

Chromatography Data System

GCsolution version 2.4

Instruction Manual

Reference

Read the instruction manual thoroughly before you use the product.
Keep this instruction manual for future reference.

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Introduction

Thank you very much for purchasing the GCsolution software for Shimadzu gas chromatograph workstations (hereafter called "GCsolution").

GCsolution allows you to control the gas chromatograph (hereafter called "GC") from your personal computer, acquire chromatograms and other different kinds of data, and reanalyze the acquired data under different conditions on your personal computer.

This manual describes the parameters and setting ranges. If you have any questions while using GCsolution, please refer to this manual.

The "Operation" manual is attached as a manual. This manual has been put together in order to familiarize you with the basic knowledge required to operate GCsolution. Be sure to read it through before using this software. After reading the manual, keep it in a safe place so that it can be accessed whenever necessary.

This manual assumes that the reader is knowledgeable of basic operations of Windows®. For the operation of Windows®, refer to the instruction manual that comes with that product.

This is the common manual for both GCsolution and GCsolution Lite.

Using the instruction manual

Kinds of instruction manuals

The GCsolution package contains the following information that describes the operational procedures and functions.

Name	Media	Description
Operation manual for GCsolution	Printed document	Explains the operational procedures for data acquisition and analysis using GCsolution.
On-line help	GCsolution program	Provides detailed information on parameters and setting ranges. This is accessible from the Help menu in GCsolution. (For using the on-line help, refer to section 12.1.1 Using Help in manual.
Operation manual for GCsolution (PDF version)	CD-ROM disk for installation	Provides the operations volume of the instruction manual as a PDF file so that it can be viewed on your personal computer. It is accessible from the Help menu in GCsolution. (For using this PDF, refer to section 12.1.2 Using the Online Manual in this instruction manual.
Quick manual for GCsolution (PDF version)	CD-ROM disk for installation	Provides the Quick manual as a PDF file so that it can be viewed on your personal computer.
References manual for GCsolution (PDF version)	CD-ROM disk for installation	Provides the Reference manual as a PDF file so that the on-line help can be printed out. The general table of contents is available, including all the instruction manuals (PDF versions). This is the common manual for both GCsolution and GCsolution Lite.
Administration manual for GCsolution (PDF version)	CD-ROM disk for installation	Expands the operational procedures and basic idea of system administration and data management using GCsolution. This manual is provided as a PDF file so that it can be referred whenever operations related to system administration are needed. The general table of contents is available, including all the instruction manuals (PDF versions). This is the common manual for both GCsolution and GCsolution Lite.

Legends for instruction manual

This manual uses the following legends:

Legend	Meaning
< >	Shows a window or view name; e.g., <Data Acquisition> window or <Method> view.
[]	Shows a parameter, tab, column, cell, bar name, menu command, that can be selected from the menu bar.
[]-[] command	Shows a sequence of selecting the menu in the first [] and then selecting the command in the second []. For example, [File]-[Print] command means that you should click on the File menu and then select the Print command from the displayed list of commands.

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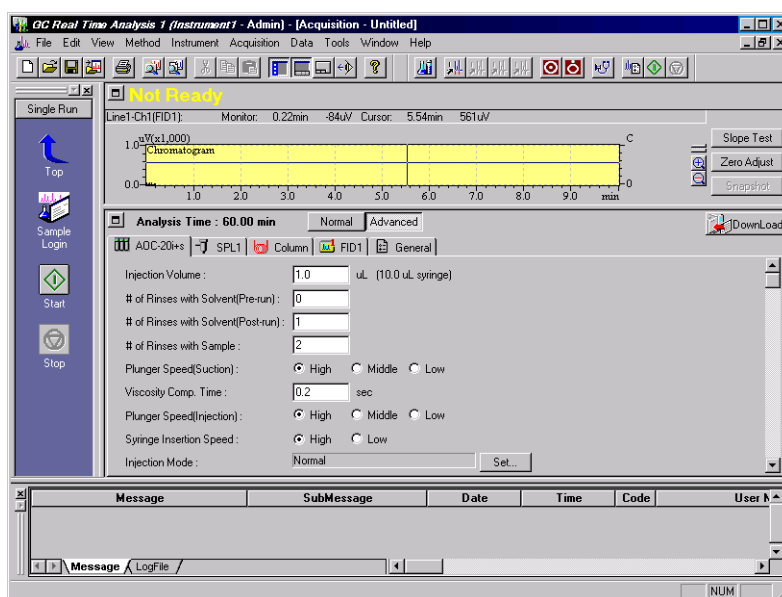
1 Overview of GCsolution

1.1 Organization of GCsolution

GCsolution consists of two screens, <GC Real Time Analysis> and <GC Postrun>. When it is installed, the [GCsolution] icon will appear on the Desktop.

1.1.1 <GC Real Time Analysis> screen

The <GC Real Time Analysis> screen is used to acquire data from single-run analysis or continuous analysis (batch analysis). It allows you to quickly prepare a report on the acquired data. This screen is also used to perform operations for the GC unit connected to a personal computer.



The <GC Real Time Analysis> screen provides two modes, [GC Real Time Analysis] and [GC Analysis Editor].

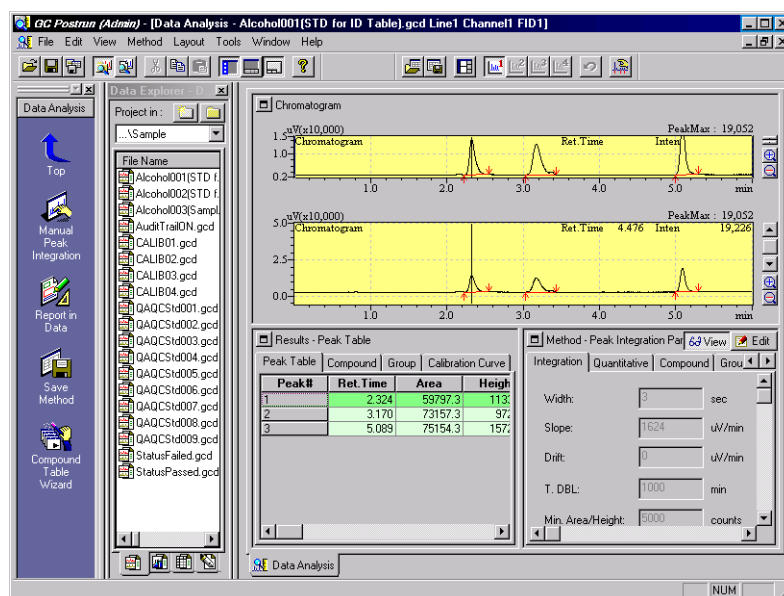
	[GC Real Time Analysis]: This mode establishes connection with the GC, allowing you to select <Data Acquisition> to acquire data, <Batch Table> to perform continuous data processing, <System Configuration> or <Instrument Monitor> to control the GC.
	[GC Analysis Editor]: In this mode, GCsolution operates without establishing a connection with the GC. Select this mode when you want to edit any other method file, batch file, or report file that is not used for the current analysis on the <GC Real Time Analysis> screen. The <GC Analysis (Editor)> looks almost like the <GC Real Time Analysis> screen, but all the functions for communication with the GC are disabled. The environmental settings for the <GC Analysis (Editor)> screen are not actual, but only reflect the corresponding information in the method file.

Note: You cannot toggle between the [GC Analysis Editor] and [GC Real Time Analysis] modes. If you click on the [GC Real Time Analysis] icon in the [GC Real Time Analysis] mode, the [GC Analysis Editor] mode will become active.



1.1.2 <GC Postrun> screen

The <GC Postrun> screen allows you to select <Data Analysis> to perform reprocessing, <Data Comparison> to compare multiple chromatograms, <Calibration Curve> to check and modify calibration curves, or <Batch Table> to perform continuous post-run analysis by editing a batch table and executing batch processing. It also enables you to quickly prepare a report using the data, methods, and chromatograms that have been reprocessed.



1.2 Starting up GCsolution

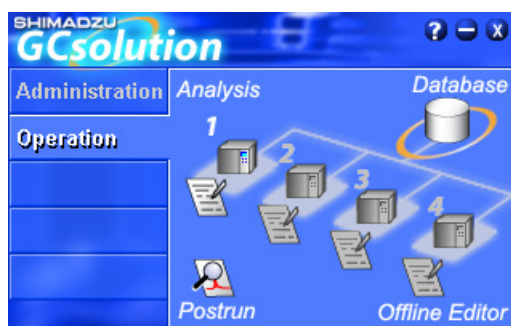
GCsolution can be started up by either of the following two methods:

- Double-clicking on an icon displayed on the Desktop
- Selecting GCsolution from the [Start] menu

1.2.1 Starting up GCsolution using an icon

When GCsolution is installed, the [GCsolution] icon will appear on the Desktop. When you double-click on the [GCsolution] icon, the launcher will appear.

Note: This image is different in the case of GCsolution Lite.



Icon	Description
?	Displays the Help menu.
-	Minimizes the Launcher (startup screen).
x	Exits the Launcher.
GCsolution	Displays the version.
Page menu	Toggles between [Administration] and [Operation].

1.2.1.1 Administration

When you click on [Administration], the following window will be displayed.

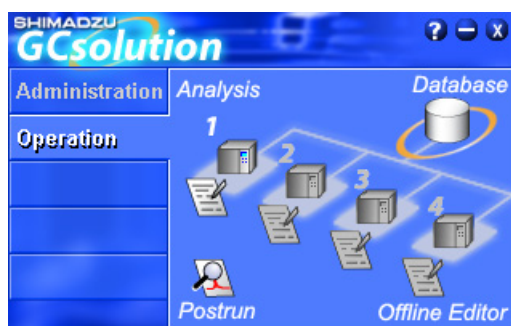




Icon	Description
System Policy	Displays the <System Policy> window. The <System Policy> window allows you to complete general settings for system administration and other settings for audit trail, reports, files and logs. <i>Refer to "12.2 <System Policy> Window" on page 520</i>
User Administration	Displays the <User Administration> window. The <User Administration> window is used to specify or change passwords; to register, authorize, change, or delete users; to register users in a Rights group. <i>Refer to "12.3 <User Administration> Window" on page 524</i>
Data Reg. Settings	Displays the <Agent Registration Settings> window. The <Agent Registration Settings> window allows you to set the registration parameters for registering files such as data files and PDFs to CLASS-Agent. <i>Refer to "12.4 <Agent Registration Settings> Window" on page 532</i>
Log Browser	Displays the <Log Browser> window. The <Log Browser> window displays the event logs of log administration, system administration, and instrument. If the user administration is shared with Shimadzu user authentication tool, the log of user authentication tool is also displayed. <i>Refer to "12.5 <Log Browser>" on page 540</i>

1.2.1.2 Operation

When you click on [Operation], the following window will be displayed.



Icon	Description
Analysis 1-4	Displays the <GC Analysis> window. Note: Only the icons corresponding to the connected analyzers are available. The other icon or icons are dimmed.
Offline Editor 1-4	Displays the <GC Analysis[Editor]> window.
Database	Runs Agent Manager software. Note: If Agent Manager is not installed, this icon is dimmed. Note: This is not displayed in the case of GCsolution Lite.
Postrun	Displays the <GC Postrun> window.

Refer to "1.2.3 <Login> Window" on page 5

Note: This image is different in the case of GCsolution Lite.

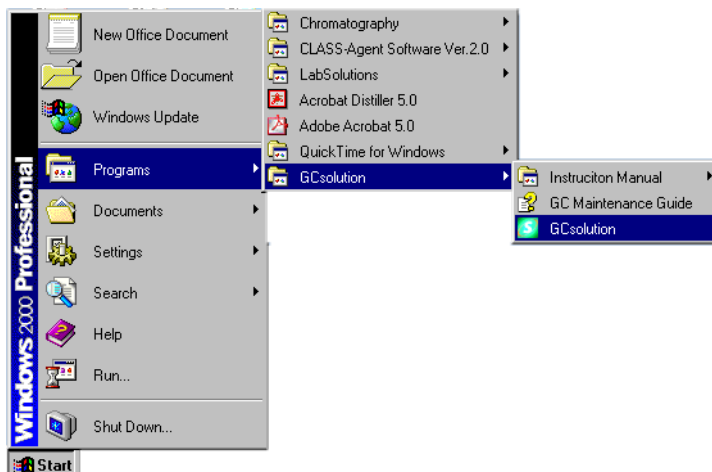


1.2.2 Starting up GCsolution from the [Start] menu

The Launcher can be started up from the [Start] menu.

When you select [Start] --> [Program] --> [GCsolution] --> [GCsolution] command, the Launcher will start up.

Note: In the case of GCsolution Lite, [GCsolution Lite] is displayed in the Menu.



1.2.3 <Login> Window

The <Login> window is displayed when the GCsolution software has been started up. This window allows you to enter a user ID and password so that you can be accepted as an authorized user.



Note: GCsolution may not properly operates depending upon the properties of the user who logged on Windows (not the user of GCsolution).

Note: Check the group by selecting [Control Panel]/[User and Password]/Properties from [User] tab. Either [Administrators] or [Power Users] must be selected to ensure the proper operation of GCsolution.

Note: Immediately after the installation of GCsolution, select "Admin" in the User ID field and click on the [OK] button to log in. You do not need to enter a password.

Parameter	Description
User ID	Enter a registered user ID. Note: If [Normal Login] is not selected, you may select your user ID from the list displayed by clicking on the [▼] button located to the right of the cell, starting from the second log-in procedure. <i>Normal Login: Refer to "12.2 <System Policy> Window" on page 520</i>



Parameter	Description
Password	Enter the password registered for the entered user ID.
[OK] button	After entering the user ID and password, click on this button. User confirmation will be performed, and if you are accepted as a user, the program will start up.
[Cancel] button	Clicking on this button will cancel startup.

Note: The information displayed in the window is different depending on whether you have logged in as the administrator or a general user who has system administration right.

Refer to "12.2 <System Policy> Window" on page 520

- For administrator

The screenshot shows the 'User Administration' window with the 'Users' tab active. The 'User Name' field is populated with 'Admin'. There are three empty input fields for 'Old Password', 'New Password', and 'Confirm New Password'. The 'OK', 'Cancel', and 'Help' buttons are at the bottom.

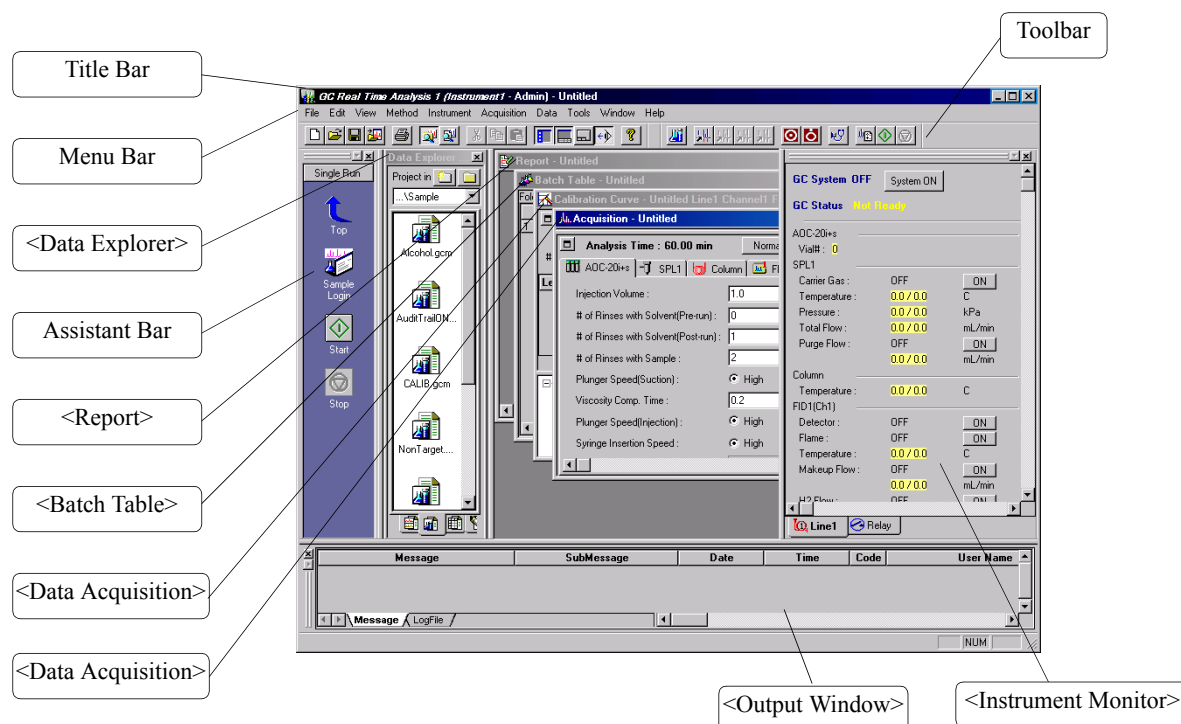
- For general user

The screenshot shows the 'User Administration' window with the 'Password' tab active. The 'User Name' field is populated with 'Taro'. There are three empty input fields for 'Old Password', 'New Password', and 'Confirm New Password'. The 'OK', 'Cancel', and 'Help' buttons are at the bottom.

2.1

<GC Real Time Analysis> Screen

The <GC Real Time Analysis> and <GC Postrun> screens contains various windows. It is very important to know the names of these windows when using GCsolution. This section gives the names of the windows for the <GC Real Time Analysis> screen and describes their simple functions. In this manual, window names are enclosed in < >.



Name	Function
Title Bar	The currently used program name and file name are displayed.
Menu Bar	The items on the Menu Bar change according to the selected window. When one of the items is selected, multiple commands will be listed. <i>For a detailed explanation of the Menu Bar, see the chapters describing each window.</i>
Toolbar	The buttons on the Toolbar change according to the selected window. Frequently used commands are assigned to those buttons, making them easier to use. <i>For a detailed explanation of the Toolbar, see the chapters describing each window.</i>
<Data Acquisition>	This window is used to display analysis chromatograms, to prepare or edit the GC parameters, and to collect data. Refer to "5 <Data Acquisition> Window" on page 63
<Batch Table>	This window is used to create a batch table for multiple data acquisitions and to carry out batch processing. Batch processing is available for data acquisition, calibration curve preparation, report printing, etc. Refer to "9 <Batch Table> Window" on page 329

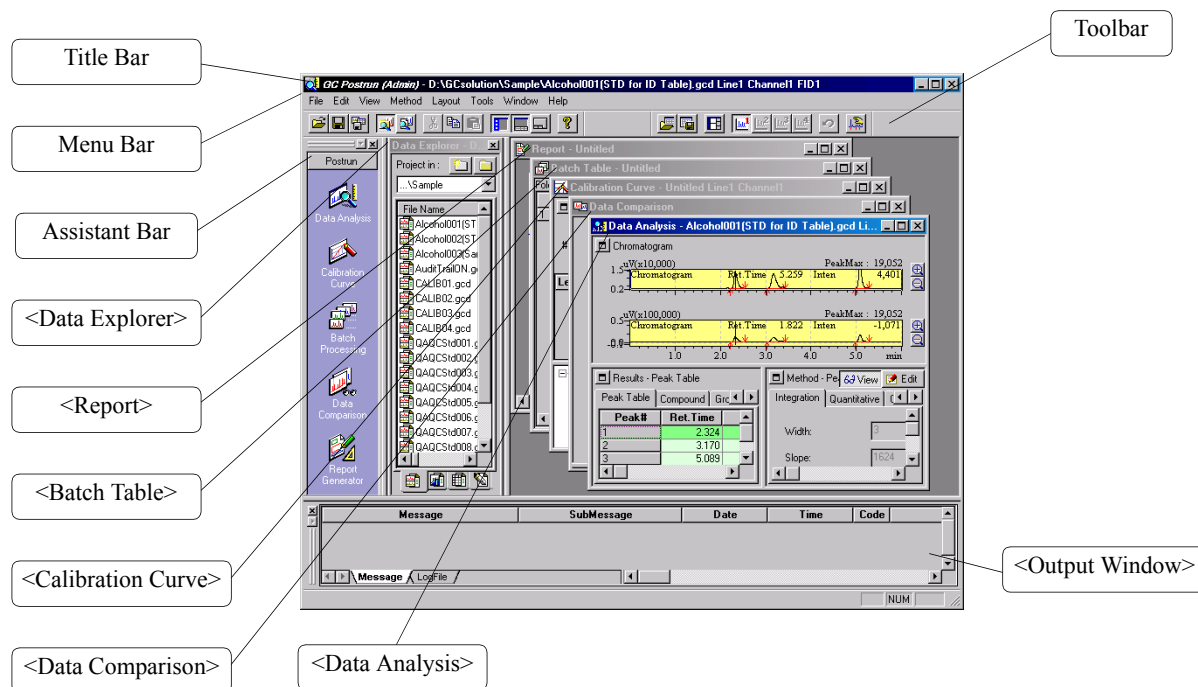


Name	Function
<Report>	This window is used to create a report format in which the settings for the method file and the analysis and postrun results are printed out. <i>Refer to "10 <Report> Window" on page 383</i>
<Calibration Curve>	This window is used to check calibration curves and to manually prepare a calibration curve by selecting data. Calibration curves, as well as their information and data processing parameters (Method View), are displayed here. <i>Refer to "7 <Calibration Curve> Window" on page 283</i>
<Instrument Monitor>	This window is used to monitor the state of the GC connected to a personal computer and to perform GC control, such as starting/stopping the GC. <i>Refer to "5.6 <Instrument Monitor> Window" on page 167</i>
Assistant Bar	Icons are listed here for command selections and window operations that are performed along the sequence of general operations. Normally, a desired operation is selected by clicking on the corresponding icon. <i>Refer to "3.2 [RealTime] Assistant Bar" on page 12</i>
<Data Explorer>	Files classified by file group (data, methods, batch, and reports) are listed here. This window is used to perform file-related operations. The destination of the file to be saved can be specified in this window. <i>Refer to "11 <Data Explorer> Window" on page 487</i>
<Output Window>	This window is used to display the logs for the user's login, executed batch processing, errors, etc. <i>Refer to "14.1 <Output Window> Window" on page 561</i>

2.2

<GC Postrun> screen

The <GC Real Time Analysis> and <GC Postrun> screens contains various windows. It is very important to know the names of these windows when using GCsolution. This section gives the names of the windows for the <GC Postrun> screen and describes their simple functions. In this manual, window names are enclosed in < >.



Name	Function
Title Bar	The currently used program name and file name are displayed.
Menu Bar	The items on the Menu Bar change according to the selected window. When one of the items is selected, multiple commands will be listed. <i>For a detailed explanation of the Menu Bar, see the chapters describing each window.</i>
Toolbar	The buttons on the Toolbar change according to the selected window. Frequently used commands are assigned to those buttons, making them easier to use. <i>For a detailed explanation of the Toolbar, see the chapters describing each window.</i>
<Data Analysis>	This window is used to analyze the acquired data by editing the data processing parameters. The window shows a chromatogram, a peak table, data processing parameters (Method View), etc. Refer to "6 <Data Analysis> Window" on page 191
<Calibration Curve>	This window is used to check calibration curves and to manually prepare a calibration curve by selecting data. Calibration curves, as well as their information and data processing parameters (Method View), are displayed here. Refer to "7 <Calibration Curve> Window" on page 283

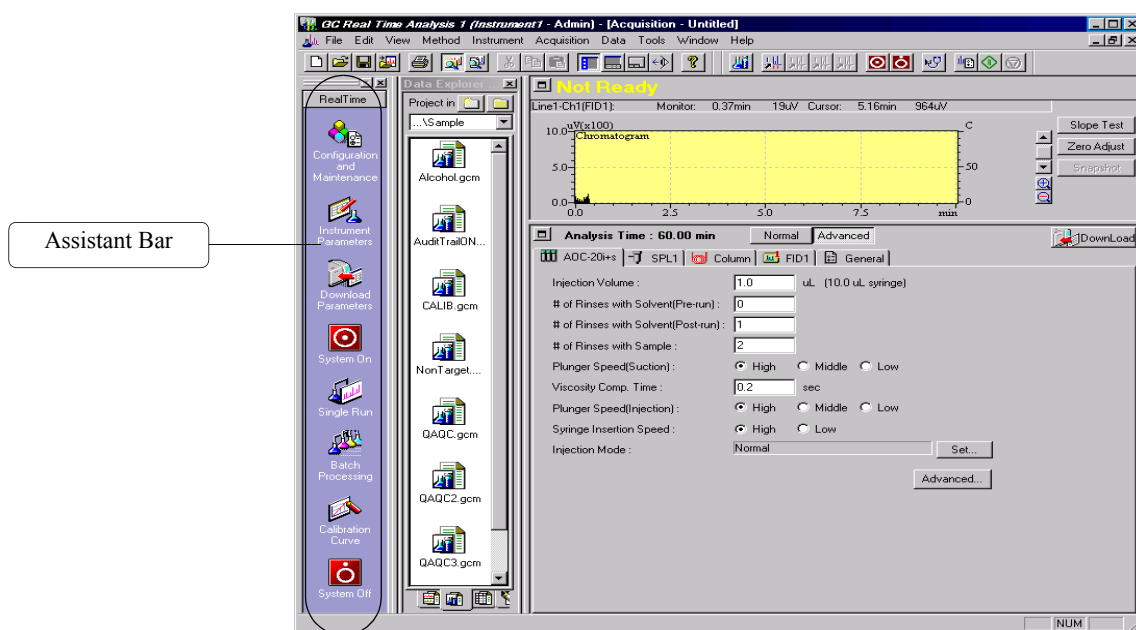


Name	Function
<Data Comparison>	This window is used to compare multiple sets of data. Chromatograms and peak tables are displayed here. <i>Refer to "8 <Data Comparison> Window" on page 313</i>
<Batch Table>	This window is used to prepare a batch table for continuous post-run analysis of multiple sets of data and to execute batch processing. The batch processing includes post-run analysis of data, preparation of calibration curves, and printing of reports. <i>Refer to "9 <Batch Table> Window" on page 329</i>
<Report>	This window is used to display analysis results and to prepare reports, such as chromatograms. <i>Refer to "10 <Report> Window" on page 383</i>
Assistant Bar	Icons are listed here for command selections and window operations that are performed along the sequence of general operations. Normally, a desired operation is selected by clicking on the corresponding icon. <i>Refer to "3.3 [Postrun] Assistant Bar ." on page 14</i>
<Data Explorer>	Files classified by file group (data, methods, batch, and reports) are listed here. This window is used to perform file-related operations. The destination of the file to be saved can be specified in this window. <i>Refer to "11 <Data Explorer> Window" on page 487</i>
<Output Window>	This window is used to display the logs for the user's login, executed batch processing, errors, etc. <i>Refer to "14.1 <Output Window> Window" on page 561</i>

3.1

What is the Assistant Bar?

The Assistant Bar in each program window displays the icons for options on the Menu Bar that are frequently used in the sequence of normal operations. If you click on these icons sequentially from the top, you will be able to perform a series of operations for each function. To display the Assistant Bar, select [View] -- [Assistant Bar] in each program window, or click on the  button on the Toolbar.



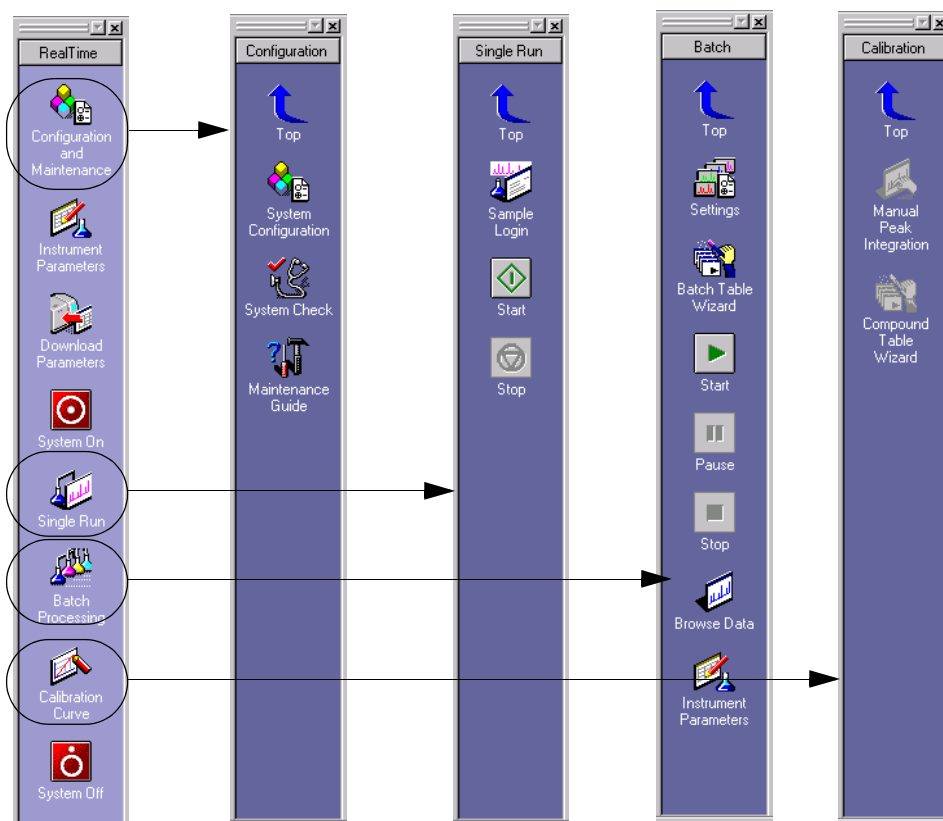
Note: If the following operations are performed with the Assistant Bar displayed, the Assistant Bar will be closed:

- Clicking on the  button located at the upper right of the Assistant Bar
- Selecting [View] -- [Assistant Bar] in the program window
- Clicking on the  button on the Toolbar



3.2 [RealTime] Assistant Bar

The Assistant Bar displayed on the <GC Real Time Analysis> screen shows the icons that will be used sequentially (from top to bottom) along the flow of analysis operations. The Assistant Bar will change, as shown below, depending on the icon you click on.



Refer to "5.2.1 [Configuration] Assistant Bar" on page 67

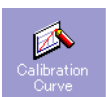
Refer to "5.2.2 [Single Run] Assistant Bar" on page 68

Refer to "9.2 Assistant Bar" on page 335

Refer to "5.2.2 [Single Run] Assistant Bar" on page 68

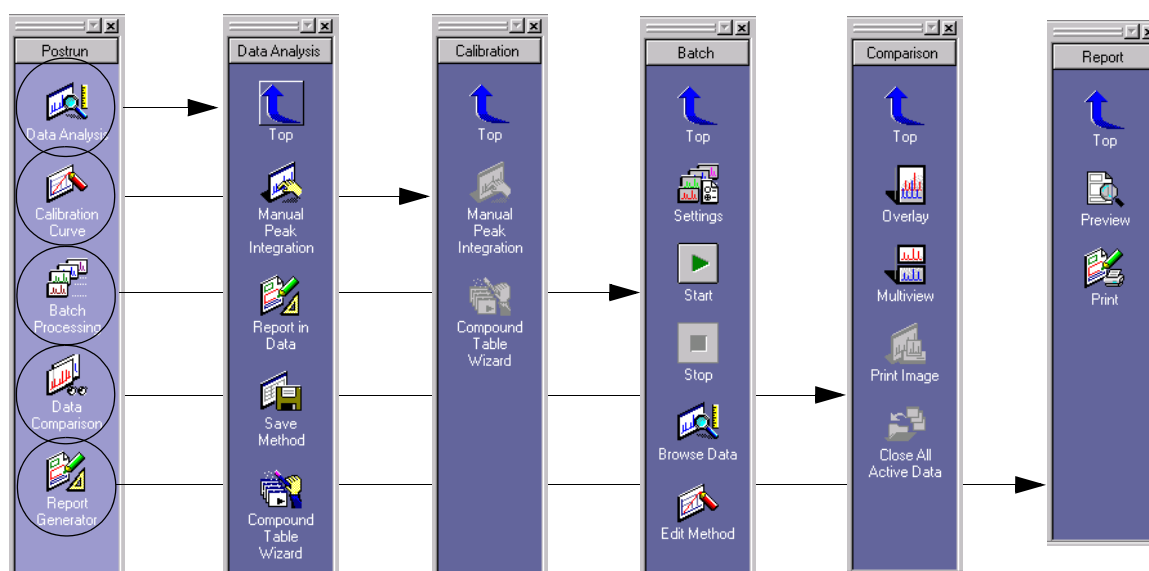
Icon	Function
Configuration and Maintenance 	The Assistant Bar will change to the [Configuration] type. <i>Refer to "5.2.1 [Configuration] Assistant Bar" on page 67</i>

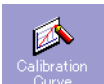


Icon	Function
Instrument Parameters 	Shows the <Instrument Parameters> View to allow you to set device parameters for units to be used for analysis. Clicking this icon once more shows the <Chromatogram> View. <i>Refer to "5.5 <Data Acquisition> -<Instrument Parameters> View" on page 85</i>
Download Parameters 	Downloads the set parameters in <Instrument Parameters> view to the GC. <i>Refer to "5.5 <Data Acquisition> -<Instrument Parameters> View" on page 85</i>
System On 	Displays the <Instrument Monitor> window and starts the GC. A short time later, the system will be turned ON. Note: If you click on this icon before downloading the parameters to the GC, a window will appear prompting you to confirm whether or not you wish to download the parameters. Clicking on the [OK] button will download the parameters and start the GC in accordance with those parameters. <i>Refer to "5.6 <Instrument Monitor> Window" on page 167</i>
Single Run 	Displays the <Data Acquisition> window, allowing you to carry out single-run analysis. The Assistant Bar will change to the [Data Acquisition] type. <i>Refer to "5 <Data Acquisition> Window" on page 63</i> <i>Refer to "5.2.2 [Single Run] Assistant Bar" on page 68</i>
Batch Processing 	Displays the <Batch Table> window, allowing you to perform continuous analysis. The Assistant Bar will change to the [Batch Table] type. <i>Refer to "9 <Batch Table> Window" on page 329</i> <i>Refer to "9.2.1 [Batch] (Analysis) Assistant Bar" on page 335</i>
Calibration Curve 	Displays the <Calibration Curve> window, allowing you to check and edit calibration curves. <i>Refer to "7 <Calibration Curve> Window" on page 283</i>
System Off 	Displays the <Instrument Monitor> window and stops the GC. A short time later, the system will be turned OFF. <i>Refer to "5.6 <Instrument Monitor> Window" on page 167</i>

3.3 [Postrun] Assistant Bar .

The Assistant Bar displayed on the <GC Postrun> screen shows the icons that will be used sequentially (from top to bottom) along the flow of post-run operations. The icons included on the Assistant Bar will change between the <Data Analysis>, <Batch Table>, <Data Comparison> or <Report> windows.



Icon	Function
	Displays the <Data Analysis> window, allowing you to check the data files and perform post-run analysis by editing the data processing parameters. The Assistant Bar will change to the [Postrun] type. Refer to "6.1 Overview of <Data Analysis> Window" on page 191 Refer to "6.2 [Data Analysis] Assistant Bar" on page 196
	Displays the <Calibration Curve> window, allowing you to check and edit calibration curves. The Assistant Bar will change to the [Calibration] type. Refer to "7 <Calibration Curve> Window" on page 283 Refer to "7.2 [Calibration] Assistant Bar" on page 289
	Displays the <Batch Table> window, allowing you to specify the batch post-run conditions for continuous post-run analysis of data. The Assistant Bar will change to the [Batch Table] type. Refer to "9 <Batch Table> Window" on page 329 Refer to "9.2.2 [Batch] (Postrun) Assistant Bar" on page 336
	Displays the <Data Comparison> window, allowing you to compare multiple data sets. The Assistant Bar will change to the [Comparison] type. Refer to "8 <Data Comparison> Window" on page 313 ???
	Displays the <Report> window, allowing you to create a report format. The Assistant Bar will change to the [Report] type. Refer to "10 <Report> Window" on page 383 Refer to "10.2 [Report] Assistant Bar" on page 388



4.1

What is the <System Configuration> Window?

This chapter describes the <System Configuration> window. This window is used to set up or check the system configuration (such as the parameters for the GC and its modules, such as the auto sampler, column, and detector) that are used with GCsolution.

4.1.1 What the <System Configuration> Window is Used for

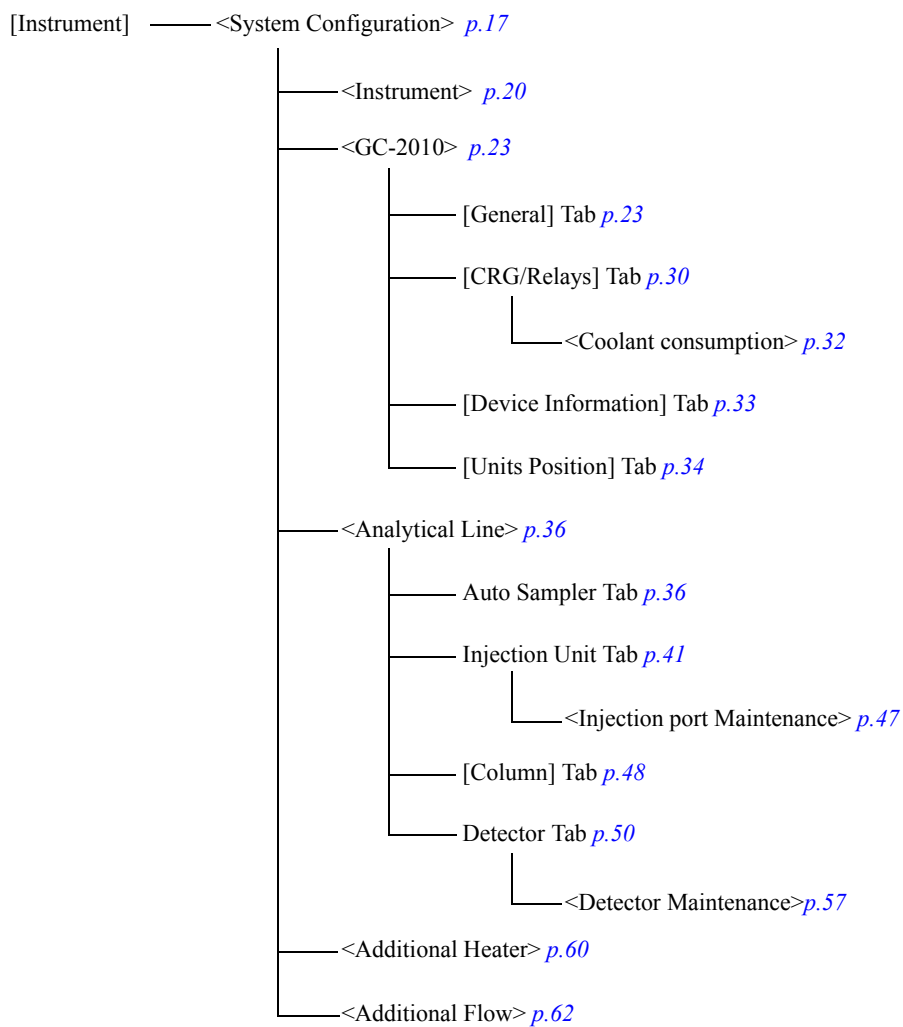
The <System Configuration> and other related windows allow you to perform the following operations:

Operation	Window used
Selecting GC modules that are used for data acquisition and setting up and checking the configuration parameters for those modules	<i>Refer to "4.2 <System Configuration> Window" on page 17</i>
Entering a name for the GC that is controlled with GCsolution	<i>Refer to "4.3 <Instrument> Window" on page 20</i>
Specifying connection ports for the personal computer on which GCsolution is installed and for the GC	<i>Refer to "4.3 <Instrument> Window" on page 20</i>
Specifying the conditions for system ON/OFF of GC and the general parameters of GC	<i>Refer to "4.4 <GC> Window" on page 23</i>
Setting up the parameters for the GC's modules	<i>Refer to "4.5 <Analytical Line> Window" on page 36</i>



4.1.2 Organization of the <System Configuration> Window

The following windows are used to set up the parameters for system configuration.



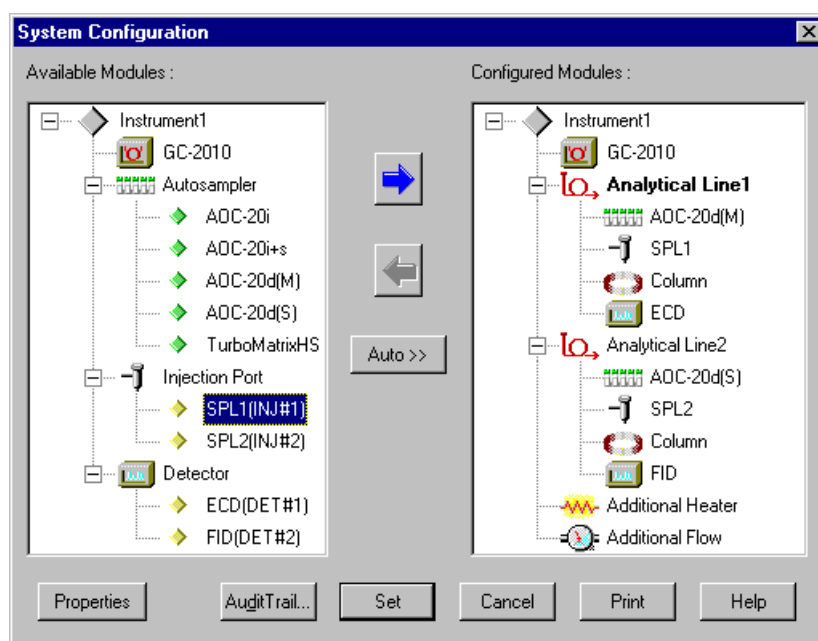
4.2

<System Configuration> Window

The <System Configuration> window is used to check the types of modules installed on the GC or to select a module used for data acquisition. The settings in this window will be saved in the system configuration file.

To open the <System Configuration> window, click on the [System Configuration] icon on the [RealTime] Assistant Bar in the <GC Real Time Analysis> screen, or select [System Configuration] from the [Instrument] menu.

After the GC has been installed, the <New Instrument> window is displayed for you to set up the system configuration. For the description of each of this window's parameters, refer to "[4.3 <Instrument> Window](#)" on page 20.



Note: GCsolution identifies the auto samplers as follows:

Autosampler type	Tab
AOC-20i	AOC-20i
AOC-20i+s	AOC-20i+s
AOC-20 Dual Tower (Master)	AOC-20d(M)
AOC-20 Dual Tower (Slave)	AOC-20d(S)

Note: AOC-20 d(M) and AOC-20d(S) are not displayed in the case of GCsolution Lite.



Parameter	Description
Available Modules	All the module types installed on the GC are listed according to the installation information acquired from the GC. Since the installation information on the auto sampler is not available, all the auto-sampler types available for the GC are listed. For any model other than GC-2010/GC-2014/GC-2025, all the units are displayed when the AOC connection is marked with a check in the settings for the CBM-102. If arbitrary names are given to the GC and the modules installed on the GC, those names are displayed. The connection port names for any modules other than those of the GC and its modules (except for the auto sampler) are found in parentheses after the name of the module. Note: The following information is displayed in the [Available Modules] section depending on the connection type between the PC and GC: ● <GC Real Time Analysis> ... Actual connection information acquired from the GC ● <GC Analysis (Editor)> ... System configuration information in the method file Note: If the connection is not established in the <GC Real Time Analysis> screen or if no method file can be found in the <GC Analysis (Editor)> screen, the corresponding error message will be generated. Note: If you select [Line Configuration] from the [Method] menu on the <GC Postrun> screen, the <System Configuration> window will be displayed. However, since no information can be acquired from the GC on the <GC Postrun> screen, nothing will be displayed in the [Available Modules] section.
Configured Modules	The modules used for data acquisition are displayed for each line. Each type of auto sampler, injection port, column, and up to three types of detectors may be specified for each line. For the line 2, however, only a single type of a detector may be specified. Note: If you select [Line Configuration] from the [Method] menu on the <GC Postrun> screen, the <System Configuration> window will be displayed. However, since no information can be acquired from the GC on the <GC Postrun> screen, the system configuration settings that were used to acquire data as reference information will be displayed in the [Configured Modules] section. Note: The modules displayed in the [Configured Modules] section are shown as tabs in the <Instrument Parameters> view in the <GC Real Time Analysis> screen. To change any module, specify a name in the <Instrument Property> window for that module. Note: The <GC Analysis (Editor)> screen does not allow you to change the settings in the [Configured Modules] section. Note: If you enter "2" in the [# of Analytical Lines] on the General tab page of the <GC-2010 Property> window, the item for line 2 will be additionally displayed in the [Configured Modules] section.
[Properties] button	If you select an item in the [Available Modules] and [Configured Modules] sections and then click on the [Properties] button, the <Instrument Property> window for that item will be displayed. This can also be done by double-clicking on that item. If you click on any of the module names listed under [Analytical Line], the [Instrument Property] window containing all the modules will be displayed.
[-->] button	If you select an item in the [Available Modules] section and then click on the [-->] button, that item will be copied under [Analytical Line #] selected in the [Configured Modules] section. [Additional Heater] and [Additional Flow] will be displayed under the corresponding items in the [Configured Modules] section. Note: Double-clicking on an item in the [Available Modules] section also allows you to copy that item in the [Configured Modules] section.
[<--] button	If you select an item in the [Available Modules] section and then click on the [<--] button, that item will be deleted from the [Configured Modules] section.
[Auto] button	If you click on the [Auto] button, the modules used for data acquisition will be automatically copied from the [Available Modules] section to the [Configured Modules] section. Note: This button is disabled in the <GC Analysis (Editor)> screen.
[Audit Trail] button	If you click on the [Audit Trail] button, the audit trail of the instrument configuration is displayed.

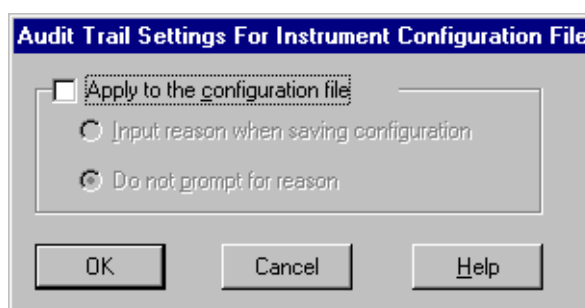


Parameter	Description
[Set] button	If you check the settings (system configuration) in the [Configured Modules] section and find them proper, click on this button to return to the <GC Real Time Analysis> screen. If the settings are not proper, the error window will be opened for you to check the settings. Note: This button is disabled in the <GC Analysis (Editor)> screen.
[Print] button	If you click on the [Print] button, the parameter settings for the modules selected in the [Configured Modules] section will be printed out.

4.2.1 Audit Trail Settings for Instrument Configuration File

This dialog box is used to specify whether or not to record the log of changes made to the instrument configuration file. Once the audit trail is enabled, you cannot disable it. Be careful when you make this setting.

This dialog is opened by selecting the [Audit Trail for Instrument Configuration] of <Data Acquisition>-[Tools] menu.



Parameter	Description
Apply to the configuration file	If selected, the audit trail for instrument configuration is enabled. Note that once this function is enabled, you can no longer change the setting.
Input reason when saving configuration	If selected, the screen to prompt you to enter the reason for change appears when the instrument configuration is changed.
Do not prompt for reason	If selected, the screen to prompt you to enter the reason for change does not appear when the instrument configuration is changed.



4.3

<Instrument> Window

The <Instrument> window is used to check the name and type of the GC connected to the PC and its communication port for the PC. To open this window, (a) select [Instrument #] (# shows an instrument No.) in the [Available Modules] and [Configured Modules] sections of the <System Configuration> window and then click on the [Properties] button; or (b) double-click on [Instrument #] (# shows an instrument No.).

If no system configuration file exists, opening the <Instrument> window will allow you to specify a communication port and other settings. After completing these settings, acquire the installation information from the GC.

Parameter	Description	Setting range (unit)	Default value
Instrument Name	Enter the name of the GC connected to the PC. The entered name will be displayed in the <System Configuration> window.	Up to 31 alphanumeric characters	Instrument # (# shows an instrument No.)
Instrument Type	Select the type of GC connected to the PC from the list that is displayed by clicking on ▼ on the right. Note: Only GC-2014 is displayed in the case of GCsolution Lite.	GC-2010 GC-2014 GC-2025 GC-1700 GC-17A V3 GC-17A V2 GC-17A V1 GC-14B GC-14C Other (CBM-102)	GC-2010
Communication	Select a communication method between the PC and GC or CBM-102. If an instrument other than the GC-2010/GC-2014/GC-2025 is used, communication will take place with the CBM-102.	RS-232C LAN	RS-232C
RS-232C port	Select the communication port between the PC and GC from the list that is displayed by clicking on ▼ on the right.	None COM1 to 10	None



Parameter	Description	Setting range (unit)	Default value
LAN IP address	For the LAN connection, specify the IP address on the GC. Note: The LAN connection requires optionally available software and the LAN adapter for the GC.	0.0.0.0 to 255.255.255.255	
MS	Select this option when the system is integrated with GCMSsolution. Note: This parameter is only valid for the GC-2010.		
[CBM-102 Set- tings] button	If this button is clicked, the setup window for the CBM-102 appears. The button is valid when an instrument other than the GC-2010/GC-2014/GC-2025 is used.		None
Description	You can enter text on detailed information for the instrument here. When not needed, leave this field blank.		

Note: When you first set up the system configuration after installing GCsolution, the following <New Instrument> window will be opened before the <System Configuration> window is displayed. The content of the <New Instrument> window are the same as shown in "4.3 <Instrument>."

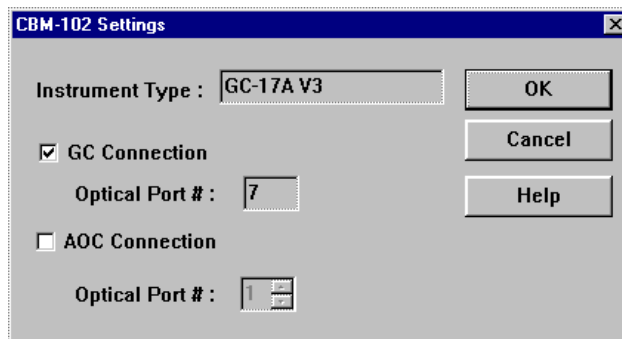
Note: If the instrument type is changed, turn the GC OFF/ON before clicking the OK button, and then wait until the GC has started up. If the CBM-102 is used, turn it OFF/ON and then wait until the CBM-102 has started up. To determine whether the CBM-102 has started, listen for the beep sound after the CBM-102 has been turned ON.

Note: For the GC-17A, the GCsolution does not run properly with a ROM version earlier than v1.65.

Note: For the GC-14B, if the DIALOG indicator for the corresponding key on the GC is illuminated, the CBM-102 will emit a warning sound and proper connection will not be possible. In this case, turn OFF the DIALOG indicator by selecting [SHIFTDOWN] - [ESCP].



4.3.1 Setting the CBM-102



Parameter	Description	Setting range (unit)	Default value
Instrument Type	Indicates the instrument type.	GC-1700 GC-17A V3 GC-17A V2 GC-17A V1 GC-14B GC-14C Other (CBM-102)	
GC Connection	Indicates whether the GC is connected. If Instrument Type is set to Other (CBM-102), the GC is not connected. Otherwise, the GC is connected.	ON, OFF	
Optical Port #	Indicates the optical link port number on the CBM-102, which is used to connect the GC.	7	7
AOC Connection	Indicates whether the AOC is connected. If Instrument Type is set to Others (CBM-102), this parameter cannot be set.	ON, OFF	OFF
Optical Port #	Indicates the optical link port number on the CBM-102, which is used to connect the GC.	1 to 3	1

4.4

<GC> Window

The <GC> window is used to specify the system parameters for the GC. To open this window, (a) select [GC] in the <System Configuration> window, and then click on the [Properties] button; or (b) double-click on [GC].

In the <GC Real Time Analysis> screen, the <GC> window shows the module installation information acquired from the GC. In the <GC Analysis (Editor)> mode, however, the system configuration information in the method file will be displayed and cannot be changed.

4.4.1 <GC> - [General] Tab

This tab is used to specify the number of Analytical Lines in GC and the conditions for turning ON/OFF the GC.

For the GC-2010, GC-2014 and GC-2025

Parameter	Description	Setting range (unit)	Default value
# of Analytical Lines	Enter the number of lines (connected GC) that are controlled by GCsolution, which allows for controlling up to two lines. Note: For the GC-2025, fixed "1".	1 to 2	1
Pressure units	Select the pressure unit that is used to display or specify the pressure of the flow.	kPa, bar, psi	kPa
Save Monitored Values	Specify whether the values (carrier gas pressure, column oven temperature, etc.) monitored by the operating GC are to be stored in the data file.	ON, OFF	OFF
Sampling Period	Specify a sampling period in which the Save Monitored Values is checked.	1000 to 12000 (msec)	1000
Atmosphere compensation	When this parameter is marked with a check, the carrier gas flow will be corrected by the atmospheric pressure. The default value is OFF.	ON, OFF	OFF



Parameter	Description	Setting range (unit)	Default value
GC System On When turning on the power	When this parameter is marked with a check, the system will be turned ON by at the same time the GC is turned ON. The default value is OFF.	ON, OFF	OFF
START TIME	Specify the time at which you want to start controlling the temperature after starting to send the carrier gas. You can prevent damage to the column by substituting the mixed air in the flow path with the carrier gas before the temperature of the column oven is increased.	0.0 to 6000.0 (min)	0.0
STOP TIME	Specify the time at which you want to stop controlling the temperature after the system is turned OFF by clicking on the [System OFF] in the <GC Real Time Analysis> screen.	0.0 to 6000.0 (min)	0.0
SLEEP TIME	Specify the time at which you want to turn ON the system again after stopping the temperature-control unit. If this parameter will not be used, remove the check mark.	0.0 to 6000.0, 9999.0 (min)	9999.0
FLOW OFF TIME	Specify the time at which you want to stop sending the carrier gas after stopping the temperature-control unit. If this parameter will not be used, remove the check mark.	0.0 to 6000.0, 9999.0 (min)	9999.0
System On Mode	If you select [Flow/Temp>Det], the flow controller and temperature-control unit will be turned ON when the system is turned ON. Subsequently, the detector will also be turned ON. If you select [Flow/Temp], the flow controller and temperature-control unit will be turned ON when the system is turned ON, but the detector will not be turned ON subsequently.	[Flow/Temp>Det] [Flow/Temp]	[Flow/Temp>Det]

For the GC-17A, GC-1700, or GC-14C

Parameter	Description	Setting range (unit)	Default value
# of Analytical Lines	Enter the number of lines (connected GC) that are controlled by GCsolution, which allows for controlling up to two lines.	1 to 2	1
Pressure units	Select the pressure unit that is used to display or specify the pressure of the flow.	kPa, bar, psi	kPa
Atmosphere compensation	When this parameter is marked with a check, the carrier gas flow will be corrected by the atmospheric pressure. The default value is OFF.	ON, OFF	OFF
START TIME	Specify the time at which you want to start controlling the temperature after starting to send the carrier gas. You can prevent damage to the column by substituting the mixed air in the flow path with the carrier gas before the temperature of the column oven is increased.	0.0 to 3000.0 (min)	0.0



Parameter	Description	Setting range (unit)	Default value
STOP TIME	Specify the time at which you want to stop controlling the temperature after the system is turned OFF by clicking on the [System OFF] in the <GC Real Time Analysis> screen.	0.0 to 3000.0 (min)	0.0
SLEEP TIME	Specify the time at which you want to turn ON the system again after stopping the temperature-control unit. If this parameter will not be used, remove the check mark.	0.0 to 3000.0, 9999 (min)	9999
FLOW OFF TIME	Specify the time at which you want to stop sending the carrier gas after stopping the temperature-control unit. If this parameter will not be used, remove the check mark.	0.0 to 3000.0, 9999 (min)	9999
[Installation Information] button	This button allows you to specify the GC installation state. To set the injection port and the heat unit port on the detector, use this button.		

Note: The atmosphere compensation cannot be set for the GC-17A V1/V2 and GC-14C. It can only be set for the GC-17A V3 and GC-1700.

Note: FLOW OFF TIME cannot be set for the GC-14C.

For the GC-14B

Parameter	Description	Setting range (unit)	Default value
# of Analytical Lines	Enter the number of lines (connected GC) that are controlled by GCsolution, which allows for controlling up to two lines.	1 to 2	1
Pressure units	Select the pressure unit that is used to display or specify the pressure of the flow.	kPa, bar, psi	kPa
[Installation Information] button	This button allows you to specify the GC installation state. To specify whether the heat unit port is available, or to set the injection port and the heat unit port on the detector, use this button.		

For others (CBM-102)

Parameter	Description	Setting range (unit)	Default value
# of Analytical Lines	Enter the number of lines (connected GC) that are controlled by GCsolution, which allows for controlling up to two lines.	1 to 2	1
Pressure units	Select the pressure unit that is used to display or specify the pressure of the flow.	kPa, bar, psi	kPa



4.4.1.1 <Installation Information> window

The <Installation Information> window is used to enter the installation information on the GC. For the GC-17A, GC-1700, or GC-14C, it is necessary to specify the positions of heat units and to set the injection port and the heat unit used for the detector. For the GC-14B, you need to specify whether heat units are available and the heat unit used for the detector.

a) Heat Units tab

This tab is used to set the heat units for the GC.

For the GC-17A, GC-1700, or GC-14C

Parameter	Description	Setting range
INJ DET AUX1 AUX2 AUX3 AUX4 AUX5	Shows whether each heat unit is available.	ON, OFF
Name	Up to 7 arbitrary alphanumeric characters may be entered for the name of each heat unit.	
Position	Specify the position where each heat unit is installed. Based on this information, the [Units Position] box will be displayed in the <GC Property> window. More than one heat unit cannot be specified in the same position. Note: For the GC-14C, this parameter cannot be set.	1 to 9: The heat unit is installed on the top plate of the GC. 0: The heat unit is installed other than as above.

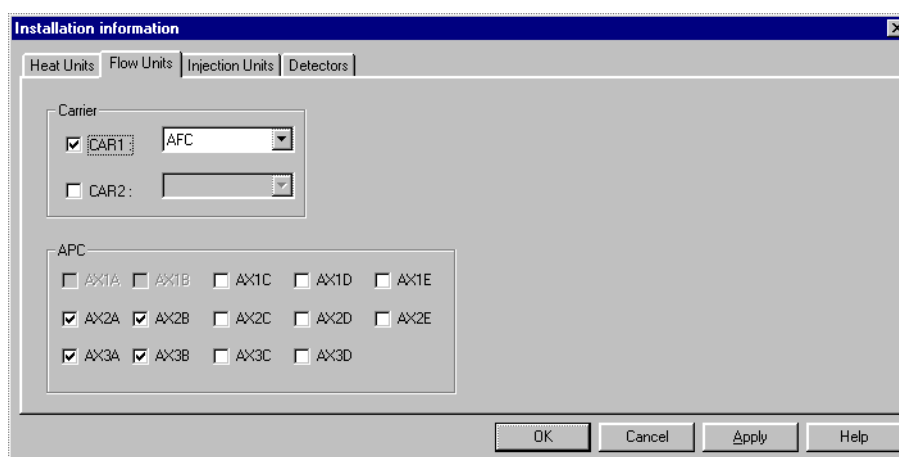


For the GC-14B

Parameter	Description	Setting range
INJ DET AUX1 AUX2 AUX3	Shows whether each heat unit is available.	ON, OFF
Name	Up to 7 arbitrary alphanumeric characters may be entered for the name of each heat unit.	

b) [Flow Units] tab

This tabbed page shows the flow units for the GC. It is not displayed for the GC-14B.



For the GC-17A, GC-1700, or GC-14C

Parameter	Description	Setting range
Carrier gas CAR1 CAR2	Shows whether flow units are available for controlling the flow of carrier gas and their types. Set this parameter on the GC.	AFC Manual splitter None
APC AX1A, AX1B, AX1C, AX1D, AX1E AX2A, AX2B, AX2C, AX2D, AX2E AX3A, AX3B, AX3C, AX3D	Shows whether the APC is available. Set this parameter on the GC.	ON, OFF



c) [Injection Units] tab

This tab is used to specify the injection units for the GC.

Installation information

Heat Units | Flow Units | **Injection Units** | Detectors

	Flow Zone	Heat Zone	Purge
☒ INJ#1 :	CAR1	INJ	AX2A
☐ INJ#2 :			

OK Cancel Apply Help

For the GC-17A, GC-1700, or GC-14C

Parameter	Description	Setting range
INJ#1 INJ#2	Specify whether the injection port is available.	ON, OFF
Flow Zone	Shows the flow unit ports. CAR1 to 2 correspond to INJ#1 to 2.	CAR1, CAR2
Heat Zone	Shows the heat ports. Only the heat ports selected on the [Heat Units] tabbed page are displayed here.	INJ, DET, AUX1, AUX2, AUX3, AUX4, AUX5
Purge	Shows the APC for purge use. Please perform a setup by GC side.	AX1A, AX1B ... AX3D

For the GC-14B

Parameter	Description	Setting range
INJ#1 INJ#2	Specify whether the injection port is available.	ON, OFF
Heat Zone	Shows the heat ports. Only the heat ports selected on the [Heat Units] tabbed page are displayed here.	INJ, DET, AUX1, AUX2, AUX3



d) [Detectors] tab

This tab is used to specify the detectors for the GC.

For the GC-17A or GC-1700

Parameter	Description	Setting range
Type	Shows the detector types.	FID, FPD, FTD, ECD, TCD, WFID, WFTD
Heat Zone	Sets the heat unit ports.	INJ, DET, AUX1, AUX2, AUX3, AUX4, AUX5
Aux. Heat Zone	Shows the auxiliary heat unit ports. This parameter must be set only when the detector type is FPD. Specify one auxiliary heat unit port for the FPD-17 or two for the FPD-17c.	INJ, DET, AUX1, AUX2, AUX3, AUX4, AUX5
Makeup	Shows the APC port used to control the flow of makeup gas for the detector. Please perform a setup by GC side.	AX1A, AX1B ... AX3D
H2	Shows the APC port used to control the flow of hydrogen gas for the detector. Please perform a setup by GC side.	AX1A, AX1B ... AX3D
Air	Shows the APC port used to control the flow of air or nitrogen gas for the detector. Please perform a setup by GC side.	AX1A, AX1B ... AX3D

For the GC-14B or GC-14C

Parameter	Description	Setting range
Type	Shows and sets the detector types. Note: If the FTD or SID detector is used for the GC-14B, FID will also be displayed here, where changes can be made.	FID, FPD, FTD, ECD, TCD, SID



Parameter	Description	Setting range
Heat Zone	Sets the heat unit ports. Note: AUX4 and AUX5 are not available for the GC-14B.	INJ, DET, AUX1, AUX2, AUX3, AUX4, AUX5

Note: If there is more than one detector for the GC-14B or GC-14C, the heat unit port DET is shared by the detectors. In this case, do not specify the DET for the heat unit ports of the detectors, but rather for the additional heat units.

Example: For the FID and TCD detectors

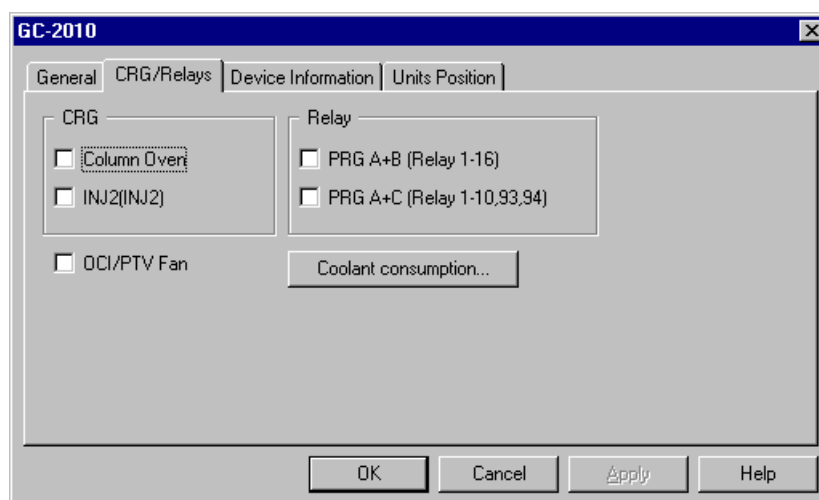
Heat unit port for FID: OFF (DET for heat unit of FID)

Heat unit port for TCD: AUX3 (DET or AUX3 for heat unit of TCD)

Additional heat unit: DET

4.4.2 <GC> - [CRG/Relays] Tab

The [CRG/Relays] tab in the <GC Property> window shows whether the CRG, OCI/PTV fan, and relays are installed. For the GC-14B, however, you can specify whether or not the PRG is available. The settings under this tab can only be checked; they cannot be changed. This tabbed page is not displayed if the GC type is [Others (CBM-102)].



For the GC-2010, GC-2014 or GC-2025

Parameter	Description
CRG	Shows whether each temperature-control unit is equipped with the CRG.
Column Oven	Shows whether the column oven is equipped with the CRG.
SPL2 (INJ2)	Shows whether the INJ2 temperature-control unit is equipped with the CRG.
OCI/PTV Fan	If the OCI or PTV fan is connected to the GC, the box will be marked with a check.
Relay	Shows whether the optional relay output connectors are available.



Parameter	Description
PRG A+B (Relay 1-16)	Shows whether the optional relays for PRG A+B are available. Relays 1 to 16 are available for PRG A+B.
PRG A+C (Relay 1-10, 93, 94)	Shows whether the optional relays for PRG A+C are available. Relays 1 to 10, 93, and 94 are available for PRG A+C.
[Coolant consumption] button	Specify the time-based coolant capacity of the CRG (cooling unit) when the system check is performed. The <Coolant consumption> window will be opened. <i>Refer to "4.4.2.1 <Coolant consumption> Window" on page 32</i>
AFC-2014d is used as additional AMC	Shows how the AFC-2014d (dual type AFC for packed column) is used if it is provided. When unchecked, the AFC-2014d is used to control the flow rate of carrier gas in the injection unit. When checked, the AFC-2014d is used as an additional flow (AMC). Note: These settings are only valid for the GC-2014.

For the GC-17A, GC-1700, GC-14C

Parameter	Description
CRG	Shows whether each heat unit is equipped with a CRG.
Column Oven	Shows whether the column oven is equipped with a CRG.
INJ2 (AUX1)	Shows whether the INJ (AUX1) heat unit is equipped with a CRG. Note: The name of AUX1 heat unit is displayed for INJ2.
OCI/PTV Fan	If the OCI or PTV fan is connected to the GC, the check box is checked. Note: For the GC-17A V1, the connection information cannot be acquired from the GC and, therefore, must be entered.
Relay	Shows whether the optional relay output connectors are available.
PRG1 (Relay 1-8)	Shows whether the optional relays for PRG1 are available. Relays 1 to 8 are available for PRG1.
PRG2 (Relay 9-16)	Shows whether the optional relays for PRG2 are available. Relays 9 to 16 are available for PRG2.

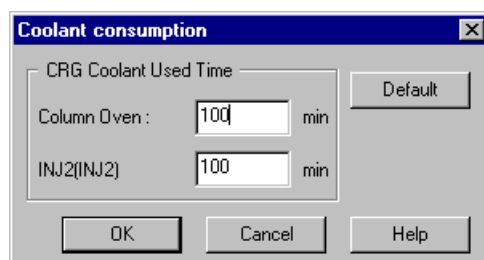
For the GC-14B

Parameter	Description	Setting range	Default value
Relay	Specify whether the optional relay output connectors are available.		
PRG1 (Relay 1-8)	Specify whether the optional relays for PRG1 are available. Relays 1 to 8 are available for PRG1.	ON, OFF	OFF



4.4.2.1 <Coolant consumption> Window

Specify the time-based coolant capacity of the CRG (cooling unit). The entered value will be used when the system check is performed. If the actual time exceeds the specified time during the system check, the system will be evaluated as having failed the check.



Parameter	Description	Setting range	Default value
Column Oven	Specify the time period for which the coolant for the CRG for the column oven can be used.	0 to 9999 (min)	100
SPL2 (INJ2)	Specify the time period for which the coolant for the CRG for the INJ2 temperature-control unit can be used.	0 to 9999 (min)	100
[Default] button	Enters the default value for each item.	-	-



4.4.3 <GC> - [Device Information] Tab

When any module is connected to the GC, a serial number and ROM version will be automatically loaded from that module and then displayed.

Check that the serial number and ROM version are displayed. The [Unit ID] field may be set freely. If you want to give a specific name or number to the module, enter it in this field. If not, leave this field blank. The [Unit ID] specified here will be used in the system check report.

Note: For the GC-17A, GC-1700, and GC-14C, the serial number can be entered, since it cannot be loaded from the instrument.

Note: For the GC-14B, the serial number and ROM version can be entered, since they cannot be loaded from the instrument.

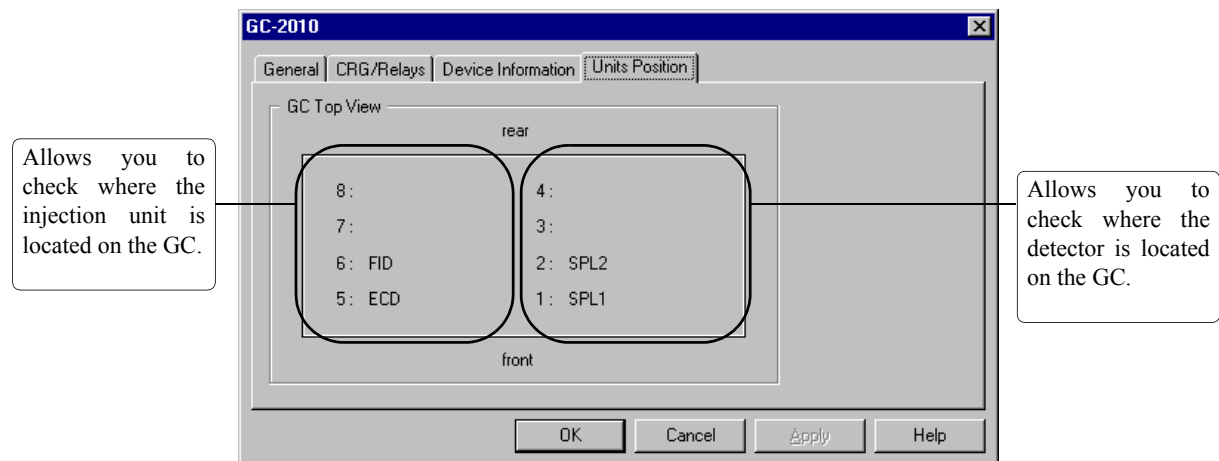
Note: For others (CBM-102), the instrument name can be entered in addition to the serial number, ROM version, and unit ID.



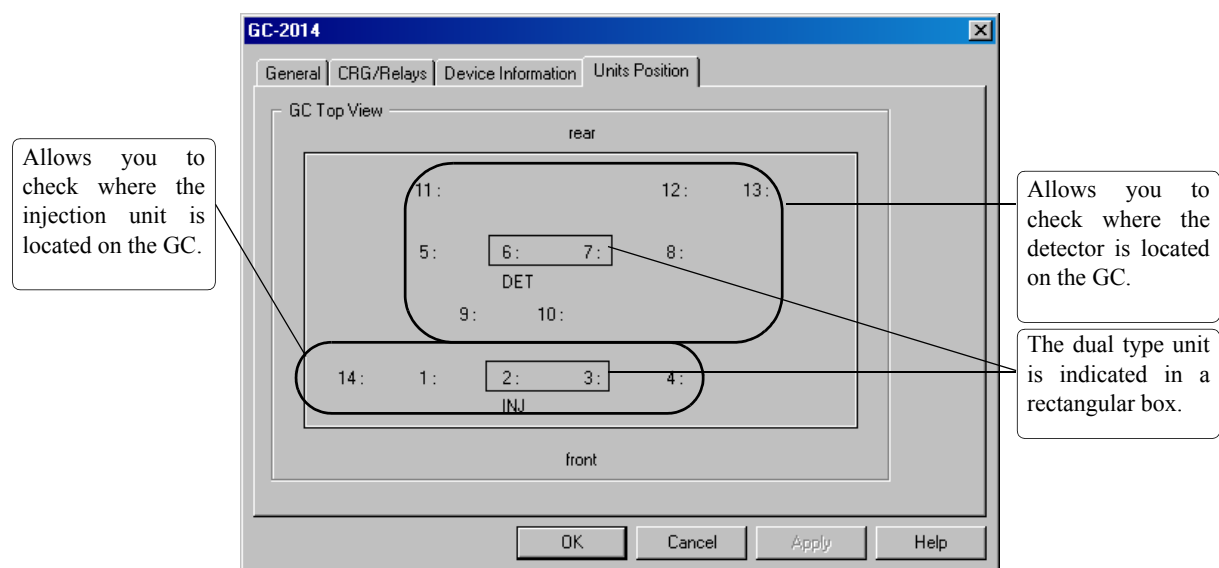
4.4.4 <GC> - [Units Position] Tab

This page allows you to check the positions of the injection unit and detector installed on the GC, as viewed from the top of the GC. The settings under this tab can only be checked; they cannot be changed.

For GC2010



For GC2014



Note: For the GC-2025, GC-14B, GC-14C, and others (CBM-102), this tabbed page is not displayed.



4.4.5 <GC> - [CBM-102] Tab

When the CBM-102 is used as the interface with the PC, its settings are entered on this tabbed page. For the GC-2010/GC-2014/GC-2025, this tabbed page is not displayed.

Parameter	Description	Setting range	Default value
Analog Input	Shows whether the analog input connector is available for inputting data from the detector.		
AD1	Shows whether the analog input connector for AD1 is available.	ON, OFF	ON
AD2	Shows whether the analog input connector for AD2 is available. Note: AD2 is set to ON if the 2-channel board is installed.	ON, OFF	OFF
Device Information	Shows and sets the device information on the CBM-102.		
Serial #	Sets the serial number.		
ROM Version	Shows the ROM version loaded from the instrument.		
Unit ID	Allows you to freely enter information, such as the reference number of the instrument.		



4.5

<Analytical Line> Window

The <Analytical Line> window is used to set up the parameters for the modules installed on the GC, such as the auto-sampler, injection unit, column, and detector. The parameters must be set up for each line.

4.5.1 <Analytical Line> - [Auto-sampler] Tab

Each of the auto-sampler tabs is used to set up the configuration parameters for the corresponding auto-sampler installed on the GC. Since the setting items vary depending on the type of auto-sampler used, confirm the type before setting up the parameters. Each of the auto-sampler tab pages on the <Analytical Line> window can be displayed by one of the following methods:

- Select an auto-sampler in the [Configured Modules] section of the <System Configuration> window, and then click on the [Properties] button.
- Double-click on an auto-sampler in the [Configured Modules] section.
- If the <Analytical Line> window is already opened, click on an auto-sampler tab.

Note: To set up the configuration parameters of any module that is not in use, select an auto-sampler in the [Available Modules] section of the <System Configuration> window, and then click on the [Properties] button. The window displayed by this procedure will be slightly different from that displayed by selecting the auto-sampler in the [Configured Modules] section and then clicking on the [Properties] button. However, this window allows you to set up the module before use.

4.5.1.1 AOC-20i/AOC-20d (S) Tab

The image displays two side-by-side screenshots of the 'Modules of Analytical Line#1' configuration window. Both windows show the 'AOC-20i' and 'AOC-20d(S)' tabs. The left window is for 'AOC-20i' and the right is for 'AOC-20d(S)'. Both windows have a 'SPL1' tab selected. The 'Vial Capacity' is set to 1.5 mL and 'Syringe Capacity' is set to 10 uL. The 'Rack Type' is set to 'Short'. The 'Device Information' section includes fields for 'Serial number', 'ROM version', and 'Unit ID'. The bottom of each window has 'OK', 'Cancel', 'Apply', and 'Help' buttons.



Parameter	Description	Setting range	Default value
Rack Type	Select a rack type for the auto-sampler.	Short, Long	Short
Vial Capacity	Enter vial capacity.	1.5, 4.0 (mL)	1.5
Syringe Capacity	Enter syringe capacity.	0.5, 5, 10, 50, 250 (uL)	10
Device Information	The information entered here will be used in the system check report.	-	-
Serial number	Enter the serial number indicated on the label affixed to the rear or lateral side of the AOC.	-	-
ROM version	Load the ROM version for the AOC to display it here.	-	-
Unit ID	This field allows you to enter any information freely. If you want to give a specific name or number to the AOC, use this field. If not, leave the field blank.	-	-

4.5.1.2 AOC-20i+s/AOC-20d(M) Tab

Parameter	Description	Setting range	Default value
Vial Capacity	Enter vial capacity.	1.5, 4.0 (mL)	1.5
Rack Type	Select a rack type for the auto-sampler.	Short, Long	Short
Syringe Capacity	Enter syringe capacity.	10, 50, 250 (uL)	10



Parameter	Description	Setting range	Default value
Use Barcode	If you are using a barcode, mark the box with a check.	Yes, No	No
Use AOC-20s	Sets whether to use AOC-20s or not.	Yes, No	Yes
AOC-20i Device Information AOC-20s Device Information	The information entered here will be used in the system check report.	-	-
Serial number	Enter the serial number indicated on the label affixed to the rear or lateral side of the AOC.	-	-
ROM version	Load the ROM version for the AOC to display it here.	-	-
Unit ID	This field allows you to enter any information freely. If you want to give a specific name or number to the AOC, use this field. If not, leave the field blank.	-	-

Note: If the AOC-20i+s is connected to the GC-14B, set the Rack Type (Short/Long) of the AOC-20i on the AOC panel using [FUNCTION 93]. For any GC model other than the GC-14B, the Rack Type of the AOC-20i is fixed to Short on the AOC-20i+s.

Note: If different vial capacities are used between the AOC-20d (M) and the AOC-20d(S), allocate the samples on the GC (in the case of a GC-2010) or on the AOC (in the case of a GC-17A).



4.5.1.3 TurboMatrixHS Tab

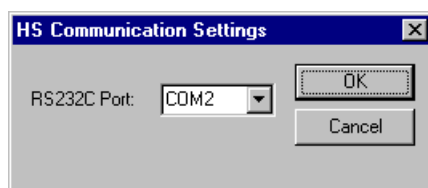
This tab page is displayed only when the GCsolution TurboMatrixHS Control Option has been installed.

Parameter	Description	Setting range	Default value
ROM version	Displays the ROM version acquired from the HS unit.		
Number of Vials	Displays the maximum number setting of vials acquired from the HS unit.	16, 40, 110	
Serial number	Displays the serial number acquired from the HS unit.		
Unit ID	[Unit ID] field is provided for users to freely enter a name or number unique to the instrument as necessary. When not needed, leave this field blank.		
[Communication...] button	If this button is clicked, the dialog box for setting the RS232C port to which the HS unit is connected is displayed.		
Option	Displays presence/absence of options by acquiring the information from the HS unit.		



Parameter	Description	Setting range	Default value
Progressive Mode	Displays whether the Progressive mode is available or not. When TurboMatrixHS is used, this option is always set to Present.	Present, None	Present
MHE Mode	Displays whether the MHE mode is available or not. When TurboMatrixHS is used, this option is always set to Present.	Present, None	Present
Sample Shaker	Displays whether the sample shaker is available or not.	Present, None	None
PPC (High Pressure Sampling)	Displays whether PPC is enabled or not.	Present, None	None
Cryofocus	Displays whether the cryofocus is available or not.	Present, None	None
Back Flush	Displays whether the back flush function is available or not.	Present, None	None
Water Trap	Displays whether the water trap function is available or not.	Present, None	None

Note: No communication setting has been made right after installation. Click on the [Communication...] button to set the communication port.



Clicking OK after specifying PC's RS232C port connected to the HS unit closes the dialog box and connects the PC to the HS unit. Upon establishment of connection, the information on the ROM version, maximum vial number, serial number, and presence/absence of options is read in by the PC and displayed.



4.5.2 <Analytical Line> - [Injection Unit] Tab

The Injection Unit tab page is used to display and set the configuration parameters for the injection unit installed on the GC. This tab page can be displayed by any of the following methods:

- Select an injection unit in the [Configured Modules] section of the <System Configuration> window, and then click on the [Properties] button.
- Double-click on an injection unit in the [Configured Modules] section of the <System Configuration> window.
- If the <Analytical Line> window is already open, click on the Injection Unit tab.

Note: To set up the configuration parameters of any module that is not currently being used, select an injection unit in the [Available Modules] section, and then click on the [Properties] button. The window displayed by this procedure will be slightly different from that displayed by selecting SPL in the [Configured Modules] section and clicking on the [Properties] button. However, this window allows you to set up the module before use.

Note: The tab name for the injection unit may be changed by entering a name in the [Name] field. The settings may be different depending on your PC.

The screenshot shows the 'Modules of Analytical Line#1' dialog box with the 'Injection Unit' tab selected. The dialog box contains the following fields and controls:

- Tab Headers:** SPL1 | Column | FID1
- Name:** SPL1
- Injection Unit Type:** SPL
- Carrier Gas:** He (dropdown menu)
- Injection port Maintenance...:** Button
- Heater:**
 - Zone:** INJ1
 - Maximum Temperature:** 470 C
- Carrier Flow:**
 - Flow Unit Type:** AFC-2010
 - Zone:** CAR1
 - Slot:** SLOT1
 - Primary Pressure:** 500.0-900.0 kPa (dropdown menu)
- In case of no APC for purge:**
 - Purge Flow:** 3 mL/min
 - Inlet Pressure:** 100 kPa
- Buttons:** OK, Cancel, Apply, Help

**For the GC-2010**

Parameter	Description	Setting range	Default value
Name	Up to 7 alphanumeric characters may be entered for the name of the injection unit. The entered name will be displayed on the corresponding tab page of the <Instrument Parameters> view. It will also be displayed in the <Instrument Monitor> window and various reports.		
Injection Unit Type	Displays the type of sample inlet.	SPL, WBI, PTV, OCI	SPL
Carrier Gas	Select the type of carrier gas.	He, N2, H2, Ar	He
Heater	This section includes the parameters related to temperature control of the heat unit.		
Zone	Displays the temperature-control unit port for the sample inlet.	INJ1, DET1, INJ2, DET2, AUX3, AUX4, AUX5	
Maximum Temperature	Specify the maximum temperature of the temperature-control unit for the sample inlet.	10 to 470 (°C)	470
Carrier Flow	This section includes the parameters related to the flow control of carrier gas in the injection unit.		
Flow Unit Type	Displays the type of flow control unit.	AFC-2010, Manual SPL, None	-
Zone	Displays the port for flow control.	CAR1, CAR2, CAR3	-
Slot	Displays the slot for flow control.	SLOT1 to 6	-
Primary Pressure	Specify primary pressure.	300 to 500, 500 to 900, 900 to 980 (kPa)	500 to 900
In case of no APC for purge			
Purge Flow	If the APC for purge is not installed on the GC, specify the purge flow rate in accordance with the instruction manual. Enter the flow rate at which the inlet pressure of the column remains constant.	0.0 to 40.0 (mL/min)	3.0
Inlet Pressure	Specify the column inlet pressure at which to check the purge flow rate.	0.0 to 970.0 (kPa)	100.0
[Injection port Maintenance] button	When this button is clicked on, the <Injection port Maintenance> window will be opened. <i>Refer to "4.5.2.1 <Injection port Maintenance> Window" on page 47</i>		

Note: If the APC for purge use is selected for the flow unit, [In case of no APC for purge] is dimmed so that it cannot be accessed.



For the GC-2014

Parameter	Description	Setting range	Default value
Name	Up to 7 alphanumeric characters may be entered for the name of the injection unit. The entered name will be displayed on the corresponding tab page of the <Instrument Parameters> view. It will also be displayed in the <Instrument Monitor> window and various reports.		
Injection Unit Type	Displays the type of sample inlet.	SPL, WBI, PTV, OCI, SINJ, DINJ	SPL
Mode	Select a mode when "DINJ" is selected in [Injection Unit Type].		
Carrier Gas	Select the type of carrier gas. Note: When "DINJ" is selected in [Injection Unit Type], proceed with the mode setting as follows: If you select "Dual" in [Mode], select two options, Carrier Gas L and R. If you select "Single L" in [Mode], select Carrier Gas L. If you select "Single R2" in [Mode], select Carrier Gas R.	He, N2, H2, Ar	He
Heater	This section includes the parameters related to temperature control of the heat unit.		
Zone	Displays the temperature-control unit port for the sample inlet.	INJ1, DET1, INJ2, DET2, AUX3, AUX4, AUX5	
Maximum Temperature	Specify the maximum temperature of the temperature-control unit for the sample inlet.	10 to 420 (°C)	420
Carrier Flow	This section includes the parameters related to the flow control of carrier gas in the injection unit.		
Flow Unit Type	Displays the type of flow control unit.	AFC-2010, Manual SPL, AFC-2014d, AFC-2014s, None	-
Zone	Displays the port for flow control.	CAR1, CAR2, CAR3	-
Slot	Displays the slot for flow control.	SLOT2 to 6	-
Primary Pressure	Specify primary pressure.	300 to 500, 500 to 900, 900 to 980 (kPa)	500 to 900
In case of no APC for purge			



Parameter	Description	Setting range	Default value
Purge Flow	If the APC for purge is not installed on the GC, specify the purge flow rate in accordance with the instruction manual. Enter the flow rate at which the inlet pressure of the column remains constant.	0.0 to 40.0 (mL/min)	3.0
Inlet Pressure	Specify the column inlet pressure at which to check the purge flow rate.	0.0 to 970.0 (kPa)	100.0
[Injection port Maintenance] button	When this button is clicked on, the <Injection port Maintenance> window will be opened. <i>Refer to "4.5.2.1 <Injection port Maintenance> Window" on page 47</i>		

For the GC-2025

Parameter	Description	Setting range	Default value
Name	Up to 7 alphanumeric characters may be entered for the name of the injection unit. The entered name will be displayed on the corresponding tab page of the <Instrument Parameters> view. It will also be displayed in the <Instrument Monitor> window and various reports.		
Injection Unit Type	Displays the type of sample inlet.	SPL	SPL
Carrier Gas	Select the type of carrier gas.	He, N ₂ , H ₂ , Ar	He
Heater	This section includes the parameters related to temperature control of the heat unit.		
Zone	Displays the temperature-control unit port for the sample inlet.	INJ1	
Maximum Temperature	Specify the maximum temperature of the temperature-control unit for the sample inlet.	10 to 420 (°C)	420
Carrier Flow	This section includes the parameters related to the flow control of carrier gas in the injection unit.		
Flow Unit Type	Displays the type of flow control unit.	AFC-2010, Manual SPL, None	-
Zone	Displays the port for flow control.	CAR1, CAR2, CAR3	-
Slot	Displays the slot for flow control.	SLOT1 to 6	-
Primary Pressure	Specify primary pressure.	300 to 500, 500 to 900, 900 to 980 (kPa)	500 to 900
In case of no APC for purge			
Purge Flow	If the APC for purge is not installed on the GC, specify the purge flow rate in accordance with the instruction manual. Enter the flow rate at which the inlet pressure of the column remains constant.	0.0 to 40.0 (mL/min)	3.0
Inlet Pressure	Specify the column inlet pressure at which to check the purge flow rate.	0.0 to 970.0 (kPa)	100.0



Parameter	Description	Setting range	Default value
[Injection port Maintenance] button	When this button is clicked on, the <Injection port Maintenance> window will be opened. <i>Refer to "4.5.2.1 <Injection port Maintenance> Window" on page 47</i>		

Note: If the APC for purge use is selected for the flow unit, [In case of no APC for purge] is dimmed so that it cannot be accessed.

For the GC-17A or GC-1700

Parameter	Description	Setting range (unit)	Default value
Name	Up to 7 alphanumeric characters may be entered for the name of the injection unit. The entered name will be displayed on the corresponding tabbed page of the <Instrument Parameters> view. It will also be displayed in the <Instrument Monitor> window and various reports.	Up to 7 alphanumeric characters	-
Injection Unit Type	Select the type of injection unit.	SPL, WBI/DRI, PTV, OCI	-
Carrier Gas	Select the type of carrier gas from the list that is displayed by clicking on on the right.	He, N2, H2, Ar	He
Heater	This section includes the parameters related to temperature control of the heat unit.	-	-
Zone	Shows the heat unit port for the sample injection inlet.	INJ, DET, AUX1, AUX2, AUX3, AUX4, AUX5	-
Maximum Temperature	Specify the maximum temperature for the temperature control at the sample injection inlet.	GC-17A 10 to 470 (°C)	470
		GC-1700 10 to 420 (°C)	420
Carrier Flow	This section includes the parameters related to the flow control of carrier gas in the injection unit.	-	-
Flow Unit Type	Shows the type of flow unit.	AFC, Manual SPL, None	-
Zone	Shows the flow control port.	CAR1, CAR2	-
Primary Pressure	Select a primary pressure from the list that is displayed by clicking on on the right. Note: For the GC-17A V1 or GC-17A V2, this parameter cannot be set.	GC-17A 600, 400, 980 (kPa)	600
		GC-1700 600, 400, 980, 500 (kPa)	600
Purge Flow	This section includes the parameters related to the flow control for purging the injection unit.	-	-
APC Port	Shows the APC port name for purge.	AX1A, AX1B... AX3D	-
Control Mode	Select an APC control mode.	Flow, Pressure	Flow
In case of no APC for purge		-	-



Parameter	Description	Setting range (unit)	Default value
Purge Flow	If the APC for purge is not installed on the GC, specify the purge flow rate. Enter the flow rate at which the column inlet pressure remains constant.	0.0 to 40.0 (mL/min)	3.0
Inlet Pressure	Specify the column inlet pressure at which to check the purge flow rate. For the GC-1700, this parameter cannot be set. Only the purge flow rate is used to calculate the pressure.	0.0 to 400.0 (kPa)	100.0

Note: If the APC for purge flow control is available, [In case of no APC for purge] is dimmed so that it cannot be accessed.

Note: For the GC-17A V3, [Inlet Pressure] under [In case of no APC for purge] takes 970 kPa as the upper limit when the primary pressure is 970 kPa. However, if the ROM version for the GC is earlier than v3.13, set the upper limit at 400 kPa.

Note: For the GC-1700, enter the measured value for purge flow rate in [Purge Flow] under [In case of no APC for purge]. To enter this value on the GC, use the [FUNCTION 6] key.

For the GC-14B or GC-14C

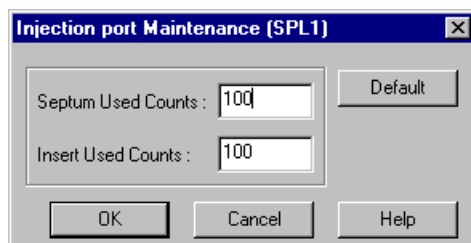
Parameter	Description	Setting range (unit)	Default value
Name	Up to 7 alphanumeric characters may be entered for the name of the injection unit. The entered name will be displayed on the corresponding tabbed page of the <Instrument Parameters> view. It will also be displayed in the <Instrument Monitor> window and various reports.	Up to 7 alphanumeric characters	-
Injection Unit Type	Select the type of injection unit.	SPL, WBI/DRI, PTV, OCI	-
Carrier Gas	Select the type of carrier gas from the list that is displayed by clicking on  on the right.	He, N2, H2, Ar	He
Heater	This section includes the parameters related to temperature control of the heat unit.	-	-
Zone	Shows the heat unit port for the sample injection inlet. Note: For the GC-14B, AUX4 and AUX5 are not available. Note: For the GC-14B, AUX3 means TCD temperature control.	INJ, DET, AUX1, AUX2, AUX3, AUX4, AUX5	-
Maximum Temperature	Specify the maximum temperature for the temperature control at the sample injection inlet.	GC-14B 10 to 450 (°C)	400
		GC-14C 10 to 440 (°C)	440

Note: For the GC-14B, the maximum temperatures for Heat Port INJ and DET are the same value.



4.5.2.1 <Injection port Maintenance> Window

This window is used to specify the service life of consumables (septum and glass insert) in the injection unit. The entered value will be used during the system check. If the actual value exceeds this limit, the septum and insert will be evaluated as having failed the check.



Parameter	Description	Setting range	Default value
Septum Used Counts	Enter the service life of the septum.	0 to 9999	100
Insert Used Counts	Enter the service life of the glass insert.	0 to 9999	100
[Default] button	Enters the default value in each field.	-	-



4.5.3 <Analytical Line> - [Column] Tab

This tab page is used to enter the information on the column installed on the GC. It is also used to register or delete data on the column database. The [Column] tab page of the <Analytical Line> window can be displayed by one of the following methods:

- Select a column in the [Configured Modules] section of the <System Configuration> window, and then click on the [Properties] button.
- Double-click on a column in the [Configured Modules] section of the <System Configuration> window.
- If the <Analytical Line> window is already open, click on the [Column] tab.

Modules of Analytical Line#1

Column: FID

Please input the column information on the [Registered Columns] table, and click the [Select] button.

Selected Column

Name : CBP1-S25-050

Serial # : Inner Diameter : 0.32 mm

Length : 25 m Film Thickness : 0.5 um

Max Usable Temp. : 320 C Installation Date : 3/22/2002

Registered Columns

	Column Name	Serial #	Film Thickness (um)	Length (m)	Inner Dia
1	CBP1-S25-050		0.5	25	
2	CBP1-W12-100		1	12	

Select Add Delete

Description :

OK Cancel Apply Help



Parameter	Description	Setting range	Default value
Selected Column	Shows the information on the column selected in the [Registered Columns] table. When the injection unit type is DINJ (dual type), select either the L-side or R-side column.	-	-
Registered Columns	The information on the registered columns is displayed in a tabular format.	-	-
Name	Up to 31 alphanumeric characters may be entered for an arbitrary column name. The entered name will be displayed on the corresponding tab page of the <Instrument Parameters> view in the <GC Real Time Analysis> screen. It will also be displayed in the <Instrument Monitor> window and various reports.	-	-
Serial #	Up to 15 alphanumeric characters may be entered here.	-	-
Max. Usable Temp.	Set the upper temperature limit for the column oven.	0 to 470 (°C)	-
Length	Enter the column length.	0.1 to 250.0 (m)	-
Inner Diameter	Enter the inner diameter of the column.	0.01 to 6.00 (mm)	-
Film Thickness	Enter the film thickness of the column. Note: For the packed column, set this parameter to 0.	0.00 to 30.00 (um)	0.50
Installation Date	Enter the date (yy/mm/dd) when the column was installed on the GC.	-	-
[Select] button	Click on this button when you select a column displayed in the [Registered Columns] table.	-	-
[Add] button	Click on this button when you add a column to the [Registered Columns] table.	-	-
[Delete] button	Click on this button when you delete a column from the [Registered Columns] table.	-	-
Description	Up to 511 alphanumeric characters may be entered as a comment on the selected column.	-	-

Note: The temperature entered in the [Max. Usable Temp.] field will be the upper temperature limit when a temperature is specified on the [Column] tab page of the <Instrument Parameters> view in the <Data Acquisition> mode. If you enter any temperature exceeding this limit on the [Column] tab page of the <Instrument Parameters> view, an error message will be generated.

Note: Before entering the column information, refer to the instruction manual or package for your column.

Note: If the column information stored in the system configuration file is different from that on the column database, a message will be generated with the database information displayed.

Note: The following two types of columns are registered as defaults:

Column Name	Max. Usable Temp.	Length	Inner Diameter	Film Thickness
CBP1- S25-050	320C	25.0m	0.32mm	0.50μm
CBP1- W12-100	320C	12.0m	0.53mm	1.00μm



4.5.4 <Analytical Line> - [Detector] Tab

This tab page displays the configuration parameters of the detector installed on the GC and allows you to change it. The Detector tab page of the <Analytical Line> window can be displayed by one of the following methods:

- Select a detector in the [Configured Modules] section of the <System Configuration> window, and then click on the [Properties] button.
- Double-click on a detector in the [Configured Modules] section of the <System Configuration> window.
- If the <Analytical Line> is already open, click on the Detector tab.

Note: To set up the configuration parameters of any detector that is not currently being used, select that detector in the [Available Modules] section of the <System Configuration> window. The window displayed by this procedure will be slightly different from that displayed by selecting the detector in the [Configured Modules] section and clicking on the [Properties] button. However, this window allows you to set up the detector before use.

Note: The tab name for any detector may be changed by entering a name in the [Name] field. The settings may be different depending on your PC.

The screenshot shows the 'Modules of Analytical Line#1' dialog box with the 'ECD' tab selected. The 'Name' field contains 'ECD'. The 'Detector Type' is set to 'ECD' and 'Det#' is 'DET#1'. There is a checkbox for 'Use Power controller' which is unchecked, and a 'Detector Maintenance...' button. The 'Base Period' is 40 msec and 'Filter Time Const' is 200 msec. Under the 'Heater' section, 'Zone' is 'DET1' and 'Maximum Temperature' is 470 C. Under the 'Flow' section, 'Detector APC Type' is 'APC(Det3ch)', 'Zone' is 'DetAPC1', 'Slot' is 'SLOT2', and 'Makeup Gas Type' is 'N2/Air'. At the bottom are 'OK', 'Cancel', 'Apply', and 'Help' buttons.

For the GC-2010

Parameter	Description	Setting range	Default value
Name	Up to 7 alphanumeric characters may be entered for an arbitrary detector name. The entered name will be displayed on the corresponding tab page of the <Instrument Parameters> view in the <GC Real Time Analysis> screen. It will also be displayed on the <Instrument Monitor> window and various reports.	-	-
Detector Type	Displays the detector type.	FID, FPD, FPD+, FTD, ECD, TCD-S, BID, ECD-EX	-



Parameter	Description	Setting range	Default value
Det#	Displays the detector number.	DET#1 to #4	-
Use Power controller	Determines whether the power controller for the detector is used. To use the detector as the FID, you do not need to select this box. To use it as the FTD, select this box.	-	-
Interference Filter	When [Detector Type] is "FPD+" select a interference filter.	P, S, Sn	P
Base Period	Select a basic sampling period that will be used when chromatogram data is transferred to the PC. The sampling period for the chromatogram data that will be stored on the data file is that specified in the method file.	4, 8, 20, 40, 60, 80, 100, 200, 500, 1000 (msec)	40
Filter Time Const.	Select a time constant for noise filter in GC.	4, 5, 10, 20, 50, 100, 200, 500, 1000, 2000 (msec)	200
Heater	This section shows the information on the temperature-control unit for the detector.	-	-
Zone	Displays the temperature-control unit port for the detector.	INJ1, DET1, INJ2, DET2, AUX3, AUX4, AUX5	-
Maximum Temperature	Enter the maximum temperature of the temperature-control unit for the detector.	10 to 470 (°C)	470
Pre-temperature control unit	This section shows the information related to the pre-temperature-control for the detector. It is only displayed when the detector type is the TCD-S with pre-heater unit.	-	-
Zone	Displays the temperature-control unit for the pre-temperature-control.	INJ1, DET1, INJ2, DET2, AUX3, AUX4, AUX5	-
Name	Up to 7 alphanumeric characters may be entered for an arbitrary name of the pre-temperature-control. The entered name will be displayed on the corresponding tab page of the <Instrument Parameters> view in the <GC Real Time Analysis> screen. It will also be displayed on the <Instrument Monitor> window and various reports.	-	None
Maximum Temperature	Enter the maximum temperature for the pre-temperature-control.	10 to 470 (°C)	470
Flow	This section shows the information on the flow control for the detector.	-	-



Parameter	Description	Setting range	Default value
Detector APC Type	Displays the flow controller type for the detector.	APC (Det1 to 3ch), APC(BID), None	-
Zone	Displays the flow controller port for the detector.	DetAPC1 to 4	-
Slot	Displays the flow controller slot for the detector.	SLOT1 to 6	-
Makeup Gas / ECD Gas Type	Select the makeup gas / ECD gas type to be used. Note: ECD Gas appears when [Detectgor Type] is ECD-EX.	He, N2, H2, Ar	<Other than the ECD, ECD-EX> He <ECD, ECD-EX> N2
[Detector Maintenance] button	If this button is clicked on for ECD detector, the <Detector Maintenance> dialog box is displayed. <i>Refer to "4.5.4.1 <Detector Maintenance> Window" on page 57.</i>		

For the GC-2014

Parameter	Description	Setting range	Default value
Name	Up to 7 alphanumeric characters may be entered for an arbitrary detector name. The entered name will be displayed on the corresponding tab page of the <Instrument Parameters> view in the <GC Real Time Analysis> screen. It will also be displayed on the <Instrument Monitor> window and various reports.	-	-
Detector Type	Displays the detector type.	FID, FPD, FTD, ECD, TCD-L	-
Det#	Displays the detector number.	DET#1 to #4	-
Mode	When [Detector Type] is "DFID," select a mode.	Dual, Single L, Single R	Dual
Use Power controller	Determines whether the power controller for the detector is used. To use the detector as the FID, you do not need to select this box. To use it as the FTD, select this box.	-	-
Interference Filter	When [Detector Type] is "FPD" select a interference filter.	P, S, Sn	P
Base Period	Select a basic sampling period that will be used when chromatogram data is transferred to the PC. The sampling period for the chromatogram data that will be stored on the data file is that specified in the method file.	4, 8, 20, 40, 60, 80, 100, 200, 500, 1000 (msec)	40
Filter Time Const.	Select a time constant for noise filter in GC.	4, 5, 10, 20, 50, 100, 200, 500, 1000, 2000 (msec)	200



Parameter	Description	Setting range	Default value
Heater	This section shows the information on the temperature-control unit for the detector.	-	-
Zone	Displays the temperature-control unit port for the detector.	INJ1, DET1, INJ2, DET2, AUX3, AUX4, AUX5	-
Maximum Temperature	Enter the maximum temperature of the temperature-control unit for the detector.	10 to 420 (°C)	420
Pre-temperature control unit	This section shows the information related to the pre-temperature-control for the detector. It is only displayed when the detector type is the TCD-L.	-	-
Zone	Displays the temperature-control unit for the pre-temperature-control.	INJ1, DET1, INJ2, DET2, AUX3, AUX4, AUX5	-
Name	Up to 7 alphanumeric characters may be entered for an arbitrary name of the pre-temperature-control. The entered name will be displayed on the corresponding tab page of the <Instrument Parameters> view in the <GC Real Time Analysis> screen. It will also be displayed on the <Instrument Monitor> window and various reports.	-	None
Maximum Temperature	Enter the maximum temperature for the pre-temperature-control.	10 to 420 (°C)	420
Flow	This section shows the information on the flow control for the detector.	-	-
Detector APC Type	Displays the flow controller type for the detector.	APC (Det1 to 3ch), None	-
Zone	Displays the flow controller port for the detector.	DetAPC1 to 4	-
Slot	Displays the flow controller slot for the detector.	SLOT1 to 6	-
Makeup Gas Type	Select the makeup gas type to be used.	He, N2, H2, Ar	He
[Detector Maintenance] button	If this button is clicked on, the <Detector Maintenance> dialog box is displayed. <i>Refer to "4.5.4.1 <Detector Maintenance> Window" on page 57.</i>		

For the GC-2025

Parameter	Description	Setting range	Default value
Name	Up to 7 alphanumeric characters may be entered for an arbitrary detector name. The entered name will be displayed on the corresponding tab page of the <Instrument Parameters> view in the <GC Real Time Analysis> screen. It will also be displayed on the <Instrument Monitor> window and various reports.	-	-
Detector Type	Displays the detector type.	FID	-
Det#	Displays the detector number.	DET#1	-



Parameter	Description	Setting range	Default value
Use Power controller	Determines whether the power controller for the detector is used. To use the detector as the FID, you do not need to select this box. To use it as the FTD, select this box.	-	-
Base Period	Select a basic sampling period that will be used when chromatogram data is transferred to the PC. The sampling period for the chromatogram data that will be stored on the data file is that specified in the method file.	4, 8, 20, 40, 60, 80, 100, 200, 500, 1000 (msec)	40
Filter Time Const.	Select a time constant for noise filter in GC.	4, 5, 10, 20, 50, 100, 200, 500, 1000, 2000 (msec)	200
Heater	This section shows the information on the temperature-control unit for the detector.	-	-
Zone	Displays the temperature-control unit port for the detector.	INJ1, DET1, INJ2, DET2, AUX3, AUX4, AUX5	-
Maximum Temperature	Enter the maximum temperature of the temperature-control unit for the detector.	10 to 420 (°C)	420
Flow	This section shows the information on the flow control for the detector.	-	-
Detector APC Type	Displays the flow controller type for the detector.	APC (Det1 to 3ch), None	-
Zone	Displays the flow controller port for the detector.	DetAPC1 to 4	-
Slot	Displays the flow controller slot for the detector.	SLOT1 to 6	-
Makeup Gas Type	Select the makeup gas type to be used.	He, N2, H2, Ar	He
[Detector Maintenance] button	If this button is clicked on for ECD detector, the <Detector Maintenance> dialog box is displayed. Refer to "4.5.4.1 <Detector Maintenance> Window" on page 57.		

For the GC-17A or GC-1700

Parameter	Description	Setting range (unit)	Default value
Name	Up to 7 alphanumeric characters may be entered for an arbitrary detector name. The entered name will be displayed on the corresponding tabbed page of the <Instrument Parameters> view in the <GC Analysis> screen. It will also be displayed in the <Instrument Monitor> window and various reports.	-	-
Detector Type	Displays the detector type.	FID, FPD, FTD, ECD TCD, WFID, WFTD	-
Det#	Displays the detector number.	DET#1 to #4	-
Use Power Controller	Specify whether a power controller for the detector is used. If this parameter is checked, the detector will be used as the FTD.	ON, OFF	OFF



Parameter	Description	Setting range (unit)	Default value
Analog Input	Select an analog input connector for the CBM-102, through which detector signals are input. Note: If this parameter is set to None, no detector signal can be acquired.	AD1, AD2, None	None
Base Period	Select a basic sampling period that will be used when chromatogram data is transferred from the GC to the PC. The sampling period for the chromatogram data that will be stored in the data file is the period specified in the method file. Note: If a value smaller than 100 is specified for the base period, the resolution of input signals becomes lower. Therefore, avoid specifying such a value unless otherwise required.	20, 40, 60, 80, 100, 200, 500, 1000 (msec)	100
[Wide Range Calibration] button	If this button is clicked, the analog input connector will be compensated for when the wide range detector is used.	-	-
Heater	This section includes the parameters related to the temperature control for the detector.	-	-
Zone	Displays the heat unit port for the detector.	INJ, DET, AUX1, AUX2, AUX3, AUX4, AUX5	-
Maximum Temperature	Enter the maximum temperature of the heat unit for the detector.	GC-17A 10 to 470 (°C)	470
		GC-1700 10 to 420 (°C)	420
Aux. Heater 1 Aux. Heater 2	This section includes the parameters related to pre-temperature-control for the detector. It is only displayed when the detector type is the FPD. One pre-temperature-control unit is required for the FPD-17 and two for the FPD-17c.	-	-
Zone	Displays the heat unit port for pre-temperature-control.	INJ, DET, AUX1, AUX2, AUX3, AUX4, AUX5	-
Maximum temperature	Specify the maximum temperature for pre-temperature-control.	GC-17A 10 to 470 (°C)	470
		GC-1700 10 to 420 (°C)	420
Flow	This section includes the parameters related to detector flow control. Note: These parameters cannot be set for the GC-17A V1/V2.	-	-
Makeup	This subsection includes the parameters related to makeup gas flow control.		-
APC Port	Displays the APC port.	AX1A, AX1B ... AX3D	-
Control Mode	Displays the flow controller slot for the detector.	Flow, Pressure	Flow



Parameter		Description	Setting range (unit)	Default value
	Gas Type	Select the makeup gas used from the list that is displayed by clicking on  on the right.	He, N2, H2, Ar	He
	H2	This subsection includes the parameters related to hydrogen gas flow control.		-
	APC Port	Displays the APC port.	AX1A, AX1B, ..., AX3D	-
	Control Mode	Displays the flow controller slot for the detector.	Flow, Pressure	Flow
	Air	This subsection includes the parameters related to the flow control for air or nitrogen gas.		-
	APC Port	Displays the APC port.	AX1A, AX1B, ..., AX3D	-
	Control Mode	Displays the flow controller slot for the detector.	Flow, Pressure	Flow

For the GC-14B or GC-14C

Parameter		Description	Setting range (unit)	Default value
Name		Up to 7 alphanumeric characters may be entered for an arbitrary detector name. The entered name will be displayed on the corresponding tabbed page of the <Instrument Parameters> view in the <GC Analysis> screen. It will also be displayed in the <Instrument Monitor> window and various reports.	-	-
Detector Type		Displays the detector type.	FID, FPD, FTD, ECD, TCD, SID	-
Det#		Displays the detector number.	DET#1 to #4	-
Use Power Controller		Specify whether a power controller for the detector is used. If this parameter is checked, the detector will be used as the FTD. Note: This parameter is not available for the GC-14B.	ON, OFF	OFF
Analog Input		Select an analog input connector for the CBM-102, through which detector signals are input. Note: If this parameter is set to None, no detector signal can be acquired.	AD1, AD2, None	None
Base Period		Select a basic sampling period that will be used when chromatogram data is transferred from the GC to the PC. The sampling period for the chromatogram data that will be stored in the data file is the period specified in the method file.	20, 40, 60, 80, 100, 200, 500, 1000 (msec)	100
Heater		This section includes the parameters related to the temperature control for the detector.	-	-
	Zone	Displays the heat unit port for the detector.	INJ, DET, AUX1, AUX2, AUX3, AUX4, AUX5	-



Parameter	Description	Setting range (unit)	Default value
Maximum temperature	Specify the maximum temperature for pre-temperature-control.	GC-14B 10 to 450 (°C)	400
		GC-14C 10 to 440 (°C)	440

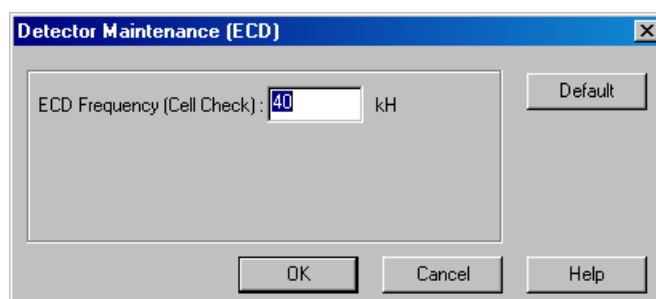
Note: For the GC-14B, the maximum temperatures for Heat Unit Port INJ and DET are the same value.

For others (CBM-102)

Parameter	Description	Setting range (unit)	Default value
Name	Up to 7 alphanumeric characters may be entered for an arbitrary detector name. The entered name will be displayed on the corresponding tabbed page of the <Instrument Parameters> view in the <GC Analysis> screen. It will also be displayed in the <Instrument Monitor> window and various reports.	-	-
Analog Input	Shows an analog input connector for the CBM-102, through which detector signals are input. Note: If this parameter is set to None, no detector signal can be acquired.	AD1, AD2	-
Base Period	Select a basic sampling period that will be used when chromatogram data is transferred from the GC to the PC. The sampling period for the chromatogram data that will be stored in the data file is the period specified in the method file.	20, 40, 60, 80, 100, 200, 500, 1000 (msec)	100

4.5.4.1 <Detector Maintenance> Window

This dialog box is used to set the acceptable range for the system check on a detector. The values set here will be used when a system check is performed





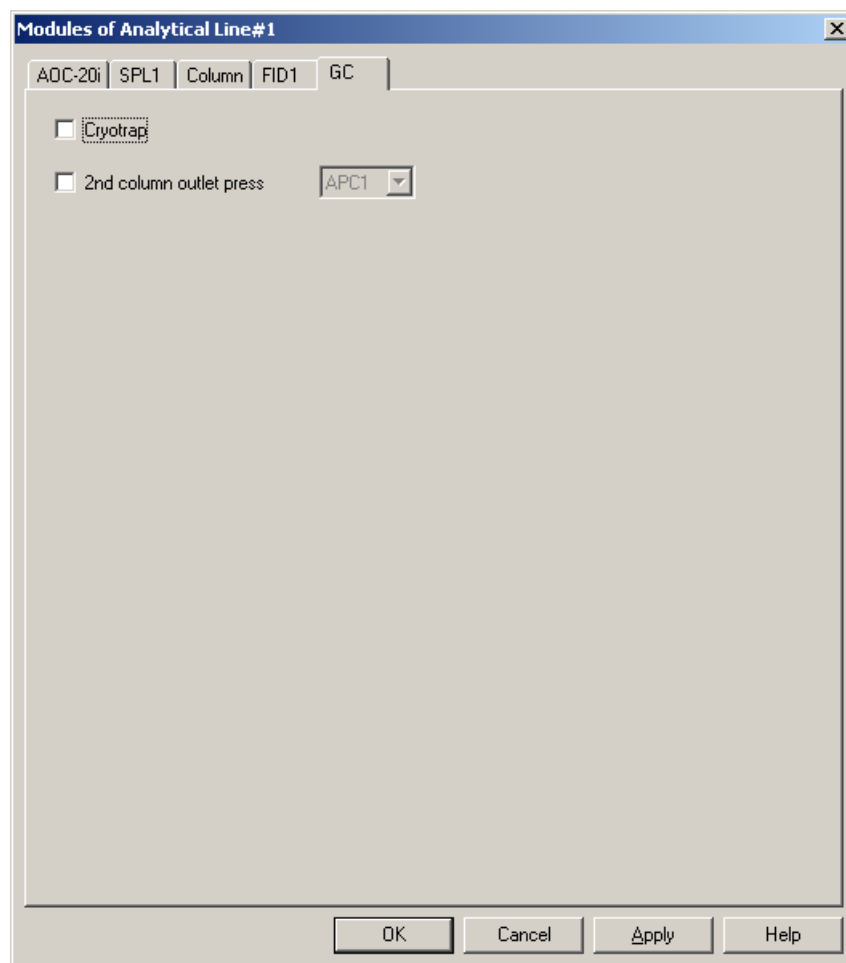
Parameter	Description	Setting range (unit)	Default value
ECD Frequency (Cell Check)	Sets the acceptable range (upper limit) for the pulse voltage frequency of the ECD / ECD-EX detector, which is measured and used for determining whether the detector cell is contaminated or not during a system check.	0-160	40
[Default] button	Clicking this button resets each field to its default value.	-	-



4.5.5 <Analytical Line>- [GC] or [GCMS] Tab

This tab page is used to enter the information of the 2nd instrument (GC or GCMS).

If you use the cryotrap on the inlet of the 2nd column, you can edit its program on the <Instrument Parameters> view. Or if there is an APC unit on the outlet position of the 2nd column, the carrier gas flow is calculated using the pressure set value of the APC.





4.6

<Additional Heater> Window

This window is used to enter the name of the additional temperature-control unit installed on the GC, the temperature-control unit and unit types, and the maximum temperature. To open the <Additional Heater> window, (a) select [Additional Heater] in the <System Configuration> window and then click on the [Properties] button; or (b) double-click on [Additional Heater].

For the GC-2010

Parameter	Description	Setting range	Default value
Name	Up to 7 alphanumeric characters may be entered for an arbitrary name of the additional temperature-control unit. The entered name will be displayed on the [Additional Heater] tab page of the <Instrument Parameters> view in the <GC Real Time Analysis> screen. It will also be displayed in the <Instrument Monitor> window and various reports.	-	-
Heat Zone	Displays the connection port for the additional temperature-control unit.	INJ1, DET1, NJ2, DET2, AUX3, AUX4, AUX5	-
Unit Type	Displays the type of the additional temperature-control unit.	-	-
Maximum Temperature	Enter the maximum temperature of the additional temperature-control unit.	GC-2010 : 10 to 470 GC-2014 : 10 to 420	GC-2010 : 470 GC-2014 : 420
		If Heat Zone is AUX4 and Unit Type is PYR1, enter a value in a range between 10 and 820. The default value is 820.	820

**For the GC-17A, GC-1700, GC-14B, or GC-14C**

Parameter	Description	Setting range	Default value
Name	Up to 7 alphanumeric characters may be entered for an arbitrary name of the additional heat unit. The entered name will be displayed on the [Additional Heater] tabbed page of the <Instrument Parameters> view on the <GC Analysis> screen. It will also be displayed in the <Instrument Monitor> window and various reports.	-	-
Heat Zone	Displays the heat unit port for the additional heat unit. For the GC-14B, AUX4 and AUX5 are not available.	INJ, DET, AUX1, AUX2, AUX3, AUX4, AUX5	-
Maximum Temperature	Enter the maximum temperature of the additional heat unit.	GC-17A 10 to 470 (°C)	470
		GC-1700 10 to 420 (°C)	420
		GC-14B 10 to 450 (°C)	400
		GC-14C 10 to 440 (°C)	440

Note: For the GC-14B, the maximum temperatures of the heat unit port INJ and DET are the same value.



4.7

<Additional Flow> Window

This window is used to enter the name of the additional flow connected to the GC, the additional APC port and slot, gas type, and a control mode. To open the <Additional Flow> window, (a) select [Additional Flow] in the <System Configuration> window and then click on the [Properties] button; or (b) double-click on [Additional Flow].

For the GC-2010

Parameter	Description	Setting range	Default value
Name	Up to seven alphanumeric characters may be entered for an arbitrary name of the additional flow. The entered name will be displayed on the [Additional Flow] tab page of the <Instrument Parameters> view in the <GC Real Time Analysis> screen. It will also be displayed in the <Instrument Monitor> window and various reports.	-	-
Zone	Displays the zone number to which the additional flow is connected.	-	-
Slot	Displays the Flow controller slot to which the additional flow is connected.	SLOT1A to 6C	-
Gas Type	Select the gas type to be used.	He, N2, H2, Ar	He
Control Mode	Select the control mode for the additional flow.	Pressure, Flow	Pressure

For the GC-2014

Parameter	Description	Setting range	Default value
Name	Up to seven alphanumeric characters may be entered for an arbitrary name of the additional flow. The entered name will be displayed on the [Additional Flow] tab page of the <Instrument Parameters> view in the <GC Real Time Analysis> screen. It will also be displayed in the <Instrument Monitor> window and various reports.	-	-



Parameter	Description	Setting range	Default value
Zone	Displays the zone number to which the additional flow is connected.	-	-
type	Displays the type of the additional flow.	-	-
Slot	Displays the Flow controller slot to which the additional flow is connected.	SLOT1A to 6C	-
Gas Type	Select the gas type to be used.	He, N2, H2, Ar	He
Control Mode	Select the control mode for the additional flow.	Pressure, Flow	Pressure

For the GC-17A or GC-1700

Parameter	Description	Setting range	Default value
Name	Up to seven alphanumeric characters may be entered for an arbitrary name of the additional flow. The entered name will be displayed on the [Additional Flow] tab page of the <Instrument Parameters> view in the <GC Real Time Analysis> screen. It will also be displayed in the <Instrument Monitor> window and various reports.	-	-
Zone	Displays the zone number to which the additional flow is connected.	AX1A, AX1B ... AX3D	-
Gas Type	Select the gas type to be used.	He, N2, H2, Ar	He
Control Mode	Displays the control mode for the addition flow.	Pressure	Pressure

Note: For the GC-17A V1, no additional flow is available.



4 <System Configuration> Window

4.7 <Additional Flow> Window



5.1

Overview of <Data Acquisition> Window

This window is used to analyze a sample with the GC and acquire data in real time. This chapter provides an overview of the functions of the <Data Acquisition> window.

5.1.1 Functions of <Data Acquisition> Window

The <Data Acquisition> window allows you to perform the following operations:

Operation	Main window used
Specify the analytical conditions for each device installed on the GC.	<i>Refer to "5.5 <Data Acquisition> -<Instrument Parameters> View" on page 85</i>
Set the parameters for a single sample and acquire data.	<i>Refer to "5.9 <Sample Login> Window" on page 180</i>
Display the status of the GC and it's devices with getting the monitored value.	<i>Refer to "5.6 <Instrument Monitor> Window" on page 167</i>
Display chromatgram in real time.	<i>Refer to "5.4 <Data Acquisition>-<Chromatogram> View" on page 79</i>

Note: To acquire multiple sets of data in batch, enter a data acquisition condition on each row of the batch table. In this case, the data sets will be acquired sequentially in accordance with the entered conditions on each row of the batch table.

Refer to "9.1 Overview of <Batch Table> Window" on page 329

5.1.2 Opening <Data Acquisition> Window

To open the <Data Acquisition> window.

- Click on the [Single Run] icon on the [RealTime] Assistant Bar.

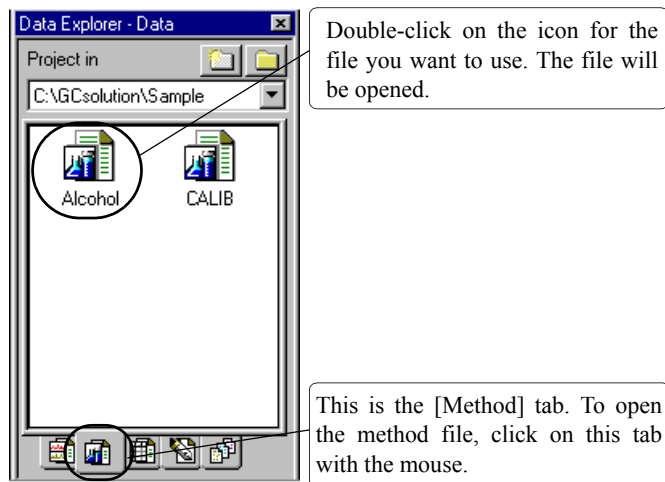




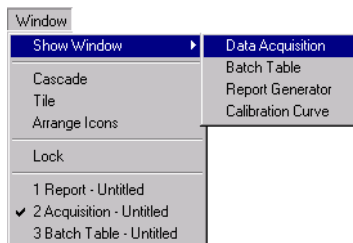
5 <Data Acquisition> Window

5.1 Overview of <Data Acquisition> Window

- Open the method file by selecting [File]-[Open Method File] or by using the Tool button.

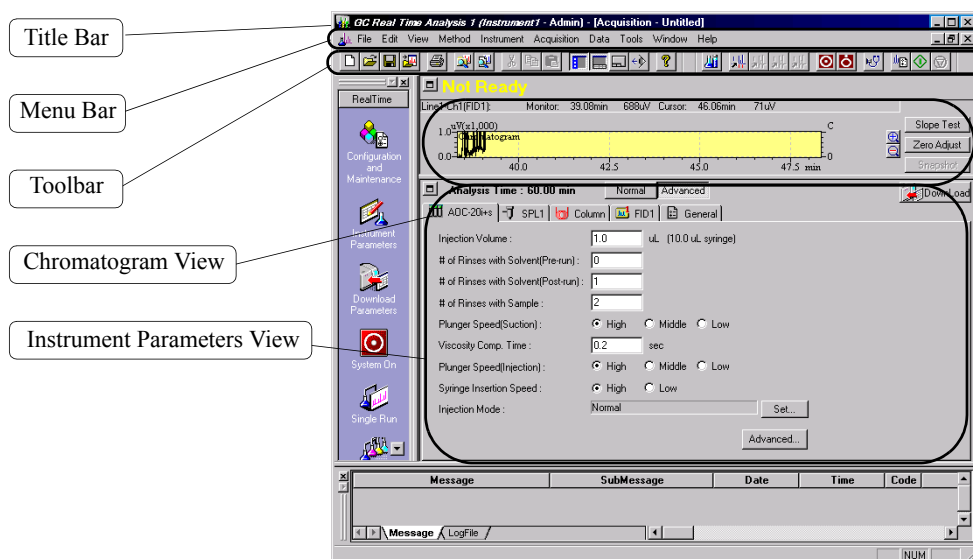


- Select [Window]-[Data Acquisition] on the <GC Real Time Analysis> screen.



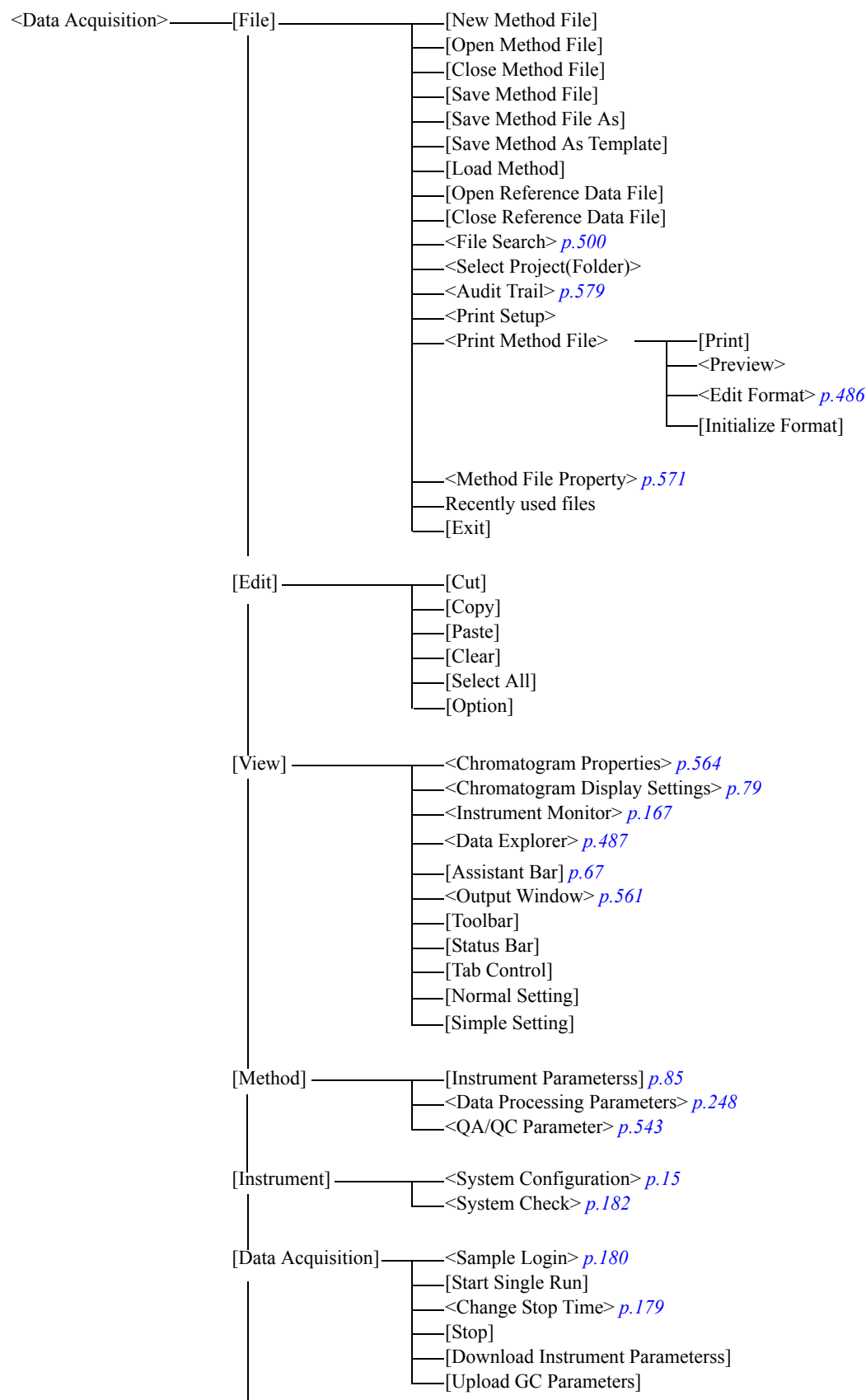
5.1.3 Element Names on <Data Acquisition>

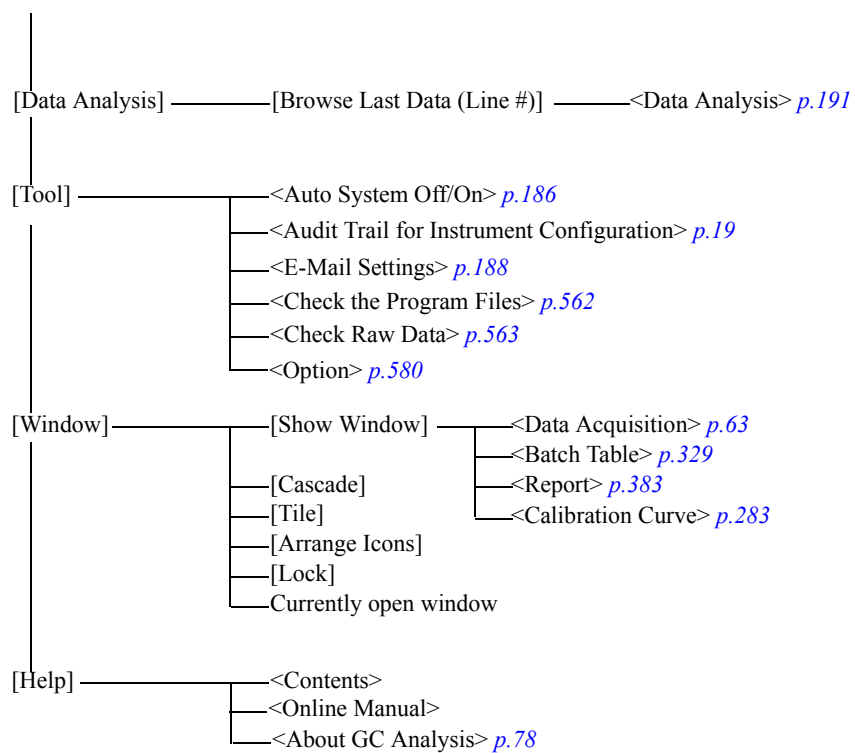
The names of elements on the <Data Acquisition> window are given below:





5.1.4 Menu Tree of <Data Acquisition> window



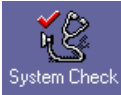




5.2 Assistant Bar

The <Data Acquisition> window shows the [Configuration] and [Single Run] Assistant Bars, which offer you operation icons aligned from the top to bottom in accordance with the operational order for the environmental settings and single-run analysis respectively.

5.2.1 [Configuration] Assistant Bar

Icon	Description
Top 	Changes to the [RealTime] Assistant Bar on the <GC Real Time Analysis> screen. <i>Refer to "3.2 [RealTime] Assistant Bar" on page 12</i>
Configuration 	Displays the <System Configuration> window, allowing you to select the GC device to be used for data acquisition. Note: In the [GC Analysis (Editor)] mode, the system configuration cannot be changed. Note: This command cannot be used during analysis. <i>Refer to "4 <System Configuration> Window" on page 15</i>
System Check 	Displays the <System Check> window, allowing you to diagnose the GC. Note: The [System Check] command is not displayed in the [GC Analysis (Editor)] mode. Note: This command cannot be used during analysis. <i>Refer to "5.10 <System Check> Window" on page 182</i>
Maintenance Guide 	Displays maintenance guide.



5.2.2 [Single Run] Assistant Bar

Icon	Description
Top 	Changes to the [RealTime] Assistant Bar on the <GC Real Time Analysis> screen. <i>Refer to "3.2 [RealTime] Assistant Bar" on page 12</i>
Sample Login 	Opens the <Sample Login> window, allowing you to enter sample information for data acquisition. <i>Refer to "5.9 <Sample Login> Window" on page 180</i>
Start 	Starts data acquisition in accordance with the settings on the <Data Acquisition> window. If the GC is not equipped with an auto injector and if the pre-run program for the GC is not used, the system will start the preparation for analysis, enter the [Ready (Standby)] mode, and then wait for the start signal to come from the GC.
Stop 	Stops the data acquisition.



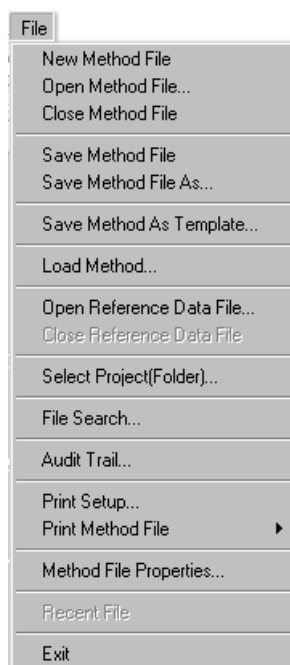
5.3

Menu Bar on <Data Acquisition> Window

This section describes the menus that are displayed on the <GC Real Time Analysis> screen when the <Data Acquisition> window is active.

Note: To make the <Data Acquisition> window active, click on somewhere on that window.

5.3.1 <Data Acquisition> - [File] Menu



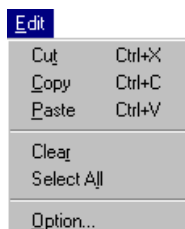
Command	Description	Tool button
New Method File	Allows you to create a new method file or use the template to create one. Note: This command's operation settings can be changed using the <Setting Options> window. <i>Refer to "14.9 <Setting Options> Window" on page 580</i>	
Open Method File	Opens the method file. Note: The <Data Acquisition> window allows you to open only one method file at a time. If you try to open another method file, a confirming window will prompt you to save the currently used method file.	
Close Method File	Closes the currently used method file. Note: If the contents of the method file have not yet been saved or if there are any modifications since the method file is opened, a window will confirm the method for saving the method file.	-



Command	Description	Tool button
Save Method File	Saves the contents of the method file.	
Save Method File As	Saves the method file as a different file.	-
Save Method As Template	Saves the currently used method file as a template file.	-
Load Method	Loads the method information contained in the data file or the contents of the method file. Also allows you to load the contents of the method file on the former model (CLASS-GC10). Refer to "5.7 <Load Method> Window" on page 177 Refer to "5.7.1 <Select Method Parameters> Window" on page 178	-
Open Reference Data File	Allows you to display a chromatogram stored in the existing data file, for your reference only. Note: This chromatogram cannot be edited or saved.	-
Close Reference Data File	Closes the reference data file.	-
Select Project(Folder)	Opens the <Select Project(Folder)> window.	
File Search	Allows you to search for files. Refer to "11.4 <GC File Search> Window" on page 500	
Audit Trail	Opens the <Audit Trail> window, allowing you to check the modification history of the method file and the reason of the modification. Refer to "14.8 <Audit Trail> Window" on page 579	-
Print Setup	Allows you to set up your printer.	-
Print Method File	Allows you to print the contents of the method file.  Print: Prints the contents of the method file. Preview: The preview is displayed. The print image can be confirmed by displaying the preview. Edit Format...: Displays the <Report> window, allowing you to edit the print format for the method file. Initiailze Format: Initializes the print format. Note: The <Method Property> window contained in the report format used to print the contents of the method file has items added to select a line (line 1, line 2, or lines 1 & 2).	
Method File Property	Allows you to check the updating history of the opened method file or enter a comment. Refer to "14.6 <Properties> Window" on page 571	-
Recently used files	Displays up to 4 file names that have been used most recently.	-
Exit	Exits the <GC Real Time Analysis> screen.	-



5.3.2 <Data Acquisition> - [Edit] Menu



The commands on the [Edit] menu are mainly used to edit the tables contained in the <Instrument Parameters> view.

Command	Description	Tool button
Cut	Moves the selected data onto the clipboard.	
Copy	Copies the selected data onto the clipboard.	
Paste	Pastes the clipboard data onto the selected item.	
Clear	Clears the selected item.	-
Select All	Selects all the items that are available for selection in the table.	-
Option	Sets the option of edit work. <i>Refer to "5.5.1.1 Linking Oven Temperature Program and Data Acquisition Time" on page 86.</i>	



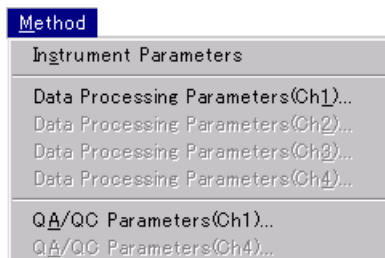
5.3.3 <Data Acquisition> - [View] Menu



Command	Description	Tool button
Chromatogram Properties	Displays the <Chromatogram Properties> window, allowing you to set the parameters such as a chromatogram color and a graph background color. Refer to "14.4 <Chromatogram View Properties> Window" on page 564	-
Chromatogram Display Settings	Displays the <Chromatogram Display Settings> window, allowing you to select the items to be displayed on the chromatogram view graph.	-
Instrument Monitor	Allows you to select whether to display or hide the <Instrument Monitor> window. When you choose to display the <Instrument Monitor> window, a check mark will appear. Refer to "5 <Data Acquisition> Window" on page 63	
Data Explorer	Allows you to select whether to display or hide the <Data Explorer> window. Refer to "11 <Data Explorer> Window" on page 487	
Assistant Bar	Allows you to select whether to display or hide the Assistant Bar. When you choose to display the Assistant Bar, a check mark will appear. Refer to "5 <Data Acquisition> Window" on page 63	
Output Window	Allows you to select whether to display or hide the <Output Window> window. When you choose to display the <Output Window> window, a check mark will appear. Refer to "14.1 <Output Window> Window" on page 561	
Toolbar	Allows you to select whether to display or hide the Toolbar. When you choose to display the Toolbar, a check mark will appear.	-
Status Bar	Allows you to select whether to display or hide the Status Bar. When you choose to display the Status Bar, a check mark will appear.	-
Tab Control	Allows you to select whether to display or hide the Tab Control. When you choose to display the Tab Control, a check mark will appear.	
Normal Setting	Switch the <Instrument Parameters> View to the Normal mode.	-
Advanced Setting	Switch the <Instrument Parameters> View to the Detailed mode.	-



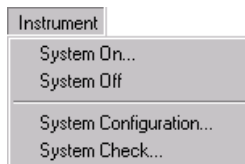
5.3.4 <Data Acquisition> - [Method] Menu



Command	Description	Tool button
Instrument Parameters	Displays the <Instrument Parameters> view at 80% of the height of the <Data Acquisition> window. Note: To change the display size of the <Instrument Parameters> view, place the cursor on the boarder (Split Bar) between the <Instrument Parameters> view and the <Chromatogram> view and vertically drag the mouse. <i>Refer to "5.5 <Data Acquisition> - <Instrument Parameters> View" on page 85</i>	
Data Processing Parameters	Displays the <Data Processing Parameters (Ch#)> window, allowing you to set the data processing parameters. Commands are available for each channel. Note: This command cannot be used during analysis. <i>Refer to "6.6 <Data Analysis> - <Method> View" on page 248</i>	
QA/QC Parameters	Displays the <QA/QC - (Ch#)> window, allowing you to set the QA/QC parameters. For line 1, select "Ch1"; for line 2, select "Ch4." Note: This command cannot be used during analysis. <i>Refer to "13 <QA/QC> Window" on page 543</i>	-



5.3.5 <Data Acquisition> - [Instrument] Menu



Command	Description	Tool button
System On	Displays the <Instrument Monitor> window and starts the GC. A short time later, the system will be turned ON. Note: If you click on this icon before downloading the parameters to the GC, a window will appear prompting you to confirm whether or not you wish to download the parameters. Clicking on the [OK] button will download the parameters and start the GC in accordance with those parameters. <i>Refer to "5.6 <Instrument Monitor> Window" on page 167</i>	
System Off	Displays the <Instrument Monitor> window and stops the GC. A short time later, the system will be turned OFF. <i>Refer to "5.6 <Instrument Monitor> Window" on page 167</i>	
System Configuration	Displays the <System Configuration> window, allowing you to select the GC device to be used for data acquisition. Note: In the [GC Analysis (Editor)] mode, the system configuration cannot be changed. Note: This command cannot be used during analysis. <i>Refer to "4 <System Configuration> Window" on page 15</i>	-
System Check	Displays the <System Check> window, allowing you to diagnose the GC. Note: The [System Check] command is not displayed in the [GC Analysis (Editor)] mode. Note: This command cannot be used during analysis. <i>Refer to "5.10 <System Check> Window" on page 182</i>	



5.3.6 <Data Acquisition> - [Data Acquisition] Menu

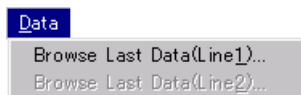


Command	Description	Tool button
Sample Login	Displays the <Sample Login> window, allowing you to enter the sample information and injection conditions used for the single run analysis. Note: This command cannot be used during analysis. <i>Refer to "5.9 <Sample Login> Window" on page 180</i>	
Start Single Run	Starts data acquisition. The settings on the <Instrument Parameters> view will be downloaded to the GC before the analysis started. Note: This command cannot be used during analysis.	
Change Stop Time	Displays the <Change Stop Time> window, allowing you to change the ending time for data acquisition. <i>Refer to "5.8 <Change Stop Time> Window" on page 179</i>	-
Stop	Stops the data acquisition and time program.	
Download Instrument Parameters	Downloads the settings on the <Instrument Parameters> view to the GC.	-
Upload GC Parameters	Allows you to acquire information from the GC and set the parameters in the <Instrument Parameters> view.	-

Note: For the GC-14B, if the DIALOG indicator for the corresponding key on the GC remains illuminated, the CBM-102 will emit a warning sound when the parameters are downloaded or uploaded, and the GC-14B will not operate properly. In this case, turn OFF the DIALOG indicator lamp using [SHIFTDOWN] - [ESCP]. If the DIALOG indicator is turned ON by any operation during the analysis, the GCsolution will malfunction.

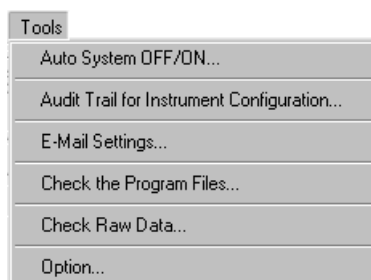


5.3.7 <Data Acquisition> - [Data Analysis] Menu



Command	Description
Browse Last Data (Line #)	Opens the <Data Analysis> window on the <GC Postrun> screen, loads and then displays the data file that has just previously been analyzed on line #. <i>Refer to "6 <Data Analysis> Window" on page 191</i>

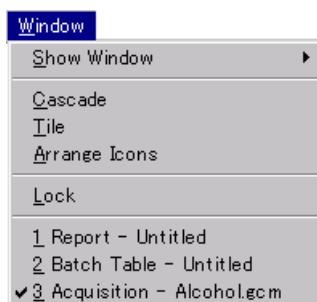
5.3.8 <Data Acquisition> - [Tool] Menu

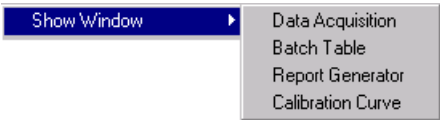
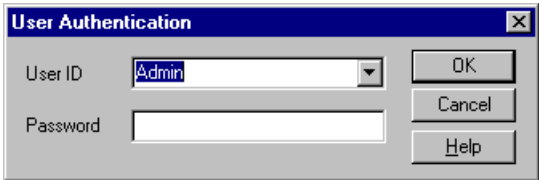


Command	Description
Auto System Off/On	Turns the GC system ON or OFF automatically. Note: The System Off command is used to decrease the temperature of the temperature-control unit or to control the flow rate in accordance with the settings on the <System Configuration> window, but not to turn OFF the GC. <i>Refer to "5.11 <Auto System OFF/ON> Window" on page 186</i>
Audit Trail for Instrument Configuration	Displays the <Audit Trail for Instrument Configuration> window.
E-Mail Settings	Displays the <E-Mail Settings> window. <i>Refer to "5.13 <E-Mail Settings>" on page 188</i>
Check the Program Files	Displays the <Program Check> window, allowing you to check the program for any corruption. <i>Refer to "14.2 <Check the Program Files> Window" on page 562</i>
Check Raw Data	Displays the <Check Raw Data> window, allowing you to check the raw data files for any corruption.
Option	Displays the <Setting Options> window, allowing you to enter the conditions for creating a new method file, batch file, or report file. This window also allows you to specify where to save template files. <i>Refer to "14.9 <Setting Options> Window" on page 580</i>



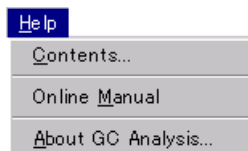
5.3.9 <Data Acquisition> - [Window] Menu

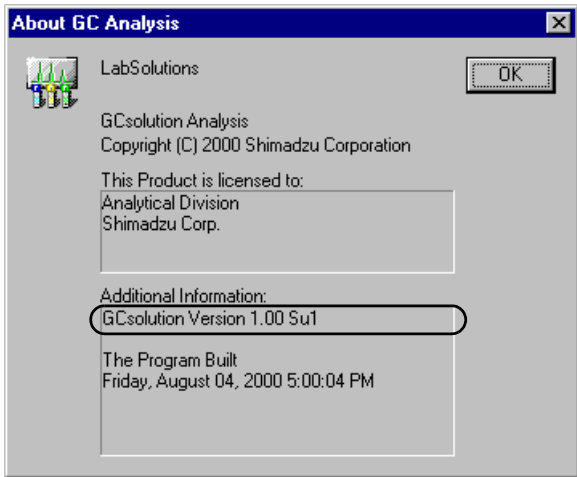


Command	Description
Show Window	Displays the window corresponding to the selected [Data Acquisition], [Batch Table], [Report Generator] or [Calibration Curve] command.  <i>Refer to "9 <Batch Table> Window" on page 329 and Refer to "10 <Report> Window" on page 383. Refer to "7 <Calibration Curve> Window" on page 283</i>
Cascade	Cascades the Currently opened windows among the <Data Acquisition>, <Batch Table>, <Report> and <Calibration Curve> windows.
Tile	Displays the Currently opened windows separately among the <Data Acquisition>, <Batch Table>, <Report> and <Calibration Curve> windows.
Arrange Icons	Aligns the minimized window icons.
Lock	Iconizes the <GC Real Time Analysis> screen to prevent access to this screen and displays this icon on the bar next to the [Start] menu located in the lower left corner of the screen. The <GC Real Time Analysis> screen cannot be accessed until clicking on the icon with the mouse button, has been clicked on. Note: When you click on [GC Real Time Analysis] icon, a window will be opened prompting you to enter your user ID and password. If you did not specify any password, just click on the [OK] button. 
Currently open window	The name of the window currently displayed on <GC analysis> screen is displayed.



5.3.10 <Data Acquisition> - [Help] Menu



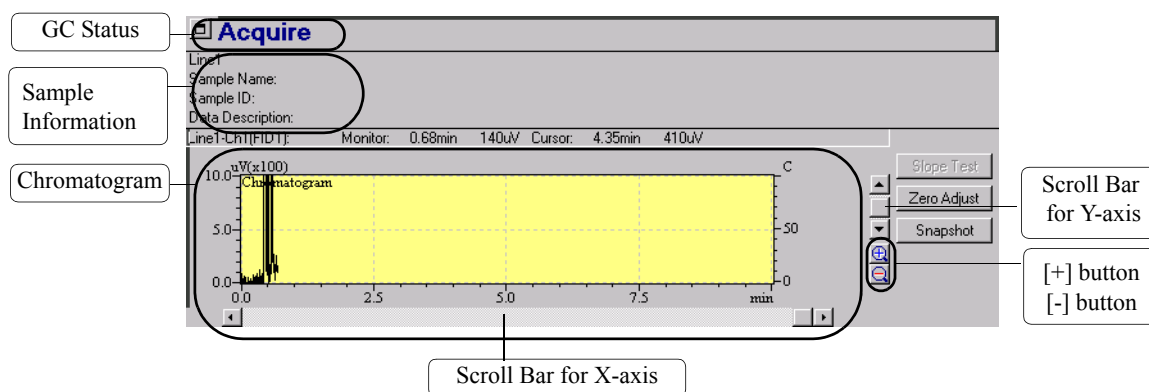
Command	Description	Tool button
Contents	Displays the help menu. <i>Refer to "12.1.1 Using Help" on page 107</i>	-
Online Manual	<i>Refer to "12.1.2 Using the Online Manual" on page 108</i>	-
About GC Analysis	Displays the version information of the <GC Real Time Analysis> screen. 	

5.4

<Data Acquisition>-<Chromatogram> View

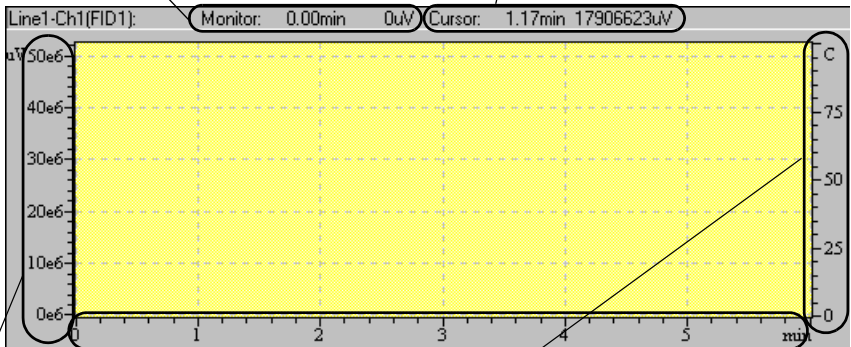
The <Chromatogram> view of the <Data Acquisition> window displays chromatogram data in real time. The X-axis of the graph represents the time (minutes) and the left Y-axis the intensity (voltage). The temperature of the column oven and the pressure or flow rate of the carrier gas can be superimposed on the chromatogram. In this case, the right Y-axis can displayed the scale.

5.4.1 Element Names of <Chromatogram> View



Name	Description																								
GC status	Indicates the GC status. <table border="1"> <thead> <tr> <th>GC status</th><th>Meaning</th></tr> </thead> <tbody> <tr> <td>Ready</td><td>The GC is ready to start analysis.</td></tr> <tr> <td>Not Ready</td><td>The GC is not ready to start analysis.</td></tr> <tr> <td>(Standby)</td><td>The PC is ready to acquire data.</td></tr> <tr> <td>Acquire</td><td>Data acquisition is in progress.</td></tr> <tr> <td>Run</td><td>The time program is running (no data acquisition).</td></tr> <tr> <td>Prerun</td><td>The pre-run program is running.</td></tr> <tr> <td>Baking</td><td>Baking is in progress. To carry out baking, which is a function executed on the GC, refer to the instruction manual that comes with the GC.</td></tr> <tr> <td>Wait START TIME</td><td>The GC is waiting for start time passed since System ON. Refer to "4.4.1 <GC> - [General] Tab" on page 23</td></tr> <tr> <td>Wait STOP TIME</td><td>The GC is waiting for stop time passed since System OFF. Refer to "4.4.1 <GC> - [General] Tab" on page 23</td></tr> <tr> <td>Slope Test</td><td>The slope test is now being performed.</td></tr> <tr> <td>System Check</td><td>The system check is now being performed.</td></tr> </tbody> </table>	GC status	Meaning	Ready	The GC is ready to start analysis.	Not Ready	The GC is not ready to start analysis.	(Standby)	The PC is ready to acquire data.	Acquire	Data acquisition is in progress.	Run	The time program is running (no data acquisition).	Prerun	The pre-run program is running.	Baking	Baking is in progress. To carry out baking, which is a function executed on the GC, refer to the instruction manual that comes with the GC.	Wait START TIME	The GC is waiting for start time passed since System ON. Refer to "4.4.1 <GC> - [General] Tab" on page 23	Wait STOP TIME	The GC is waiting for stop time passed since System OFF. Refer to "4.4.1 <GC> - [General] Tab" on page 23	Slope Test	The slope test is now being performed.	System Check	The system check is now being performed.
GC status	Meaning																								
Ready	The GC is ready to start analysis.																								
Not Ready	The GC is not ready to start analysis.																								
(Standby)	The PC is ready to acquire data.																								
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Wait STOP TIME	The GC is waiting for stop time passed since System OFF. Refer to "4.4.1 <GC> - [General] Tab" on page 23																								
Slope Test	The slope test is now being performed.																								
System Check	The system check is now being performed.																								



Name	Description
Sample Information	Indicates sample name, sample ID, data comment, etc.. These items can be specified on the [Other] tab page of the <Display Settings> window. The settings on the <Sample Login> or <Batch Table> window displayed, if are no sample name and sample ID are specified in these windows, nothing will be displayed. <i>Refer to "4.4 <GC> Window" on page 23</i> <i>Refer to "5.9 <Sample Login> Window" on page 180</i> <i>Refer to "9 <Batch Table> Window" on page 329</i>
Chromatogram	Displays the chromatogram for which data acquisition is in progress. Current signal (time and intensity). Cursor position (time and intensity).  The left Y-axis represents the intensity (voltage) of the chromatogram. The X-axis represents the time. The right Y-axis indicates the scales for the oven temperature, the pressure or flow rate of the carrier gas in accordance with the settings in [Y Axis Scale] on the [Other] tab of the <Chromatogram Display Settings> window. Note: The chromatogram view during data acquisition may differ depending on the number of channels and lines. The chromatogram can display following data and program curves in addition to the chromatogram. ● Oven temperature program ● Injection port temperature program ● Carrier gas pressure or flow rate program ● Measured oven temperature ● Measured injection port temperature ● Measured carrier gas pressure or flow rate Note: The pressure unit reflects the corresponding setting on the <System Configuration> window. <i>Refer to "4.4 <GC> Window" on page 23</i> The colors of each curve and label can be specified in the <Chromatogram Properties> window. <i>Refer to "14.3 <Check Raw Data> Window" on page 563</i> A chromatogram stored in any data file can be superimposed on the current chromatogram as a reference only by selecting [Select]-[Open Reference Data File] command.
Scroll Bar for X-axis direction	This scroll bar allows you to view all the chromatogram ranging from the start of analysis to the current plot. If you specify the range of a chromatogram by dragging the mouse, the chromatogram can be enlarged only in the X-axis direction.



Name	Description
[+] button [-] button	When the [+] button is clicked on, the chromatogram height will be enlarged two times larger (the intensity axis scale will become half in length). When the [-] button is clicked on, the chromatogram height will be reduced to half (the intensity axis scale will become two times longer).
Scroll Bar for Y-axis direction	The Scroll Bar for the Y-axis to move the chromatogram toward the intensity direction.
[Slope Test] button	The slope test can be performed for each channel. The result of this test can be used as the slope values for the data processing parameters. Note: This button is disabled during analysis.
[Zero Adjust] button	The zero adjustment is applied to the detector signal.
[Snapshot] button	The <Data Analysis> on the <GC Postrun> screen is displayed and shows the data acquired since the analysis start to when this button is pressed. Note: This button is only enabled during analysis. <i>Refer to "6.1 Overview of <Data Analysis> Window" on page 191</i>

For the GCs that are connected to the PC via the CBM-102, three buttons shown in the table below are displayed instead of the [Zero Adjustment] button. In normal situations, perform zero adjustment in the order of [CBM Zero Adjustment Cancel] - [GC Zero Adjustment] - [CBM Zero Adjustment]. When [Instrument Type] has been set to [GC-14B, Others (CBM-102)], the [GC Zero Adjustment] button is not displayed. Therefore, in that case, adjust the detector signal to around zero on the GC instead of clicking on the [GC Zero Adjustment] in the above procedure.

Name	Description
[Zero GC] button	Performs zero adjustment of the GC detector.
[Zero CBM] button	Performs zero adjustment of the analog input to the CBM-102. Note: If the GC detector signal is outside the range of -4 mV to +5 mV when CBM zero adjustment is performed, the CBM-102 emits a warning sound. In this state, the analysis can be performed, but it is recommended that the alarm be stopped by adjusting the GC detector output.
[Free CBM] button	Cancels zero adjustment of the analog input to the CBM-102. If the zero adjustment is canceled, the unprocessed signals from the GC detector are displayed on the chromatogram monitor.



5.4.2 <Chromatogram> View - <Display Settings> (Data Acquisition)

5.4.2.1 <Display Settings> - [Range (Chromatogram)] Tab

This section describes the [Range (Chromatogram)] tab of <Display Settings> for the chromatogram displayed in the <Data Acquisition> window.

Display Settings

Range(Chromatogram) | Range(Parameter/Monitor) | Others

Channel1
Time : 5.0 min
Intensity : -130 - 52485180 uV [Normalize]

Channel2
Time : 5.0 min
Intensity : 0 - 100 uV [Normalize]

Channel3
Time : 5.0 min
Intensity : 0 - 100 uV [Normalize]

Channel4
Time : 5.0 min
Intensity : 0 - 100 uV [Normalize]

[OK] [Cancel] [Apply] [Help]

Parameter	Description
Time	Enter display time on the time scale (the X-axis of the graph).
Intensity	Enter a display range on the intensity scale (the left Y-axis of the graph). If [Normalize] is selected, the range is set so that the maximum and minimum of the chromatogram falls within that range.



5.4.2.2 <Display Settings> - [Range (Overlap)] Tab

This section describes the [Range (Overlap)] tab of <Display Settings> for the chromatogram displayed in the <Data Acquisition> window.

Display Settings

Range(Chromatogram) Range(Parameter/Monitor) Others

Normalize

☒ Temperature: 0 - 0 C

☐ Pressure: 0 - 0 kPa

☐ Flow: 0 - 0 ml/min

OK Cancel Apply Help

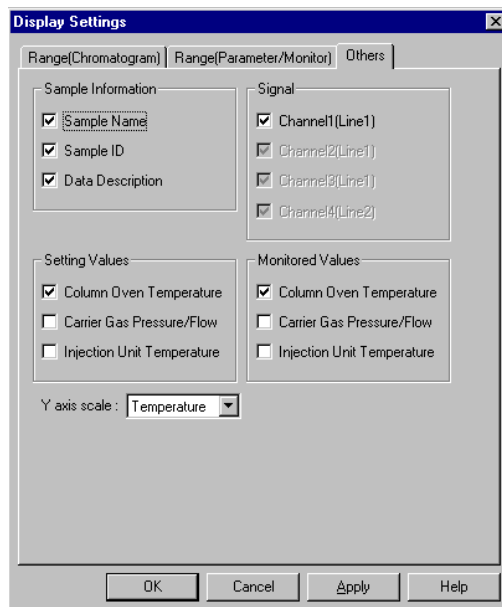
Parameter	Description
Temperature	Specify a display range for the temperature displayed on the right Y-axis of the graph when the temperature graph is superimposed on the chromatogram. If this parameter is marked with a check, [Normalize] is selected, and a range is set so that the maximum and minimum of the column oven temperature program using the method settings fall within that range.
Pressure	Specify a display range for the pressure displayed on the right Y-axis of the graph when the pressure graph is superimposed on the chromatogram. If this parameter is marked with a check, [Normalize] is selected, and a range is set so that the maximum and minimum of the carrier gas pressure program using the method settings fall within that range.
Flow	Specify a display range for the flow rates displayed on the right Y-axis of the graph when the flow rate graph is superimposed on the chromatogram. If this parameter is marked with a check, [Normalize] is selected, and a range is set so that the maximum and minimum of the carrier gas flow rate program using the method settings fall within that range.

Note: If the GC in use has no flow controller (AFC, AMC, or APC) installed, the pressure and flow values cannot be overwritten.



5.4.2.3 <Display Settings> - [Other] Tab

This section describes the [Other] tab of <Display Settings> for the chromatogram displayed in the <Data Acquisition> window.



Parameter	Description
Sample Info.	Displays sample information on the check-marked item(s).
Sample Name	Displays [Sample Name] entered on <Sample Login> or <Batch Table>.
Sample ID	Displays [Sample ID] entered on <Sample Login> or <Batch Table>.
Data Description	Displays [Data Description] entered on <Sample Login> or <Batch Table>.
Detector Signal	Displays the detected signals on the check-marked channel.
Setting Values	Superimposes on the chromatogram the program curve for any of the following if they are check-marked: "Column Oven Temperature," "Carrier Gas Pressure/Flow," and "Injection Port" (specified using Instrument Parameters). Note: This setting value is displayed when each time program is specified using Instrument Parameters.
Monitored Value(s)	Superimposes on the chromatogram the actually measured (on the GC during data acquisition) values for any of the following if they are check-marked: "Column Oven Temperature," "Carrier Gas Pressure/Flow," and "Injection Unit Temperature". Note: If the GC-2010 is being used, these monitored values are displayed when data was analyzed because "Save Monitored Values" was check-marked in the <GC-2010 Property> window (Refer to "4.4.1 <GC> - [General] Tab" on page 23).
Y-Axis Scale	Select a scale type for the right Y-axis from the list displayed by clicking on the [▼] button at the lower right, when the temperature, pressure, or flow rate graph is superimposed on the chromatogram. ● Temperature ● Pressure/Flow rate

Note: If the GC in use has no flow controller (AFC, AMC, or APC) installed, the pressure and flow values cannot be overwritten.

5.5

<Data Acquisition> -<Instrument Parameters> View

The <Instrument Parameters> view in the <Data Acquisition> window allows you to set up the operating conditions for each device on the GC. The tabs in the <Instrument Parameters> view show device names specified in [Configured Modules] in the <System Configuration> window.

5.5.1 <Instrument Parameters> View

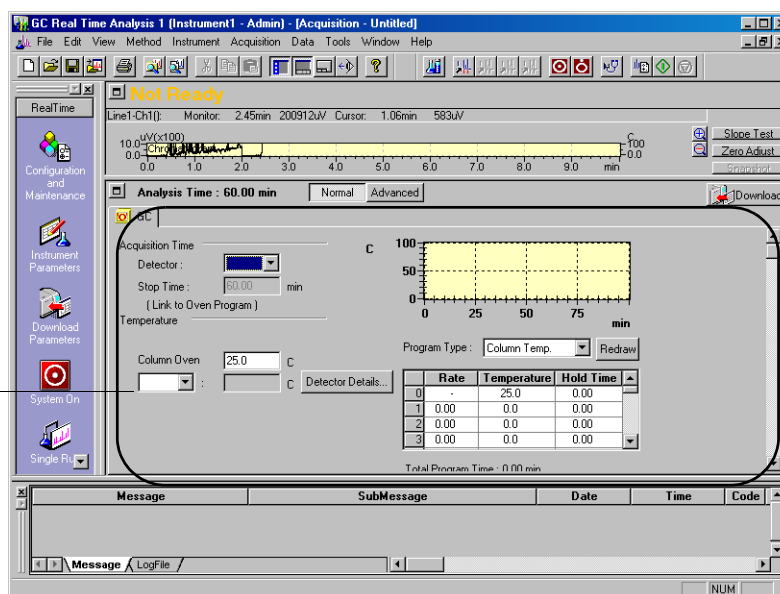
The settings on the <Instrument Parameters> view are stored in the method file.

Set the Instrument Parameterss for each line selected by [Select Line].

Note: [Select Line] will not be displayed when only one line is available.

- Normal Setting display

<Instrument Parameters> View

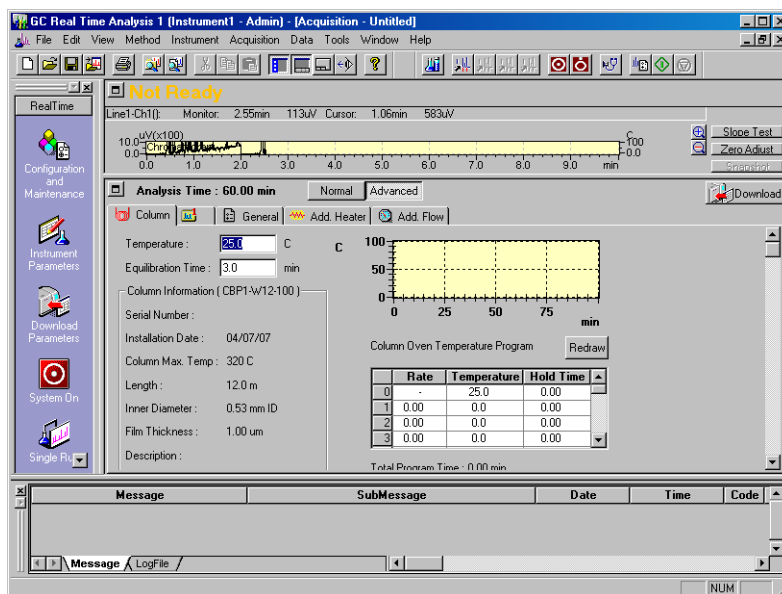




5 <Data Acquisition> Window

5.5 <Data Acquisition> -<Instrument Parameters> View

● Advanced Setting display



Note: The above illustration is given for explanations only and may differ from the window actually displayed .

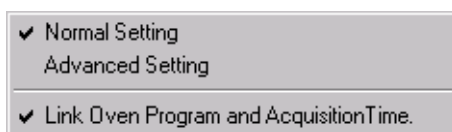
Note: If you log into the <GC Real Time Analysis> screen under the name of a user who is not authorized to edit the method (analytical conditions), no Instrument Parameters can be modified. However, the Instrument Parameters may be displayed. ([Refer to "12.3 <User Administration> Window" on page 524](#))

Note: The parameters in the <Instrument Parameters> view cannot be changed during data acquisition.

5.5.1.1 Linking Oven Temperature Program and Data Acquisition Time

You can select or deselect the [Link Oven Program and Acquire Time] option from the pop-up menu shown by right-clicking in the <Instrument Parameters> view or the [Option] command on the [Edit] menu.

If this option is enabled, data acquisition time for the detector is automatically set in accordance with the programmed time when the oven temperature program is changed at the time of Instrument Parameters setting.





5.5.2 <Instrument Parameters> View - [General] Tab

The [General] tab page in the <Instrument Parameters> view allows you to specify the items that are used to check the ready state, and the GC prerun and time program.

The screenshot shows the 'General' tab of the 'Instrument Parameters' window. The 'Ready Check' section on the left includes checkboxes for 'Column', 'SPL1', 'FID1', 'SPL2', 'SPL1 Carrier', 'SPL1 Purge', 'FID1 Makeup', 'FID1 H2', 'FID1 Air', and 'External Wait'. The 'Prerun Program' and 'Time Program' sections each contain a table with columns for Time, Device, Event, and Value. The 'Auto' section on the right includes checkboxes for 'Auto Flame On', 'Auto Flame Off', 'Reignite', and 'Auto Zero after Ready'.

For the GC-2010

Parameter	Description	Setting range (unit)	Default value
Ready Check	When the actually measured values for the items checked here reach the set values, [GC Status] will change to [Ready]. ● Heater ● Detector (FTD/BID) ● Baseline Drift ● Injection Flow ● APC Flow ● Detector APC Flow ● External Wait Note: If the GC has 2 lines, all device names will be displayed at a time.	Checked/ Not checked	Checked



Parameter	Description	Setting range (unit)	Default value
Prerun Program	Allows you to set a maximum of 100 steps for the time program that controls each unit before analysis.	-	-
Time	Set the time of event for each unit by clicking on  or  on the right, which is displayed when a cell is selected, or by directly entering a value. Note: The same time may be entered on up to 3 lines. If it is entered 4 or more times, the event will not be executed.	0.00 to 9999.00 (min)	0.00
Device	Select the unit used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the units that can be used by the program, among those selected in [Configured Modules] in the <System Configuration> window.	Refer to " Note 1: Device event in GC-2010 prerun program" on page 89.	
Event	Select the event used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the events that can be used by the unit selected in [Device].		
Value	Set the parameters, if any, required for events.		
Total Program Time	The ending time of the prerun program is displayed.	-	-
Time Program	A maximum of 100 lines may be specified for the time program that controls each unit during the analysis.	-	-
Time	Set the time of event for each unit by clicking on  or  on the right, which is displayed when a cell is selected, or by directly entering a value. Note: The same time may be entered on up to 3 lines. If it is entered 4 or more times, the event will not be executed.	0.00 to 9999.00 (min)	0.00
Device	Select the unit used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the units that can be used by the program, among those selected in [Configured Modules] in the <System Configuration> window.	Refer to " Note 2: Device event in GC-2010 time program" on page 90.	
Event	Select the event used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the events that can be used by the unit selected in [Device].		
Value	Set the parameters, if any, required for events.		
Total Program Time	The ending time of the prerun program is displayed.	-	-
Auto	Specify whether the detector is to be ignited automatically. ● Auto Flame On ● Auto Flame Off ● Reignite Note: This parameter is only valid for the FID and FPD detectors. However, it becomes valid if an APC for the detector is available. "Auto Flame Off" is always checked.	Checked/Not checked	Checked



Parameter	Description	Setting range (unit)	Default value
Auto Zero after Ready	If this parameter is checked, zero adjustment will be made automatically when the GC becomes ready.	Checked/Not checked	Checked

Note 1: Device event in GC-2010 prerun program

Device	Event	Setting range
Relay	Relay91 Relay92	0 (Point B), 1 (Point A)
	Relay1 Relay2 Relay3 Relay4 Relay5 Relay6 Relay7 Relay8 Relay9 Relay10 Relay11 Relay12 Relay13 Relay14 Relay15 Relay16	0 (Off), 1 (On)
Detector		
FID	Temperature	0.0 to 450.0
FPD, FPD+, BID	Temperature	0.0 to 350.0
FTD	Temperature	0.0 to 450.0
	Current	0.00 to 10.00
ECD, ECD-EX	Temperature	0.0 to 350.0
	Current	0 to 3.5
TCD-S (PRE-TCD)	Temperature	0.0 to 400.0
	Current	0 to 100
	Polarity	1: + 2: -
Injection Unit	Temperature	-99.0 to 450.0
Additional Heater	Temperature	For ports INJ1 and INJ2: -99.0 to 450.0 For port PYR1: 0.0 to 800.0 For other ports: 0.0 to 450.0
Others	Event	-255 to 255
	Start	0: Auto 1: Manual (program stop) 2: GC start 3: AOC start 4: Clean up

**Note 2: Device event in GC-2010 time program**

Device	Event	Setting range
Relay	Same as in the GC-2010 prerun program.	
Detector		
Additional Heater		
Others	Event	-255 to 255
	Stop	0

For the GC-2014

Parameter	Description	Setting range (unit)	Default value
Ready Check	When the actually measured values for the items checked here reach the set values, [GC Status] will change to [Ready]. <i>Refer to "5.4.1 Element Names of <Chromatogram> View" on page 79</i> ● Heater ● Detector (FTD) ● Baseline Drift ● Injection Flow ● APC Flow ● Detector APC Flow ● External Wait Note: If the GC has 2 lines, all device names will be displayed at a time.	Checked/ Not checked	Checked



Parameter	Description	Setting range (unit)	Default value
Prerun Program	Allows you to set a maximum of 100 steps for the time program that controls each unit before analysis.	-	-
Time	Set the time of event for each unit by clicking on  or  on the right, which is displayed when a cell is selected, or by directly entering a value. Note: The same time may be entered on up to 3 lines. If it is entered 4 or more times, the event will not be executed.	0.00 to 9999.00 (min)	0.00
Device	Select the unit used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the units that can be used by the program, among those selected in [Configured Modules] in the <System Configuration> window.	Refer to " Note 3: Device event in GC-2014 prerun program" on page 92.	
Event	Select the event used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the events that can be used by the unit selected in [Device].		
Value	Set the parameters, if any, required for events.		
Total Program Time	The ending time of the prerun program is displayed.	-	-
Time Program	A maximum of 100 lines may be specified for the time program that controls each unit during the analysis.	-	-
Time	Set the time of event for each unit by clicking on  or  on the right, which is displayed when a cell is selected, or by directly entering a value. Note: The same time may be entered on up to 3 lines. If it is entered 4 or more times, the event will not be executed.	0.00 to 9999.00 (min)	0.00
Device	Select the unit used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the units that can be used by the program, among those selected in [Configured Modules] in the <System Configuration> window.	Refer to " Note 4: Device event in GC-2014 time program" on page 93.	
Event	Select the event used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the events that can be used by the unit selected in [Device].		
Value	Set the parameters, if any, required for events.		
Total Program Time	The ending time of the prerun program is displayed.	-	-
Auto	Specify whether the detector is to be ignited automatically. ● Auto Flame On ● Auto Flame Off ● Reignite Note: This parameter is only valid for the FID and FPD detectors. However, it becomes valid if an APC for the detector is available. "Auto Flame Off" is always checked.	Checked/Not checked	Checked



Parameter	Description	Setting range (unit)	Default value
Auto Zero after Ready	If this parameter is checked, zero adjustment will be made automatically when the GC becomes ready.	Checked/Not checked	Checked

Note 3: Device event in GC-2014 prerun program

Device	Event	Setting range
Relay	Relay91 Relay92	0 (Point B), 1 (Point A)
	Relay1 Relay2 Relay3 Relay4 Relay5 Relay6 Relay7 Relay8 Relay9 Relay10 Relay11 Relay12 Relay13 Relay14 Relay15 Relay16	0 (Off), 1 (On)
Detector		
FID	Temperature	0.0 to 400.0
DFID	Temperature	0.0 to 400.0
FPD	Temperature	0.0 to 350.0
FTD	Temperature	0.0 to 400.0
	Current	0.00 to 50.00
ECD	Temperature	0.0 to 350.0
	Current	0.0 to 3.5
TCD-L	Temperature	0.0 to 400.0
	Temperature (pre-heating)	0.0 to 400.0
	Current	0 to 200
	Polarity	1: + 2: -
Injection Unit	Temperature	-99.0 to 400.0
Additional Heater	Temperature	For ports INJ1 and INJ2: -99.0 to 450.0 For port PYR1: 0.0 to 800.0 For other ports: 0.0 to 450.0



Device	Event	Setting range
Others	Event	-255 to 255
	Start	0: Auto 1: Manual (program stop) 2: GC start 3: AOC start 4: Clean up

Note 4: Device event in GC-2014 time program

Device	Event	Setting range
Relay	Same as in the GC-2014 prerun program.	
Detector		
Additional Heater		
Others	Event	-255 to 255
	Stop	0

For the GC-2025

Parameter	Description	Setting range (unit)	Default value
Ready Check	When the actually measured values for the items checked here reach the set values, [GC Status] will change to [Ready]. ● Heater ● Detector (FTD) ● Baseline Drift ● Injection Flow ● APC Flow ● Detector APC Flow ● External Wait	Checked/ Not checked	Checked



Parameter	Description	Setting range (unit)	Default value
Prerun Program	Allows you to set a maximum of 100 steps for the time program that controls each unit before analysis.	-	-
Time	Set the time of event for each unit by clicking on  or  on the right, which is displayed when a cell is selected, or by directly entering a value. Note: The same time may be entered on up to 3 lines. If it is entered 4 or more times, the event will not be executed.	0.00 to 9999.00 (min)	0.00
Device	Select the unit used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the units that can be used by the program, among those selected in [Configured Modules] in the <System Configuration> window.	Refer to " Note 5: Device event in GC-2025 prerun program" on page 95.	
Event	Select the event used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the events that can be used by the unit selected in [Device].		
Value	Set the parameters, if any, required for events.		
Total Program Time	The ending time of the prerun program is displayed.	-	-
Time Program	A maximum of 100 lines may be specified for the time program that controls each unit during the analysis.	-	-
Time	Set the time of event for each unit by clicking on  or  on the right, which is displayed when a cell is selected, or by directly entering a value. Note: The same time may be entered on up to 3 lines. If it is entered 4 or more times, the event will not be executed.	0.00 to 9999.00 (min)	0.00
Device	Select the unit used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the units that can be used by the program, among those selected in [Configured Modules] in the <System Configuration> window.	Refer to " Note 6: Device event in GC-2025 time program" on page 95.	
Event	Select the event used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the events that can be used by the unit selected in [Device].		
Value	Set the parameters, if any, required for events.		
Total Program Time	The ending time of the prerun program is displayed.	-	-
Auto	Specify whether the detector is to be ignited automatically. ● Auto Flame On ● Auto Flame Off ● Reignite Note: This parameter becomes valid if an APC for the detector is available. "Auto Flame Off" is always checked.	Checked/Not checked	Checked
Auto Zero after Ready	If this parameter is checked, zero adjustment will be made automatically when the GC becomes ready.	Checked/Not checked	Checked



Note 5: Device event in GC-2025 prerun program

Device	Event	Setting range
Relay	Relay91 Relay92	0 (Point B), 1 (Point A)
	Relay1 Relay2 Relay3 Relay4 Relay5 Relay6 Relay7 Relay8 Relay9 Relay10 Relay11 Relay12 Relay13 Relay14 Relay15 Relay16	0 (Off), 1 (On)
Detector		
FID	Temperature	0.0 to 400.0
Injection Unit	Temperature	-99.0 to 400.0
Others	Event	-255 to 255
	Start	0: Auto 1: Manual (program stop) 2: GC start 3: AOC start 4: Clean up

Note 6: Device event in GC-2025 time program

Device	Event	Setting range
Relay	Same as in the GC-2025 prerun program.	
Detector		
Additional Heater		
Others	Event	-255 to 255
	Stop	0

**For the GC-17A, GC-1700, or GC-14C**

Parameter	Description	Setting range (unit)	Default value
Ready Check	When the actually measured values for the items checked here reach the set values, the [GC Status] will change to [Ready]. <i>Refer to "5.4.1 Element Names of <Chromatogram> View" on page 79.</i> ● Heater ● Detector (FTD) ● Injection Unit Flow ● APC Flow ● Detector APC Flow ● External Wait Note: [Ready Check] shows the [Name] specified in the properties of the unit selected in [Configured Modules] in the <System Configuration> window. Note: If units for 2 lines are specified in [Configured Modules], they will be displayed at one time. Note: For the GC-14C, [Injection Unit Flow, APC Flow, and Detector APC Flow] is not available.	Checked/ Not checked	Checked
Time Program	A maximum of 40 lines may be specified for the time program that controls each unit during the analysis.	-	-
Time	Set the time of event for each unit by clicking on  or  on the right, which is displayed when a cell is selected, or by directly entering a value. Note: Do not specify the same time on more than one line.	0.00 to 655.00 (min)	0.0
Device	Select the unit used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the units that can be used by the program, among those selected in [Configured Modules] in the <System Configuration> window.	<i>Refer to " Note 7: Device events in time program for the GC-17" on page 98.</i>	
Event	Select the event used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the events that can be used by the unit selected in [Device].		
Setting Values	Set the parameters, if any, required for events.		
Total Program Time	The ending time of the prerun program is displayed.	-	-
Event Program	A maximum of 50 lines may be entered for the event program that runs after the analysis has been started.	-	-
Time	Set the time of the event either by clicking on  or  on the right, which appears when a cell is selected, or by directly entering a value. Note: Do not set the same time on more than one line.	0.00 to 655.00 (min) (In practice, set the parameter to at least 0.01.)	0.0
Statement	Describe the action that is executed by the event program. Note: If more than one command is specified at the same time, separate them with a colon (:).	<i>Refer to " Note 8: Statements in event program" on page 99.</i>	
Total Time	The ending time of the event program is displayed.	-	-



Parameter	Description	Setting range (unit)	Default value
PreEvent Program	A maximum of 50 lines may be entered for the pre-event program that runs before analysis. Note: At the end of the program, be sure to enter the Analysis Start command.	-	-
Time	Set the time of the event either by clicking on  or  on the right, which appears when a cell is selected, or by directly entering a value. Note: Do not set the same time on more than one line.	0.00 to 655.00 (min) (In practice, set the parameter to at least 0.01.)	0.0
Statement	A maximum of 250 alphanumeric characters may be entered for the commands to be executed in the event program. Note: If more than one command is specified at the same time, separate them with a colon (:).	<i>Refer to "Note 9: Statements in preevent program" on page 100.</i>	
Total Time	The ending time of the preevent program is displayed.	-	-
Auto	Specify whether the detector is to be automatically ignited. ● Auto Flame On ● Auto Flame Off ● Reignite Note: This parameter is only valid for the GC-17A V3 or GC-1700 equipped with the FID, WFID or FPD detector. However, it becomes valid if the APC for the detector is available. "Reignite" is only valid for WFID.	Checked/Not checked	Checked
Event	Enter the value for the split ratio when the split ratio is to be changed with the EVENT command in the time program for the GC. Note: For the GC-17A V1 and GC-14C, this parameter cannot be set.	-	-
EV61	Enter the value for the split ratio of CAR1 applicable for EVENT 61.	1 to 9999	5
EV62	Enter the value for the split ratio of CAR1 applicable for EVENT 62.	1 to 9999	10
EV63	Enter the value for the split ratio of CAR2 applicable for EVENT 63.	1 to 9999	5
EV64	Enter the value for the split ratio of CAR2 applicable for EVENT 64.	1 to 9999	10

**Note 7: Device events in time program for the GC-17**

Device	Event	Setting range
Relay	Relay91 Relay92	0 (Point B), 1 (Point A) Note: In the On/Off representation, 0 (Off), 1 (On).
	Relay1 Relay2 Relay3 Relay4 Relay5 Relay6 Relay7 Relay8 Relay9 Relay10 Relay11 Relay12 Relay13 Relay14 Relay15 Relay16	0 (Off), (On)
Detector		
FID WFID	Temperature	0 to 450 Note: For the GC-1700: 0 to 400 For the GC-14C: 0 to 420
	Range (FID) Atten (WFID)	0 to 3 0 to 4
FPD	Temperature	0 to 350
	Range	0 to 3
FTD WFTD	Temperature	0 to 450 Note: For the GC-1700: 0 to 400 For the GC-14C: 0 to 420
	Current	0 to 100, 200
	Range (FTD) Atten (WFTD)	0 to 3 0 to 4
ECD	Temperature	0 to 350
	Current	0.05, 0.1, 0.2, 0.5, 1.0, 2.0
	Range	0 to 1
TCD	Temperature	0 to 400
	Current	0 to 100
	Polarity	1: + 2: -
	Range	0 to 1



Device	Event	Setting range
SID	Temperature	0 to 450 Note: For the GC-1700: 0 to 400 For the GC-14C: 0 to 420
	Current	0 to 100, 200
	Range	0 to 3
Additional Heater	Temperature	0 to 450 Note: For the GC-1700: 0 to 400 For the GC-14C: 0 to 420
Others	Event	-255 to 255
	Stop	0

Note 8: Statements in event program

Statement	Description
RELAY n,ON RELAY n,OFF	Turns ON/OFF the PRG-102 (optionally available for the CBM-102) relay number specified by "n". n: Relay number n = 1 to 8 Interface, PC-17NS CH1 (internal switches are located on PRG) n = 9 to 16 Interface, PC-17NS CH1 (internal switches are located on TRS) n = 17 to 24 Interface, PC-17NS CH2 (internal switches are located on PRG) n = 25 to 32 Interface, PC-17NS CH2 (internal switches are located on TRS) Note: Avoid using the combined use of the RELAY command and the OUT command to port No. 5 to 8 within the same program.
OUT n,xxH	Outputs the value for xxH to the parallel I/O port number specified by "n" for the PC-16N or PC-17NS (optionally available for the CBM-102). n: I/O port number n = 1 to 4 Digital I/O port (PC-16N) n = 5 PRG-102A+ interface, PC-17NS CH1 (on PRG) n = 6 PRG-102A+ interface, PC-17NS CH1 (on TRS) n = 7 PRG-102A+ interface, PC-17NS CH2 (on PRG) n = 8 PRG-102A+ interface, PC-17NS CH2 (on TRS) xxH: xx is a 2-digit hexadecimal number. Note: Avoid using the combined use of the RELAY command and the OUT command to port No. 5 to 8 within the same program.
ZERO n	Performs zero adjustment for the analog input on the CBM channel specified with "n". n = 1 Zero adjustment is performed for Ch1 (AD1). n = 2 Zero adjustment is performed for Ch2 (AD2).
FREE n	Cancels zero adjustment for the analog input on the CBM channel specified with "n". n = 1 Zero adjustment is canceled for Ch1 (AD1). n = 2 Zero adjustment is canceled for Ch2 (AD2).

**Note 9: Statements in preevent program**

Statement	Description
RELAY n,ON RELAY n,OFF	Same as in the event program.
OUT n,xxH	
ZERO n	
FREE n	
Analysis Start command	This command is used to start the analysis. Be sure to provide it at the end of the pre-event program. Unless the command is specified, the analysis will not be started. Use different command versions depending on your system configuration as follows: ● For GC only:STAR#7 ● For GC plus AOC:STRT#1 ● For other (CBM-102):START 1 START 2 START 1,2
STAR#7	Starts the GC.
STRT#1	Starts the AOC. Note: #1 of STRT#1 varies depending on the connection port number of the AOC. If the connection port number is 2 or 3, this is #2 or #3.
START 1	Starts Ch1 (AD1) of the CBM.
START 2	Starts Ch2 (AD2) of the CBM.
START 1,2	Starts Ch1 (AD1) and Ch2 (AD2) of the CBM.

For the GC-14B

Parameter	Description	Setting range (unit)	Default value
Time Program	A maximum of 40 lines may be specified for the time program that controls each unit during the analysis.	-	-
Time	Set the time of event for each unit by clicking on  or  on the right, which is displayed when a cell is selected, or by directly entering a value. Note: Do not specify the same time on more than one line.	0.00 to 655.00 (min)	0.0
Device	Select the unit used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the units that can be used by the program, among those selected in [Configured Modules] in the <System Configuration> window.	<i>Refer to " Note 10: Device events in time program for the GC-14" on page 101.</i>	
Event	Select the event used from the list that is displayed by clicking on  on the right, which appears when a cell is selected. This list shows the events that can be used by the unit selected in [Device].		
Value	Set the parameters, if any, required for events.		
Total Program Time	The ending time of the prerun program is displayed.	-	-



Parameter	Description	Setting range (unit)	Default value
Event Program	A maximum of 50 lines may be entered for the event program that runs after the analysis has been started.	-	-
Time	Set the time of the event either by clicking on or on the right, which appears when a cell is selected, or by directly entering a value. Note: Do not set the same time on more than one line.	0.00 to 655.00 (min)	0.0
Statement	Describe the action that is executed by the event program. Note: If more than one command is specified at the same time, separate them with a colon (:).	<i>Refer to " Note 8: Statements in event program" on page 99.</i>	
Total Time	The ending time of the event program is displayed.	-	-
PreEvent Program	A maximum of 50 lines may be entered for the pre-event program that runs before analysis. Note: At the end of the program, be sure to enter the Analysis Start command.	-	-
Time	Set the time of the event either by clicking on or on the right, which appears when a cell is selected, or by directly entering a value. Note: Do not set the same time on more than one line.	0.00 to 655.00 (min)	0.0
Statement	A maximum of 250 alphanumeric characters may be entered for the commands to be executed in the event program. Note: If more than one command is specified at the same time, separate them with a colon (:).	<i>Refer to " Note 9: Statements in preevent program" on page 100.</i>	
Total Time	The ending time of the event program is displayed.	-	-

Note 10: Device events in time program for the GC-14

Device	Event	Setting range
Relay	Relay91 Relay92	0 (Point B), 1 (Point A) Note: In the On/Off representation, 0 (Off), 1 (On).
	Relay1 Relay2 Relay3 Relay4 Relay5 Relay6 Relay7 Relay8	0 (Off), (On)
Detector		
FID	Temperature	0 to 399
	Polarity	1: + 2: -
	Range	0 to 3



Device	Event	Setting range
FPD	Temperature	0 to 399
	Range	0 to 3
FTD	Temperature	0 to 399
	Current	0 to 100, 200
	Range	0 to 3
ECD	Temperature	0 to 350
	Current	0.5, 1.0, 2.0
	Range	0 to 1
TCD	Temperature	0 to 399
	Current	0 to 200
	Polarity	1: + 2: -
	Range	0 to 1
SID	Temperature	0 to 399
	Range	0 to 3
Additional Heater	Temperature	0 to 399
Others	Event	-255 to 255
	Stop	0

For others (CBM-102)

Parameter	Description	Setting range (unit)	Default value
Event Program	A maximum of 50 lines may be entered for the event program that runs after the analysis has been started.	-	-
Time	Set the time of the event either by clicking on  or  on the right, which appears when a cell is selected, or by directly entering a value. Note: Do not set the same time on more than one line.	0.00 to 655.00 (min)	0.0
Statement	Describe the action that is executed by the event program. Note: If more than one command is specified at the same time, separate them with a colon (:).	<i>Refer to " Note 8: Statements in event program" on page 99.</i>	
Total Time	The ending time of the event program is displayed.	-	-
PreEvent Program	A maximum of 50 lines may be entered for the pre-event program that runs before analysis. Note: At the end of the program, be sure to enter the Analysis Start command.	-	-



Parameter	Description	Setting range (unit)	Default value
Time	Set the time of the event either by clicking on  or  on the right, which appears when a cell is selected, or by directly entering a value. Note: Do not set the same time on more than one line.	0.00 to 655.00 (min)	0.0
Statement	A maximum of 250 alphanumeric characters may be entered for the commands to be executed in the event program. Note: If more than one command is specified at the same time, separate them with a colon (:).	<i>Refer to " Note 9: Statements in preevent program" on page 100.</i>	
Total Time	The ending time of the event program is displayed.	-	-



5.5.3 <Instrument Parameters> View - [Autosampler] Tab

If any of the following autosamplers is selected in the <System Configuration> window, the corresponding tab page shown in the following table will be displayed in the <Instrument Parameters> view.

Autosampler type	Tab
AOC-20i	AOC-20i
AOC-20i+s	AOC-20i+s
AOC-20 Dual Tower (Master)	AOC-20d(M)
AOC-20 Dual Tower (Slave)	AOC-20d(S)

Note: The above tab page is for [AOC-20i+s]. The [AOC-20d(S)], [AOC-20i+s], and [AOC-20d(M)] tab pages contain same items.

Parameter	Description	Setting range (unit)	Default value
Injection Volume	Specify the injection volume of the sample.		
	For the 0.5 uL syringe Note: Set this parameter in units of 0.01.	0.01 to 0.5 (uL)	0.05
	For the 5 uL syringe Note: Set this parameter in units of 0.1.	0.1 to 4.0 (uL)	0.5
	For the 10 uL syringe Note: Set this parameter in units of 0.1.	0.1 to 8.0 (uL)	1.0
	For the 50 uL syringe Note: Set this parameter in units of 0.5.	0.5 to 40.0 (uL)	5.0
	For the 250 uL syringe Note: Set this parameter in units of 2.5.	2.5 to 200.0 (uL)	25.0



Parameter	Description	Setting range (unit)	Default value
# of Rinses with Solvent (Pre-run)	Specify the number of rinse with solvent before the sample injection. Note: If [Injection Mode] is set to any mode other than [Normal], this parameter will be dimmed. For the number of pre-run rinses with solvent in the solvent flush mode, either [# of Rinses with Solvent (Pre-run)] or [# of Rinses with Solvent (Post-run)] specified in the <Injection Mode> window will be used. <i>Refer to "5.5.3.1 <Injection Mode> Window" on page 106</i>	0 to 99	0
# of Rinses with Solvent (Post-run)	Specify the number of times when the syringe is to be rinsed with solvent after the sample has been injected into the GC.	0 to 99	1
# of Rinses with Sample	Specify the number of rinse with the sample before the sample injection (for the solvent flush injection, the syringe is not rinsed before the injection). Change the setting value if a different type of sample is injected or if the same sample is injected repeatedly.	0 to 99	2
Plunger Speed (Suction)	Specify the plunger speed during suction.	High Middle Low	High
Viscosity Comp Time	Specify the dwelling time before the syringe has sucked the sample and then pushed down the plunger. Liquid without viscosity will be sucked into the syringe at the same time the plunger is raised. For liquids with high viscosity, however, the suction will be later than the time when the plunger goes up. In this case, specify a longer dwelling time.	0.0 to 99.9 (Sec)	0.2
Plunger Speed (Injection)	Specify the plunger speed during injection.	High Middle Low	High
Syringe Insertion Speed	Specify the syringe insertion speed.	High Low	High
Injection Mode [Set] button	Specify the order of the sample, solvent, and air to be sucked into the syringe. Clicking on the [Set] button will display the <Injection Mode> window. <i>Refer to "5.5.3.1 <Injection Mode> Window" on page 106</i>	-	Normal
[Advanced] button	Displays the <Autosampler Advanced> window, which allows you to specify further details of the autosampler operation. <i>Refer to "5.5.3.2 <Autosampler Advanced> Window" on page 107</i>	-	-

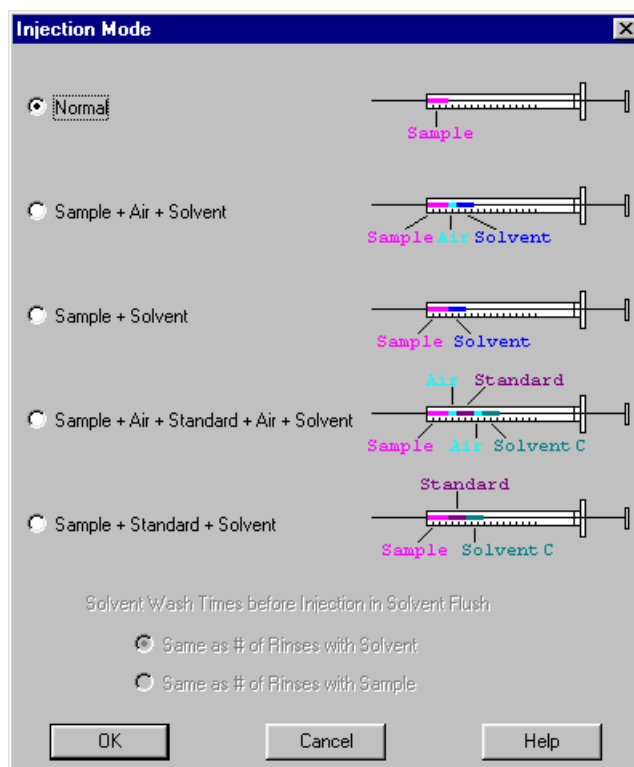
Note: To continuously acquire multiple sets of data, enter [Vial#] and [Inj. Volume] on the batch table.

Refer to "9.3.2 <Batch Table> - [Edit] Menu" on page 339



5.5.3.1 <Injection Mode> Window

When you click on the [Set] button for [Injection Mode] on the [Autosampler] tab page of the <Instrument Parameters> view, the <Injection Mode> window will be opened, which allows you to specify the mode for injecting the sample.



Parameter	Description	Setting range	Default value
Injection Mode	Specify the mode in which the sample is to be sucked into the syringe. Note: For the AOC-20i, the [Sample + Air + Standard Sample + Air + Solvent] and [Sample + Standard Sample + Solvent] items are not displayed.	Normal Sample + Air + Solvent Sample + Solvent Sample + Air + Standard + Air + Solvent Sample + Standard + Solvent	Normal
Solvent Wash Times before Injection in Solvent Flush Mode	Specify the number of pre-run rinses with solvent. Note: When the injection mode is set to "Normal," this parameter will be dimmed.	Same as # of Rinses with Solvent (Post-run) Same as # of Rinses with Sample (Pre-run)	Same as # of Rinses with Solvent (Post-run)



5.5.3.2 <Autosampler Advanced> Window

This window is opened by clicking on the [Advanced] button on the [Autosampler] tab page of the <Instrument Parameters> view. It allows you to specify the details of the syringe and plunger operation.

The screenshot shows the 'AOC-20i+s Advanced' dialog box. It contains the following settings:

- Multi Injection Count: 1
- Pumping Times: 5 times
- Inj. Port Dwell Time: 0 sec
- Terminal Air Gap: ☐ Yes, ☒ No
- Plunger Washing Speed: ☒ High, ☐ Middle, ☐ Low
- Washing Volume: ☐ 6uL, ☒ 8uL
- Syringe Suction Position: 0 mm
- Syringe Injection Position: 0 mm
- Solvent Selection: ☒ All A,B,C, ☐ only A, ☐ only B, ☐ only C

Buttons at the bottom: OK, Cancel, Help.

Parameter	Description	Setting range (unit)	Default value
Multi-Injection Count	Set this parameter when multiple injections are used.	1 to 99	1
Pumping Times	Specify the number of times when the syringe sucks and discharges the sample.	0 to 99	5
Inj. Port Dwell Time	Specify the dwelling time after the sample has been injected.	0.0 to 99.9 (Sec)	0.0
Terminal Air Gap	Specify whether air is sucked after the sample has been sucked.	Yes/No	No
Plunger Washing Speed	Specify the speed at which to lower the plunger during sample washing or pumping.	High Middle Low	High
Washing Volume	Specify the suction volume during sample washing or pumping.	-	-
	For the 0.5 uL syringe	0.3uL 0.4uL	0.4uL
	For the 5 uL syringe	3uL 4uL	4uL
	For the 10 uL syringe	6uL 8uL	8uL
	For the 50 uL syringe	30uL 40uL	40uL
	For the 250 uL syringe	150uL 200uL	200uL



Parameter	Description	Setting range (unit)	Default value
Syringe Suction Position	Specify the height of the syringe when the sample is sucked.	-	-
	When the vial capacity is 1.5 ml	-2 to 20 (mm)	0
	When the vial capacity is 4 ml	-10 to 20 (mm)	0
Syringe Injection Position	Specify the height of the syringe when the sample is injected.	0 to 22 (mm)	0
Solvent Selection Note: This parameter is not available if you use the AOC-20i.	Select the solvent used to rinse the syringe. A, B, and C: All 3 solvents are used. Only A: Only solvent A is used. Only B: Only solvent B is used. Only C: Only solvent C is used.	All A, B, C only A only B only C	All A, B, C
Use 3 Solvent Vial	Allows you to use the 3 solvents even if the autosampler is not used. Note: This parameter is only displayed when you use the AOC-20i.	1 vial 3 vials	1 vial

5.5.3.3 TurboMatrixHS Tab

This tab page is displayed only when the GCSolution TurboMatrixHS Control Option has been installed.

Set the analysis conditions used by the HS unit here. In the tab page shown below, all the items are displayed; however, some items will not be displayed depending on availability of options. Therefore, note that the following screen shot is different from the display you actually see.

The screenshot shows the TurboMatrixHS control window with the following settings:

- Mode:** ☒ Constant ☐ Progressive ☐ MHE
- Injection Mode:** ☒ Time ☐ Volume
- Thermostating Time:** 12 min
- Injection Time:** 0.08 min
- Pressurization Time:** 3 min
- Injection Volume:** 2.4 mL
- Withdrawal Time:** 0.2 min
- Transfer Flow:** 30 mL/min
- GC Cycle Time:** 10 min
- HS Carrier Gas Pressure:** 100 kPa
- Temperature Zone:** ☐ (O/N/T) ☒ Auto
- High Pressure:** ☒ ON ☐ OFF
- Oven Temp.:** 60 °C
- Inject Pressure:** 100 kPa
- Needle Temp.:** 90 °C
- Cryofocus:** ☒ ON ☐ OFF
- Transfer Temp.:** 90 °C
- Precryofocus Time:** 0 min
- Vial Venting:** ☒ ON ☐ OFF
- Postcryofocus Time:** 0 min
- Sample Shaker:** ☐ ON ☒ OFF
- Cryofocus Temp.:** -40 °C
- Water Trap:** ☐ ON ☒ OFF
- Back Flush:** ☒ ON ☐ OFF
- Back Flush ON Time:** 0 min
- Back Flush OFF Time:** 0 min
- Back Flush Pressure:** 0 kPa



Parameter	Description	Setting range (unit)	Default value
Mode	Select an operating mode here.	Constant, Progressive, MHE	Con- stant
Injection Mode	Select either of Time or Volume as a measure for determin- ing injection amount. Time: When selected, Injection Time setting is required. Volume: When selected, Injection Volume and Transfer Flow settings are required. In this case, the injection time obtained by the following equation is set to the instrument. (Injection Time) = (Injection Volume) / (Transfer Flow)	Time Volume	Time
Injection Time	Specifies the injection amount by time.	0.00 to 9.99 min	0.08
Injection Volume	Specifies the injection amount by volume.	0.00 to 9.99 mL	2.40
Transfer Flow	Specifies the transfer flow rate.	0.01 to 50.00 mL/min	30
Temperature Zone	Specifies a method for setting the temperatures for heated zones. O/N/T: Allows you to specify each temperature independently from others. Auto: Only the oven temperature is specified. The temperatures for other units are automatically set to 5°C above the oven temperature.	O/N/T Auto	O/N/T
Oven Temp.	Specifies the oven temperature.	35 to 210 °C	60
Needle Temp.	Specifies the needle temperature.	35 to 210 °C	90
Transfer Temp.	Specifies the transfer tube temperature.	35 to 210 °C	90
Thermostating Time	Specifies the heating time in the thermostat oven.	0.0 to 999.9 min	12
Pressurization Time	Specifies the time to pressurize sample vials.	0.0 to 300.0 min	3
Withdrawal Time	Specifies the time to withdraw sample vials.	0.0 to 99.9 min	0.2
GC Cycle Time	Specifies the cycle time from sample injection to the ready state for analyzing next sample.	0.0 to 999.9 min	10
HS Carrier Gas Pressure	Specifies the carrier gas pressure.	0.0 to 400.0 kPa 0.0 to 58.0 psi	100 14.5
High Pressure	Turns ON/OFF the high-pressure sampling function.	ON, OFF	OFF
Inject Pressure	Specifies the injection pressure for high-pressure sampling.	0.0 to 414.0 kPa 0.0 to 60.0 psi	100 14.5



Parameter	Description	Setting range (unit)	Default value
Vial Venting	Turns ON/OFF the vial venting function.	ON, OFF	ON
Sample Shaker	Turns ON/OFF the sample shaker function.	ON, OFF	OFF
Water Trap	Turns ON/OFF the water trap function.	ON, OFF	OFF
Cryofocus	Turns ON/OFF the cryofocus function.	ON, OFF	OFF
Precryofocus Time	Specifies the time for performing precryofocus.	0.0 to 300.0 min	0
Postcryofocus Time	Specifies the time for performing postcryofocus.	0.0 to 300.0 min	0
Cryofocus Temp.	Specifies the temperature for cryofocus.	-180 to -10 °C	-40
Back Flush	Turns ON/OFF the back flush function.	ON, OFF	OFF
Back Flush ON Time	Specifies the time to start back flushing.	0.0 to 300.0 min	0
Back Flush OFF Time	Specifies the time to stop back flushing.	0.0 to 300.0 min	0
Back Flush Pressure	Specifies the pressure for back flushing.	0.0 to 2.6 kPa	0
		0.0 to 0.4 psi	0

Note: The time event function is not settable for HS.

Note: For GC Cycle Time (Thermostating Time in the MHE mode), set a time longer than the total time of GC Analysis Time and Cooling Time. Cooling time should be about 10 minutes when the initial temperature is 50°C or higher and about 15 minutes when less than 50°C.

In cases where your system has no gradient program for column oven or incorporates a cooling program, there is no need to take cooling time into consideration.

Since preparation of the next analysis takes time in the case of GC-17/14, in addition to the above, please set up the GC Cycle Time long about 1 minute.

Note: Usually, set Temperature Zone as shown below:

(Oven Temp.) < (Needle Temp.) =< (Transfer Temp.) =< (GC Injection Port Temperature)

Note: The unit of pressure follows the <Configuration> - <GC> - <General> settings. However, since TurboMatrixHS is only the unit of kPa or psi, in the case of the other unit, it is set to kPa.



5.5.4 <Instrument Parameters> View - [Injection Port] Tab

●SPL (PTV)

Temperature : 200.0 °C
Injection Mode : Direct
Sampling Time : 1.00 min
Carrier Gas : He
Flow Control Mode : Pressure
Pressure : 8.3 kPa
Total Flow : 11.8 mL/min
Column Flow : 0.23 mL/min
Linear Velocity : 5.0 cm/sec
Purge Flow : 0.2 mL/min
Split Ratio : 50.0

Column Information (CBP1-S25-050)
Length : 25.0 m
Inner Diameter : 0.32 mm ID
Film Thickness : 0.50 um

INJ.Program Temperature
Redraw

	Rate	Temperature	Hold Time
0	-	200.0	0.00
1	0.0	0.0	0.00
2	0.0	0.0	0.00
3	0.0	0.0	0.00

Total Program Time : 0.00 min
☐ CRG
Advanced...

●WBI (OCI)

Temperature : 25.0 °C
Carrier Gas : He
Flow Control Mode : Pressure
Pressure : 100.0 kPa
Total Flow : 7.6 mL/min
Column Flow : 4.62 mL/min
Linear Velocity : 62.2 cm/sec
Purge Flow : 3.0 mL/min

Column Information (CBP1-S25-050)
Length : 25.0 m
Inner Diameter : 0.32 mm ID
Film Thickness : 0.50 um

INJ.Program Temperature
Redraw

	Rate	Temperature	Hold Time
0	-	25.0	0.00
1	0.0	0.0	0.00
2	0.0	0.0	0.00
3	0.0	0.0	0.00

Total Program Time : 0.00 min
Advanced...

For the GC-2010

Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature for the injection port.	-99.0 to 450.0 (°C)	25.0
Injection Mode	Selects the Mode. Note: This parameter is not displayed for the WBI (OCI).	Split Splitless Direct	Split



Parameter	Description	Setting range (unit)	Default value
Sampling Time	Specify the sampling time. The sampling time means the time period from the sample injection to the opening of the split path. This parameter is only valid in the Splitless Mode. Note: This parameter is not displayed for the WBI (OCI).	0.00 to 9999.99 (min)	1.00
Carrier Gas	Allows you to set the parameters related to the carrier gas. Note: The [Carrier Gas] parameters are related to each other; if any setting value is changed, the setting values for the other parameters will be changed automatically through an applicable equation.		
Control Mode	Selects the Control Mode for the carrier gas flow. Note: [Flow] can be selected here if [Direct] is selected in the [Injection Mode].	Linear Velocity Pressure Flow	Pressure
Pressure	Specify the column inlet pressure. Note: This parameter cannot be set when WBI (OCI) is used, if [Split Mode] is set to [Direct] for the SPL (PTV) or if [Control Mode] is set to [Flow].	-	-
	When the primary pressure is 980 kPa	0.0 to 970.0 (kPa) 0.0 to 9.70 (bar) 0.0 to 140.6 (psi)	100.0 (kPa) 1.00 (bar)
	When the primary pressure is 600 kPa or 400 kPa	0.0 to 400.0 (kPa) 0.0 to 4.00 (bar) 0.0 to 58.0 (psi)	14.5 (psi)
Total Flow	Specify the total flow rate. Note: This parameter cannot be set when WBI (OCI) is used, if [Split Mode] is set to [Direct] for the SPL (PTV) or if [Control Mode] is set to [Linear Velocity] or [Pressure].	-	-
	When the primary pressure is 980 kPa	0.0 to 1200.0 (mL/min)	50.0
	When the primary pressure is 600 kPa	0.0 to 400.0 (mL/min)	
	When the primary pressure is 400 kPa	0.0 to 250.0 (mL/min)	
Column Flow	Specify the column flow rate.	(mL/min)	Calculated value
Linear Velocity	Specify the linear velocity.	(cm/sec)	Calculated value
Purge Flow	Specify the purge flow rate.	0.0 to 1200.0 (mL/min)	3.0
Split Ratio	Specify the split ratio 1:X (Column Flow: Split Flow). Note: This parameter cannot be set if [Split Mode] is set to [Direct] for the SPL (PTV) or if WBI (OCI) is used. Note: If -1 is specified, split ratio is calculated using current flow setting.	-1,0.0 to 9999.9	-1



Parameter	Description	Setting range (unit)	Default value
INJ. Program	Allows you to select a control program for the injection port. From the pull-down menu, select the control program to be used. Note: The temperature program can be specified if the injection unit type is PTV or OCI and if the heat unit port is INJ2. Note: The flow program can be specified if [Control Mode] is set to [Flow]. The pressure program can be specified if [Control Mode] is set to [Pressure].	Temperature Flow Pressure Purge Flow	-
Program table	Display and edit the selected time program. Note: In the temperature program, for example, the initial temperature and initial temperature hold time in the injection unit are displayed on the 0th line.	<i>Refer to "Note 1: Setting range of program creation area for the GC-2010" on page 113.</i>	-
Graph area [Redraw] button	When you click on this button, the program curve will be redrawn on the graph.	-	-
Total Program Time	Displays the total running time of the program.	-	-
CRG	Specify whether use or not use the CRG. If this parameter is check-marked, the CRG for cooling the column oven will be used. Note: The CRG parameter appears when [CRG] (Column Oven) is check-marked on the [CRG Relay] tab of <System Configuration> - <GC-2010 Property>.	Used/Not used	Not used
Column Information	Displays the column information. <i>Refer to "4.5.3 <Analytical Line> - [Column] Tab" on page 48</i>	-	-
[Advanced] button	Displays the <Injection Port Advanced> window. <i>Refer to "5.5.4.1 <Injection Port Advanced> Window" on page 125.</i> Note: For the WBI, this button is dimmed and cannot be used.	-	-

Note 1: Setting range of program creation area for the GC-2010

- When the temperature program is set in [INJ Program] (a total of 8 lines from the 0th through 7th lines can be set)

Parameter	Setting range (unit)	Default value
Rate	-400.0 to 400.0 (°C/min)	0.00 (cannot be set on the 0th line)
Temperature	-99.0 to 450.0 (°C)	0.0 (initial temperature on the 0th line)
Hold Time	0.00 to 9999.99 (min)	0.00



● When the pressure program is set in [INJ Program] (a total of 8 lines from the 0th through 7th lines can be set)

Parameter	Setting range (unit)	Default value
Rate	-400.00 to 400.00 (kPa/min)	0.00 (cannot be set on the 0th line)
	-4.000 to 4.000 (bar/min)	0.000 (cannot be set on the 0th line)
	-58.01 to 58.01 (psi/min)	0.00 (cannot be set on the 0th line)
Pressure	When the primary pressure is 980 kPa	-
	0.0 to 970.0 (kPa)	0.0 (initial pressure on the 0th line)
	0.00 to 9.70 (bar)	0.00 (initial pressure on the 0th line)
	0.0 to 140.6 (psi)	0.0 (initial pressure on the 0th line)
	When the primary pressure is 400 or 600 kPa	-
	0.0 to 400.0 (kPa)	0.0 (initial pressure on the 0th line)
	0.00 to 4.00 (bar)	0.00 (initial pressure on the 0th line)
	0.0 to 58.0 (psi)	0.0 (initial pressure on the 0th line)
Hold Time	0.00 to 9999.99 (min)	0.00

● When the flow program is set in [INJ Program] (a total of 8 lines from the 0th through 7th lines can be set)

Parameter	Setting range (unit)	Default value
Rate	-400.00 to 400.00 (mL/min ²)	0.00 (cannot be set on the 0th line)
Flow	When the primary pressure is 980 kPa	-
	0.0 to 1200.0 (mL/min)	0.0 (initial flow on the 0th line)
	When the primary pressure is 600 kPa	-
	0.0 to 400.0 (mL/min)	0.0 (initial flow on the 0th line)
	When the primary pressure is 400 kPa	-
	0.0 to 250.0 (mL/min)	0.0 (initial flow on the 0th line)
Hold Time	0.00 to 9999.99 (min)	0.00

● When the purge flow program is set in [INJ Program] (a total of 8 lines from the 0th through 7th lines can be set)

Parameter	Setting range (unit)	Default value
Rate	-400.00 to 400.00 (mL/min ²)	0.00 (cannot be set on the 0th line)
Flow	0.0 to 1200.0 (mL/min)	00 (initial purge flow on the 0th line)
Hold Time	0.00 to 9999.99 (min)	0.00



For the GC-2014

Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature for the injection port.	-99.0 to 450.0 (°C) PTV,OCI: -99.0 to 450.0	25.0
Carrier Gas	Allows you to set the parameters related to the carrier gas. Note: The [Carrier Gas] parameters are related to each other; if any setting value is changed, the setting values for the other parameters will be changed automatically through an applicable equation.		
Column Flow	Specify the column flow rate.	0.0 to 100.0 (mL/min)	Calculated value
Column Information	Displays the column information. <i>Refer to "4.5.3 <Analytical Line> - [Column] Tab" on page 48</i>	-	-
INJ. Program	Allows you to select a control program for the injection port. From the pull-down menu, select the control program to be used. Note: The temperature program can be specified if the injection unit type is PTV or OCI and if the heat unit port is INJ2. Note: The flow program can be specified if [Control Mode] is set to [Flow]. The pressure program can be specified if [Control Mode] is set to [Pressure]. Note: For DINJ or SINJ, the flow program can be specified.	Temperature Flow Pressure	-
Program Table	Display and edit the selected time program. Note: In the temperature program, for example, the initial temperature and initial temperature hold time in the injection unit are displayed on the 0th line.	<i>Refer to "Note 2: Setting range of program creation area for the GC-2014" on page 115.</i>	-
Graph area [Redraw] button	When you click on this button, the program curve will be redrawn on the graph.	-	-
Total Program Time	Displays the total running time of the program.	-	-
[Advanced] button	Displays the <Injection Port Advanced> window. <i>Refer to "5.5.4.1 <Injection Port Advanced> Window" on page 125.</i> Note: For the WBI, this button is dimmed and cannot be used.	-	-

Note 2: Setting range of program creation area for the GC-2014

- When the temperature program is set in [INJ Program] (a total of 8 lines from the 0th through 7th lines can be set)

Parameter	Setting range (unit)	Default value
Rate	-400.0 to 400.0 (°C/min)	0.00 (cannot be set on the 0th line)
Temperature	-99.0 to 450.0 (°C)	0.0 (initial temperature on the 0th line)



Parameter	Setting range (unit)	Default value
Hold Time	0.00 to 9999.99 (min)	0.00

● When the flow program is set in [INJ Program] (a total of 8 lines from the 0th through 7th lines can be set)

Parameter	Setting range (unit)	Default value
Rate	-400.00 to 400.00 (mL/min ²)	0.00 (cannot be set on the 0th line)
Flow	When the primary pressure is 980 kPa	-
	0.0 to 1200.0 (mL/min)	0.0 (initial flow on the 0th line)
	When the primary pressure is 600 kPa	-
	0.0 to 400.0 (mL/min)	0.0 (initial flow on the 0th line)
	When the primary pressure is 400 kPa	-
	0.0 to 250.0 (mL/min)	0.0 (initial flow on the 0th line)
Hold Time	0.00 to 9999.99 (min)	0.00

● When the purge flow program is set in [INJ Program] (a total of 8 lines from the 0th through 7th lines can be set)

Parameter	Setting range (unit)	Default value
Rate	-400.00 to 400.00 (mL/min ²)	0.00 (cannot be set on the 0th line)
Flow	0.0 to 1200.0 (mL/min)	00 (initial purge flow on the 0th line)
Hold Time	0.00 to 9999.99 (min)	0.00

For the GC-2025

Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature for the injection port.	-99.0 to 400.0 (°C)	25.0
Injection Mode	Selects the Mode.	Split Splitless Direct	Split
Sampling Time	Specify the sampling time. The sampling time means the time period from the sample injection to the opening of the split path. This parameter is only valid in the Splitless Mode.	0.00 to 9999.99 (min)	1.00
Carrier Gas	Allows you to set the parameters related to the carrier gas. Note: The [Carrier Gas] parameters are related to each other; if any setting value is changed, the setting values for the other parameters will be changed automatically through an applicable equation.		
Control Mode	Selects the Control Mode for the carrier gas flow. Note: [Flow] can be selected here if [Direct] is selected in the [Injection Mode].	Linear Velocity Pressure Flow	Pressure



Parameter	Description	Setting range (unit)	Default value
Pressure	Specify the column inlet pressure. Note: This parameter cannot be set if [Split Mode] is set to [Direct] for the SPL (PTV) or if [Control Mode] is set to [Flow].	-	-
	When the primary pressure is 980 kPa	0.0 to 970.0 (kPa) 0.0 to 9.70 (bar) 0.0 to 140.6 (psi)	100.0 (kPa) 1.00 (bar)
	When the primary pressure is 600 kPa or 400 kPa	0.0 to 400.0 (kPa) 0.0 to 4.00 (bar) 0.0 to 58.0 (psi)	14.5 (psi)
Total Flow	Specify the total flow rate. Note: This parameter cannot be set if [Split Mode] is set to [Direct] for the SPL (PTV) or if [Control Mode] is set to [Linear Velocity] or [Pressure].	-	-
	When the primary pressure is 980 kPa	0.0 to 1200.0 (mL/min)	50.0
	When the primary pressure is 600 kPa	0.0 to 400.0 (mL/min)	
	When the primary pressure is 400 kPa	0.0 to 250.0 (mL/min)	
Column Flow	Specify the column flow rate.	(mL/min)	Calculated value
Linear Velocity	Specify the linear velocity.	(cm/sec)	Calculated value
Purge Flow	Specify the purge flow rate.	0.0 to 1200.0 (mL/min)	3.0
Split Ratio	Specify the split ratio 1:X (Column Flow: Split Flow). Note: This parameter cannot be set if [Split Mode] is set to [Direct] for the SPL (PTV). Note: If -1 is specified, split ratio is calculated using current flow setting.	-1,0.0 to 9999.9	-1
INJ. Program	Allows you to select a control program for the injection port. From the pull-down menu, select the control program to be used. Note: The flow program can be specified if [Control Mode] is set to [Flow]. The pressure program can be specified if [Control Mode] is set to [Pressure].	Flow Pressure Purge Flow	-
Program table	Display and edit the selected time program. Note: In the temperature program, for example, the initial temperature and initial temperature hold time in the injection unit are displayed on the 0th line.	<i>Refer to " Note 3: Setting range of program creation area for the GC-2025" on page 118.</i>	-
Graph area [Redraw] button	When you click on this button, the program curve will be redrawn on the graph.	-	-
Total Program Time	Displays the total running time of the program.	-	-



Parameter	Description	Setting range (unit)	Default value
CRG	Specify whether use or not use the CRG. If this parameter is check-marked, the CRG for cooling the column oven will be used. Note: The CRG parameter appears when [CRG] (Column Oven) is check-marked on the [CRG Relay] tab of <System Configuration> - <GC-2010 Property>.	Used/Not used	Not used
Column Information	Displays the column information. <i>Refer to "4.5.3 <Analytical Line> - [Column] Tab" on page 48</i>	-	-
[Advanced] button	Displays the <Injection Port Advanced> window. <i>Refer to "5.5.4.1 <Injection Port Advanced> Window" on page 125.</i> Note: For the WBI, this button is dimmed and cannot be used.	-	-

Note 3: Setting range of program creation area for the GC-2025

- When the pressure program is set in [INJ Program] (a total of 8 lines from the 0th through 7th lines can be set)

Parameter	Setting range (unit)	Default value
Rate	-400.00 to 400.00 (kPa/min)	0.00 (cannot be set on the 0th line)
	-4.000 to 4.000 (bar/min)	0.000 (cannot be set on the 0th line)
	-58.01 to 58.01 (psi/min)	0.00 (cannot be set on the 0th line)
Pressure	When the primary pressure is 980 kPa	-
	0.0 to 970.0 (kPa)	0.0 (initial pressure on the 0th line)
	0.00 to 9.70 (bar)	0.00 (initial pressure on the 0th line)
	0.0 to 140.6 (psi)	0.0 (initial pressure on the 0th line)
	When the primary pressure is 400 or 600 kPa	-
	0.0 to 400.0 (kPa)	0.0 (initial pressure on the 0th line)
	0.00 to 4.00 (bar)	0.00 (initial pressure on the 0th line)
	0.0 to 58.0 (psi)	0.0 (initial pressure on the 0th line)
Hold Time	0.00 to 9999.99 (min)	0.00

- When the flow program is set in [INJ Program] (a total of 8 lines from the 0th through 7th lines can be set)

Parameter	Setting range (unit)	Default value
Rate	-400.00 to 400.00 (mL/min ²)	0.00 (cannot be set on the 0th line)



Parameter	Setting range (unit)	Default value
Flow	When the primary pressure is 980 kPa	-
	0.0 to 1200.0 (mL/min)	0.0 (initial flow on the 0th line)
	When the primary pressure is 600 kPa	-
	0.0 to 400.0 (mL/min)	0.0 (initial flow on the 0th line)
	When the primary pressure is 400 kPa	-
	0.0 to 250.0 (mL/min)	0.0 (initial flow on the 0th line)
Hold Time	0.00 to 9999.99 (min)	0.00

● When the purge flow program is set in [INJ Program] (a total of 8 lines from the 0th through 7th lines can be set)

Parameter	Setting range (unit)	Default value
Rate	-400.00 to 400.00 (mL/min ²)	0.00 (cannot be set on the 0th line)
Flow	0.0 to 1200.0 (mL/min)	00 (initial purge flow on the 0th line)
Hold Time	0.00 to 9999.99 (min)	0.00

For the GC-17A or GC-1700

Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature for the injection port. Note: If the heat unit port is AUX1, the lower limit of the setting range is -99.	[GC-17A] 0 to 450 (°C) [GC-1700] 0 to 400 (°C)	25.0
Injection Mode	Selects the Mode. Note: This parameter is not displayed for the WBI (OCI).	Split Splitless Direct	Split
Sampling Time	Specify the sampling time. The sampling time means the time period from the sample injection to the opening of the split path. This parameter is only valid in the Splitless Mode. Note: This parameter is not displayed for the WBI (OCI).	0.0 to 655.0 (min)	1.0
Carrier Gas	Allows you to set the parameters related to the carrier gas. Note: The [Carrier Gas] parameters are related to each other; if any setting value is changed, the setting values for the other parameters will be changed automatically through an applicable equation.		
Control Mode	Selects the Control Mode for the carrier gas flow. Note: [Flow] can be selected here if [Direct] is selected in the [Injection Mode].	Flow Pressure	Pressure



Parameter	Description	Setting range (unit)	Default value
Pressure	Specify the column inlet pressure. Note: This parameter cannot be set when WBI (OCI) is used, if [Split Mode] is set to [Direct] for the SPL (PTV) or if [Control Mode] is set to [Flow].	0.0 to 970.0 (kPa) 0.0 to 9.70 (bar) 0.0 to 140.6 (psi)	100.0 (kPa) 1.00 (bar) 14.5 (psi)
Total Flow	Specify the total flow rate. Note: This parameter cannot be set when WBI (OCI) is used, if [Split Mode] is set to [Direct] for the SPL (PTV) or if [Control Mode] is set to [Linear Velocity] or [Pressure].	0.0 to 1200.0 (mL/min)	50.0
Column Flow	Specify the column flow rate.	(mL/min)	Calculated value
Linear Velocity	Specify the linear velocity.	(cm/sec)	Calculated value
Purge Flow (Pressure)	Specify the purge flow rate or purge pressure. Note: The purge flow rate or the purge pressure (whichever is specified here), depends on the setting for the control mode for the purge APC under the properties of the injection unit in the system configuration. When the control mode is set to Flow: Purge flow rate When the control mode is set to Pressure: Purge pressure	[Flow rate] 0 to 970 (mL/min) [Pressure] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	3 100 1.00 14.5
Split Ratio	Specify split ratio: (Column Flow: Split Flow). Note: This parameter cannot be set if [Split Mode] is set to [Direct] for the SPL (PTV) or if WBI (OCI) is used. Note: If -1 is specified, split ratio is calculated using current flow setting.	-1, 0 to 9999	-1
INJ. Program	Allows you to select a control program for the injection port. From the pull-down menu, select the control program to be used. Note: The temperature program can be specified if the injection unit type is PTV or OCI and if the heat unit port is INJ1 or INJ2. Note: The flow program can be specified if [Control Mode] is set to [Flow]. The pressure program can be specified if [Control Mode] is set to [Pressure]. Note: The purge flow (pressure) program depends upon the setting for the control mode for the purge APC under the properties of the injection unit in the system configuration. When the control mode is set to Flow: Purge flow program When the control mode is set to Pressure: Purge pressure program	Temperature Flow Pressure Purge Flow (Pressure)	-



Parameter	Description	Setting range (unit)	Default value
Program table	Display and edit the selected time program. Note: In the temperature program, for example, the initial temperature and initial temperature hold time in the injection unit are displayed on the 0th line.	<i>Refer to "Note 4: Setting range of program creation area for the GC-17." on page 121.</i>	-
Graph area [Redraw] button	When you click on this button, the program curve will be redrawn on the graph.	-	-
Total Program Time	Displays the total running time of the program.	-	-
CRG	Specify whether use or not use the CRG. If this parameter is check-marked, the CRG for cooling the column oven will be used. Note: The CRG parameter appears when [CRG] (Column Oven) is check-marked on the [CRG Relay] tab of <System Configuration> - <GC-2010 Property>.	Used/Not used	Not used
Column Information	Displays the column information. <i>Refer to "4.5.3 <Analytical Line> - [Column] Tab" on page 48</i>	-	-
Calc Const Vel Program	Press this button to let the GCsolution generate a carrier gas pressure control program used for keeping the carrier gas line speed constant throughout an analysis session based on the current column oven temperature program and column information setting. It will be shown on the pressure program grid and graph after being generated. Note: This button is displayed for AFC. And this button is disabled when [Injection Mode] has been set to [Split] or [Splitless] and [Flow Control Mode] has been set to [Pressure].	-	-
[Advanced] button	Displays the <Injection Port Advanced> window. <i>Refer to "5.5.4.1 <Injection Port Advanced> Window" on page 125.</i> Note: For the WBI, this button is dimmed and cannot be used.	-	-

Note: For the GC-17A V1 and GC-17A V2, there is no setting for the primary pressure in the pressure, total flow rate, pressure program, and flow program. Therefore, the same setting range as in the case where the primary pressure is 600 kPa is applicable.

Note 4: Setting range of program creation area for the GC-17.

● When the temperature program is set in [INJ Program] (a total of 6 lines from the 0th through 5th lines can be set)

Parameter	Setting range (unit)	Default value
Rate	-400.0 to 400.0 (°C/min)	0.00 (cannot be set on the 0th line)
Temperature	[GC-17A] -99 to 450 (°C) [GC-1700] -99 to 400 (°C)	0 (initial temperature on the 0th line)
Hold Time	0.0 to 655.0 (min)	0.0



● When the pressure program is set in [INJ Program] (a total of 6 lines from the 0th through 5th lines can be set)●

Parameter	Setting range (unit)	Default value
Rate	-400.0 to 400.0 (kPa/min)	0.00 (cannot be set on the 0th line)
	-4.000 to 4.000 (bar/min)	0.000 (cannot be set on the 0th line)
	-58.01 to 58.01 (psi/min)	0.00 (cannot be set on the 0th line)
Pressure	When the primary pressure is 980 kPa	-
	0 to 970 (kPa)	0 (initial pressure on the 0th line)
	0.00 to 9.70 (bar)	0.00 (initial pressure on the 0th line)
	0.0 to 140.6 (psi)	0.0 (initial pressure on the 0th line)
	When the primary pressure is 400, 500, or 600 kPa	-
	0 to 400 (kPa)	0 (initial pressure on the 0th line)
	0.00 to 4.00 (bar)	0.00 (initial pressure on the 0th line)
	0.0 to 58.0 (psi)	0.0 (initial pressure on the 0th line)
Hold Time	0.0 to 655.0 (min)	0.0

When the flow program is set in [INJ Program] (a total of 6 lines from the 0th through 5th lines can be set)

Parameter	Setting range (unit)	Default value
Rate	-400.0 to 400.0 (mL/min ²)	0.0 (cannot be set on the 0th line)
Flow	When the primary pressure is 980 kPa	-
	0 to 1200 (mL/min)	0 (initial flow on the 0th line)
	When the primary pressure is 500 or 600 kPa	-
	0 to 400 (mL/min)	0 (initial flow on the 0th line)
	When the primary pressure is 400 kPa	-
	0 to 250 (mL/min)	0 (initial flow on the 0th line)
Hold Time	0.0 to 655.0 (min)	0.0

● When the purge flow (pressure) program is set in [INJ Program] (a total of 6 lines from the 0th through 5th lines can



be set)

Parameter	Setting range (unit)	Default value
Rate	[Flow rate] -400.0 to 400.0 (mL/min ²) [Pressure] -400.0 to 400.0 (kPa) -4.000 to 4.000 (bar) -58.01 to 58.01 (psi)	0.0 (cannot be set on the 0th line)
Flow	[Flow rate] 0 to 970 (mL/min) [Pressure] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	0 (initial purge flow on the 0th line)
Hold Time	0.0 to 655.0 (min)	0.0

For the GC-14B or GC-14C

Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature for the injection port. Note: If the heat unit port is AUX1, the lower limit of the setting range is -99.	[GC-14B] 0 to 399 (°C) [GC-14C] 0 to 420 (°C)	25.0
Injection Mode	Selects the Mode. Note: This parameter is not displayed for the WBI (OCI). Note: For the GC-14B, this parameter is not displayed.	Split Splitless Direct	Split
Sampling Time	Specify the sampling time. The sampling time means the time period from the sample injection to the opening of the split path. This parameter is only valid in the Splitless Mode. Note: This parameter is not displayed for the WBI (OCI). Note: For the GC-14B, this parameter is not displayed.	0.0 to 655.0 (min)	1.0
INJ. Program	Allows you to select a control program for the injection port. From the pull-down menu, select the control program to be used. Note: The temperature program can be specified if the injection unit type is PTV or OCI and if the heat unit port is AUX1.	Temperature	-
Program table	Display and edit the selected time program. Note: In the temperature program, for example, the initial temperature and initial temperature hold time in the injection unit are displayed on the 0th line.	<i>Refer to "Note 5: Setting range of program creation area for the GC-14," on page 125.</i>	-
Graph area [Redraw] button	When you click on this button, the program curve will be redrawn on the graph.	-	-
Total Program Time	Displays the total running time of the program.	-	-



Parameter	Description	Setting range (unit)	Default value
CRG	Specify whether use or not use the CRG. If this parameter is check-marked, the CRG for cooling the column oven will be used. Note: The CRG parameter appears when [CRG] (Column Oven) is check-marked on the [CRG Relay] tab of <System Configuration> - <GC-2010 Property>. Note: For the GC-14B, this parameter is not displayed.	Used/Not used	Not used
Column Information	Displays the column information. <i>Refer to "4.5.3 <Analytical Line> - [Column] Tab" on page 48</i>	-	-
[Advanced] button	Displays the <Injection Port Advanced> window. <i>Refer to "5.5.4.1 <Injection Port Advanced> Window" on page 125.</i> Note: For the WBI, this button is dimmed and cannot be used.	-	-



Note 5: Setting range of program creation area for the GC-14.

- When the temperature program is set in [INJ Program] (a total of 6 lines from the 0th through 5th lines can be set)

Parameter	Setting range (unit)	Default value
Rate	[GC-14B] 0.0 to 250.0 (°C/min) [GC-14C] -400.0 to 400.0 (°C/min)	0.0 (cannot be set on the 0th line)
Temperature	[GC-14B] -99 to 399 (°C) [GC-14C] -99 to 420 (°C)	0 (initial temperature on the 0th line)
Hold Time	0.0 to 655.0 (min)	0.0

5.5.4.1 <Injection Port Advanced> Window

If you click on the [Advanced] button on the [Injection Port] tab page of the <Instrument Parameters> view, the following <SPL(PTV) Advanced> or <WBI Advanced> window will be opened.

- SPL (PTV)

	Time	Split Ratio
1	0.00	0.0
2	0.00	0.0
3	0.00	0.0
4	0.00	0.0
5	0.00	0.0
6	0.00	0.0
7	0.00	0.0

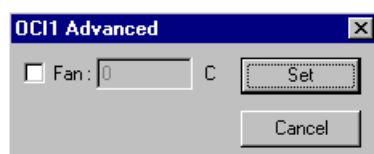


Parameter	Description	Setting range (unit)	Default value
High Pressure Injection	Set the High-Pressure Injection mode. ● On: After the sample has been injected, the column inlet pressure is maintained at the pressure set here, until the specified time. To obtain the high pressure, do so manually on the GC. ● Off: No high-pressure injection is performed. ● Auto: After the sample has been injected, the column inlet pressure is maintained at the pressure set here, until the specified time. The high pressure is automatically obtained when the GC becomes ready. Note: If [INJ Mode] is set to [Direct] on the [Injection Units] tabbed page of the <Instrument Parameters> view, this parameter cannot be set. Note: For the GC-17A V1/V2, GC-14B, or GC-14C, this parameter is not displayed.	On Off Auto	Off
Pressure	Specify the pressure to be used during high pressure.	-	100.0 (kPa)
	When the primary pressure is 980	0.0 to 970.0 (kPa) 0.00 to 9.70 (bar) 0.0 to 140.6 (psi)	1.00 (bar) 14.5 (psi)
	When the primary pressure is 400 or 600	0.0 to 400.0 (kPa) 0.00 to 4.00 (bar) 0.0 to 58.0 (psi)	
Time	Specify the time period to maintain high pressure.	[GC-2010] 0.00 to 9999.99 (min) [GC-17A V3, GC-1700] 0.0 to 655.0 (min)	1.00
Carrier Gas Saver	After the sample injection, the split ratio will be changed at the specified time to suppress the consumption of carrier gas. Note: This parameter is disabled if the [Injection Mode] is set to "Direct". Note: For the GC-17A, GC-14B, or GC-14C, this parameter is not displayed.	Checked/Not checked	Not checked
Split Ratio	Specify the split ratio used to save the carrier gas. Enter a value smaller than the split ratio used to analyze the sample.	0.0 to 9999.9	5.0
Time	Specify the time at which to change the split ratio.	0.00 to 9999.99 (min)	1.00
Splitter Hold	Allows you to set the Splitter Hold mode. ● On: After sample injection, the splitter will be held until the specified time. The splitter will be held by the operation on GC panel. ● Auto: After sample injection, the splitter will be held until the specified time. The splitter will be held automatically when the GC becomes ready to use. ● Off: The splitter will not be held. Note: For the GC-17A, GC-14B, or GC-14C, this parameter is not displayed.	On Off Auto	Off
Time	Specify the time period to hold the splitter.	0.00 to 9999.99 (min)	0.10



Parameter	Description	Setting range (unit)	Default value
Fan	When this parameter is checked, the injection port cooling fan will be used. Note: This parameter is disabled if [OCI/PTV Fan] is not specified for use on the [CRG Relay] tab page of the <System Configuration>-<GC Properties> window. Note: For the GC-14B, this parameter is not displayed.	Checked/Not checked	Not checked
	Specify the operating temperature of the fan. If the injection unit temperature decreases below the set value, the fan will start operating.	0.0 to 100.0 (°C)	50.0
Split Ratio Program	Sets the split ratio program. Note: For the GC-17A, GC-14B, or GC-14C, this parameter is not displayed.	1st row to 7th row	-
Time	Specify the time at which to change the split ratio.	0.00 to 9999.99 (min)	-
Split Ratio	Specify the split ratio.	-1, 0.0 to 9999.9	-

●OCI



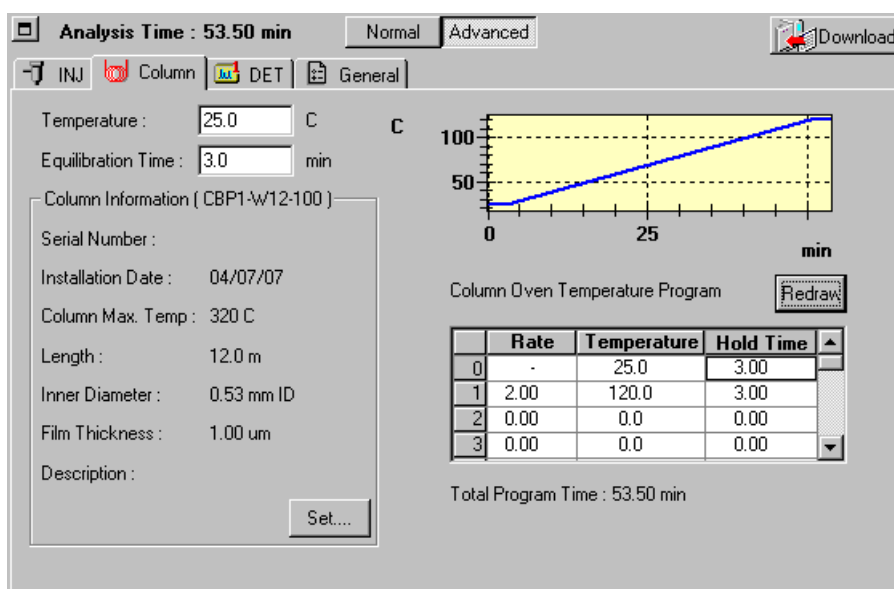
Parameter	Description	Setting range (unit)	Default value
Fan	When this parameter is checked, the injection port cooling fan will be used. Specify the operating temperature of the fan. Note: When OCI/PTV fan is used, this parameter can be Specified. Note: For the GC-14B, this parameter is not displayed.	Checked/Not checked	Not checked
	Set the temperature at which the fan starts operating. If the injection unit temperature decreases below the set value, the fan will start operating.	0.0 to 100.0 (°C)	50.0



5.5.5 <Instrument Parameters> View - [Column] Tab

The [Column] tab page of the <Instrument Parameters> view displays the parameters shown below.

If two analysis lines are selected, the [Column] tab page can be edited from either of those lines. However, [Column Information] shows the settings for each analysis line.



Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature of the column oven. Note: The upper limit temperature to be set is restricted by the upper limit temperature of the column.	[GC-2010] -99.0 to 450.0 (°C) [GC-2014] -99.0 to 400.0 (°C) [GC-2025] -99.0 to 400.0 (°C) [GC-17A] -99 to 450 (°C) [GC-1700] -99 to 400 (°C) [GC-14B] -99 to 399 (°C) [GC-14C] -99 to 420 (°C)	25.0
Equilibration Time	Specify the equilibration time. Note: For the GC-14B, this parameter is not displayed.	[GC-2010, GC-2014, GC-2025] 0.0 to 9999.9 (min) [Other than above] 0.0 to 655.0 (min)	3.0



Parameter	Description	Setting range (unit)	Default value
Column Information (Column Name)	Displays the column information. Note: If there are two analytical lines, regardless of which line is selected, the upper limit temperature of the column will be that of the lowest upper limit values for the working temperature of the column on both lines. <i>Refer to "4.5.3 <Analytical Line> - [Column] Tab" on page 48</i>	-	-
Column Oven Temperature Program	Allows you to set the control program for the column oven. The setting value in [Temperature] becomes the default value for [Temperature] on the 0th line.	[GC-2010, GC-2014, GC-2025] 0th to 20th row [Other than above] 0th to 5th row	-
	Rate	-250.0 to 250.0 (°C/min)	0.0 (cannot be set on the 0th line)
	Temperature	[GC-2010] -99.0 to 450.0 (°C) [GC-2014] -99.0 to 400.0 (°C) [GC-2025] -99.0 to 400.0 (°C) [GC-17A] -99 to 450 (°C) [GC-1700] -99 to 400 (°C) [GC-14B] -99 to 399 (°C) [GC-14C] -99 to 420 (°C)	25.0 (initial temperature on the 0th line)
	Hold Time	[GC-2010, GC-2014, GC-2025] 0.00 to 9999.99 (min) [Other than above] 0.0 to 655.0 (min)	0.00
Graph area [Redraw] button	When you click on this button, the created column oven temperature program will be redrawn as a graph.	-	-
Total Program Time	Displays the final time of the column oven temperature program.	- (min)	-
CRG	If this parameter is check-marked, the CRG for cooling the column oven will be used. Note: The CRG parameter appears when [CRG] (Column Oven) is check-marked on the [CRG/Relays] tab of <System Configuration> window. (<i>Refer to "4.4.2 <GC> - [CRG/Relays] Tab" on page 30</i>) Note: For the GC-14B, this parameter is not displayed.	Checked/Not checked	Not checked



Parameter	Description	Setting range (unit)	Default value
[Set] button	Displays the [Column] tab of <Analytical Line> window. <i>Refer to "4.5.3 <Analytical Line> - [Column] Tab" on page 48</i>	-	-



5.5.6 <Instrument Parameters> View - [Detector] Tab

5.5.6.1 FID ,FPD,FPD+ Detector

If the FID,FPD,FPD+ detector (WFID for the wide range type of the FID) is used, the following tabbed page appears:

Graph area

Program creation area

Setting the detector temperature

Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature for the detector	(for FID) [GC-2010] 0.0 to 450.0 (°C) [GC-2014] 0.0 to 400.0 (°C) [GC-2025] 0.0 to 400.0 (°C) [GC-17A] 0 to 450 (°C) [GC-1700] 0 to 400 (°C) [GC-14B] 0 to 399 (°C) [GC-14C] 0 to 420 (°C)	25.0



Parameter	Description	Setting range (unit)	Default value
		(for FPD) [GC-2010, GC-2014] 0.0 to 350.0 (°C) [GC-17A, GC-1700] 0 to 350 (°C) [GC-14B] 0 to 399 (°C) [GC-14C] 0 to 350 (°C)	25.0
AUX. Temperature 1	Specify the auxiliary temperature 1 for the detector. Note: Set this parameter when the FPD for the GC-17A or GC-1700 is used.	0 to 200 (°C)	25.0
AUX. Temperature 2	Specify the auxiliary temperature 2 for the detector. Note: Set this parameter when the FPD for the GC-17A or GC-1700 is used. This setting is required for the FPD-17c.	0 to 350 (°C)	25.0

Setting the detector signal

Parameter	Description	Setting range (unit)	Default value
Signal Acquire	When this parameter is checked, data acquisition will be performed in accordance with the settings for the following parameters. No data acquisition will be carried out unless the check box is checked.	Checked/Not checked	Checked
Sampling Rate	Select sampling time for chromatogram data from the list that is displayed by clicking on  on the right. <i>For the base period, refer to "4.5.4 <Analytical Line> - [Detector] Tab" on page 50</i>	-	-
	When the base period is 4 to 80 (msec)	1 to 20 times the base period	Base period
	When the base period is 100 ~ (msec)	1 to 10 times the base period	Base period
Stop Time	Specify the stop time for data acquisition.	0.00 to 9999.99 (min)	60.00
Subtract Detector	Select a subtract detector from the list that is displayed by clicking on  on the right. After it has been specified, the differential signals compared with the signals of the specified detector will be used as the data for the chromatogram. Note: This parameter can be set for the GC-2010 or GC-2014.	None DET#1 to #4 (the detector selected for the analysis line in the system configuration is displayed)	None
Delay Time	Specify the delay time between the start of the GC program and that of data acquisition. Enter a value smaller than Stop Time.	0.00 to 9999.99 (min)	0.00



Setting the parameters specific to the detector

Parameter	Description	Setting range (unit)	Default value
Range (Atten)	Specify the magnification factor for signals output from the detector. Note: For the GC-2010, GC-2014 or GC-2025, this parameter is not available. Note: For the wide-range-type detector, set Atten rather than Range.	(Range) 0 to 3	1
		(Atten) 0 to 4	1
Polarity	Specify the polarity of the detector. Note: For the GC-14B or GC-14C, this parameter can be set.	+, -	+

Settings for detector gas

For the GC-14B or GC-14C, no setting is available for detector gas.

For the GC-17A or GC-1700, set the gas flows at either flow rate or pressure in accordance with the APC control modes for makeup gas, H₂, and air under detector properties in the <System Configuration> window. For the GC-2010, the gas flows can only be set at flow rate.

Parameter	Description	Setting range (unit)	Default value
Makeup gas	Shows the makeup gas type selected in <System Configuration>. Note: For the FPD for the GC-2010 or GC-2014, no setting is available for makeup gas.		-
Makeup Flow (Makeup Pressure)	Specify the makeup gas flow at a flow rate or pressure value. Note: For the FPD for the GC-2010 or GC-2014, no setting for makeup gas. If H ₂ gas is used for makeup gas, setting range is the same as H ₂ flow and pressure.	(For specifying the flow rate) [GC-2010, GC-2014, GC-2025] 0.0 to 1200.0 (mL/min) [GC-17A, GC-1700] 0 to 970 (mL/min)	[GC-2010, GC-2014, GC-2025] 30 [GC-17 type] 28
		(For specifying the pressure) [GC-17A, GC-1700] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	75 kPa 0.75 bar 10.9 psi



Parameter	Description	Setting range (unit)	Default value											
H2 Flow (H2 Pressure)	Specify the flow at a flow rate or pressure value. Note: For FPD+ of the GC-2010, the initial value for the flow rate of H2 varies depending upon "Interference Filter for the Detector in Configuration". For FPD of the GC-2014, the initial value for the flow rate of H2 varies depending upon "Interference Filter for the Detector in Configuration" and "Injection Unit Type." ● H2 Flow (GC-2010 FPD+)	(For specifying the flow rate) [GC-2010, GC-2014, GC-2025] FID:0.0 to 100.0 (mL/min) FPD:0.0 to 200.0 (mL/min) [GC-17A, GC-1700] FID:0.0 to 100.0 (mL/min) FPD:0.0 to 200.0 (mL/min)	(For FID) [GC-2010, GC-2014, GC-2025] 40.0 [GC-17 type] 46 (For FPD) [GC-2010] 80 (For FPD+, see the left description column.) [GC-2014] (See the left description column.) [GC-17 type] 36											
	<table><tr><td>P</td><td>S</td><td>Sn</td></tr><tr><td>62.5</td><td>40.0</td><td>75.0</td></tr></table>	P	S	Sn	62.5	40.0	75.0							
	P	S	Sn											
	62.5	40.0	75.0											
● H2 Flow (GC-2014)	(For specifying the pressure) [GC-17A, GC-1700] FID:0 to 100 (kPa) 0 to 1.00 (bar) 0 to 14.5 (psi) FPD:0 to 200 (kPa) 0 to 2.00 (bar) 0 to 29.0 (psi)	(For FID) 60 kPa 0.60 bar 8.7 psi (For FPD) 50 kPa 0.50 bar 7.3 psi												
<table><tr><td></td><td>P</td><td>S</td><td>Sn</td></tr><tr><td>DINJ,SINJ</td><td>130.0</td><td>90.0</td><td>90.0</td></tr><tr><td>SPI, WBI, PTV, OCI</td><td>80.0</td><td>90.0</td><td>100.0</td></tr></table>		P	S	Sn	DINJ,SINJ	130.0	90.0	90.0	SPI, WBI, PTV, OCI	80.0	90.0	100.0		
	P	S	Sn											
DINJ,SINJ	130.0	90.0	90.0											
SPI, WBI, PTV, OCI	80.0	90.0	100.0											
Air Flow (Air Pressure)	Specify the air flow at a flow rate or pressure value. Note: For FPD+ of the GC-2010, the initial value for the flow rate of air varies depending upon "Interference Filter for the Detector in Configuration". For FPD of the GC-2014, the initial value for the flow rate of air varies depending upon "Interference Filter for the Detector in Configuration" and "Injection Unit Type." ● Air Flow (GC-2010 FPD+)	(For specifying the flow rate) [GC-2010, GC-2014, GC-2025] 0.0 to 1200.0 (mL/min) [GC-17A, GC-1700] 0 to 970 (mL/min)	(For FID) [GC-2010, GC-2014, GC-2025] 400 [GC-17 type] 480 (For FPD) [GC-2010] 120 (For FPD+, see the left description column.) [GC-2014] (See the left description column.) [GC-17 type] 480											
	<table><tr><td>P</td><td>S</td><td>Sn</td></tr><tr><td>90.0</td><td>60.0</td><td>65.0</td></tr></table>	P	S	Sn	90.0	60.0	65.0							
	P	S	Sn											
	90.0	60.0	65.0											
● Air Flow (GC-2014)	(For specifying the pressure) [GC-17A, GC-1700] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	50 kPa 0.50 bar 7.3 psi												
<table><tr><td></td><td>P</td><td>S</td><td>Sn</td></tr><tr><td>DINJ,SINJ</td><td>130.0</td><td>90.0</td><td>90.0</td></tr><tr><td>SPI, WBI, PTV, OCI</td><td>80.0</td><td>90.0</td><td>100.0</td></tr></table>		P	S	Sn	DINJ,SINJ	130.0	90.0	90.0	SPI, WBI, PTV, OCI	80.0	90.0	100.0		
	P	S	Sn											
DINJ,SINJ	130.0	90.0	90.0											
SPI, WBI, PTV, OCI	80.0	90.0	100.0											



Parameter	Description	Setting range (unit)	Default value
Flow Program (Pressure Program)	Allows you to set the program for the flow rates/ pressures of makeup gas, hydrogen, and air. On the 0th line, the default flow rate and hold time are displayed. Note: To set [Flow/Pressure Program], select a gas control program from the list that is displayed by clicking on  on the right, and then set the following parameters in the table. Note: For the GC-2014, no flow rate program is available. Note: The flow/pressure program for the GC-17A or GC-1700 can be set when the APC is AX1A, AX1B, AX2A, AX2B, AX3A, or AX3B.	[GC-2010, GC-2025] 0th to 7th lines [GC-17A, GC-1700] 0th to 5th lines	-
	Rate	(For flow program) [GC-2010, GC-2025] -400.00 to 400.00 (mL/min ²) [GC-17A, GC-1700] -400.0 to 400.0 (mL/min ²)	0.00 (The 0th line cannot be set.)
		(For pressure program) [GC-17A, GC-1700] -400.0 to 400.0 (kPa/min) -4.000 to 4.000 (bar/min) -58.01 to 58.01 (psi/min)	0.00 (The 0th line cannot be set.)
	Flow (Pressure)	(For flow program) [GC-2010, GC-2025] 0.0 to 1200.0 (mL/min) [GC-17A, GC-1700] 0 to 970 (mL/min)	0.0 (The 0th line is set to the default flow.)
		(For pressure program) [GC-17A, GC-1700] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	0.0 (The 0th line is set to the default flow.)
	Hold time	[GC-2010,GC-2025] 0.00 to 9999.99 (min) [GC-17A, GC-1700] 0.0 to 655.0 (min)	0.00
[Redraw] button	Redraws the graph.	-	-
Total Program Time	Displays the final time taken for the flow program.	-	-



5.5.6.2 DFID Detector

If the dual type FID detector (DFID detector) is used, the following tabbed page appears:

Setting the detector temperature

Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature for the detector	0.0 to 400.0 (°C)	25.0

Setting the detector signal

Parameter	Description	Setting range (unit)	Default value
Signal Acquire	When this parameter is checked, data acquisition will be performed in accordance with the settings for the following parameters. No data acquisition will be carried out unless the check box is checked.	Checked/Not checked	Checked
Sampling Rate	Select sampling time for chromatogram data from the list that is displayed by clicking on ☐ on the right. <i>For the base period, refer to "4.5.4 <Analytical Line> - [Detector] Tab" on page 50</i>	-	-
	When the base period is 4 to 80 (msec)	1 to 20 times the base period	Base period
	When the base period is 100 ~ (msec)	1 to 10 times the base period	Base period
Stop Time	Specify the stop time for data acquisition.	0.00 to 9999.99 (min)	60.00
Subtract Detector	Select a subtract detector from the list that is displayed by clicking on ☐ on the right. After it has been specified, the differential signals compared with the signals of the specified detector will be used as the data for the chromatogram.	None DET#1 to #4 (the detector selected for the analysis line in the system configuration is displayed)	None
Delay Time	Specify the delay time between the start of the GC program and that of data acquisition. Enter a value smaller than Stop Time.	0.00 to 9999.99 (min)	0.00

Setting the parameters specific to the detector

Parameter	Description	Setting range (unit)	Default value
Polarity	Specify the polarity of the detector.	+, -	+

Settings for detector gas



only be set at flow rate.

Parameter	Description	Setting range (unit)	Default value
Makeup gas	Shows the makeup gas type selected in <System Configuration>.		-
Makeup Flow	Specify the makeup gas flow at a flow rate or pressure value.	0.0 to 1200.0 (mL/min) If H2 gas is used for makeup gas, setting range is the same as H2 flow range.	30.0 When the injection unit type is the packed column (DINJ or SINJ): 0
H2 Flow	Specify the flow at a flow rate or pressure value.	0.0 to 100.0 (mL/min)	40.0
Air Flow	Specify the air flow at a flow rate or pressure value.	0.0 to 1200.0 (mL/min)	400.0

5.5.6.3 FTD Detector

If the FTD detector (WFTD for the wide range type of the FTD) is used, the following tabbed page appears:

Graph area

Program creation area

	Rate	Flow	Hold Time
0	0.00	27.5	0.00
1	0.00	0.0	0.00
2	0.00	0.0	0.00
3	0.00	0.0	0.00

Total Program Time : 0.00 min

Makeup Gas : He H2 Flow : 1.5 mL/min
Makeup Flow : 27.5 mL/min Air Flow : 145.0 mL/min



Setting the detector temperature

Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature for the detector	[GC-2010] 0.0 to 450.0 (°C) [GC-2014] 0.0 to 400.0 (°C) [GC-17A] 0 to 450 (°C) [GC-1700] 0 to 400 (°C) [GC-14B] 0 to 399 (°C) [GC-14C] 0 to 420 (°C)	25.0

Setting the detector signal

Parameter	Description	Setting range (unit)	Default value
Signal Acquire	When this parameter is checked, data acquisition will be performed in accordance with the settings for the following parameters. No data acquisition will be carried out unless the check box is checked.	Checked/Not checked	Checked
Sampling Rate	Select sampling time for chromatogram data from the list that is displayed by clicking on  on the right. <i>For the base period, refer to "4.5.4 <Analytical Line> - [Detector] Tab" on page 50</i>	-	-
	When the base period is 4 to 80 (msec)	1 to 20 times the base period	Base period
	When the base period is 100 ~ (msec)	1 to 10 times the base period	Base period
Stop Time	Specify the stop time for data acquisition.	0.00 to 9999.99 (min)	60.00
Subtract Detector	Select a subtract detector from the list that is displayed by clicking on  on the right. After it has been specified, the differential signals compared with the signals of the specified detector will be used as the data for the chromatogram. Note: This parameter can be set for the GC-2010 or GC-2014.	None DET#1 to #4 (the detector selected for the analysis line in the system configuration is displayed)	None
Delay Time	Specify the delay time between the start of the GC program and that of data acquisition. Enter a value smaller than Stop Time.	0.00 to 9999.99 (min)	0.00



Setting the parameters specific to the detector

Parameter	Description	Setting range (unit)	Default value
Range (Atten)	Specify the magnification factor for signals output from the detector. Note: For the GC-2010 or GC-2014, this parameter is not available. Note: For the wide-range-type detector, set Atten rather than Range.	(Range) 0 to 3	1
		(Atten) 0 to 4	1
Current	Specify the current value for the detector. Note: For the GC-14B, this parameter is not displayed.	[GC-2010] 0.00 to 10.00 (pA)	0
		[GC-17A, GC-1700] 0 to 100, 200 (pA)	0
		[GC-14C] 0 to 100, 200 (pA)	0
Voltage	Specify the voltage value for the detector. Note: For the GC-2010 or GC-2014, this parameter can be set.	[GC-2010] 0 to 100 (%)	0
Polarity	Specify the polarity of the detector. Note: For the GC-14B or GC-14C, this parameter can be set.	+, -	+

Settings for detector gas

For the GC-14B or GC-14C, no setting is available for detector gas.

For the GC-17A or GC-1700, set the gas flows at either flow rate or pressure in accordance with the APC control modes for makeup gas, H₂, and air under detector properties in the <System Configuration> window. For the GC-2010 or GC-2014, the gas flows can only be set at flow rate.

Parameter	Description	Setting range (unit)	Default value
Makeup gas	Shows the makeup gas type selected in <System Configuration>.		-
Makeup Flow (Makeup Pressure)	Specify the makeup gas flow at a flow rate or pressure value. If H ₂ gas is used for makeup gas, setting range is the same as H ₂ flow and pressure.	(For specifying the flow rate) [GC-2010, GC-2014] 0.0 to 1200.0 (mL/min) [GC-17A, GC-1700] 0 to 970 (mL/min)	[GC-2010, GC-2014] 27.5 When the injection unit type is the packed column (DINJ or SINJ): 0 [GC-17 type] 28
		(For specifying the pressure) [GC-17A, GC-1700] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	75 kPa 0.75 bar 10.9 psi



Parameter	Description	Setting range (unit)	Default value
H2 Flow (H2 Pressure)	Specify the flow at a flow rate or pressure value.	(For specifying the flow rate) [GC-2010, GC-2014] 0.0 to 30.0 (mL/min) [GC-17A, GC-1700] 0 to 30 (mL/min)	[GC-2010, GC-2014] 1.5 [GC-17 type] 4
		(For specifying the pressure) [GC-17A, GC-1700] 0 to 200 (kPa) 0 to 2.00 (bar) 0 to 29.0 (psi)	68 kPa 0.68 bar 9.9 psi
Air Flow (Air Pressure)	Specify the air flow at a flow rate or pressure value.	(For specifying the flow rate) [GC-2010, GC-2014] 0.0 to 1200.0 (mL/min) [GC-17A, GC-1700] 0 to 970 (mL/min)	[GC-2010, GC-2014] 145.0 [GC-17 type] 150
		(For specifying the pressure) [GC-17A, GC-1700] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	53 kPa 0.53 bar 7.7 psi
Flow Program (Pressure Program)	Allows you to set the program for the flow rates/pressures of makeup gas, hydrogen, and air. On the 0th line, the default flow rate and hold time are displayed. Note: To set [Flow/Pressure Program], select a gas control program from the list that is displayed by clicking on  on the right, and then set the following parameters in the table. Note: For the GC-2014, no flow rate program is available. Note: The flow/pressure program for the GC-17A or GC-1700 can be set when the APC is AX1A, AX1B, AX2A, AX2B, AX3A, or AX3B.	[GC-2010] 0th to 7th lines [GC-17A, GC-1700] 0th to 5th lines	-
		Rate	
		(For flow program) [GC-2010] -400.00 to 400.00 (mL/min ²) [GC-17A, GC-1700] -400.0 to 400.0 (mL/min ²)	0.00 (The 0th line cannot be set.)
		(For pressure program) [GC-17A, GC-1700] -400.0 to 400.0 (kPa/min) -4.000 to 4.000 (bar/min) -58.01 to 58.01 (psi/min)	0.00 (The 0th line cannot be set.)
	Flow (Pressure)	(For flow program) [GC-2010] 0.0 to 1200.0 (mL/min) [GC-17A, GC-1700] 0 to 970 (mL/min)	0.0 (The 0th line is set to the default flow.)



Parameter	Description	Setting range (unit)	Default value
		(For pressure program) [GC-17A, GC-1700] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	0.0 (The 0th line is set to the default flow.)
	Hold time	[GC-2010] 0.00 to 9999.99 (min) [GC-17A, GC-1700] 0.0 to 655.0 (min)	0.00
[Redraw] button	Redraws the graph.	-	-
Total Program Time	Displays the final time taken for the flow program.	-	-

5.5.6.4 ECD Detector

If the ECD detector is used, the following tabbed page will appear.

The screenshot shows the ECD Detector tabbed page with the following components:

- Temperature:** 200.0 °C
- Signal Acquire:** Checked
- Sampling Rate:** 40 msec
- Stop Time:** 6.00 min
- Delay Time:** 0.00 min
- Subtract Detector:** None
- Current:** 0.00 nA
- Makeup Gas:** N2/Air
- Makeup Flow:** 30.0 mL/min
- Flow Program:** Makeup (dropdown menu)
- Redraw** button
- Graph area:** A plot showing mL/min vs min with a yellow background and a dashed grid.
- Program creation area:** A table with columns Rate, Flow, and Hold Time.
- Total Program Time:** 0.00 min
- NUM** button

Setting the detector temperature

Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature for the detector	[GC-2010, GC-2014] 0.0 to 350.0 (°C)	25.0
		[Other than above] 0 to 350 (°C)	25



Setting the detector signal

Parameter	Description	Setting range (unit)	Default value
Signal Acquire	When this parameter is checked, data acquisition will be performed in accordance with the settings for the following parameters. No data acquisition will be carried out unless the check box is checked.	Checked/Not checked	Checked
Sampling Rate	Select sampling time for chromatogram data from the list that is displayed by clicking on  on the right. <i>For the base period, refer to "4.5.4 <Analytical Line> - [Detector] Tab" on page 50</i>	-	-
	When the base period is 4 to 80 (msec)	1 to 20 times the base period	Base period
	When the base period is 100 ~ (msec)	1 to 10 times the base period	Base period
Stop Time	Specify the stop time for data acquisition.	0.00 to 9999.99 (min)	60.00
Subtract Detector	Select a subtract detector from the list that is displayed by clicking on  on the right. After it has been specified, the differential signals compared with the signals of the specified detector will be used as the data for the chromatogram. Note: This parameter can be set for the GC-2010 or GC-2014.	None DET#1 to #4 (the detector selected for the analysis line in the system configuration is displayed)	None
Delay Time	Specify the delay time between the start of the GC program and that of data acquisition. Enter a value smaller than Stop Time.	0.00 to 9999.99 (min)	0.00

Setting the parameters specific to the detector

Parameter	Description	Setting range (unit)	Default value
Range (Atten)	Specify the magnification factor for signals output from the detector. Note: For the GC-2010 or GC-2014, this parameter is not available.	0 to 1	1
Current	Specify the current value for the detector.	[GC-2010] 0.00 to 3.50 (nA) [GC-17A, GC-1700] 0.05, 0.1, 0.2, 0.5, 1.0, 2.0 (nA) [GC-14B] 0.5, 1.0, 2.0 (nA) [GC-14C] 0.05, 0.1, 0.2, 0.5, 1.0, 2.0 (nA)	0.00 0.05 0.5 0.05



Settings for detector gas

For the GC-14B or GC-14C, no setting is available for detector gas.

For the GC-17A or GC-1700, set the gas flows at either flow rate or pressure in accordance with the APC control modes for makeup gas, H₂, and air under detector properties in the <System Configuration> window. For the GC-2010, the gas flows can only be set at flow rate.

Parameter	Description	Setting range (unit)	Default value
Makeup gas	Shows the makeup gas type selected in <System Configuration>.	-	-
Makeup Flow (Makeup Pressure)	Specify the makeup gas flow at a flow rate or pressure value. If H ₂ gas is used for makeup gas, for safety reason, setting range become lower.	(For specifying the flow rate) [GC-2010, GC-2014] 0.0 to 1200.0 (mL/min) [GC-17A, GC-1700] 0 to 970 (mL/min)	[GC-2010, GC-2014] 30.0 [GC-17 type] 28
		(For specifying the pressure) [GC-17A, GC-1700] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	75 kPa 0.75 bar 10.9 psi
Flow Program (Pressure Program)	Allows you to set the program for the flow rates/pressures of makeup gas, hydrogen, and air. On the 0th line, the default flow rate and hold time are displayed. Note: To set [Flow/Pressure Program], select a gas control program from the list that is displayed by clicking on  on the right, and then set the following parameters in the table. Note: For the GC-2014, no flow rate program is available. Note: The flow/pressure program for the GC-17A or GC-1700 can be set when the APC is AX1A, AX1B, AX2A, AX2B, AX3A, or AX3B.	[GC-2010] 0th to 7th lines [GC-17A, GC-1700] 0th to 5th lines	-
	Rate	(For flow program) [GC-2010] -400.00 to 400.00 (mL/min ²) [GC-17A, GC-1700] -400.0 to 400.0 (mL/min ²)	0.00 (The 0th line cannot be set.)
		(For pressure program) [GC-17A, GC-1700] -400.0 to 400.0 (kPa/min) -4.000 to 4.000 (bar/min) -58.01 to 58.01 (psi/min)	0.0 (The 0th line cannot be set.)
	Flow (Pressure)	(For flow program) [GC-2010] 0.0 to 1200.0 (mL/min) [GC-17A, GC-1700] 0 to 970 (mL/min)	0.0 (The 0th line is set to the default flow.)



Parameter	Description		Setting range (unit)	Default value
			(For pressure program) [GC-17A, GC-1700] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	0.0 (The 0th line is set to the default flow.)
		Hold time	[GC-2010] 0.00 to 9999.99 (min) [GC-17A, GC-1700] 0.0 to 655.0 (min)	0.00
[Redraw] button	Redraws the graph.		-	-
Total Program Time	Displays the final time taken for the flow program.		-	-



5.5.6.5 ECD-EX Detector

If the ECD-EX detector is used, the following tabbed page will appear.

Graph area

Program creation area

Setting the detector temperature

Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature for the detector	0.0 to 350.0 (°C)	25.0

Setting the detector signal

Parameter	Description	Setting range (unit)	Default value
Signal Acquire	When this parameter is checked, data acquisition will be performed in accordance with the settings for the following parameters. No data acquisition will be carried out unless the check box is checked.	Checked/Not checked	Checked
Sampling Rate	Select sampling time for chromatogram data from the list that is displayed by clicking on on the right. <i>For the base period, refer to "4.5.4 <Analytical Line> - [Detector] Tab" on page 50</i>	-	-
	When the base period is 4 to 80 (msec)	1 to 20 times the base period	Base period
	When the base period is 100 ~ (msec)	1 to 10 times the base period	Base period
Stop Time	Specify the stop time for data acquisition.	0.00 to 9999.99 (min)	60.00
Subtract Detector	Select a subtract detector from the list that is displayed by clicking on on the right. After it has been specified, the differential signals compared with the signals of the specified detector will be used as the data for the chromatogram.	None DET#1 to #4 (the detector selected for the analysis line in the system configuration is displayed)	None



Parameter	Description	Setting range (unit)	Default value
Delay Time	Specify the delay time between the start of the GC program and that of data acquisition. Enter a value smaller than Stop Time.	0.00 to 9999.99 (min)	0.00

Setting the parameters specific to the detector

Parameter	Description	Setting range (unit)	Default value
Current	Specify the current value for the detector.	0.00 to 3.50 (nA)	2.00

Settings for detector gas

Parameter	Description	Setting range (unit)	Default value
ECD gas	Shows the ECD gas type selected in <System Configuration>.	-	-
ECD Flow	Specify the ECD gas flow at a flow rate value. If H ₂ gas is used for ECD gas, for safety reason, setting range become lower.	0.0 to 1200.0 (mL/min)	60.0
Flow Program	Allows you to set the program for the flow rates/ pressures of ECD gas. On the 0th line, the default flow rate and hold time are displayed.	0th to 7th lines	-
	Rate	-400.00 to 400.00 (mL/min ²)	0.00 (The 0th line cannot be set.)
	Flow (Pressure)	0.0 to 1200.0 (mL/min)	0.0 (The 0th line is set to the default flow.)
	Hold time	0.00 to 9999.99 (min)	0.00
[Redraw] button	Redraws the graph.	-	-
Total Program Time	Displays the final time taken for the flow program.	-	-



5.5.6.6 TCD Detector

If the TCD detector (TCD-S or TCD-L for the GC-2014) is used, the following tab page will appear.

Graph area

Program creation area

	Rate	Flow	Hold Time
0	-	8.0	0.00
1	0.00	0.0	0.00
2	0.00	0.0	0.00
3	0.00	0.0	0.00

Total Program Time : 0.00 min

Setting the detector temperature

Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature for the detector	[GC-2010, GC-2014] 0.0 to 400.0 (°C) [GC-17A, GC-1700] 0 to 400 (°C) [GC-14B] 0 to 399 (°C) [GC-14C] 0 to 400 (°C)	25.0
Temperature (Pre)	Specify the temperature for the preheater of the detector. Set this parameter for only the TCD-L for the GC-2014. For the TCD-S of the GC-2010 with pre-heater unit, the same value as "Temperature" is set and displayed automatically.	0.0 to 400.0 (°C)	25.0

Setting the detector signal

Parameter	Description	Setting range (unit)	Default value
Signal Acquire	When this parameter is checked, data acquisition will be performed in accordance with the settings for the following parameters. No data acquisition will be carried out unless the check box is checked.	Checked/Not checked	Checked



Parameter	Description	Setting range (unit)	Default value
Sampling Rate	Select sampling time for chromatogram data from the list that is displayed by clicking on  on the right. <i>For the base period, refer to "4.5.4 <Analytical Line> - [Detector] Tab" on page 50</i>	-	-
	When the base period is 4 to 80 (msec)	1 to 20 times the base period	Base period
	When the base period is 100 ~ (msec)	1 to 10 times the base period	Base period
Stop Time	Specify the stop time for data acquisition.	0.00 to 9999.99 (min)	60.00
Subtract Detector	Select a subtract detector from the list that is displayed by clicking on  on the right. After it has been specified, the differential signals compared with the signals of the specified detector will be used as the data for the chromatogram. Note: This parameter can be set for the GC-2010 or GC-2014.	None DET#1 to #4 (the detector selected for the analysis line in the system configuration is displayed)	None
Delay Time	Specify the delay time between the start of the GC program and that of data acquisition. Enter a value smaller than Stop Time.	0.00 to 9999.99 (min)	0.00

Setting the parameters specific to the detector

Parameter	Description	Setting range (unit)	Default value
Range (Atten)	Specify the magnification factor for signals output from the detector. Note: For the GC-2010, GC-2014 and GC-14B, this parameter is not available.	[GC-17A, GC-1700] 0 to 1 [GC-14C] 1	1
Current	Specify the current value for the detector.	[GC-2010] 0 to 100 (mA) [GC-2014] 0 to 200 (mA) [GC-17A, GC-1700] 0 to 100 (mA) [GC-14B, GC-14C] 0 to 200 (mA)	0
Polarity	Specify the polarity of the detector.	+, -	+

Settings for detector gas

For the GC-14B or GC-14C or GC-2014, no setting is available for detector gas.

For the GC-17A or GC-1700, set the gas flows at either flow rate or pressure in accordance with the APC control modes for makeup gas under detector properties in the <System Configuration> window. For the GC-2010, the gas flows can only be set



at flow rate.

Parameter	Description	Setting range (unit)	Default value
Makeup gas	Shows the makeup gas type selected in <System Configuration>.	-	-
Makeup Flow (Makeup Pressure)	Specify the makeup gas flow at a flow rate or pressure value.	(For specifying the flow rate) [GC-2010] 0.0 to 1200.0 (mL/min) [GC-17A, GC-1700] 0 to 970 (mL/min)	[GC-2010] For TCD-S: 8 For TCD-L: 30 [GC-17 type] 28
	If H ₂ gas is used for makeup gas, for safety reason, setting range become lower.	(For specifying the pressure) [GC-17A, GC-1700] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	75 kPa 0.75 bar 10.9 psi
Flow Program (Pressure Program)	Allows you to set the program for the flow rates/ pressures of makeup gas, hydrogen, and air. On the 0th line, the default flow rate and hold time are displayed. Note: To set [Flow/Pressure Program], select a gas control program from the list that is displayed by clicking on  on the right, and then set the following parameters in the table. Note: The flow/pressure program for the GC-17A or GC-1700 can be set when the APC is AX1A, AX1B, AX2A, AX2B, AX3A, or AX3B.	[GC-2010] 0th to 7th lines [GC-17A, GC-1700] 0th to 5th lines	-
		Rate	
		(For flow program) [GC-2010] -400.00 to 400.00 (mL/min ²) [GC-17A, GC-1700] -400.0 to 400.0 (mL/min ²)	0.00 (The 0th line cannot be set.)
		(For pressure program) [GC-17A, GC-1700] -400.0 to 400.0 (kPa/min) -4.000 to 4.000 (bar/min) -58.01 to 58.01 (psi/min)	0.00 (The 0th line cannot be set.)
		Flow (Pressure)	
		(For flow program) [GC-2010] 0.0 to 1200.0 (mL/min) [GC-17A, GC-1700] 0 to 970 (mL/min)	0.0 (The 0th line is set to the default flow.)
		(For pressure program) [GC-17A, GC-1700] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	0.0 (The 0th line is set to the default flow.)



Parameter	Description	Setting range (unit)	Default value
	Hold time	[GC-2010] 0.00 to 9999.99 (min) [GC-17A, GC-1700] 0.0 to 655.0 (min)	0.00
[Redraw] button	Redraws the graph.	-	-
Total Program Time	Displays the final time taken for the flow program.	-	-



5.5.6.7 BID Detector

If the BID detector for the GC-2010 is used, the following tab page will appear.

Temperature : 200.0 C

☒ Signal Acquire

Sampling Rate : 40 msec

Stop Time : 60.00 min

Delay Time : 0.00 min

Subtract Detector : None

Flow Program : Discharge Gas

Redraw

	Rate	Flow	Hold Time
0	-	40.0	0.00
1	0.00	0.0	0.00
2	0.00	0.0	0.00
3	0.00	0.0	0.00

Total Program Time : 0.00 min

Discharged Flow : 40.0 mL/min

Setting the detector temperature

Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature for the detector	0.0 to 350.0 (°C)	25.0

Setting the detector signal

Parameter	Description	Setting range (unit)	Default value
Signal Acquire	When this parameter is checked, data acquisition will be performed in accordance with the settings for the following parameters. No data acquisition will be carried out unless the check box is checked.	Checked/Not checked	Checked
Sampling Rate	Select sampling time for chromatogram data from the list that is displayed by clicking on  on the right. <i>For the base period, refer to "4.5.4 <Analytical Line> - [Detector] Tab" on page 50</i>	-	-
	When the base period is 4 to 80 (msec)	1 to 20 times the base period	Base period
	When the base period is 100 ~ (msec)	1 to 10 times the base period	Base period
Stop Time	Specify the stop time for data acquisition.	0.00 to 9999.99 (min)	60.00



Parameter	Description	Setting range (unit)	Default value
Subtract Detector	Select a subtract detector from the list that is displayed by clicking on  on the right. After it has been specified, the differential signals compared with the signals of the specified detector will be used as the data for the chromatogram.	None DET#1 to #4 (the detector selected for the analysis line in the system configuration is displayed)	None
Delay Time	Specify the delay time between the start of the GC program and that of data acquisition. Enter a value smaller than Stop Time.	0.00 to 9999.99 (min)	0.00

Settings for detector gas

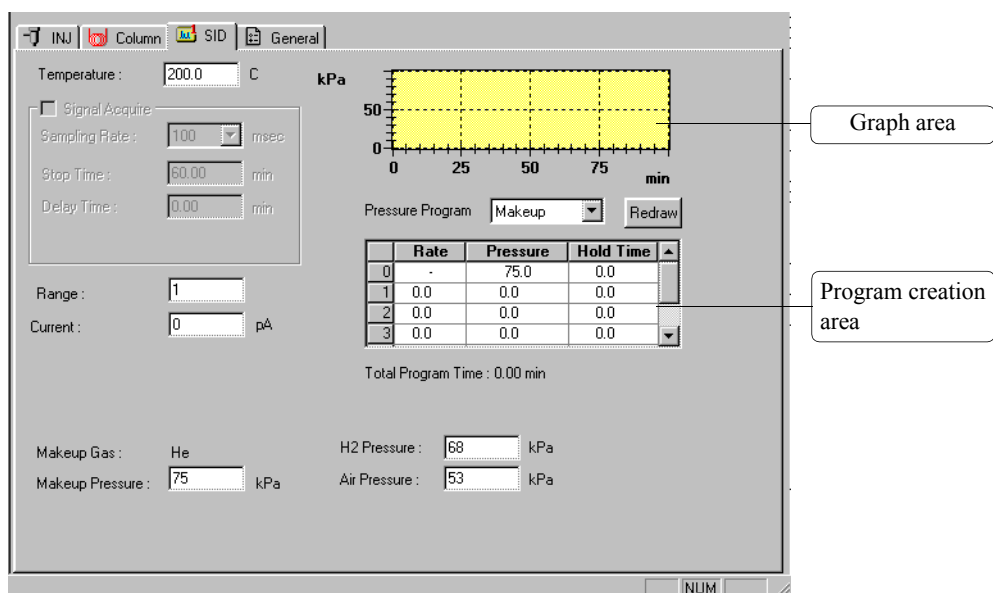
Parameter	Description	Setting range (unit)	Default value
Discharged Flow	Specify the Discharge Gas flow at a flow rate value.	0.0 to 100.0 (mL/min)	50.0
Flow Program	Allows you to set the program for the flow rates of Discharge Gas. On the 0th line, the default flow rate and hold time are displayed.	0th to 7th lines	-
		Rate	0.00 (The 0th line cannot be set.)
		Flow	0.0 to 100.0 (mL/min) 0.0 (The 0th line is set to the default flow.)
		Hold time	0.00 to 9999.99 (min) 0.00
[Redraw] button	Redraws the graph.	-	-
Total Program Time	Displays the final time taken for the flow program.	-	-



5.5.6.8 SID Detector

If an SID detector is used, the following tabbed page is displayed.

For the GC-2010 or GC-2014, no SID detector is used.



Setting the detector temperature

Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature for the detector	[GC-17A] 0 to 450 (°C) [GC-1700] 0 to 400 (°C) [GC-14B] 0 to 399 (°C) [GC-14C] 0 to 420 (°C)	25

Setting the detector signal

Parameter	Description	Setting range (unit)	Default value
Signal Acquire	When this parameter is checked, data acquisition will be performed in accordance with the settings for the following parameters. No data acquisition will be carried out unless the check box is checked.	Checked/Not checked	Checked



Parameter	Description	Setting range (unit)	Default value
Sampling Rate	Select sampling time for chromatogram data from the list that is displayed by clicking on  on the right. <i>For the base period, refer to "4.5.4 <Analytical Line> - [Detector] Tab" on page 50</i>	-	-
	When the base period is 4 to 80 (msec)	1 to 20 times the base period	Base period
	When the base period is 100 ~ (msec)	1 to 10 times the base period	Base period
Stop Time	Specify the stop time for data acquisition.	0.00 to 9999.99 (min)	60.00
Delay Time	Specify the delay time between the start of the GC program and that of data acquisition. Enter a value smaller than Stop Time.	0.00 to 9999.99 (min)	0.00

Setting the parameters specific to the detector

Parameter	Description	Setting range (unit)	Default value
Range	Specify the magnification factor for signals output from the detector.	0 to 3	1
Current	Specify the current value for the detector. Note: For the GC-14B, this parameter is not displayed.	[GC-17A, GC-1700] 0 to 100, 200 (pA) [GC-14C] 0 to 100, 200 (pA)	0 0
Polarity	Specify the polarity of the detector. Note: For the GC-14B or GC-14C, this parameter can be set.	+, -	+

Settings for detector gas

For the GC-14B or GC-14C, no setting is available for detector gas.

For the GC-17A or GC-1700, set the gas flows at either flow rate or pressure in accordance with the APC control modes for makeup gas, H₂, and air under detector properties in the <System Configuration> window. For the GC-2010, the gas flows can only be set at flow rate.

Parameter	Description	Setting range (unit)	Default value
Makeup gas	Shows the makeup gas type selected in <System Configuration>.	-	-
Makeup Flow (Makeup Pressure)	Specify the makeup gas flow at a flow rate or pressure value.	(For specifying the flow rate) [GC-17A, GC-1700] 0 to 970 (mL/min)	28
		(For specifying the pressure) [GC-17A, GC-1700] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	75 kPa 0.75 bar 10.9 psi



Parameter	Description	Setting range (unit)	Default value	
H2 Flow (H2 Pressure)	Specify the flow at a flow rate or pressure value.	(For specifying the flow rate) [GC-17A, GC-1700] 0 to 970 (mL/min)	4	
		(For specifying the pressure) [GC-17A, GC-1700] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	68 kPa 0.68 bar 9.9 psi	
Air Flow (Air Pressure)	Specify the air flow at a flow rate or pressure value.	(For specifying the flow rate) [GC-17A, GC-1700] 0 to 970 (mL/min)	150	
		(For specifying the pressure) [GC-17A, GC-1700] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	53 kPa 0.53 bar 7.7 psi	
Flow Program (Pressure Program)	Allows you to set the program for the flow rates/ pressures of makeup gas, hydrogen, and air. On the 0th line, the default flow rate and hold time are displayed. Note: To set [Flow/Pressure Program], select a gas control program from the list that is displayed by clicking on  on the right, and then set the following parameters in the table. Note: The flow/pressure program for the GC-17A or GC-1700 can be set when the APC is AX1A, AX1B, AX2A, AX2B, AX3A, or AX3B.	[GC-17A, GC-1700] 0th to 5th lines	-	
		Rate	(For flow program) [GC-17A, GC-1700] -400.0 to 400.0 (mL/min ²)	0.00 (The 0th line cannot be set.)
			(For pressure program) [GC-17A, GC-1700] -400.0 to 400.0 (kPa/min) -4.000 to 4.000 (bar/min) -58.01 to 58.01 (psi/min)	0.00 (The 0th line cannot be set.)
		Flow (Pressure)	(For flow program) [GC-17A, GC-1700] 0 to 970 (mL/min)	0.0 (The 0th line is set to the default flow.)
			(For pressure program) [GC-17A, GC-1700] 0 to 400 (kPa) 0 to 4.00 (bar) 0 to 58.0 (psi)	0.0 (The 0th line is set to the default flow.)
		Hold time	[GC-17A, GC-1700] 0.0 to 655.0 (min)	0.00



Parameter	Description	Setting range (unit)	Default value
[Redraw] button	Redraws the graph.	-	-
Total Program Time	Displays the final time taken for the flow program.	-	-

5.5.6.9 Other Detector for GC-2014

If any other detector for the GC-2014 is used, the following tabbed page is displayed.

Setting the detector signal

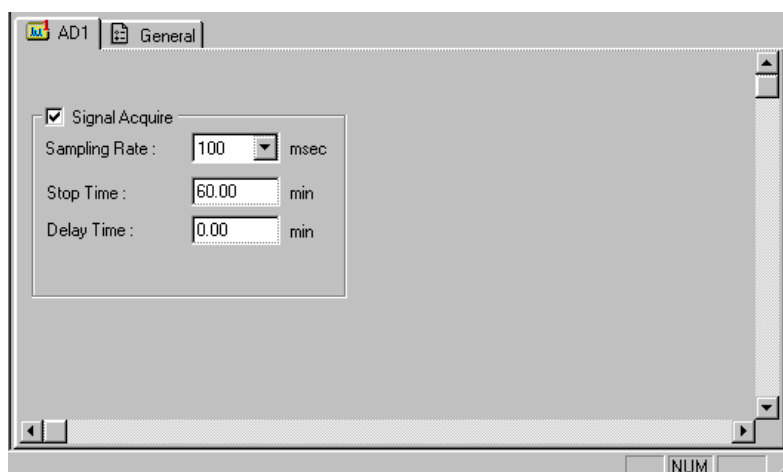
Parameter	Description	Setting range (unit)	Default value
Signal Acquire	When this parameter is checked, data acquisition will be performed in accordance with the settings for the following parameters. No data acquisition will be carried out unless the check box is checked.	Checked/Not checked	Checked
Sampling Rate	Select sampling time for chromatogram data from the list that is displayed by clicking on  on the right. <i>For the base period, refer to "4.5.4 <Analytical Line> - [Detector] Tab" on page 50</i>	-	-
	When the base period is 4 to 80 (msec)	1 to 20 times the base period	Base period
	When the base period is 100 ~ (msec)	1 to 10 times the base period	Base period
Stop Time	Specify the stop time for data acquisition.	0.00 to 9999.99 (min)	60.00
Delay Time	Specify the delay time between the start of the GC program and that of data acquisition. Enter a value smaller than Stop Time.	0.00 to 9999.99 (min)	0.00
Subtract Detector	Select a subtract detector from the list that is displayed by clicking on  on the right. After it has been specified, the differential signals compared with the signals of the specified detector will be used as the data for the chromatogram.	None DET#1 to #4 (the detector selected for the analysis line in the system configuration is displayed)	None



5.5.6.10 Other Detectors

If any other detector is used, the following tabbed page is displayed.

When Instrument Type is set to [Others (CBM-102)], a detector of this category is applicable.



Setting the detector signal

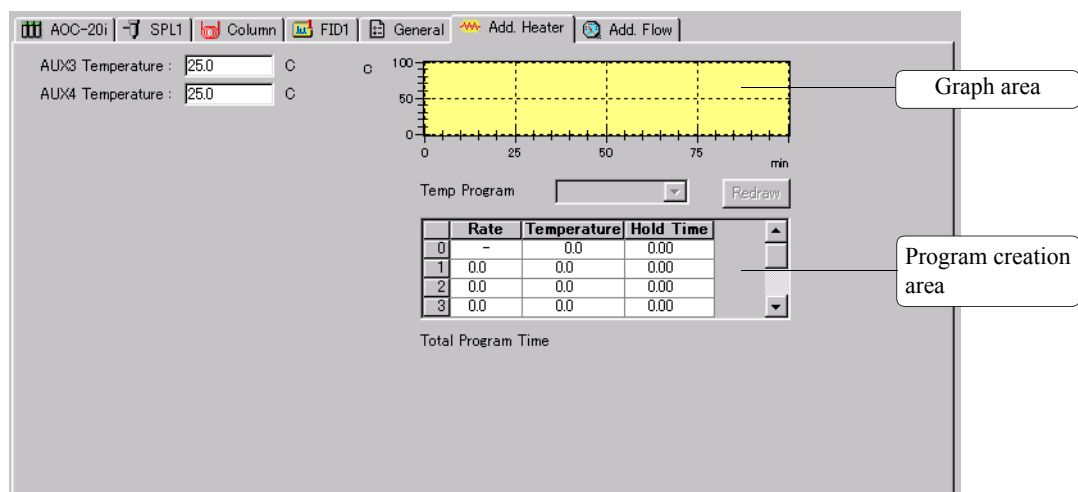
Parameter	Description	Setting range (unit)	Default value
Signal Acquire	When this parameter is checked, data acquisition will be performed in accordance with the settings for the following parameters. No data acquisition will be carried out unless the check box is checked.	Checked/Not checked	Checked
Sampling Rate	Select sampling time for chromatogram data from the list that is displayed by clicking on  on the right. <i>For the base period, refer to "4.5.4 <Analytical Line> - [Detector] Tab" on page 50</i>	-	-
	When the base period is 20 to 80 (msec)	1 to 20 times the base period	Base period
	When the base period is 100 ~ (msec)	1 to 10 times the base period	Base period
Stop Time	Specify the stop time for data acquisition.	0.00 to 9999.99 (min)	60.00
Delay Time	Specify the delay time between the start of the GC program and that of data acquisition. Enter a value smaller than Stop Time.	0.00 to 9999.99 (min)	0.00



5.5.7 <Instrument Parameters> View - [Additional Heater] Tab

This section describes the parameters on the [Additional Heater] tab page of the <Instrument Parameters> view.

On the tag page, set the parameters for the heater unit that has been selected as an additional heater in the system configuration.



Parameter	Description	Setting range (unit)	Default value
Temperature	Specify the temperature for each heater unit. Note: For the GC-2010 or GC-2014, when the heat unit port is AUX4 and the heat unit type is PYR1, the setting range is 0.0 to 800.0°C. Note: For the GC-2010, when the heat unit ports are INJ1 and INJ2, the setting range is -99.0 to 450.0. Note: For the GC-2014, when the heat unit ports are INJ1 and INJ2, the setting range is -99.0 to 400.0. Note: For the GC-17A, GC-1700, or GC-14C, when the heat unit port is AUX1, the lower limit of the setting range is -99.	[GC-2010] 0.0 to 450.0 (°C) [GC-2014] 0.0 to 400.0 (°C) [GC-17A] 0 to 450 (°C) [GC-1700] 0 to 400 (°C) [GC-14B] 0 to 399 (°C) [GC-14C] 0 to 420 (°C)	25.0



Parameter	Description	Setting range (unit)	Default value
Temp Program	Allows you to set the following control program for each heater unit. For the GC-2010, the temperature program can be set only when the heat unit ports are INJ1 and INJ2. For any other GC type, the temperature program can be set only when the heat unit port is AUX1. Note: To set [Temp Program], select a desired heater unit from the pull-down menu. Note: No temperature programs are available for the GC-2014.	-	-
	Rate	-400.0 to 400.0 (°C/min)	0.00 (The 0th line cannot be set.)
	Temperature	[GC-2010] 0.0 to 450.0 (°C) [GC-17A] 0 to 450 (°C) [GC-1700] 0 to 400 (°C) [GC-14B] 0 to 399 (°C) [GC-14C] 0 to 420 (°C)	0.00 (The 0th line is set to the default flow.)
	Hold Time	[GC-2010] 0.00 to 9999.99 (min) [Other than above] 0.0 to 655.0 (min)	0.00
Total Program Time	Displays the final time of the temperature program.	-	-

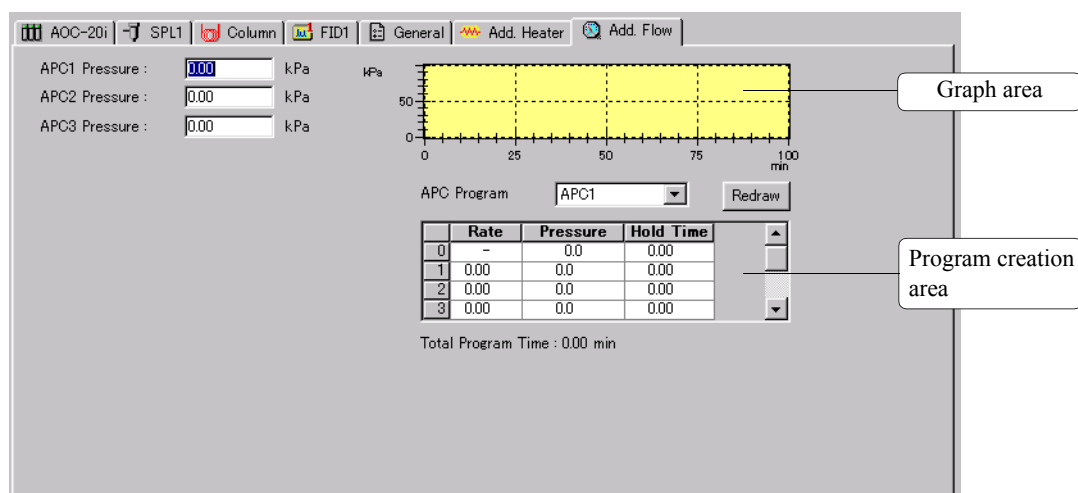


5.5.8 <Instrument Parameters> View - [Add. Flow] Tab

This section describes the parameters on the [Add. Flow] tab page of the <Instrument Parameters> view.

On this tab page, set the parameters for the flow unit that has been selected for an additional flow in the system configuration.

For the GC-14B or GC-14C, no additional flow is displayed.



Parameter	Description	Setting range (unit)	Default value
Pressure	Specify the pressure.	[GC-2010, GC-2014] 0.00 to 970.00 (kPa) 0.00 to 9.70 (bar) 0.0 to 140.6 (psi)	0.0
		[GC-17A] 0 to 400 (kPa) 0.00 to 4.00 (bar) 0.0 to 58.0 (psi)	0
Flow	Specify the flow rate.	[GC-2010] 0.0 to 1200.0 (mL/min)	0.0
AMC Flow	Set a flow rate of each AMC.	[GC-2014] 0.0 to 100.0 (mL/min)	0.0



Parameter	Description		Setting range (unit)	Default value
APC Program	Allows you to create the following control program for each unit. Note: To set the control program, select a desired flow unit from the pull-down menu, and then set the following parameters. If [Pressure] is selected for [Control Mode] in the <System Configuration> window, set the pressure control program. If [Flow] is selected, set the flow control program. The value specified for [Pressure] or [Flow] on the same tab page will become the initial value for [Pressure] or [Flow] in the control program. Note: Set a flow rate of each AMC.		-	-
	Pressure	Rate	[GC-2010] -400.0 to 400.0 (kPa/min) -4.000 to 4.000 (bar/min) -58.01 to 58.01 (psi/min)	0.00 (The 0th line cannot be set.)
			[GC-17A, GC-1700] -400.0 to 400.0 (kPa/min) -4.000 to 4.000 (bar/min) -58.01 to 58.01 (psi/min)	0.000 (The 0th line cannot be set.)
		Pressure	[GC-2010] 0.0 to 970.0 (kPa) 0.00 to 9.70 (bar) 0.0 to 140.6 (psi)	0.0 (The 0th line shows the default pressure.)
			[GC-17A, GC-1700] 0 to 400 (kPa) 0.00 to 4.00 (bar) 0.0 to 58.0 (psi)	0.00 (The 0th line shows the default pressure.)
		Hold Time	[GC-2010] 0.00 to 9999.99 (min)	0.00
			[GC-17A, GC-1700] 0.0 to 655.0 (min)	0.0
	Flow	Rate	[GC-2010] -400.0 to 400.0 (mL/min ²)	0.0 (The 0th line cannot be set.)
		Flow	[GC-2010] 0.0 to 1200.0 (mL/min)	0.0 (The 0th line shows the default flow.)
		Hold Time	[GC-2010] 0.00 to 9999.99 (min)	0.00
Total Program Time	Displays the final time of the APC program.		-	-

Note: Specify either [Pressure] or [Flow] according to the setting for [Control Mode] in the <System Configuration> window. For the GC-17A or GC-1700, only [Pressure] is displayed.



5.5.9 <Instrument Parameters> View - [GC] Tab

This section describes the parameters on the [GC] tab page of the <Instrument Parameters> view.

[GC] tab is displayed in Normal Setting display mode.

Only frequently changed parameters are on this tab.

ADC-20i+s GC

Acquisition Time

Detector : FID1

Stop Time : 60.00 min

Temperature

SPL1 : 25.0 C

Column Oven : 25.0 C

FID1 : 25.0 C

Detector Details...

Flow

Carrier Gas Type : He

Injection Mode : Split

Sampling Time : 1.00 min

Pressure : 100.0 kPa

Total Flow : 50.0 mL/min

Column Flow : 4.62 mL/min

Split Ratio : -1.0

Details...

Temperature Program : Column Oven

Redraw

	Rate	Temperature	Hold Time
0	-	25.0	0.00
1	0.00	0.0	0.00
2	0.00	0.0	0.00
3	0.00	0.0	0.00

Total Program Time : 0.00 min

Column Information

Name : CBP1-S25-050

Length : 25.0 m Inner Diameter : 0.32 mm ID

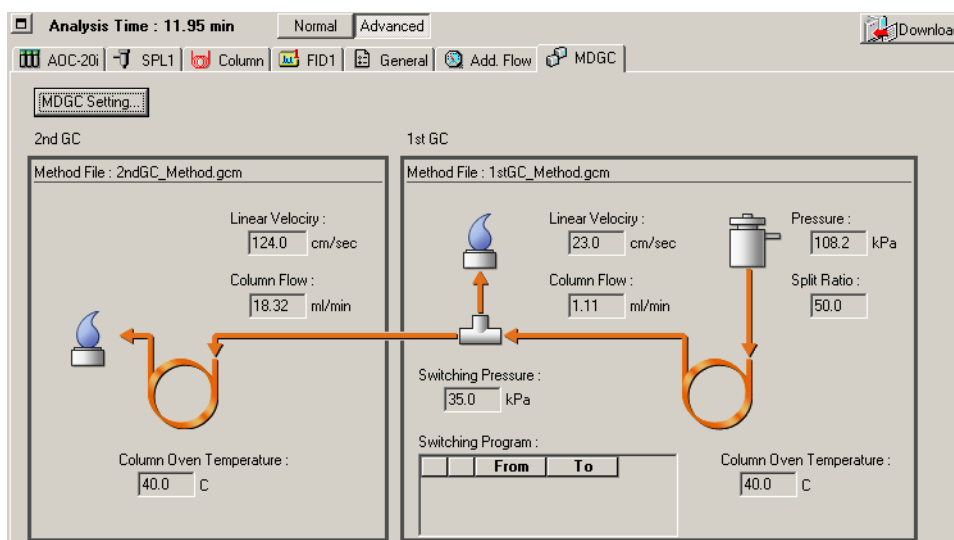
Set...



5.5.10 <Instrument Parameters> View - [MDGC] Tab

The [MDGC] tab page of the <Instrument Parameters> view displays set values of carrier gas pressure, flow and the switching program.

To edit those parameters, press [MDGC setting...] button to display <MDGC Setting> window.

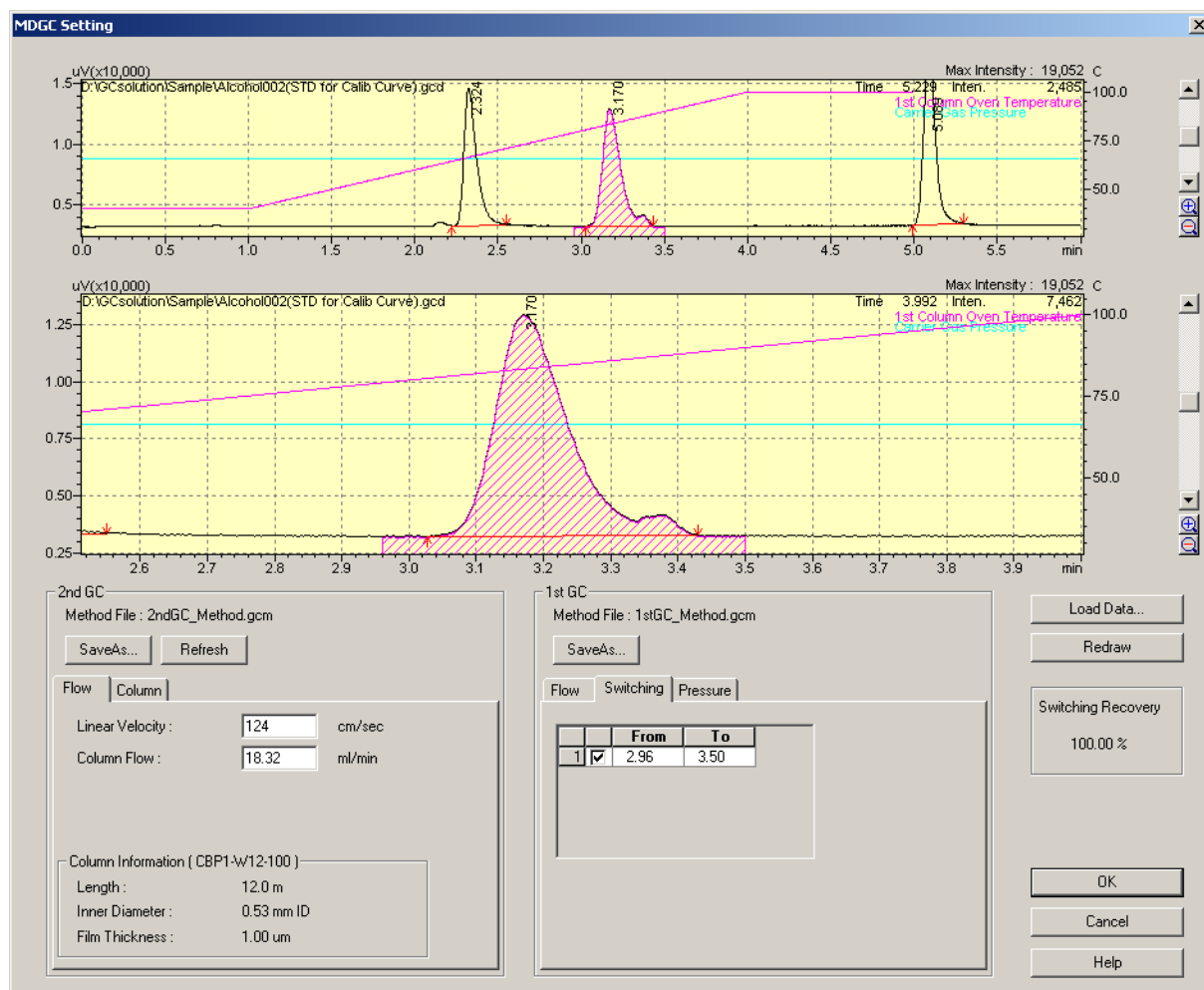


Note: Pictures of the detectors are changed to display actual installed detectors.



5.5.10.1 <MDGC Setting>

<MDGC Setting> displays a chromatogram on the upper side and analytical parameters and programs on the lower side. On the left of the lower side, there is the 2nd GC/GCMS, the right side is the 1st GC setting area. You can switch setting items on the tabs.



To edit the switching program, display the [Switching] tab on the top, and then double click on the start and end point of the switching range on the chromatogram. Click on [Add] button on the <Switching range> window to display the switching area on the graph.



1stGC -[Flow] tab

Parameter	Description	Setting range (unit)	Default value
Linear Velocity	Specify the linear velocity.	(cm/sec)	Calculated value
Column Flow	Specify the column flow rate.	(ml/min)	Calculated value
Split Ratio	Specify the split ratio 1:X (Column Flow: Split Flow). Note: This parameter cannot be set if [Split Mode] is set to [Direct] for the SPL (PTV) or if WBI (OCI) is used. Note: If -1 is specified, split ratio is calculated using current flow setting.	-1, 0.0 to 9999.9	-1
Switching Pressure	Specify the switching pressure. Set the lower value than the carrier gas pressure and then the switching recovery is 100%.	0.00 to 970.0 (kPa)	0.00

1stGC -[Switching] tab

Parameter	Description	Setting range (unit)	Default value
Switching Program	Specify switching ranges (minute unit). If you remove the check mark of some ranges, they become invalid ranges.	both [From] and [To] 0.00 to 9999.99 (min)	0.00

1stGC -[Pressure] tab

Parameter	Description	Setting range (unit)	Default value
Pressure Program	Rate	-400.00 to 400.00 (kPa/min)	0.00
	Pressure When the primary pressure is 980 kPa When the primary pressure is 400 or 600 kPa	0.0 to 970.0 (kPa) 0.0 to 400.0 (kPa)	100.0
	Hold Time	0.00 to 9999.99 (min)	0.00

2ndGC or GCMS -[Flow] tab

Parameter	Description	Setting range (unit)	Default value
Linear Velocity	Specify the linear velocity.	(cm/sec)	Calculated value
Column Flow	Specify the column flow rate.	(ml/min)	Calculated value
Column Outlet Pressure	Displayed when the [2nd column outlet press] is on in the system configuration setting. Specify the pressure value of the APC on the column outlet position.	0.0 to 970.0 (kPa)	0.00

**2ndGC or GCMS -[Column] tab**

Parameter	Description	Setting range (unit)	Default value
Column Temperature Program	Rate	-250.0 to 250.0 (°C/min)	0.0
	Temperature	-99.0 to 450.0 (°C)	0.0
	Hold Time	0.00 to 9999.99 (min)	0.00
	Total Program Time	Displays the total running time of the program.	

2ndGC or GCMS -[Cryotrap] tab

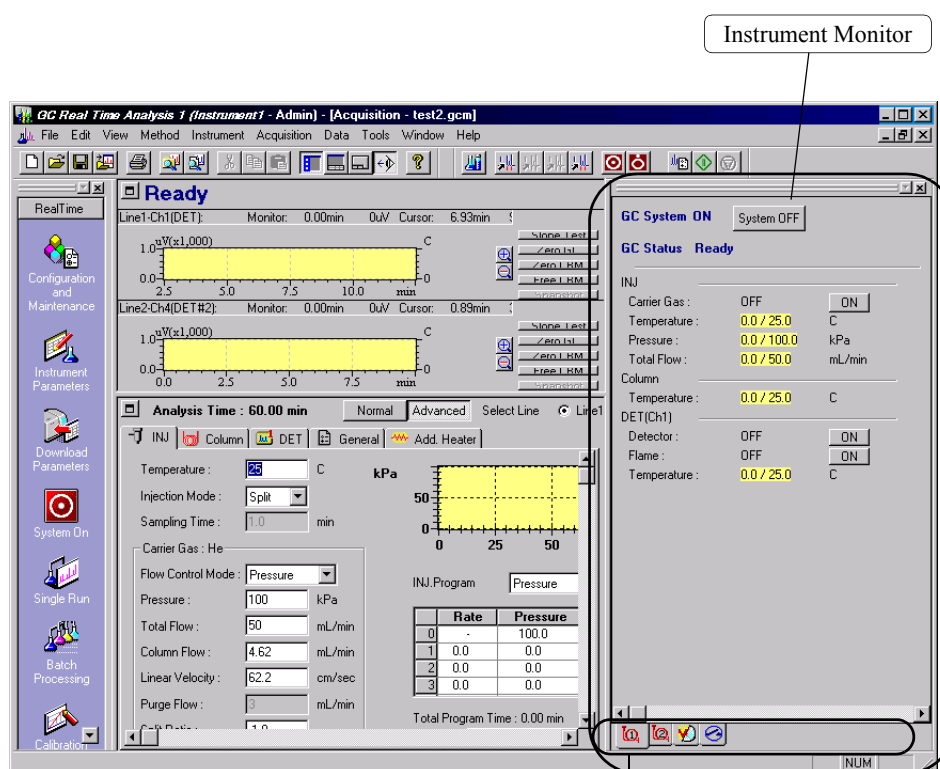
Parameter	Description	Setting range (unit)	Default value
Cryotrap Program	Displayed when the [Cryotrap] is on in the system configuration setting. You can set cooling ON/OFF time range for the cryotrap.	Time 0.00 to 9999.99 (min) ON/OFF	0.00 OFF

5.6

<Instrument Monitor> Window

The <Instrument Monitor> window displays the state of each device. It allows you to check the state of each device before or during data acquisition.

5.6.1 What is the <Instrument Monitor> Window?

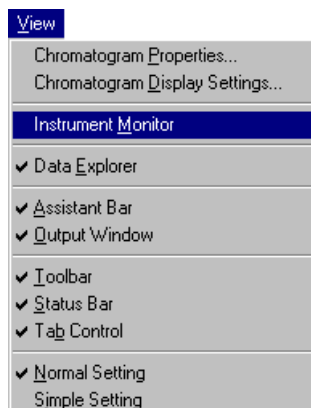


Up to 4 kinds of tabs are displayed according to the connected GC units. Those tabs are [Line1], [Line2], [Add. Heater/Flow], and [Relay].

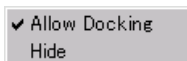


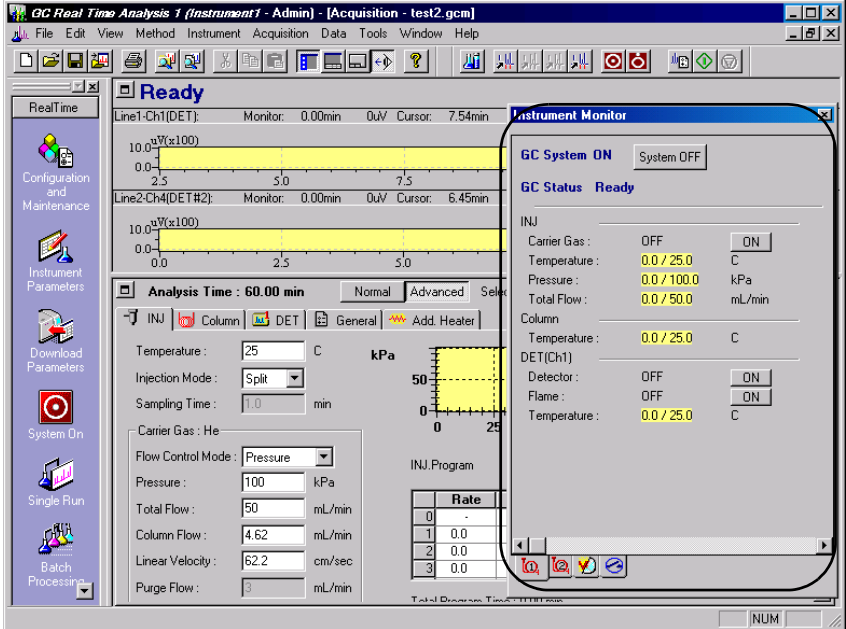
5.6.2 Opening <Instrument Monitor> Window

To open the <Instrument Monitor> window, select [Instrument Monitor] from the [View] menu on the <GC Real Time Analysis> screen menu bar or click on  button on the tool bar.



To change the display mode as follows, click on the <Instrument Monitor> window with the right mouse button, and then use the menu that appears.



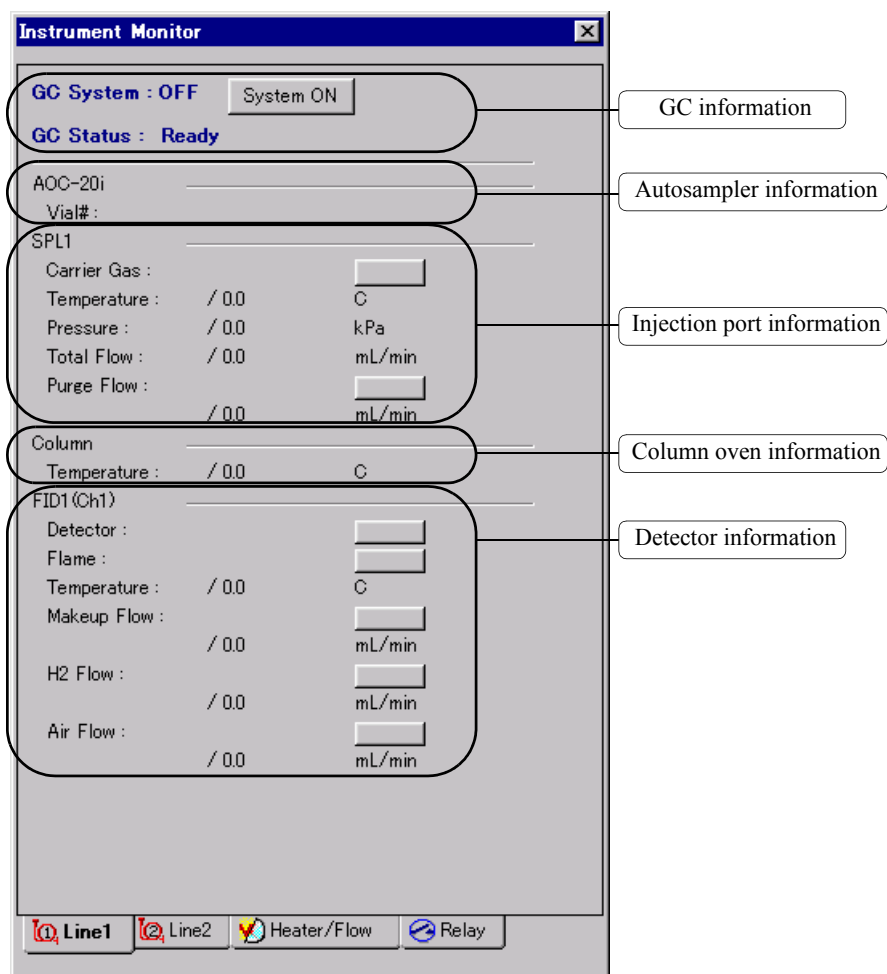
Command	Function
Allow Docking	Toggles between displaying the <Instrument Monitor> window within the <GC Real Time Analysis> screen and displaying it as another tiled window.  The screenshot shows the 'GC Real Time Analysis 1 (Instrument1 - Admin) - [Acquisition - test2.gcm]' window. The 'Instrument Monitor' window is tiled on top of the main analysis window. The 'Instrument Monitor' window displays 'GC System ON' and 'GC Status Ready'. It shows various parameters for the INJ (Injection) and DET (Detector) components, including Carrier Gas, Temperature, Pressure, Total Flow, Column, and Detector settings. The 'Analysis Time' is 60.00 min. The 'Flow Control Mode' is Pressure. The 'Pressure' is 100 kPa. The 'Total Flow' is 50 mL/min. The 'Column Flow' is 4.62 mL/min. The 'Linear Velocity' is 62.2 cm/sec. The 'Purge Flow' is 3 mL/min. The 'INJ Program' table shows a rate of 0.0 for all three steps.
Hide	Closes the <Instrument Monitor> window.



5.6.3 <Instrument Monitor> Window - [Line] Tab

The [Line1] and [Line2] tab pages of the <Instrument Monitor> window display the following parameters and buttons for the devices selected for each line in [Configured Modules] in the <System Configuration> window.

Each instrument's name is the one specified in the [Instrument Name] field in each instrument's property window, which can be opened from the <System Configuration> window.



Parameter	Description	Display
GC System	Shows if the GC system is ON or OFF.	ON: Active OFF: Not active



Parameter	Description	Display
[System ON] button/ [System OFF] button	Activate or inactivate the GC. Note: The [System ON] and [System OFF] buttons are only valid when the GC is turned ON (powered). (These buttons are not used to turn ON/OFF the GC.) Note: If [GC System On when Turning On the Power] is selected in the <GC-2010 Property> window, the [System ON] function will become active just when the GC is turned ON. Note: For the GC-14B, the [System OFF] function is not available.	When the system is inactive: [System ON] button When the system is active: [System OFF] button
GC Status	Displays the GC status. <i>Refer to "GC Status" on page 79</i>	
Autosampler	Displays the vial number in use when data acquisition is performed.	-
Injection Port	Displays the state of the injection port. [Setting Values] shows the values specified on the [Injection Port] tab page of the <Instrument Parameters> view. [Actual] shows monitored values. It also displays the [ON/OFF] button, which is used to control [Carrier Gas] and [Purge Flow].	[Actual]/[Setting Values]
Carrier Gas	Displays whether carrier gas flow is ON or OFF.	ON OFF
	Displays the button that controls the flow controller.	When the gas is OFF: [ON] button When the gas is ON: [OFF] button
Temperature	Displays the injection port temperature.	[Actual]/[Setting Values]
Pressure	Displays the injection port pressure.	[Actual]/[Setting Values]
Total Flow	Displays the total flow rate.	[Actual]/[Setting Values]
Purge Flow	Displays whether purge flow is ON or OFF.	ON OFF
	Displays the purge flow rate.	[Actual]/[Setting Values]
	Displays the button that controls the purge flow controller.	When the gas is OFF: [ON] button When the gas is ON: [OFF] button
Column Oven	Displays the column oven temperature. [Setting Values] shows the value specified on the [Column] tab page of the <Instrument Parameters> view. [Actual] shows monitored value.	[Actual]/[Setting Values]
Detector	Displays the following detector state. [Setting Values] shows the value specified on the [Detector] tab page of the <Instrument Parameters> view. [Actual] shows monitored value. It also displays the [ON/OFF] button that controls the flow controller or power controller. Note: [Frame], [H2 Flow], [Air Flow], and [Makeup Flow] are only displayed when the FID or FPD is used. [Power Controller] and [Adjustment] are only displayed when the FTD is used.	[Actual]/[Setting Values]



Parameter	Description	Display
Detector	Displays whether the detector is active or inactive.	ON: Active OFF: Inactive
	Displays the button that controls whether the detector is active or inactive.	When the detector is inactive: [ON] button When the detector is active: [OFF] button
Flame	Displays the flame state.	ON OFF
	Displays the button that can turn ON/OFF the flame.	When the flame is OFF: [ON] button When the flame is ON: [OFF] button
Plasma	Displays the plasma state.	ON OFF
	Displays the button that can turn ON/OFF the plasma.	When the plasma is OFF: [ON] button When the plasma is ON: [OFF] button
Temperature	Displays the detector temperature.	[Actual]/[Setting Values]
H2 Flow	Displays whether the hydrogen gas flow is ON or OFF.	ON OFF
	Displays the flow rate of hydrogen gas.	[Actual]/[Setting Values]
	Displays the button that controls whether the hydrogen flow is ON or OFF.	When the flow is OFF: [ON] button When the flow is ON: [OFF] button
Air Flow	Displays whether the air flow is ON or OFF.	ON OFF
	Displays the flow rate of air.	[Actual]/[Setting Values]
	Displays the button that controls whether the air flow control is ON or OFF.	When the flow is OFF: [ON] button When the flow is ON: [OFF] button
Makeup Flow	Displays whether the makeup gas flow is ON or OFF.	ON OFF
	Displays the flow rate of makeup gas.	[Actual]/[Setting Values]
	Displays the button that controls whether the makeup gas flow control is ON or OFF.	When the flow is OFF: [ON] button When the flow is ON: [OFF] button



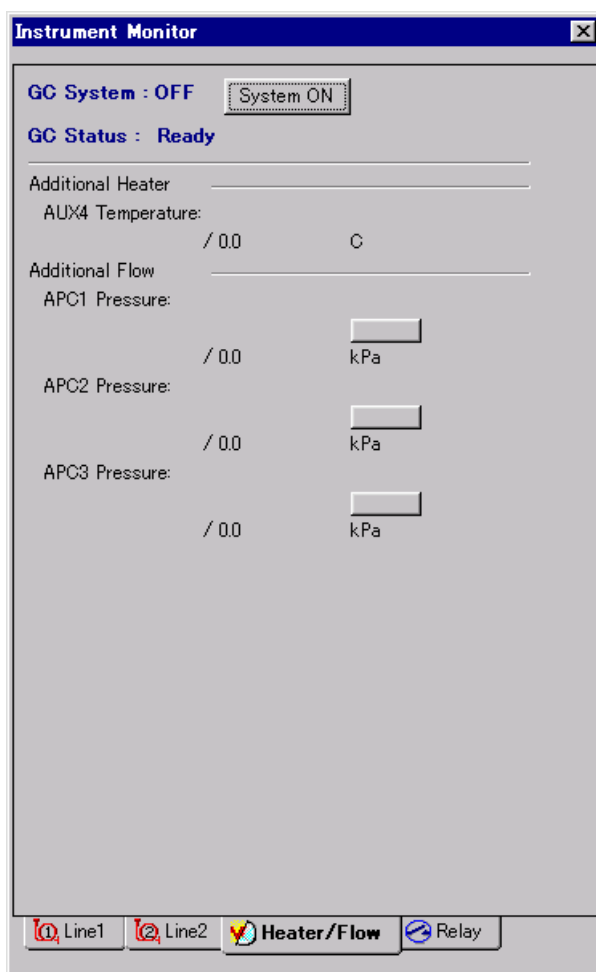
Parameter	Description	Display
ECD Gas Flow	Displays whether the ECD gas flow is ON or OFF.	ON OFF
	Displays the flow rate of ECD gas.	[Actual]/[Setting Values]
	Displays the button that controls whether the ECD gas flow control is ON or OFF.	When the flow is OFF: [ON] button When the flow is ON: [OFF] button
Discharged Flow	Displays whether the discharge gas flow is ON or OFF.	ON OFF
	Displays the flow rate of discharge gas.	[Actual]/[Setting Values]
	Displays the button that controls whether the Discharged gas flow control is ON or OFF.	When the flow is OFF: [ON] button When the flow is ON: [OFF] button
Power Controller	Displays whether the power controller for the FTD detector is ON or OFF.	ON OFF
	Displays the button that controls whether the power controller for the FTD detector is ON or OFF.	When the power is OFF: [ON] button When the power is ON: [OFF] button
Adjustment	Displays whether the adjustment for the FTD detector is started or stopped.	Run Complete
	Displays the button that controls whether the adjustment for the FTD detector is started or stopped.	When the Adjustment is Complete: [RUN] button When the Adjustment is Run: [STOP] button

5.6.4 <Instrument Monitor> - [Additional Heater/Flow] Tab

The [Additional Heater/Flow] tab page of the <Instrument Monitor> window displays the following buttons and parameters for the devices selected in [Additional Heater] and [Additional Flow] of [Configured Modules] in the <System Configuration>



window.



Parameter	Description	Display
GC System	Shows if the GC system is ON or OFF.	ON: Active OFF: Not active
[System ON] button/ [System OFF] button	Activate or inactivate the GC. Note: The [System ON] and [System OFF] buttons are only valid when the GC is turned ON (powered). (These buttons are not used to turn ON/OFF the GC.) Note: If [GC System On when Turning On the Power] is selected in the <GC-2010 Property> window, the [System ON] function will become active just when the GC is turned ON.	When the system is inactive: [System ON] button When the system is active: [System OFF] button
GC Status	Displays the GC status. <i>Refer to "GC Status" on page 79</i>	
Additional Heater	Displays the temperature of the additional heater. [Setting Values] shows the value specified on the [Additional Heater] tab page of the <Instrument Parameters> view. [Actual] shows monitored value.	[Actual]/[Setting Values]



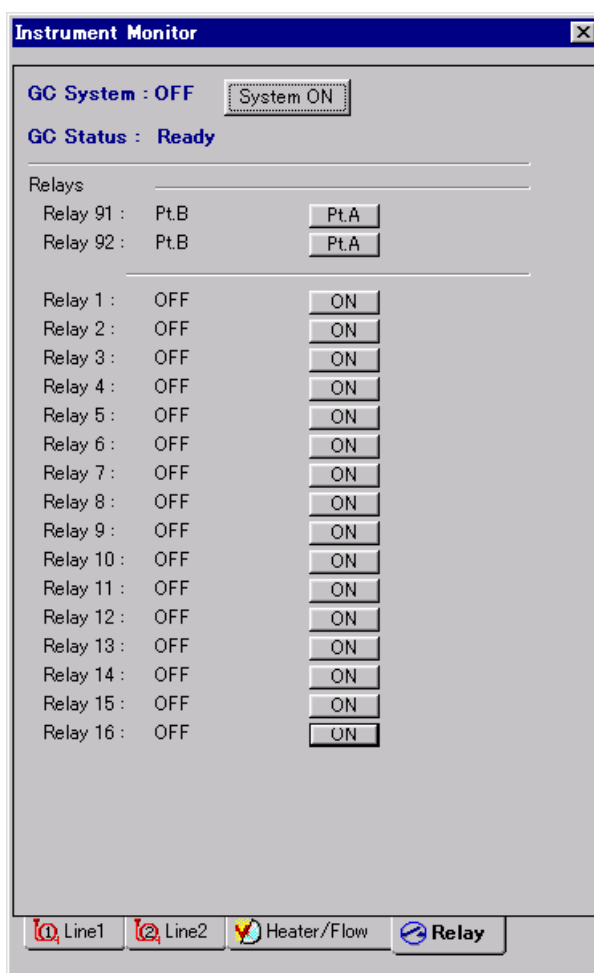
Parameter	Description	Display
Additional Flow	Displays the state of the additional flow control unit. [Setting Values] shows the value specified on the [Additional Flow] tab page of the <Instrument Parameters> view. [Actual] shows monitored values. Also displays the ON/OFF button that controls the flow control unit.	-
Pressure	Displays whether the flow control unit is ON or OFF.	ON: Active OFF: Inactive
	Pressure of the flow control unit	[Actual]/[Setting Values]
	Button that controls whether the flow control unit is ON or OFF.	When the system is inactive: [ON] button When the system is active: [OFF] button
Flow	Active/inactive state of the flow control unit	ON: Active OFF: Inactive
	Flow rate of the flow control unit	[Actual]/[Setting Values]
	Button that controls whether the flow control unit is ON or OFF	When the system is inactive: [ON] button When the system is active: [OFF] button

Note: Either [Pressure] or [Flow] is displayed according to the setting for [Control Mode] on the <Additional Flow> window.



5.6.5 <Instrument Monitor> - [Relay] Tab

The [Relay] tab page of the <Instrument Monitor> window displays the following buttons and parameters for the relays selected in [CRG Relay] in <GC-2010 Property> window.



Parameter	Description	Display
GC System	Shows if the GC system is ON or OFF.	ON: Active OFF: Not active
[System ON] button/ [System OFF] button	Activate or inactivate the GC. Note: The [System ON] and [System OFF] buttons are only valid when the GC is turned ON (powered). (These buttons are not used to turn ON/OFF the GC.) Note: If [GC System On when Turning On the Power] is selected in the <GC-2010 Property> window, the [System ON] function will become active just when the GC is turned ON.	When the system is inactive: [System ON] button When the system is active: [System OFF] button
GC Status	Displays the GC status. <i>Refer to " GC Status" on page 79</i>	

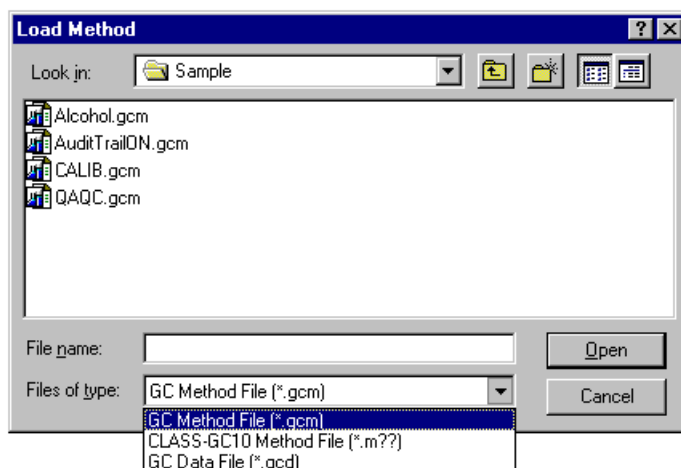


Parameter	Description	Display
Relays 91 and 92 Relays 93 and 94	Displays the status (Pt.A/Pt.B) of the relay point.	Pt.A: Connected to point A. Pt.B: Connected to point B.
[Pt.A] button [Pt.B] button	Displays the button for selecting a relay point. Note: For a detailed explanation of the statuses of point A and B, refer to the instruction manual for the GC unit.	When connected to point A: [Pt.B] button When connected to point B: [Pt.A] button
Relays 1 through 16	Displays whether the relay is ON or OFF.	ON: The relay is ON. OFF: The relay is OFF.
[ON] button [OFF] button	Displays the button for turning the relay ON/OFF.	When the relay is ON: [OFF] button When the relay is OFF: [ON] button

5.7

<Load Method> Window

The <Load Method> window allows you to specify, load, and reuse a part of a method. To do so, select [File]-[Load Method] from the <GC Real Time Analysis> screen main menu bar, and then select the file containing the information you want to use, from the following <Load Method> window.



Note: Any of the following files can be loaded:

- GC method file (*.gcm)
- GC data file (*.gcd)
- CLASS-GC10 method file (*.m??)



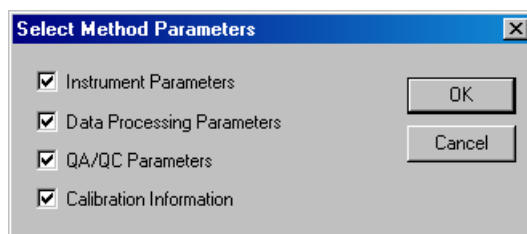
5.7.1 <Select Method Parameters> Window

If you select a file that contains the method you want to use, the <Select Method Parameters> window will be opened. Select the parameters that are to be loaded from the method.

Note: If the CLASS-GC10 method file is selected, only the data processing parameters can be loaded.

Note: If the number of methods to be loaded does agree with the number of lines for the current instrument, follow the rule given below:

Method to be loaded	Line for current instrument	Line for loading
1	1&2	1
1&2	1	1



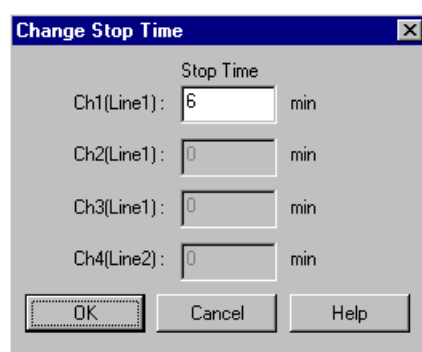
Parameter	Description
Instrument Parameters	Loads the Instrument Parameters from the file. <i>Refer to "5.5 <Data Acquisition> - <Instrument Parameters> View" on page 85</i>
Data Processing Parameters	Loads the data processing parameters from the file. The data processing parameters is the parameters that should be set on the <Data Processing Parameters (Ch#)> window. <i>Refer to "6.5 <Data Analysis> - <Results> View" on page 240</i>
QA/QC Parameters	Loads the QA/QC parameters from the file. <i>Refer to "13.2 <QA/QC> - [General] Tab" on page 545</i>
Calibration Information	Loads the calibration curve data out of the file contents.

5.8

<Change Stop Time> Window

The <Change Stop Time> window allows you to change the stop time of data acquisition while data acquisition is in progress.

To open this window, select [Data Acquisition]-[Change Stop Time] from the main menu bar on the <GC Real Time Analysis> screen when the <Data Acquisition> window is active.



Parameter	Description	Setting range
Stop Time Channels 1 through 4	Enter the time at which to stop data acquisition.	0.00 - 9999.99 (min)

Note: The changed stop time for data acquisition is reflected in [Stop Time] on the <Instrument Parameters> view - [Detector] tab. ([Refer to "5.5.6 <Instrument Parameters> View - \[Detector\] Tab" on page 131](#))

Note: If the changed stop time for data acquisition is shorter than the actual analysis time, data acquisition will be stopped at that time and a data file created.



5.9

<Sample Login> Window

The <Sample Login> window is used to specify the sample information to be analyzed by the single run analysis. After setting the Instrument Parameters and data processing parameters, enter the sample information. To display this window, click on [Sample Login] icon on the [Single Run] assistant bar or select [Data Acquisition]-[Sample Login] from the main menu bar on the <GC Real Time Analysis> screen when the <Data Acquisition> window is active.

This part is displayed by clicking on the [Advanced >>] button.

Note: The <Sample Login> window contains the following parameters for each line. Among these parameters, the settings for [Data File] and [Vial#] are mandatory; data acquisition cannot be carried out without these parameter settings. The method file currently opened in <Acquisition> window is used for the analysis.

Note: If the MS detector is selected, the [Line 2] tab will not be displayed.

Parameter	Description
Acquisition	When this parameter is not checked, a data file will not be maked. In the case of two analytical lines, it can be set up for each line.
Acquisition Information	
Sample Name	Enter sample name.
Sample ID	Enter sample ID.
Data File	Enter the name of the data file that is created after data acquisition.
Auto-increment	When this parameter is checked, a number will be added to the file name. If the same file name exists, the new file will then be saved as a different file.



Parameter	Description
Baseline Data	Enter the name of the data file for Baseline chromatogram. Alternatively, you may want to click on the [Browse] button and specify an existing file.
Data Description	Enter any comments for the data.
Injector	
Vial#	Enter the vial number.
Barcode	Displays the information that has been read from the barcode reader.
Report	To report the acquired data, check this parameter and specify the report format file. You may want to click on the [Browse] button and specify an existing file.
Quantitation (Detail)	
Type	Clicking on the  button displays the <Sample Type> window, which allows you to specify the sample type to be analyzed. Refer to "9.10.2 <Sample Type> Window" on page 367. The following sample types are available. The data analysis method after data acquisition differs depending on the type specified here. ● [Unknown]: The sample will be analyzed quantitatively. ● [Standard]: A calibration curve will be created. ● [Control]: The sample will be analyzed quantitatively. ● [Unspiked]: The sample will be analyzed quantitatively. ● [Spiked]: The sample will be analyzed quantitatively. ● [Standard (ISTD Recovery)]: The sample will be used to QA/QC calculation. Control, Unspiked, and Spiked will have special meanings when the QA/QC calculation is performed on the batch table analysis.
ISTD Amount #1	Enter the internal standard mass added to an unknown sample when the sample is quantitatively analyzed by the internal standard method. The displayed value corresponds to the internal standard mass that is applicable when the ISTD group number for the internal standard method is 1. If you click on the  button, <Internal Standard Amount> is displayed, allowing you to enter multiple internal standard mass values. Note: When [Sample Type] is [Standard], the concentration (1-16) value on the <Method> view - [Compound] tab is used as the internal standard mass. Refer to "6.6.3 <Method> View - [Compound] Tab" on page 273 Refer to "9.10.3 <ISTD Amount> Window" on page 368
Dilution Factor	Enter the dilution ratio that is used when the diluted sample is quantitatively analyzed. If the sample is not diluted, enter "1"; if the sample is diluted to 1/5, enter "5." Note: If you set [Dilution Factor] to [None] (with the check removed) at installation, this parameter does not appear. Refer to "16.3.6 Quantitative Calculation Methods using Dilution Factor" on page 622
Level #	Enter the level number for the calibration point that is created when [Standard Sample] is selected for the sample type.
Sample Amount	Enter the sample amount.

Note: During data acquisition, only [Sample Name], [Sample ID], and [Data Description] can be changed among the [Acquisition Information] parameters.

Note: The data in the <Sample Login> window is saved. Next time the window is opened, the data that was displayed when you clicked on the [OK] button will appear.



5.10 <System Check> Window

The <System Check> window is used to carry out "the standard self-diagnosis" of the GC-2010, GC-2014 or GC-2025 and then save the results in a file.

The <System Check> window is used to check the status of the GC-2010, GC-2014 or GC-2025 system and the use of consumables.

The system check is only performed for the instruments selected in the <System Configuration> window.

To display the <System Check> window, select [Instrument]-[System Check] from the main menu bar on the <GC Real

Note: The [Stop], [Close], and [View Result] buttons will not be displayed if the system check is selected on the batch table.

Parameter	Description
Last Run Date	Displays the date when the last system check was performed.
Check	When marked with a check, the status of each device on the GC system will be checked.
Report Out	When marked with a check, the results of the check will be output.
[Run] button	When this button is clicked on, the system check will be performed under the specified conditions.
[Stop] button	When this button is clicked on, the system check will be stopped. No report on the check results will be output.



Parameter	Description
[View Result] button	When this button is clicked on, the <System Check Result> window will be displayed. <i>Refer to "5.10.1 <System Check Result> Window" on page 184</i>
[Advanced] button	When [Advanced>>] button is clicked on, the items for the detailed settings for the consumables and instruments that are subjected to the system check will be displayed. If you click on [Advanced<<] button, the items will disappear. <i>Refer to "5.10.1 <System Check Result> Window" on page 184</i>

Consumables	The following item is indicated when it clicks on the [Advanced>>] button.
LCD Back Light	Compares the cumulative illumination time of the LCD back light with the threshold value.
Fan Motor	Compares the cumulative operation time of the fan motor with the threshold value.
Septum	Compares the threshold value with the number of times the septum at the injection port is used.
Insert	Compares the threshold value with the number of times the glass insert at the injection port is used.
CRG Coolant	Compares the value from the CRG coolant consumption counter with the threshold value. This check is only performed when the column oven or INJ2 heater port is equipped with a CRG.
GC Check	The following item is indicated when it clicks on the [Advanced>>] button.
Heat Sensor	Checks how long the heat sensor has been used at 300C.
DC Voltage	Measures the DC voltage, and checks to see whether the error falls within the standard range.
Environment	Measures the room temperature, and checks to see whether it falls within the assured operating range.
	Measures the atmospheric pressure, and checks to see whether it falls within the assured operating range.
Primary Pressure	Measures the primary pressure of the carrier gas, and checks to see whether it is equal to or larger than the value specified in the system configuration.
CPU	Checks the CPU and the real time clock register.
Detector ROM	Checks each detector for the detector ROM data.
Detector ADC	Checks each detector's ADC register.
Detector High Voltage	Checks each detector's measured value for high voltage. This check is only performed when the FID, FTD, or FPD is installed.
Detector Ignite	Checks each detector for the ignition pulse and ignition operation. This check is only performed when the FID or FPD is installed.
ECD Cell	Measures the frequency of pulse voltage at the detector ECD for each detector, and compares the contamination of the cell with the threshold value.
Flow Unit ROM	Checks each flow control slot for the ROM.
Flow Unit ADC	Checks each flow control slot for the ADC.
Flow Control	Checks each flow port to see whether the flow is controlled properly.
[Reset] button	When this button is clicked on, the <Consumables Reset> window will be displayed. <i>Refer to "5.10.2 <Consumables Reset> Window" on page 185</i>



Note: For the consumables check, the settings on the following window, which is opened from each tab on the <System Configuration> window, are used as thresholds values when the comparison results are displayed.

- Consumables: <Standard of System Check (Injection Port)> and <Standard of System Check (CRG Coolant Used Time)>
- Instruments: <Standard of System Check (Detector)>

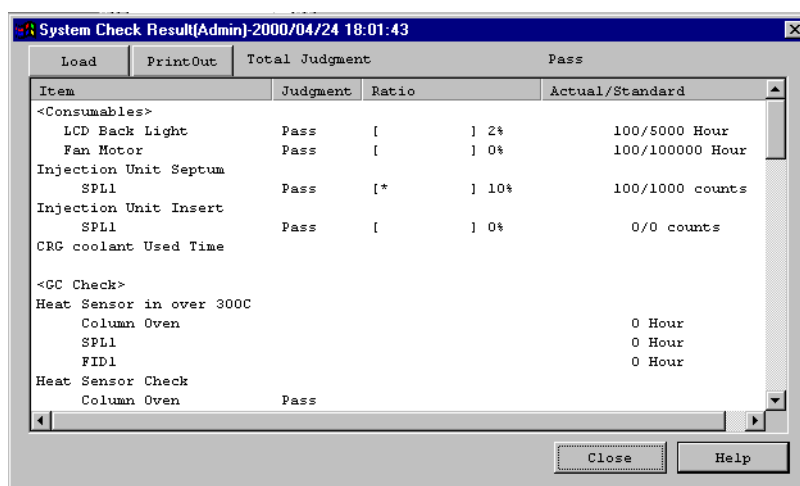
For the other checks, the internal standard values of the GC are used as threshold values when the comparison results are displayed.

5.10.1 <System Check Result> Window

The <System Check Result> window allows you to check the details of the system check results.

It also allows you to check the past check results.

To display this window, click on the [View Result] button.



Parameter	Description
Total Judgement	Displays the system result as "Pass" or "Fail." If any of the consumables and instruments in the following table are not acceptable, they will be marked as "fail."
Item	Displays the system check targets.
Judgement	Displays the system check result.
Ratio	Displays the use ratio of consumables using * and percentage. Each "*" denotes 10% and can be used for up to 100%.
Actual/Standard	Displays the actual and threshold values.
[Load] button	Opens the [Load] dialog box, which allows you to load a past result file.
[Print] button	Outputs the system check results that are currently displayed.



5.10.2 <Consumables Reset> Window

During a system check, the usage condition of consumables is checked. The specified number of uses for consumables, which are specified in the <Standard of System Check (Injection Port)> and <Standard of System Check (CRG Coolant Used Time)> windows in the <System Configuration> window, are compared with the number of uses internally counted by the GCsolution software for each run. If any count exceeds the corresponding standard (specified) value, the consumable will be identified as "fail."

Refer to "4.4.2.1 <Coolant consumption> Window" on page 32

Refer to "4.5.2.1 <Injection port Maintenance> Window" on page 47

If the consumable is identified as "fail," replace it and click on the [Reset] button on the <Consumable Reset> window to reset the count.

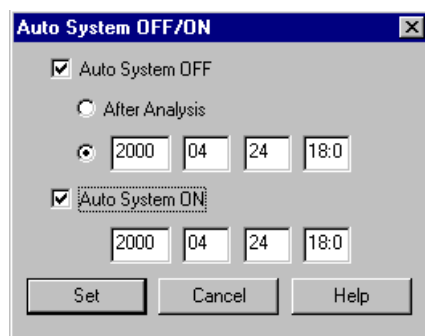
The screenshot shows the 'Consumables Reset' dialog box. It is organized into four main sections, each with two input fields and a 'Reset' button. The first section is for 'SPL1 (INJ#1)', showing 'Septum Used Counts' and 'Insert Used Counts' both at 0. The second section is for 'PTV1 (INJ#2)', also showing 0 for both counts. The third section is for '(INJ#3)', showing 0 for both counts. The fourth section is for 'CRG Coolant Used Time', showing 'Column Oven' and 'PTV1 (INJ#2)' both at 0 minutes. A 'Close' button is located at the bottom right of the dialog.

Parameter	Description
INJ#	Displays the usage counts of the consumables at the injection port.
Septum Used Counts	Displays the usage count of the septum.
Insert Used Counts	Displays the usage count of the glass insert.
CRG Coolant Used Time	Displays the usage time of the coolant used for the CRG.
Column Oven	Displays the usage time of the CRG coolant for the column oven.
INJ2	Displays the usage time of the CRG coolant for the INJ2 heater port.
[Reset] button	Resets the usage time to zero.
[Close] button	Closes the window, and returns to the <System Check - Detail> window.



5.11 <Auto System OFF/ON> Window

The <Auto System OFF/ON> window is used to set the parameter that automatically stops or starts the GC. To display this window, select [Tools]-[Auto System OFF/ON] from the main menu bar on the <GC Real Time Analysis> screen when the <Data Acquisition> window is active.



Parameter	Description
Auto System Off	Mark this parameter with a check when you want to stop the system automatically. [After Analysis]: Automatically stops the GC when the analysis is completed. (Setting date and time): Automatically stops the GC on the date and time specified here.
Auto System On	Mark this parameter with a check when you want to start the GC system automatically. Specify the date and time when the GC system should be started automatically. The GC system will be automatically started according to the settings for the Instrument Parameterss on the specified date and time.

Note: If any error occurs on the PC or the GC, the GC system may not be stopped or started automatically.

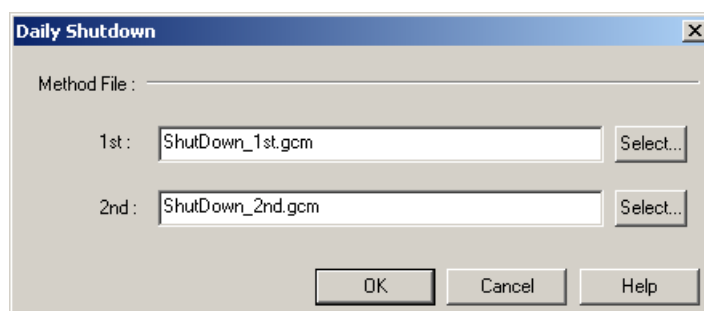
Note: If the GC-14B is used, the Auto System Off function is not available.



5.12 <Daily Shutdown> Window

The daily shutdown function is for reducing gas consumption during when you are not performing analysis. You can use it even if GCMS's vacuum is on.

Prepare methods (shutdown methods) that have low flow rate settings of the carrier gas and low temperature settings of the column and detectors. Then click on [Daily Shutdown] icon on the assistant bar to display <Daily Shutdown>. Set the method files for shutdown and click on [OK] button to download the selected method files.



Note: If you set the gas flow setting of the detector to stop, you can extinguish its flame (FID or other)



5.13 <E-Mail Settings>

When you select the <E-Mail Settings> window, you can notify customers of any event that may occur during a single run or batch run.

Display the <E-Mail Settings> window by [Tools] Menu - [E-mail Setting] Command on <GC Real Time Analysis> window.

5.13.1 [E-Mail] Tab

Parameter	Description	Setting range
From	Specify the sender of the message.	Within 127 characters
[Test] button	Send a test message to verify the settings.	-
Event	Select the event when to send the message.	Error Warning Batch Start Batch End Shut Down End Startup End
Send E-mail	Check to send the message on the selected event.	-
[Apply same address to all events] button	Applies the same address to all events.	-
To	Specify the destination(E-Mail address) of the message. Multiple destinations can be specified by using commas (,) as the delimiter.	Within 2047 characters
Subject	Specify the title of the message.	Within 511 characters



Parameter	Description	Setting range
Body	Specify the main body of the message.	Within 2047 characters

5.13.2 [SMTP Server] Tab

Parameter	Description	Setting range
Server Name	Specify the name of the SMTP server.	Within 50 characters
Port Number	Specify the port number for the SMTP port of the mail server.	-



5 <Data Acquisition> Window

5.13 <E-Mail Settings>



6.1

Overview of <Data Analysis> Window

The <Data Analysis> window is used to check the data acquired on the GC or to change the data processing parameters, and then the data is re-analyzed.

The <Data Analysis> window consists of the <Chromatogram>, <Results>, and <Method> views, each of which displays the contents of a single data file.

6.1.1 Function of <Data Analysis> Window

For data analysis, the following operations can be performed.

Operation for data analysis	Main window used
Display a chromatogram.	6.4 <Data Analysis> - <Chromatogram> View
Display the result of quantitative calculation and a calibration curve.	6.5 <Data Analysis> - <Results> View
Check and modify, if necessary, the methods in the data file.	6.6 <Data Analysis> - <Method> View
Set the peak integration parameters.	6.6.1 <Method> View - [Integration] Tab
Set the quantitative parameters.	6.6.2 <Method> View - [Quantitative] Tab
Enter the necessary information on each chemical compound to be determined.	6.6.3 <Method> View - [Compound] Tab
Enter the necessary information on each group of chemical compounds to be quantitatively analyzed.	6.6.4 <Method> View - [Group] Tab
Set the column performance parameters.	6.6.5 <Method> View - [Performance] Tab

6.1.2 Opening <Data Analysis> Window

To display the <Data Analysis> window, perform the following steps:

- Click on the [Data Analysis] icon located on the Assistant Bar on the <GC Postrun> screen.

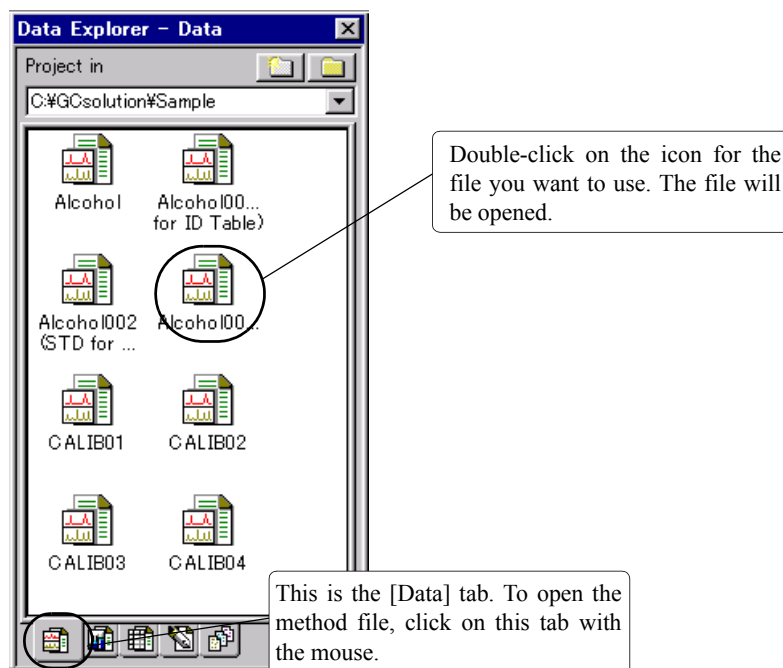




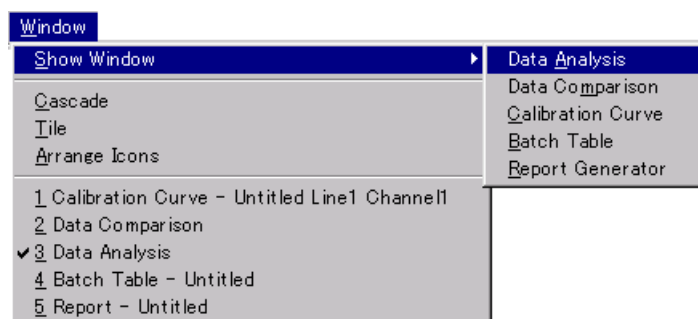
6 <Data Analysis> Window

6.1 Overview of <Data Analysis> Window

- Open an arbitrary data file from the <Data Explorer> window on the <GC Postrun> screen.

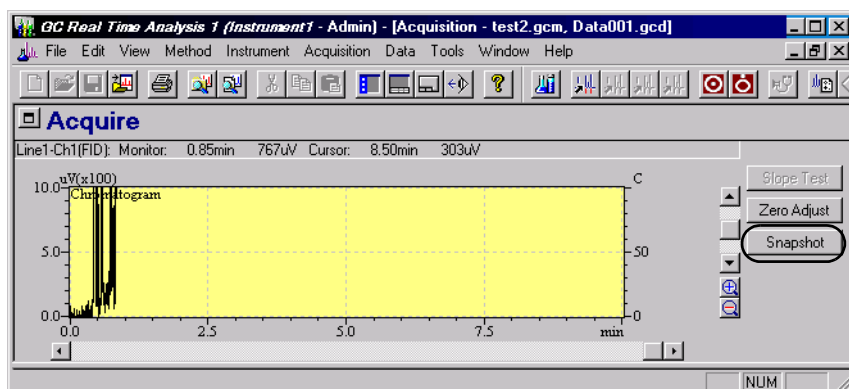


- Select [Window]-[Show Window]-[Data Analysis] from the main menu bar on the <GC Postrun> screen.





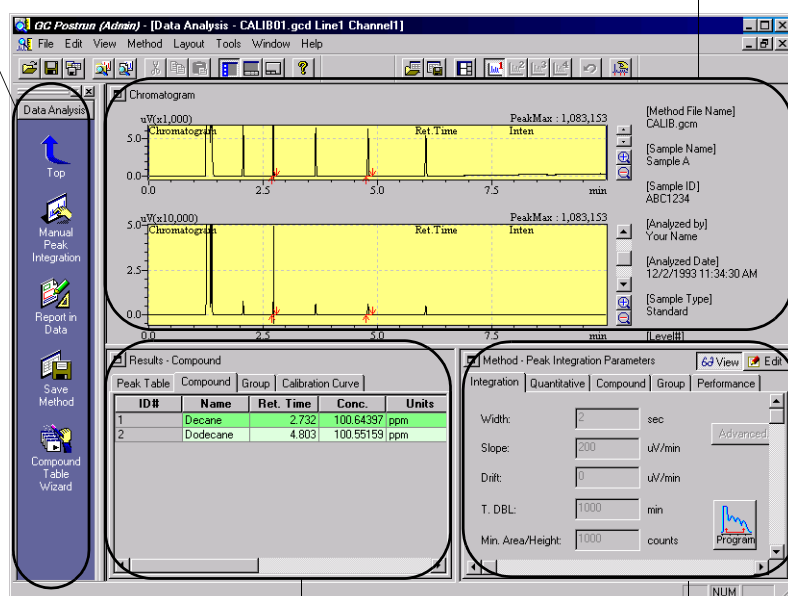
- Click on the [Snapshot] button on the chromatogram view of the <GC Real Time Analysis> screen.



6.1.3 Element Names on <Data Analysis> Window

[Postrun] Assistant Bar (Refer to "3.3 [Postrun] Assistant Bar ." on page 14)

<Chromatogram> view (Refer to "6.4 <Data Analysis> - <Chromatogram> View" on page 211)

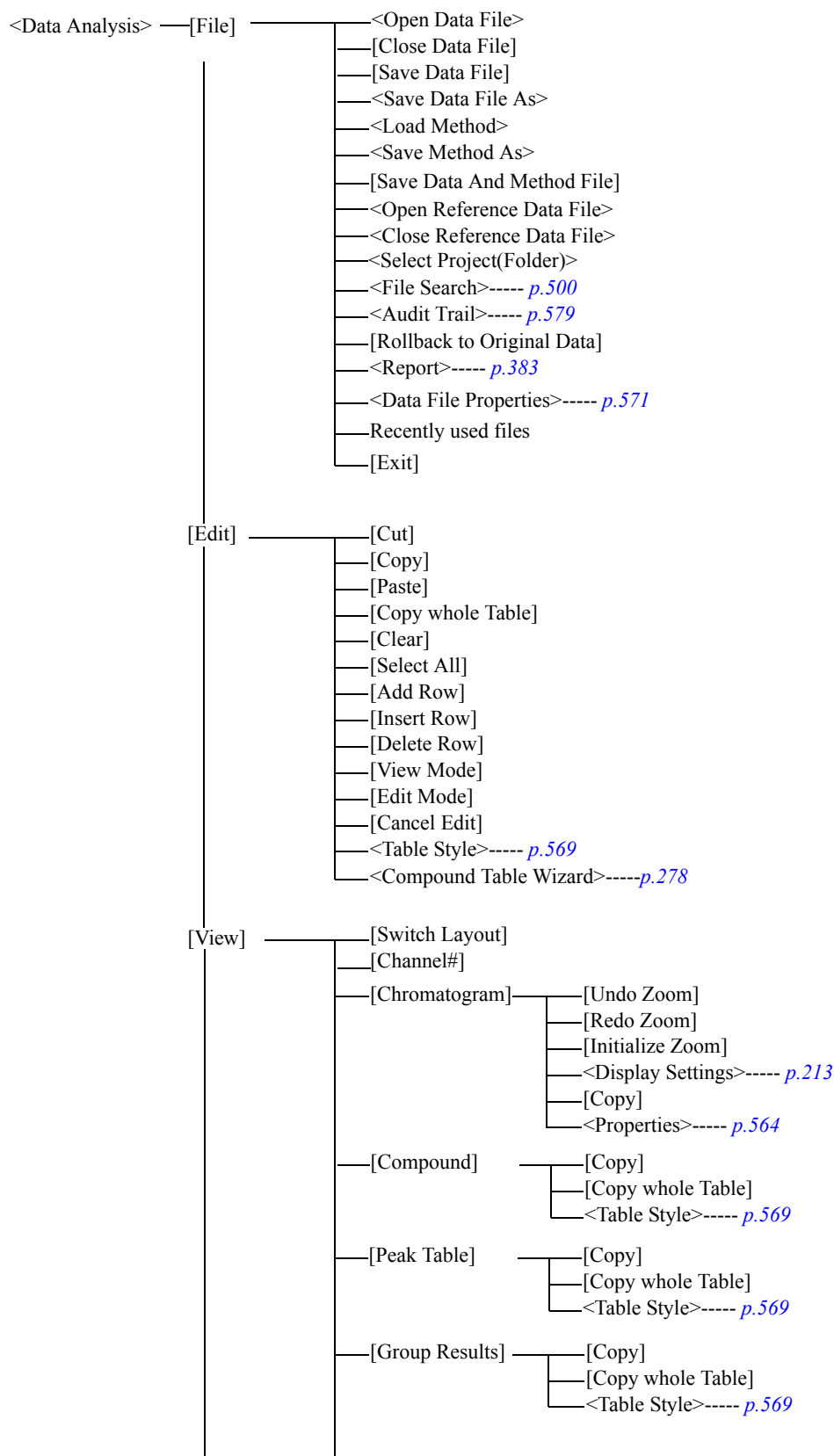


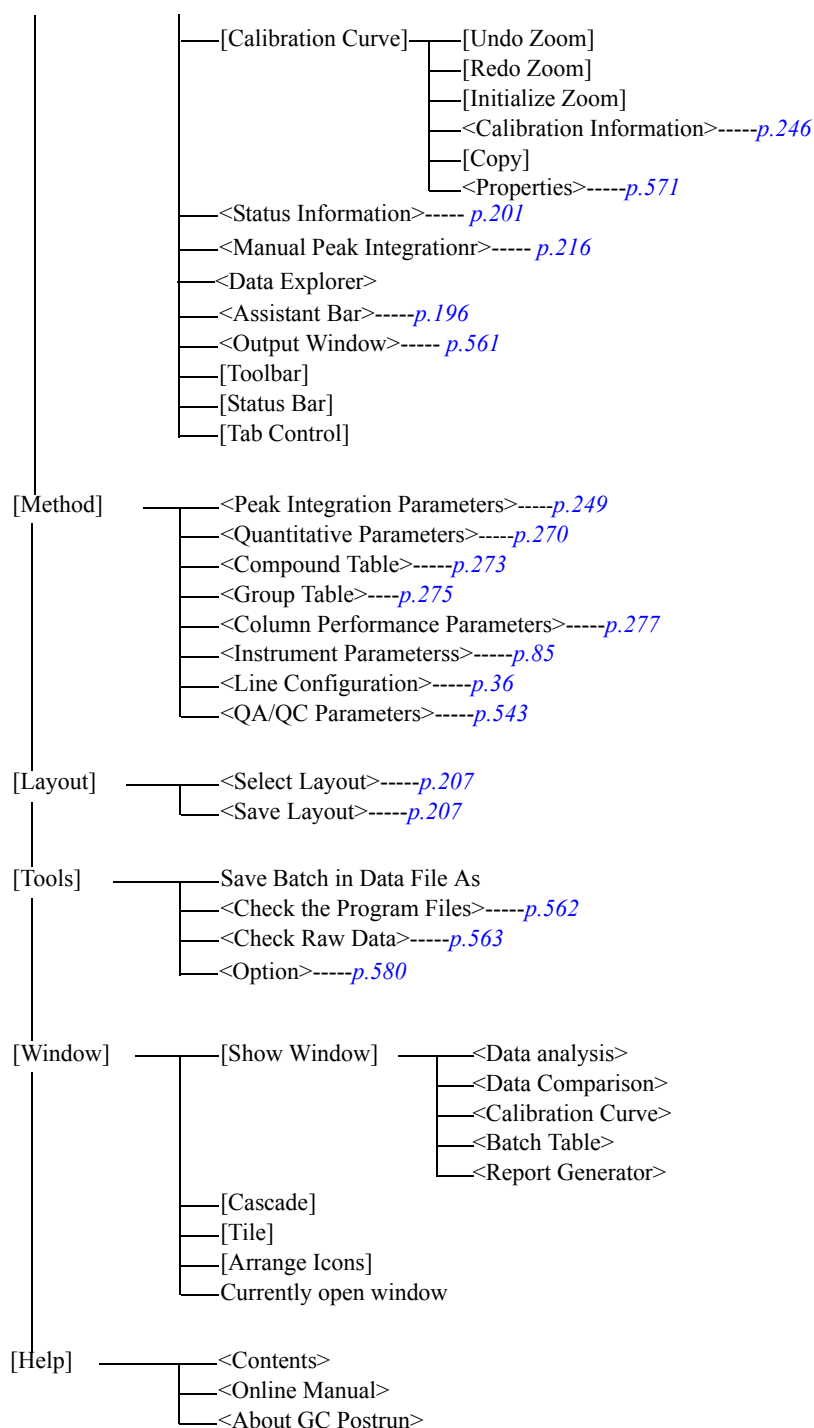
<Results> view (Refer to "6.5 <Data Analysis> - <Results> View" on page 240)

<Method> view (Refer to "6.6 <Data Analysis> - <Method> View" on page 248)



6.1.4 Menu Tree of <Data Acquisition> Window

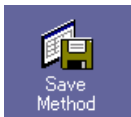






6.2 [Data Analysis] Assistant Bar

The <Data Analysis> window displays the [Data Analysis] Assistant Bar, on which the following icons are located in the order corresponding to the flow of operations that should be performed for postrun analysis by checking the contents of the data file and editing the data processing parameters.

Icon	Description
	Displays the [Postrun] Assistant Bar. <i>Refer to "3.3 [Postrun] Assistant Bar ." on page 14</i>
	Displays the <Manual Peak Integration> window. <i>Refer to "6.4.4 <Manual Peak Integration>" on page 216</i>
	Displays the <Data Report> window. The same report file as the latest one used on the <Data Analysis> window is stored in the data file. The <Data Report> window will be displayed according to the report information in the data file. The [Postrun] Assistant Bar will appear again. <i>Refer to "10 <Report> Window" on page 383</i> <i>Refer to "10.2 [Report] Assistant Bar" on page 388</i>
	Displays the <Save Method File As> window, which allows you to save the method information of the data file used for data analysis as a method file.
	Displays <Compound Table Wizard> for facilitating the setup of a compound table.

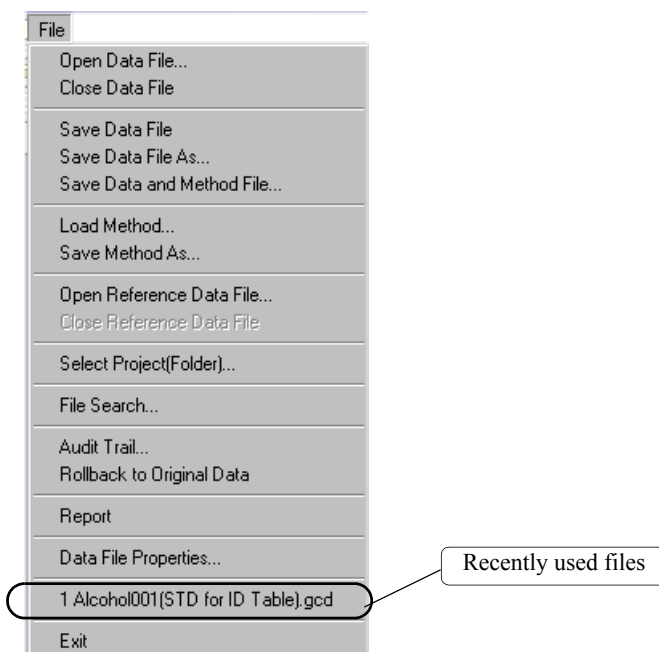


6.3

Menu Bar of <Data Analysis>

This section describes the menus that are displayed on the <GC Postrun> screen menu bar when the <Data Analysis> window is active.

6.3.1 <Data Analysis> - [File] Menu



Command	Description	Tool button
Open Data File	Opens an existing data file. Note: Only one data file can be opened on the <Data Analysis> window at a time. If you try to open another data file, a window will appear prompting you to save the currently used data file.	
Close Data File	Closes the currently used data file. If the contents of the data file are not saved or if there is any change after the data file has been opened, then a window will appear asking you to confirm the mode for saving the data file.	-
Save Data File	Saves the contents of the data file.	
Save Data File As	Saves the data file under a different name.	-
Save Data and Method File	Saves the contents of the data and method file.	-



Command	Description	Tool button
Load Method	Loads the method information in other files, and then performs peak integration and identification for the data displayed on the <Data Analysis> window or performs identification/quantitative analysis for calibration curves, etc. Allows you to load method files and the method information in data files. However, you cannot load any information on the system configuration and Instrument Parameters for data acquisition. If the data file contains method information for two lines, a window will appear so you can select a line number. If the number of channels for the data displayed on the <Data Analysis> window is different from that in the method information, the data will be loaded in accordance with the smaller number of channels. Refer to "5.7.1 <Select Method Parameters> Window" on page 178	
Save Method As	Saves the method information in the data file used for data analysis, as another method file. If the number of channels for the data used for data analysis is different from the number of channels for the selected methods, the data will be loaded on whichever smaller number of channels.	
Open Reference Data File	Opens the reference data file. The reference data is only used to display chromatograms and is not processed.	-
Close Reference Data File	Closes the reference data file.	-
Select Project(Folder)	Displays the <Select Project(Folder)> window.	-
File Search	Displays the <File Search> window so you can search for an existing file. Refer to "11.4 <GC File Search> Window" on page 500	
Audit Trail	Displays the <Audit Trail> window, which allows you to check the history of data file modifications and the reasons given for those modifications. Refer to "14.8 <Audit Trail> Window" on page 579	-
Rollback to Original Data	When the audit trail function is in use, you can undo the data based on the file updating history. Refer to "14.9 <Setting Options> Window" on page 580	-
Report	When the acquired or analyzed data is printed out, the contents of the report file used at that time will be saved as the report information in the data file. When this command is selected, the <Report> window will be displayed based on that report information in the data file. Refer to "10 <Report> Window" on page 383	-



Command	Description	Tool button
Data File Properties	Displays the <Properties> window, which allows you to check or modify the file information, comments, sample information, and files used in the currently opened data file. <i>Refer to "14.6 <Properties> Window" on page 571</i>	-
Recently used files	Displays up to 4 file names that have been used recently. When a file name is selected, that file will be opened.	-
Exit	Exits the <GC Postrun> screen and closes the windows.	-

6.3.2 <Data Analysis> - [Edit] Menu

The commands under the [Edit] menu are mainly used to set the parameters in the compound table and group table contained in the <Method > view.



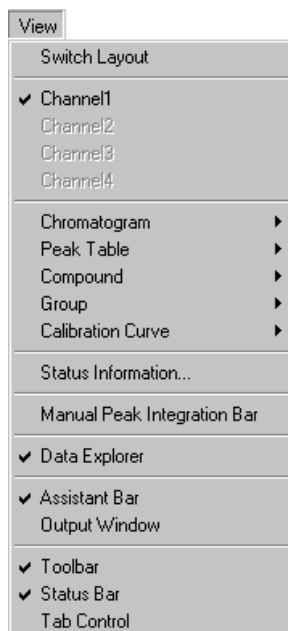
Command	Description	Tool button
Cut	Moves the selected data to the clipboard.	
Copy	Copies the selected data to the clipboard.	
Paste	Pastes the data on the clipboard onto the selected item.	
Copy whole Table	Copies the entire table, including its heading, to the clipboard.	-
Clear	Clears the selected items.	-
Select All	Selects all the selectable items contained in the table.	-



Command	Description	Tool button
Add Row	Adds a new row to the last row. This parameter is only valid in the Edit Mode.	-
Insert Row	Inserts a new row above the row on which the cursor is currently positioned. This parameter is only valid in the Edit Mode.	-
Delete Row	Deletes the row on which the cursor is currently positioned. This parameter is only valid in the Edit Mode.	-
View Mode	Changes to the View Mode when used in the Edit Mode.	-
Edit Mode	Changes to the Edit Mode when used in the View Mode.	-
Cancel Edit	Undoes the data on the <Method > view, and changes to the View Mode.	
Table Style	Displays the <Table Style> window, which allows you to select a table style. <i>Refer to "14.5 <Table Style> Window" on page 569</i>	-
Compound Table Wizard	Displays the <Compound Table Wizard> window, which allows you to set the Compound Table easily.	-



6.3.3 <Data Analysis> - [View] Menu

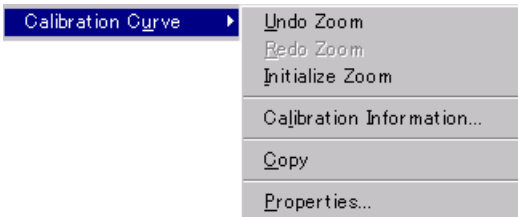


Command	Description	Tool button
Switch Layout	Select this command to reverse the display ratio between the <Results> View and <Method> View.	
Channel1	Selects viewing only channel 1 (line 1) in the window.	
Channel2	Selects viewing only channel 2 (line 1) in the window.	
Channel3	Selects viewing only channel 3 (line 1) in the window.	

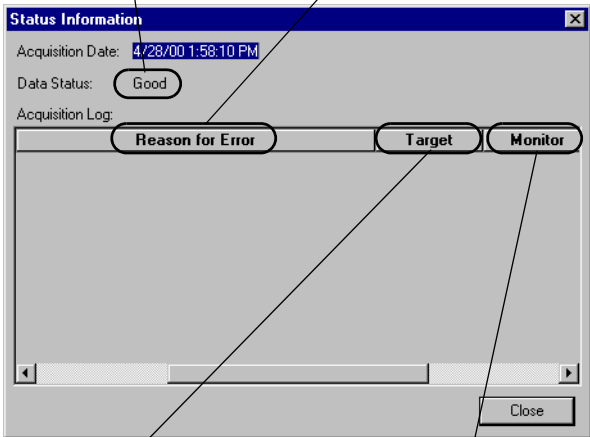


Command	Description	Tool button
Chromatogram	Note: The same menu will appear when the chromatogram area on the <Chromatogram > view is clicked on with the right mouse button.	-
Undo Zoom	Undoes zooming in of the chromatogram. If the chromatogram cannot be undone or if it does not need to be undone, this parameter is dimmed.	-
Redo Zoom	Redoes zooming in of the chromatogram. If the chromatogram does not need to be redone, this parameter is dimmed.	-
Initialize Zoom	Cancels zooming in the chromatogram and returns it to the initial state.	-
Peak Position Line	Sets whether to display the peak position line or not. The peak position line is synchronized with the retention time values in the [Compound] tab-page of the <Method> View and [Peak Table] and [Compound] tab-pages of the <Results> View. <i>Refer to "6.6.3 <Method> View - [Compound] Tab" on page 273</i> <i>Refer to "6.5.1 <Results> View - [Peak Table] Tab" on page 240</i> <i>Refer to "6.5.2 <Results> View - [Compound] Tab" on page 242</i>	-
Display Settings	Displays the <Display Settings> window, which allows you to set the items to be displayed on all the chromatograms and the zoomed-in chromatogram. <i>Refer to "6.4.3 <Chromatogram> View - <Display Settings> Window" on page 213</i>	-
Copy	Copies the zoomed-in chromatogram to the clipboard in the metafile format. Note: This parameter is used to paste a chromatogram on MS Word, MS Excel, or any other similar application.	-
Properties	Displays the <Chromatogram Properties> window, which allows you to select a mode for displaying the chromatogram. <i>Refer to "14.4 <Chromatogram View Properties> Window" on page 564</i>	-
Peak Table	Note: This is a command menu that is valid when the [Peak Table] tab in the <Results > view is selected. Note: The same menu will appear when the [Peak Table] tab in the <Results > view is clicked on with the right mouse button.	-
Copy	Copies the selected data to the clipboard.	-
Copy whole Table	Copies the entire table, including its heading, to the clipboard.	-
Table Style	Displays the <Table Style> window, which allows you to select a peak table style. <i>Refer to "14.5 <Table Style> Window" on page 569</i>	-



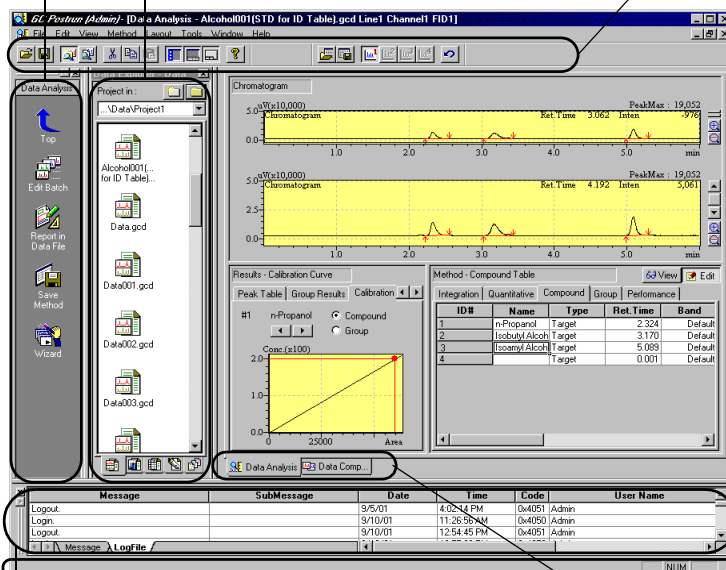
Command	Description	Tool button
Compound	 Note: This is a command menu that is valid when the [Peak Table] tab in the <Results > view is selected. Note: The same menu will appear when the [Peak Table] tab in the <Results > view is clicked on with the right mouse button.	-
Copy	Copies the selected data to the clipboard.	-
Copy whole Table	Copies the entire table, including its heading, to the clipboard.	-
Table Style	Displays the <Table Style> window, which allows you to select a peak table style. <i>Refer to "14.5 <Table Style> Window" on page 569</i>	-
Group	 Note: This is a command menu that is valid when the [Group Results] tab in the <Results > view is selected. Note: The same menu will appear when the [Group Results] tab in the <Results > view is clicked on with the right mouse button.	Group Results
Copy	Copies the selected data to the clipboard.	-
Copy whole Table	Copies the entire table, including its heading, to the clipboard.	-
Table Style	Displays the <Table Style> window, which allows you to select a style of group results table. <i>Refer to "14.5 <Table Style> Window" on page 569</i>	-
Calibration Curve.	 Note: This is a command menu that is valid when the [Calibration Curve] tab in the <Results > view is selected. Note: The same menu will appear when the [Calibration Curve] tab in the <Results > view is clicked on with the right mouse button.	-
Undo Zoom	Undoes zooming in of the chromatogram. If the chromatogram cannot be undone or if it does not need to be undone, this parameter is dimmed.	-
Redo Zoom	Redoes zooming in of the chromatogram. If the chromatogram does not need to be redone, this parameter is dimmed.	-
Initialize Zoom	Cancels zooming in of the chromatogram, and returns it to the initial state.	-



Command	Description	Tool button
Calibration Information	Displays the <Calibration Information> window, which allows you to view the data for the calibration curve displayed within the view.	-
Copy	Copies the calibration curve to the clipboard.	-
Properties	Displays the <Properties> window for the calibration curve, which allows you to select a mode for displaying the calibration curve.	-
Status Information	Displays an analysis log when analysis is performed on the GC-2010. The displayed analysis log consists of up to 26 rows. Success or failure is displayed here. Error location and details  Originally targeted control value calculated from the analytical conditions when an error occurs Actually measured value when an error occurs	-
Manual Peak Integration Bar	Displays the <Manual Peak Integration> window. <i>Refer to "6.4.4 <Manual Peak Integration>" on page 216</i>	

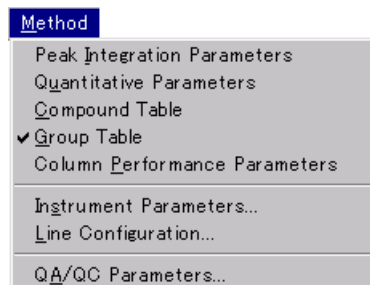


Command	Description	Tool button
Data Explorer	Toggles between displaying and hiding the items. When the items are displayed, they will be marked with a check in the menu. Assistant Bar <i>Refer to "3.3 [Postrun] Assistant Bar ." on page 14</i>	
Assistant Bar	Data Explorer <i>Refer to "11 <Data Explorer> Window" on page 487</i>	
Output Window		
Toolbar		-
Status Bar		-
Tab Control	Output Window <i>Refer to "14.1 <Output Window> Window" on page 561</i> Status Bar Tab Control	





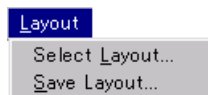
6.3.4 <Data Analysis> - [Method] Menu

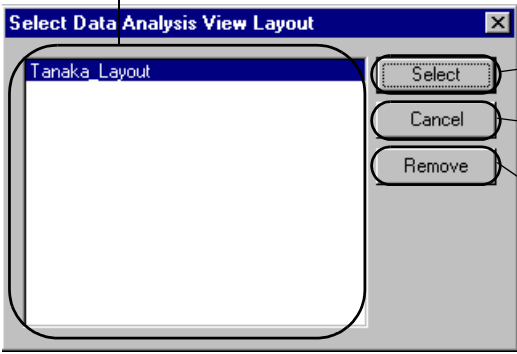
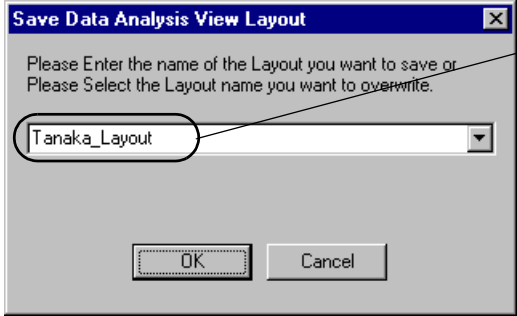


Command	Description
Peak Integration Parameters	Selects the [Integration] tab in the <Method > view. <i>Refer to "6.6.1 <Method> View - [Integration] Tab" on page 249</i>
Quantitative Parameters	Selects the [Quantitative] tab in the <Method > view. <i>Refer to "6.6.2 <Method> View - [Quantitative] Tab" on page 270</i>
Compound Table	Selects the [Group] tab in the <Method > view. <i>Refer to "6.6.3 <Method> View - [Compound] Tab" on page 273</i>
Group Table	Selects the [Group] tab in the <Method > view. <i>Refer to "6.6.4 <Method> View - [Group] Tab" on page 275</i>
Column Performance Parameters	Selects the [Performance] tab in the <Method > view. <i>Refer to "6.6.5 <Method> View - [Performance] Tab" on page 277</i>
Instrument Parameterss	Displays the <Instrument Parameterss> window protected from any modification, which allows you to view the Instrument Parameterss at data acquisition. <i>Refer to "5.5 <Data Acquisition> -<Instrument Parameters> View" on page 85</i>
Line Configuration	Opens the [Configured Modules] section in the <System Configuration> window, which allows you to view the GC's line settings at data acquisition. No system configuration settings can be modified here. <i>Refer to "4.2 <System Configuration> Window" on page 17</i>
QA/QC Parameters	Displays the <QA/QC-Ch#> windows, which allows you to set the QA/QC parameters for quality control. <i>Refer to "13 <QA/QC> Window" on page 543</i>



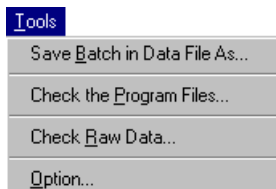
6.3.5 <Data Analysis> - [Layout] Menu

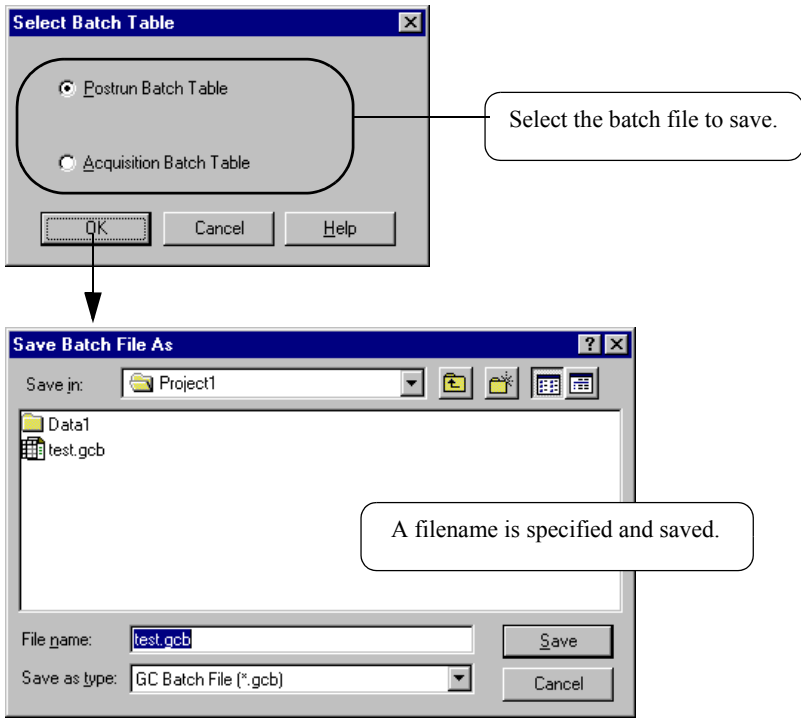


Command	Description
Select Layout	Displays the <Select Layout> window, which allows you to load a stored layout. Displays up to 5 screen layouts saved by selecting [Layout]-[Save Layout] from the main menu bar.  Loads the selected layout. Closes the <Select Layout> window without changing the layout. Deletes the selected layout.
Save Layout	Names the layout in use and saves it.  Enter the name of the screen layout to be saved. To overwrite an already saved layout, select its name by clicking on [▼]. Note: The <Data Analysis> window will be opened next time in the layout of the view that is displayed on the <Data Analysis> window just before you have exited the <GC Postrun> screen.



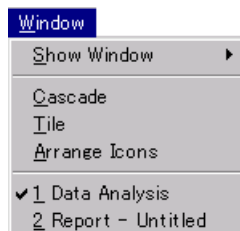
6.3.6 <Data Analysis> - [Tools] Menu

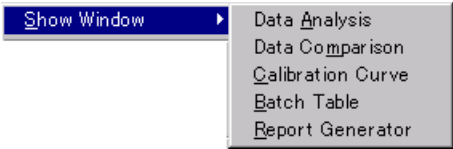


Command	Description
Save Batch in Data File As	Displays the <Select Batch Table> window. If you use batch tables when data is acquired or reanalyzed, the last used batch table will be saved in the data file. Select this command when you want to name and save a batch table stored in the data file as a batch file. Note: When executing batch-analysis or batch-postrun, the batch table used at the last is saved in a data file.  Select the batch file to save. A filename is specified and saved.
Check the Program Files	Displays the <Check the Program Files> window, which allows you to check for any program corruption. Refer to "14.2 <Check the Program Files> Window" on page 562
Check Raw Data	Displays the <Check Raw Data> window, allowing you to check the raw data files for any corruption.
Option	Displays the <Setting Options> window. Refer to "14.9 <Setting Options> Window" on page 580



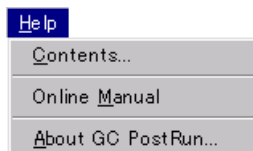
6.3.7 <Data Analysis> - [Window] Menu

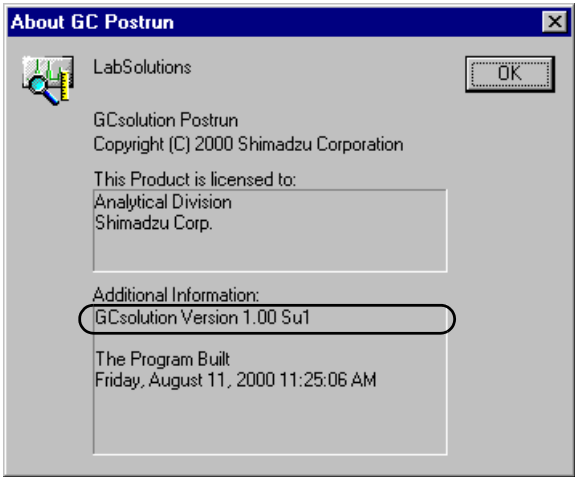


Command	Description
Show Window	Displays the window selected from the submenu among the <Data Analysis>, <Data Comparison>, <Calibration Curve>, <Batch Table>, and <Report> windows.  <i>Refer to "7 <Calibration Curve> Window" on page 283</i> <i>Refer to "8 <Data Comparison> Window" on page 313</i> <i>Refer to "9 <Batch Table> Window" on page 329</i> <i>Refer to "10 <Report> Window" on page 383</i>
Cascade	Cascades the <Data Analysis>, <Data Comparison>, <Calibration Curve>, <Batch Table>, and <Report> windows.
Tile	Tiles the <Data Analysis>, <Data Comparison>, <Calibration Curve>, <Batch Table>, and <Report> windows.
Arrange Icons	Arranges the minimized window icons.
Currently open window	The name of the window currently displayed on <GC Postrun> screen is displayed.



6.3.8 <Data Analysis> - [Help] Menu



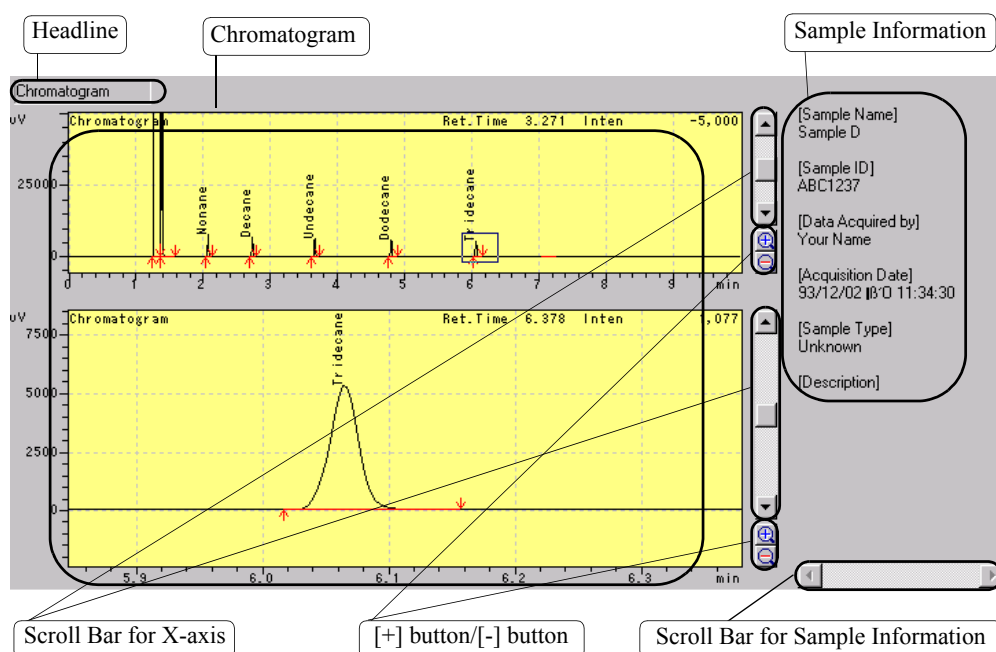
Command	Description	Tool button
Contents	Displays the help menu. <i>Refer to "12.1.1 Using Help" on page 107</i>	-
Online Manual	<i>Refer to "12.1.2 Using the Online Manual" on page 108</i>	-
About GC Postrun	Displays the version information of the <GC Postrun> screen. 	

6.4

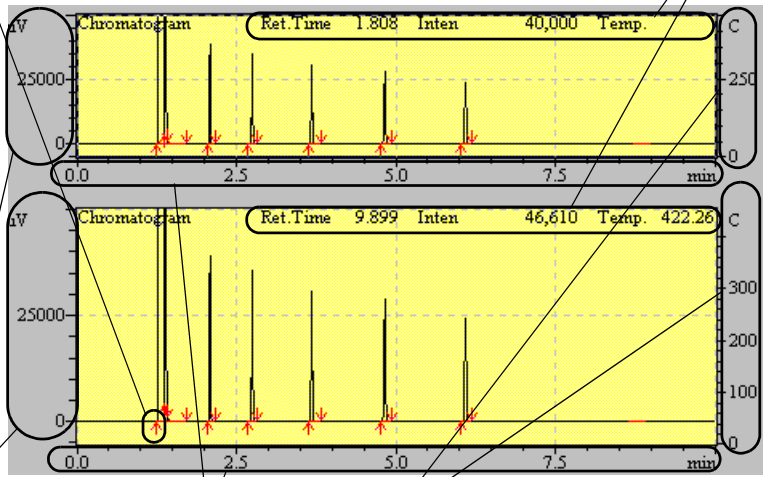
<Data Analysis> - <Chromatogram> View

The <Chromatogram> view in the <Data Analysis> window displays the chromatogram and sample information for the specified channel in the data file. The chromatogram is displayed as either an original chromatogram (representing the entire data) or an expanded chromatogram (showing an enlarged part of the original chromatogram). The view of the expanded chromatogram may be changed by dragging a part of the original or expanded chromatogram. The part displayed as the expanded chromatogram is identified by enclosing it in a box within the original chromatogram.

6.4.1 Element Names of <Chromatogram> View



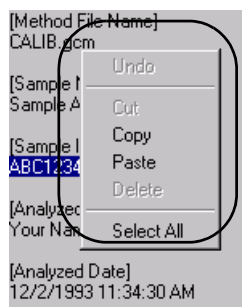


Name	Description
Headline	The <Chromatogram> view can be displayed on top of the whole <Data Analysis> window by double-clicking on the headline. If you double-click on the headline again, the <Chromatogram> view will be displayed in the previous state.
Chromatogram	The chromatogram stored in the currently loaded data file is displayed. The upper chromatogram is the original one representing the entire data. The lower chromatogram is the expanded one showing an enlarged part of the original chromatogram. If you have set up the software to display the peak marks in the <Properties> window for the chromatogram, the starting and ending positions of each peak will be indicated by an arrow. <i>Refer to "14.4 <Chromatogram View Properties> Window" on page 564</i> Cursor position information  The left Y-axis shows the intensity of the chromatogram. The X-axis is the time axis. The right Y-axis shows the scales for the oven temperature and the pressure or flow rate of the carrier gas, in accordance with the [Y Axis Scale] on the [Other] tab page of the <Chromatogram Display Settings> window.
Scroll Bar for Chromatogram	The displayed chromatogram is moved vertically.
[+] button [-] button	When the [+] button located at the lower end of the right Y-axis is clicked on, the chromatogram height will be enlarged two times larger (the intensity axis scale will become half in length). When the [-] button is clicked on, the chromatogram height will be reduced to half (the intensity axis scale will become two times longer).
Sample Information	The sample name, sample ID, data comment, etc. entered at data acquisition are displayed. The items to be displayed as the sample information should be specified in [Sample Information] on the [Other] tab page of the <Display Settings> window. In each item, the data specified on the <Sample Login> and <Batch Table> windows will be displayed. If no sample name and sample ID are specified on the <Sample Login> and <Batch Table> windows, nothing will be displayed. <i>Refer to "6.4.3 <Chromatogram> View - <Display Settings> Window" on page 213</i> <i>Refer to "5.9 <Sample Login> Window" on page 180</i> <i>Refer to "9 <Batch Table> Window" on page 329</i>
Scroll Bar for Sample Information	The displayed sampled information is scrolled horizontally. In particular, use this Scroll Bar when the data comment is long.



6.4.2 Sample Information Menu in the <Chromatogram> View

If you click on the sample information area of the <Chromatogram> view with the right mouse button, the following menu will appear. This menu allows you to paste the sample information to another application from the clipboard.



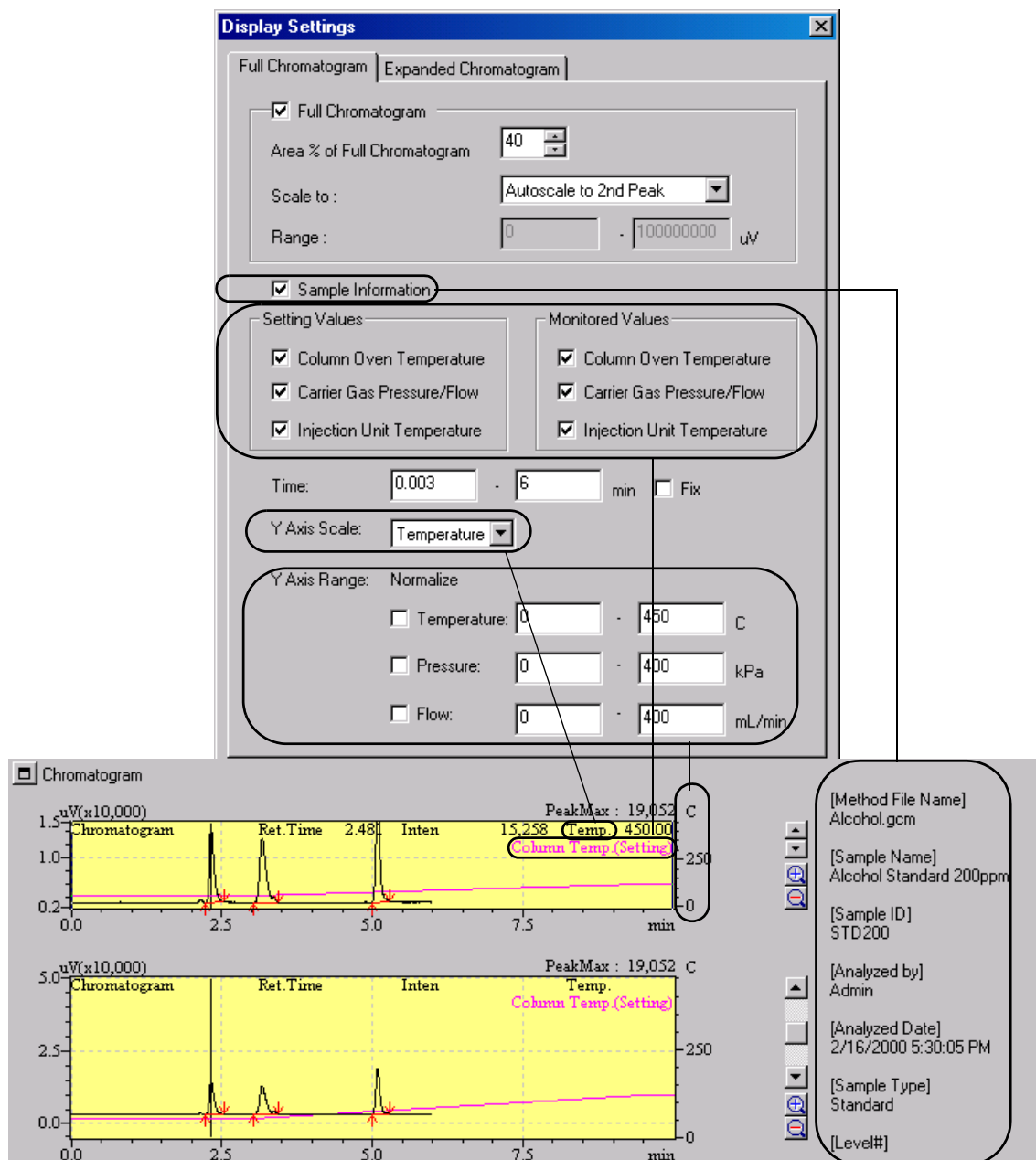
6.4.3 <Chromatogram> View - <Display Settings> Window

The <Display Settings> window is used to set the display details of the chromatogram view displayed on the <Data Analysis> window.

To open the <Display Settings> window, click on the chromatogram area of the <Chromatogram> view. A pop-up menu will appear. From this menu, select [Display Settings]. “Monitored Values” can be displayed only by GC-2010, GC-2014 or GC-2025 data files.

6.4.3.1 <Display Settings> - [Full Chromatogram] Tab

Set the display details of the original chromatogram representing the entire data.

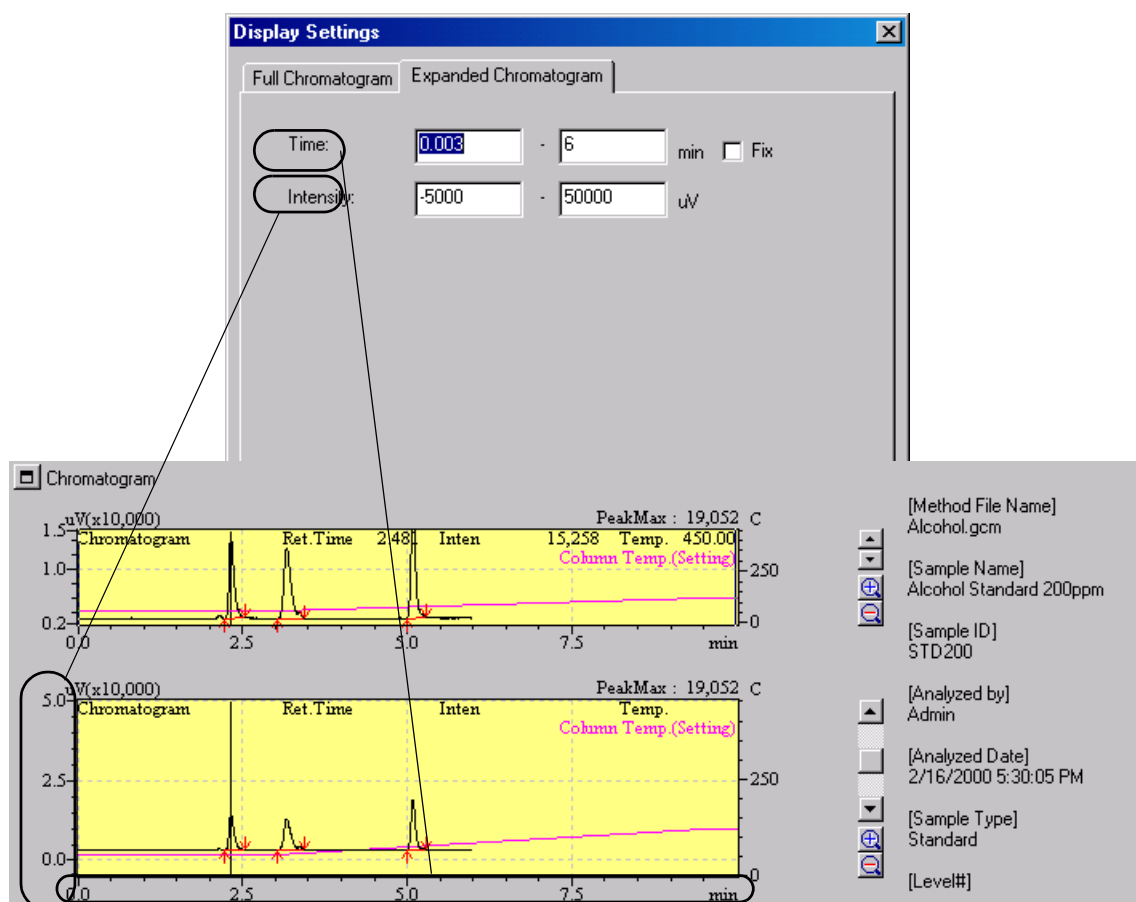




Parameter	Description		
Full Chromatogram	Switches ON/OFF the display of the base shift.		
	Parameter	Description	Setting range (Default value)
	Area % of Full Chromatogram	Specifies the height(%) of the original chromatogram in the <Chromatogram view> window.	10-90 (50)
	Scale to	Selects the intensity axis of the chromatogram.	(Autoscale to Largest Peak), Autoscale to 2nd Peak, Autoscale to 3rd Peak, Autoscale to Intensity Setup at the time of Analysis
	Range	Specify the intensity axis range when [User-defined] is selected for [Scale to].	-100000000 - 100000000
Sample Information	Displays the sample information on the right part of the chromatogram.		
Setting Values	Superimposes on the chromatogram the program curves for "Column Oven Temperature," "Carrier Gas Pressure/Flow," and "Injection Unit Temperature" among the Instrument Parameters set at data acquisition.		
Monitored Values	Superimposes on the chromatogram the graphs for "Column Oven Temperature," "Carrier Gas Pressure/Flow," and "Injection Unit Temperature" that have actually been measured during data acquisition. Note: “Monitored values” can be displayed only by GC-2010 data files.		
Time Axis	Specifies the range of display time for the full chromatogram. If the check box for Fixed is checked, the chromatogram will be displayed within the specified time range even if other data is loaded.		
Y Axis Scale	Select either temperature or pressure/flow for the Y-axis scale displayed on the right of the chromatogram.		
Y Axis Range	Specify the range of the Y-axis scale (right side) automatically based on the Instrument Parameters settings or by entering a value. If [Normalize] is marked with a check, the Y-axis scale will be displayed in such a range as allows the maximum and minimum of each program to be contained in that scale.		



6.4.3.2 <Display Settings> - <Expanded Chromatogram> Tab

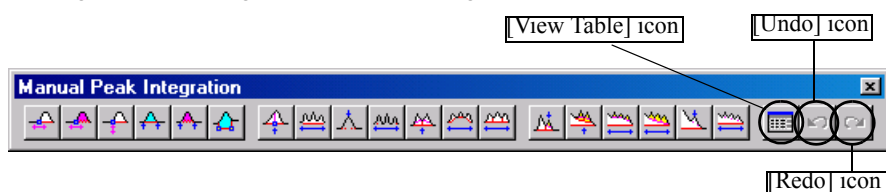


Set the display details of an expanded chromatogram.

Parameter	Description
Time	Sets the time range of the horizontal axis for the expanded chromatogram.
Intensity	Sets the intensity range of the vertical axis for the expanded chromatogram.

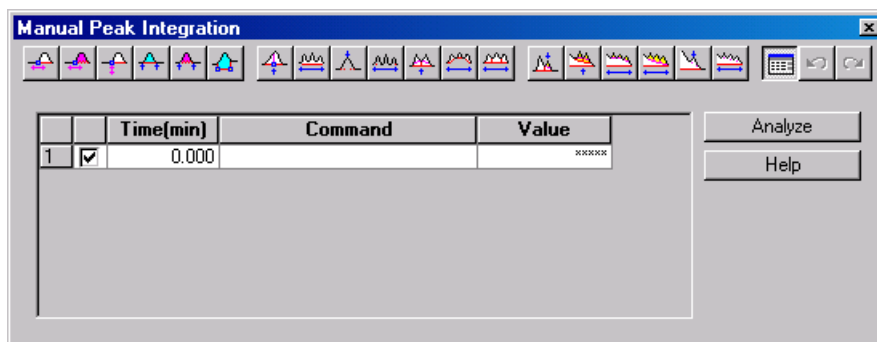
6.4.4 <Manual Peak Integration>

To show the <Manual Integration> screen, select the [Manual Integration] command in the popup menu on the <Chromatogram> view or the [Manual Integration Bar] command from the [View] menu of the <Data Analysis> screen. The <Manual Integration> screen is a toolbar containing tools for manipulating peaks. You can execute manipulation commands by clicking the tool buttons on a magnified chromatogram in the <Chromatogram> view.





Click the [View Table] icon to show the table.



Icon	Command of Time Program	Reference
	Move BL* ¹	<i>Refer to "6.4.4.2 <Move BL>" on page 220</i>
	Move BL(AutoCorrect)* ¹	<i>Refer to "6.4.4.3 <Move BL (Auto Correct)>" on page 221</i>
	Move BL(Vertical)	<i>Refer to "6.4.4.4 <Move BL(Vertical)>" on page 222</i>
	Insert Peak* ²	<i>Refer to " " on page 222</i>
	Insert Peak(AutoCorrect)* ²	<i>Refer to "6.4.4.6 <Insert Peak(Auto Correct)>" on page 224</i>
	Insert Peak Start Insert Peak End	<i>Refer to "6.4.4.7 Insert Peak(Start/End)" on page 225</i>
	Split Peak	<i>Refer to " " on page 225</i>
	Unify Peaks	<i>Refer to "6.4.4.9 <Unify Peaks>" on page 227</i>
	Reject Peak	<i>Refer to " " on page 227</i>
	Reject Peaks	<i>Refer to "6.4.4.11 <Reject Peaks>" on page 229</i>
	Force B/V	<i>Refer to "6.4.4.12 <Force B/V>" on page 230</i>
	Force B Peaks	<i>Refer to "6.4.4.13 <Force B Peaks>" on page 231</i>



Icon	Command of Time Program	Reference
	Force V Peaks	<i>Refer to "6.4.4.14 <Force V Peaks>" on page 232</i>
	Force T/L/N/NB	<i>Refer to "6.4.4.15 <Force T/L/N/NB>" on page 233</i>
	Force B/V TL.Peak	<i>Refer to "6.4.4.16 <Force B/V TL.Peak>" on page 235</i>
	Force B TL.Peaks	<i>Refer to "6.4.4.17 <Force B TL.Peaks>" on page 236</i>
	Force V TL.Peaks	<i>Refer to "6.4.4.18 <Force V TL.Peaks>" on page 237</i>
	Reject TL.Peak	<i>Refer to "6.4.4.19 <Reject TL.Peak>" on page 238</i>
	Reject TL.Peaks	<i>Refer to "6.4.4.20 <Reject TL.Peaks>" on page 239</i>

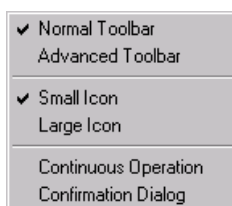
*1:The Move BL command of Version 2.1 or earlier and the Move BL command of Version 2.2 or later are not identical. The function identical to Move BL of V2.1 or earlier in Version 2.2 or later is Move BL (AutoCorrect). Move BL in an integration time program created by Version 2.1 or earlier is shown as Move BL (AutoCorrect) in Version 2.2 or later.

*2:The Insert Peak command of Version 2.1 or earlier and the Insert Peak command of Version 2.2 or later are not identical. The function identical to Insert Peak of V2.1 or earlier in Version 2.2 or later is Insert Peak (AutoCorrect). Insert Peak in an integration time program created by Version 2.1 or earlier is shown as Insert Peak (AutoCorrect) in Version 2.2 or later.

Note: The manual integration table is equivalent to the "Integration Time Program with Data Only" in Versions 2.1 and earlier.



6.4.4.1 Popup menu on the toolbar

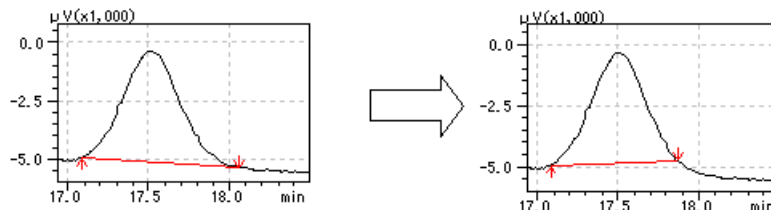


Command	Description
Normal Toolber	Shows only the standard integration command icons. 
Advanced Toolbar	Shows all the integration command icons. 
Small Icon	Uses small icons to show the buttons.
Large Icon	Uses large icons to show the buttons.
Continuous Operation	Specifies whether to perform manual integration commands in succession or not.
Confirmation Dialog	Toggles between showing and not showing of a message screen for confirmation. Note: The commands that require user input such as [Force B/L], which requires you to select either of B or V, show a message screen for your confirmation even if this setting has been set to not show a message screen.



6.4.4.2 <Move BL>

This command allows you to move a peak detection point (starting or ending point) to your selected time. No correction is made after the move.



Note: You can also move detection points for tailing/leading peaks.
In doing this, you cannot move one beyond the neighboring peaks.

Refer to "6.4.4.3 <Move BL (Auto Correct)>" on page 221

(Time program command)

Command	Time	Value
Move BL	Specify the time of the detection point.	Time at the destination

(Operational procedure)

1. Select the  button [Move BL] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the peak detection point of your choice (starting or ending point) and click on it. A blue vertical line will appear at the detection point.
3. Move the mouse cursor to the time to which you wish to move the detection point.

Note: While the mouse cursor is moving, the baseline correction line (red line) moves along the chromatogram according to the cursor position.

4. If [Confirmation Dialog] has not been checkmarked, the detection point move accordingly and the chromatogram display reflects it.

For [Confirmation Dialog]: Refer to "6.4.4.1 Popup menu on the toolbar" on page 219

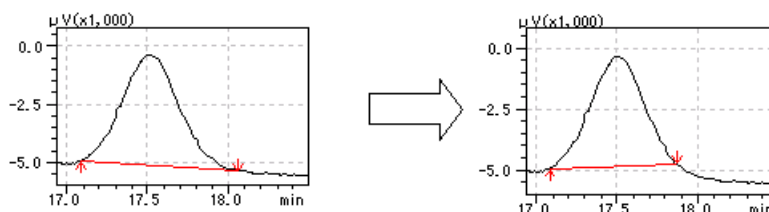
5. If [Confirmation Dialog] has been checkmarked, the <Move BL> screen will appear. The specified detection point and the destination time will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The integration result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.

Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.3 <Move BL (Auto Correct)>

This command allows you to move a peak detection point (starting or ending point) to your selected time. After the move, correction is made and the detection point changes accordingly. The correction is intended for preventing the baseline correction line from crossing the chromatogram.



Note: You can also move detection points for tailing/leading peaks.
In doing this, you cannot move one beyond the neighboring peaks.

(Time program command)

Command	Time	Value
Move BL(Auto Correct)	Specify the time of the detection point.	Time at the destination

(Operational procedure)

1. Select the  button [Move BL(Auto Correct)] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the peak detection point of your choice (starting or ending point) and click on it. A blue vertical line will appear at the detection point.
3. Move the mouse cursor to the time to which you wish to move the detection point.

Note: While the mouse cursor is moving, the baseline correction line (red line) moves along the chromatogram according to the cursor position.

4. If [Confirmation Dialog] has not been checkmarked, the detection point move accordingly and the chromatogram display reflects it.

For [Confirmation Dialog]: Refer to "6.4.4.1 Popup menu on the toolbar" on page 219

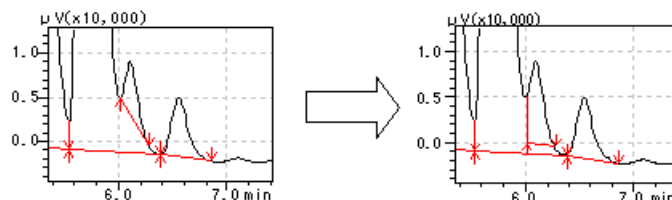
5. If [Confirmation Dialog] has been checkmarked, the <Move BL(Auto Correct)> screen will appear. The specified detection point and the destination time will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The integration result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.

Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.4 <Move BL(Vertical)>

This command allows you to move a peak detection point (starting or ending point) in the intensity axis (vertical) direction.



Note: You can also move detection points for tailing/leading peaks.

(Time program command)

Command	Time	Value
Move BL(Vertical)	Specify the time of the detection point.	Intensity value at the destination

(Operational procedure)

1. Select the  button [Move BL(Vertical)] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the peak detection point of your choice (starting or ending point) and click on it. A blue horizontal line will appear at the detection point. The vertical line at the detection point will disappear.
3. Move the mouse cursor vertically to the intensity value to which you wish to move the detection point and click on it.

Note: While the mouse cursor is moving, the baseline correction line (red line) moves along the chromatogram according to the cursor position.

4. If [Confirmation Dialog] has not been checkmarked, the detection point move accordingly and the chromatogram display reflects it.

For [Confirmation Dialog]: Refer to "6.4.4.1 Popup menu on the toolbar" on page 219

5. If [Confirmation Dialog] has been checkmarked, the <Move BL(Vertical)> screen will appear. The specified detection point and the destination time will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The integration result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.

Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.5 <Insert Peak>

This command allows you to specify the times of the starting and ending points to insert a peak. No correction is made after the insertion.

Note: You can insert a tailing/leading peak. However, you cannot specify a tailing/leading peak on another tailing/leading peak.

(Time program command)

Command	Time	Value
Insert Peak	Specify the time at the starting point	Specify the time at the ending point

(Operational procedure)

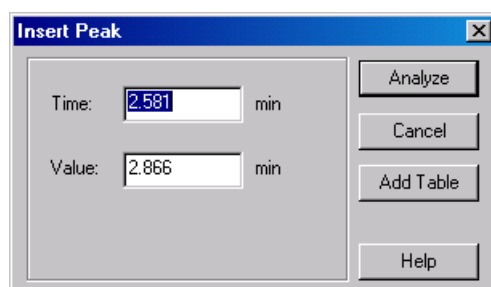
1. Select the  button [Insert Peak] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time of the starting point of the peak you wish to insert and click on it. A blue vertical line will appear at the starting point.
3. Move the mouse cursor to the time of the ending point of the peak you wish to insert and click on it.

Note: While the mouse cursor is moving, the baseline correction line (red line) moves along the chromatogram according to the cursor position.

4. If [Confirmation Dialog] has not been checkmarked, the peak is inserted accordingly and the chromatogram display reflects it.

Reference: For [Confirmation Dialog], refer to 6.4.4.1.

5. If [Confirmation Dialog] has been checkmarked, the <Insert Peak> screen will appear. The times of the starting and ending points of the peak to be inserted will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.

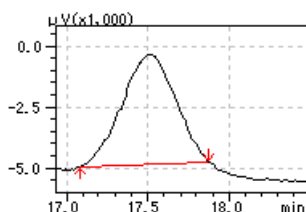


Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.6 <Insert Peak(Auto Correct)>

This command allows you to specify the times of the starting and ending points to insert a peak. After the insertion, correction is made and the detection point changes accordingly. The correction is intended for preventing the baseline correction line from crossing the chromatogram.



Note: You can insert a tailing/leading peak. However, you cannot specify a tailing/leading peak on another tailing/leading peak.

(Time program command)

Command	Time	
Insert Peak	Specify the time at the starting point	Specify the time at the ending point

(Operational procedure)

1. Select the  button [Insert Peak(Auto Correct)] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time of the starting point of the peak you wish to insert and click on it. A blue vertical line will appear at the starting point.
3. Move the mouse cursor to the time of the ending point of the peak you wish to insert and click on it.

Note: While the mouse cursor is moving, the baseline correction line (red line) moves along the chromatogram according to the cursor position.

4. If [Confirmation Dialog] has not been checkmarked, the peak is inserted accordingly and the chromatogram display reflects it.

Reference: For [Confirmation Dialog], refer to 6.4.4.1.

5. If [Confirmation Dialog] has been checkmarked, the <Insert Peak(Auto Correct)> screen will appear. The times of the starting and ending points of the peak to be inserted will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.

Note: When this screen is opened from the <Integration Time Program> screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.7 Insert Peak(Start/End)

This command allows you to specify the times and intensities of the starting and ending points to insert a peak.

Note: You can insert a tailing/leading peak. However, you cannot specify a tailing/leading peak on another tailing/leading peak.

(Time program command)

Command	Time	Value
Insert Peak Start	Specify the time at the starting point.	Specify the time at the ending point.
Insert Peak End	Specify the intensity at the starting point.	Specify the intensity at the ending point.

(Operational procedure)

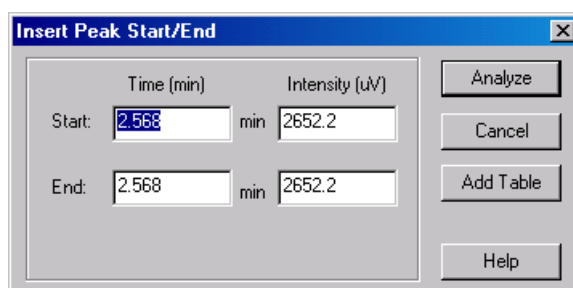
1. Select the  button [Insert Peak Start/End] on the toolbar. Vertical and horizontal lines will appear at the mouse cursor position.
2. Move the mouse cursor to the time of the starting point of the peak you wish to insert and click on it. Blue vertical and horizontal lines will appear at the starting point.
3. Move the mouse cursor to the time of the ending point of the peak you wish to insert and click on it.

Note: While the mouse cursor is moving, the baseline correction line (red line) moves along the chromatogram according to the cursor position.

4. If [Confirmation Dialog] has not been checkmarked, the peak is inserted accordingly and the chromatogram display reflects it.

Reference: For [Confirmation Dialog], refer to 6.4.4.1.

5. If [Confirmation Dialog] has been checkmarked, the <Insert Peak(Start/End)> screen will appear. The times and intensities of the starting and ending points of the peak to be inserted will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.



Note: When this screen is opened from the <Integration Time Program> screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.8 <Split Peak>

This command allows you to divide a peak at the specified point.

(Time program command)

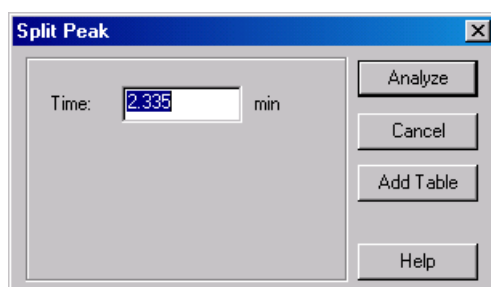
Command	Time	Value
Split Peak	Time at which a peak is divided	None

(Operational procedure)

1. Select the  button [Split Peak] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time in a peak at which you wish to divide the peak and click on it.
3. If [Confirmation Dialog] has not been checkmarked, the peak is divided accordingly and the chromatogram display reflects it.

For [Confirmation Dialog]: Refer to "6.4.4.1 Popup menu on the toolbar" on page 219

4. If [Confirmation Dialog] has been checkmarked, the <Split Peak> screen will appear. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.



Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.9 <Unify Peaks>

This command allows you to consolidate multiple peaks between user-specified two points into one peak.

(Time program command)

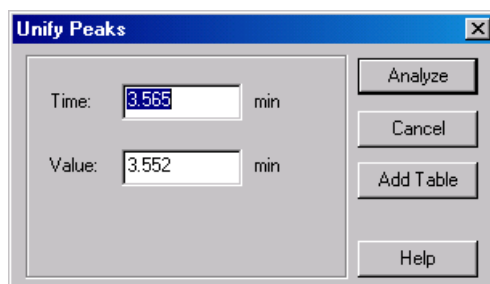
Command	Time	Value
Unify Peaks	Time at the section starting point	Time at the section ending point

(Operational procedure)

1. Select the  button [Unify Peaks] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to start the section for consolidating peaks and click on it. Next, move the mouse cursor to the time at which you wish to end the section and click on it.
3. If [Confirmation Dialog] has not been checkmarked, peaks between the specified two points are consolidated and the chromatogram display reflects it.

For [Confirmation Dialog]: Refer to "6.4.4.1 Popup menu on the toolbar" on page 219

4. If [Confirmation Dialog] has been checkmarked, the <Unify Peaks> screen will appear. The times of the specified two points will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.



Note: When this screen is opened from the <Integration Time Program> screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.10 <Reject Peak>

This command allows you to remove a peak by specifying its apex.

(Time program command)

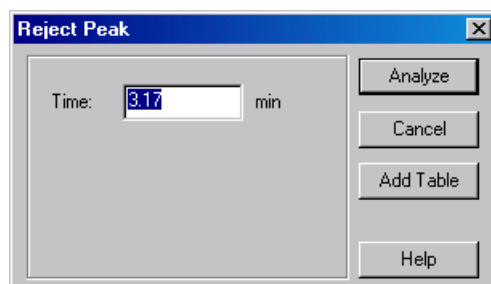
Command	Time	Value
Reject Peak	Specify the time of the peak apex.	None

(Operational procedure)

1. Select the  button [Reject Peak] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time of the apex of the peak you wish to remove and click on it.
3. If [Confirmation Dialog] has not been checkmarked, the peak is removed and the chromatogram display reflects it.

For [Confirmation Dialog]: Refer to "6.4.4.1 Popup menu on the toolbar" on page 219

4. If [Confirmation Dialog] has been checkmarked, the <Reject Peak> screen will appear. The specified time will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.



Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.11 <Reject Peaks>

This command allows you to remove multiple peaks between user-specified two points.

(Time program command)

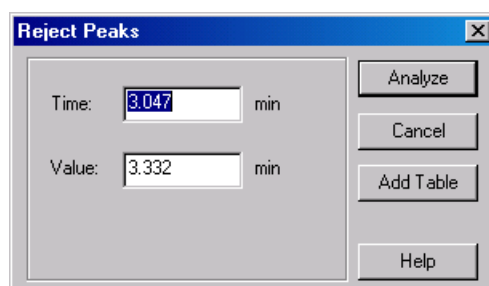
Command	Time	Value
Reject Peaks	Time to start the section	Time to end the section

(Operational procedure)

1. Select the  button [Reject Peaks] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to start the section for removing peaks and click on it. Next, move the mouse cursor to the time at which you wish to end the section and click on it.
3. If [Confirmation Dialog] has not been checkmarked, peaks between the specified two points are consolidated and the chromatogram display reflects it.

For [Confirmation Dialog]: Refer to "6.4.4.1 Popup menu on the toolbar" on page 219

4. If [Confirmation Dialog] has been checkmarked, the <Reject Peaks> screen will appear. The times of the specified two points will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.



Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.

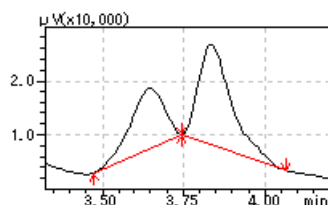


6.4.4.12 <Force B/V>

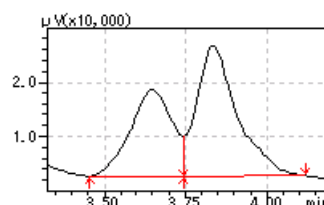
This command allows you to change how peaks are separated at a specified midpoint between two peaks.

Specify "B" to separate peaks completely (as shown below on the left) or "V" to separate them vertically (as shown below on the right).

B: Complete separation



V: Vertical separation



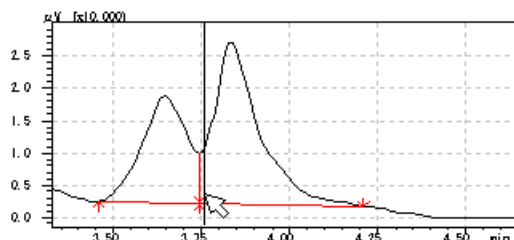
Note: Force B/V is also applied to tailing/leading peaks.

(Time program command)

Command	Time	Value
Force B/V	Specify the time of the detection point	0:B, 1:V

(Operational procedure)

1. Select the  button [Force B/V] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time of the midpoint of two adjacent peaks for which you wish to change B/V setting and click on it. The <Force B/V> screen will appear.



3. Select [0: Force B] or [1: Force V].

Force B/V

Time: 2.535 min

Value: 0:Force B

Analyze

Cancel

Add Table

Help

Note: The [Confirmation Dialog] screen always appears even if [Confirmation Dialog] has not been checkmarked in the popup menu on the toolbar described in 6.4.4.1 because this command requires you to select the setting.

4. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.

Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.13 <Force B Peaks>

This command allows you to change the forced baseline setting for multiple tailing/leading peaks between user-specified two points to B (complete separation) leaving them as tailing/leading peaks.

(Time program command)

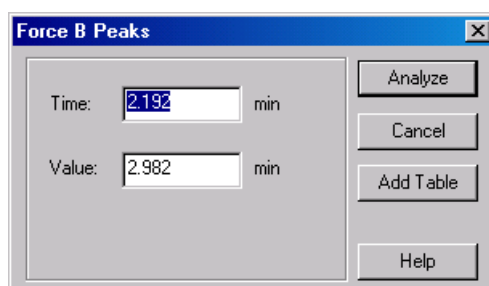
Command	Time	Value
Force B Peaks	Time to start the section	Time to end the section

(Operational procedure)

1. Select the  button [Φορξε Β Πεακς] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to start the section for changing the setting for forcing baseline to B and click on it. Next, move the mouse cursor to the time at which you wish to end the section and click on it.
3. If [Confirmation Dialog] has not been checkmarked, the forced baseline setting for peaks between the specified points is set to B and the chromatogram display reflects it.

For [Confirmation Dialog]: Refer to "6.4.4.1 Popup menu on the toolbar" on page 219

4. If [Confirmation Dialog] has been checkmarked, the <Force B Peaks> screen will appear. The times of the specified two points will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.



Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.14 <Force V Peaks>

This command allows you to change the forced baseline setting for multiple tailing/leading peaks between user-specified two points to V (vertical separation) leaving them as tailing/leading peaks.

(Time program command)

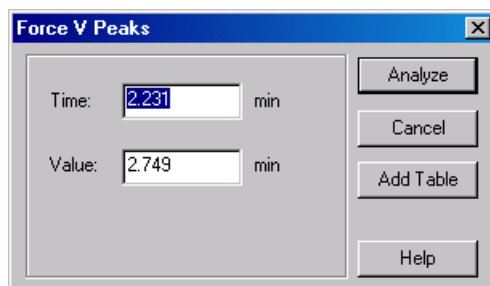
Command	Time	Value
Force V Peaks	Time to start the section	Time to end the section

(Operational procedure)

1. Select the  button [Force V Peaks] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to start the section for changing the setting for forcing baseline to V and click on it. Next, move the mouse cursor to the time at which you wish to end the section and click on it.
3. If [Confirmation Dialog] has not been checkmarked, the forced baseline setting for peaks between the specified points is set to B and the chromatogram display reflects it.

For [Confirmation Dialog]: Refer to "6.4.4.1 Popup menu on the toolbar" on page 219

4. If [Confirmation Dialog] has been checkmarked, the <Force V Peaks> screen will appear. The times of the specified two points will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.



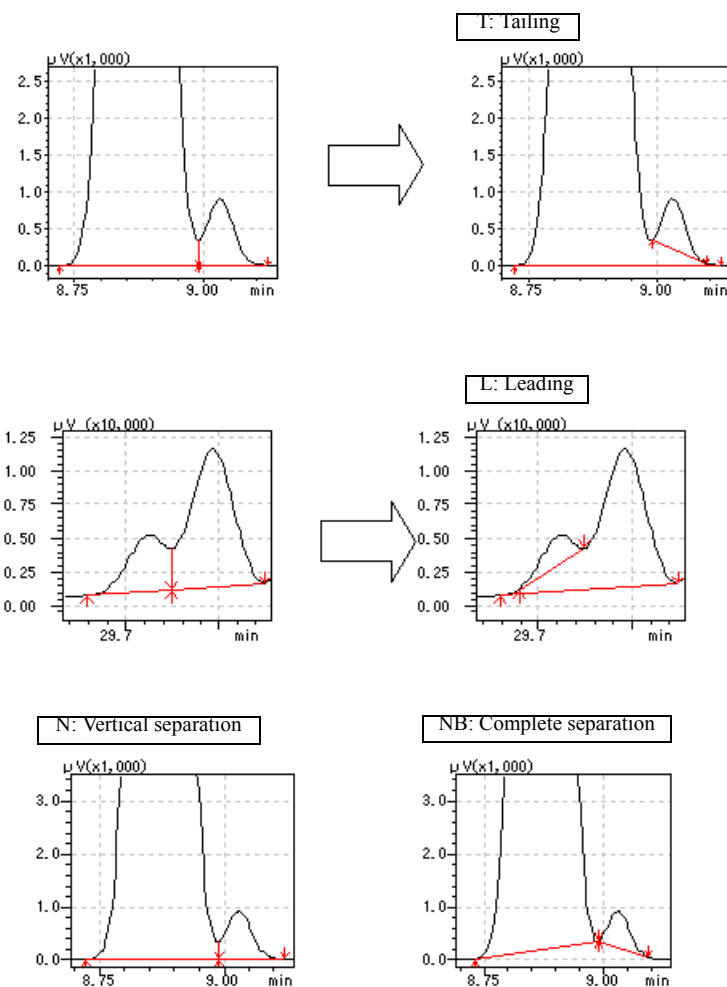
Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.15 <Force T/L/N/NB>

This command allows you to change the processing method for a peak by specifying its apex.

- When set to T, which means tailing, the specified peak is treated as a trailing peak of the preceding peak.
- When set to L, which means leading, the specified peak is treated as a leading peak of the peak that follows it.
- When set to N, which means no tailing/leading and vertical separation, the specified peak is vertically separated.
- When set to NB, which means no tailing/leading and complete separation, the specified peak is completely separated.



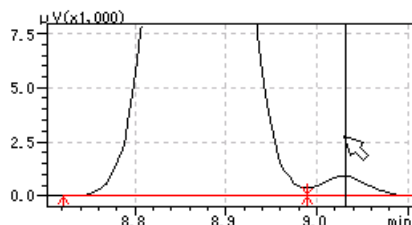
(Time program command)

Command	Time	Value
Force T/L/N/NB	Specify the time at the peak apex	0:T, 1:L, 2:N, 3:NB

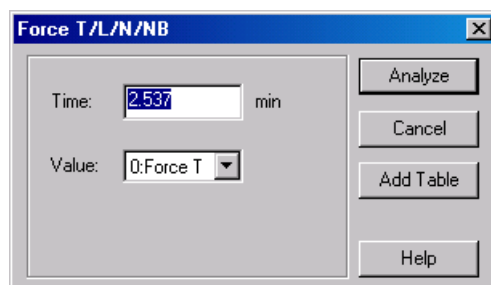


(Operational procedure)

1. Select the  button [Force T/L/N/NB] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time of the apex of the peak for which you wish to change the way how it is treated and click on it. The <Force T/L/N/NB> screen will appear.



3. Select either of [0: Force T], [1: Force L], [2: Force N], or [3: Force NB].



Note: The [Confirmation Dialog] screen always appears even if [Confirmation Dialog] has not been checkmarked in the popup menu on the toolbar described in 6.4.4.1 because this command requires you to select the setting.

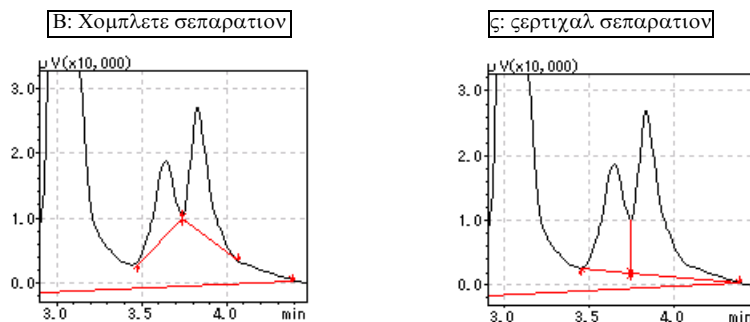
4. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table

Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.16 <Force B/V TL.Peak>

This command allows you to specify two adjacent tailing or leading peaks and change the separation method of the peaks. When set to B, the peaks are separated completely (as shown below on the left). When set to V, the peaks are vertically separated (as shown below on the right).

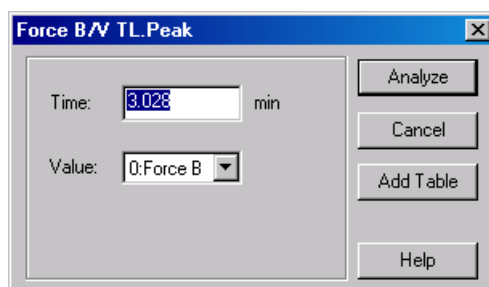


(Time program command)

Command	Time	Value
Force B/V TL.Peak	Specify the time of the detection point	0:B,1:V

(Operational procedure)

1. Select the  button [Force B/V TL.Peak] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time of the midpoint of two adjacent peaks for which you wish to change B/V setting and click on it. The <Force B/V TL.Peak> screen will appear.
3. Select [0: Force B] or [1: Force V].



Note: The [Confirmation Dialog] screen always appears even if [Confirmation Dialog] has not been checkmarked in the popup menu on the toolbar described in 6.4.4.1 because this command requires you to select the setting.

4. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram.

Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.17 <Force B TL.Peaks>

This command allows you to change the forced baseline setting for multiple tailing/leading peaks between user-specified two points to B (complete separation) leaving them as tailing/leading peaks.

(Time program command)

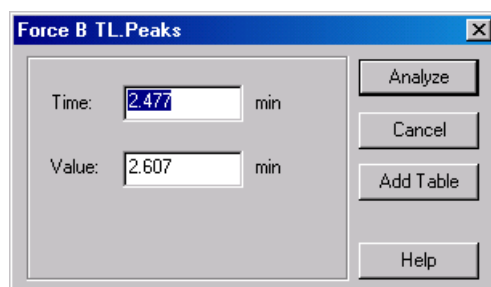
Command	Time	Value
Force B TL.Peaks	Time to start the section	Time to end the section

(Operational procedure)

1. Select the  button [Force B TL.Peak] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to start the section for changing the setting for forcing baseline to B and click on it. Next, move the mouse cursor to the time at which you wish to end the section and click on it.
3. If [Confirmation Dialog] has not been checkmarked, the forced baseline setting for peaks between the specified points is set to B and the chromatogram display reflects it.

For [Confirmation Dialog]: Refer to "6.4.4.1 Popup menu on the toolbar" on page 219

4. If [Confirmation Dialog] has been checkmarked, the <Force B TL.Peak> screen will appear. The times of the specified two points will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.



Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.18 <Force V TL.Peaks>

This command allows you to change the forced baseline setting for multiple tailing/leading peaks between user-specified two points to V (vertical separation) leaving them as tailing/leading peaks.

(Time program command)

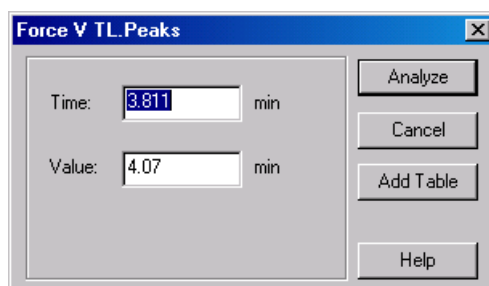
Command	Time	Value
Force V TL.Peaks	Time to start the section	Time to end the section

(Operational procedure)

1. Select the  button [Force V TL.Peaks] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to start the section for changing the setting for forcing baseline to V and click on it. Next, move the mouse cursor to the time at which you wish to end the section and click on it.
3. If [Confirmation Dialog] has not been checkmarked, the forced baseline setting for peaks between the specified points is set to B and the chromatogram display reflects it.

For [Confirmation Dialog]: Refer to "6.4.4.1 Popup menu on the toolbar" on page 219

4. If [Confirmation Dialog] has been checkmarked, the <Force V TL.Peaks> screen will appear. The times of the specified two points will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.



Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.19 <Reject TL.Peak>

This command allows you to remove a tailing or leading peak by specifying time. The area of the removed peak is added to the main peak.

(Time program command)

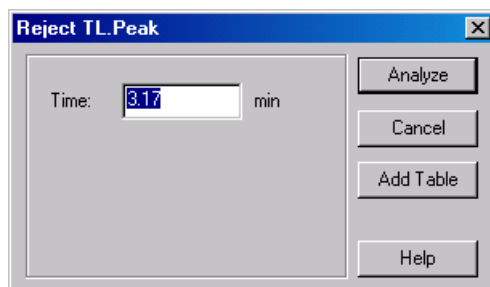
Command	Time	Value
Reject TL.Peak	Specify the time of the peak apex	None

(Operational procedure)

1. Select the  button [Reject TL.Peak] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time of the apex of the peak you wish to remove and click on it.
3. If [Confirmation Dialog] has not been checkmarked, the peak is removed and the chromatogram display reflects it.

For [Confirmation Dialog]: Refer to "6.4.4.1 Popup menu on the toolbar" on page 219

4. If [Confirmation Dialog] has been checkmarked, the <Reject TL.Peak> screen will appear. The times of the specified two points will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table.



Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.4.4.20 <Reject TL.Peaks>

This command allows you to remove tailing or leading peaks between user-specified two points. The areas of the removed peaks are added to the main peak.

(Time program command)

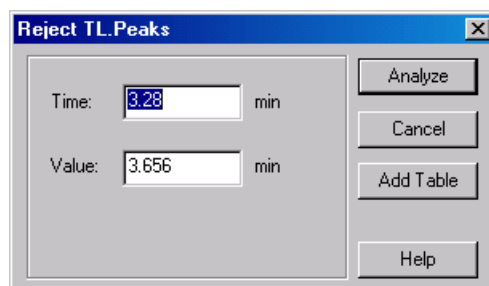
Command	Time	Value
Reject TL.Peaks	Time at the section starting point	Time at the section ending point

(Operational procedure)

1. Select the  button [Reject TL.Peaks] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to start the section for removing peaks and click on it. Next, move the mouse cursor to the time at which you wish to end the section and click on it.
3. If [Confirmation Dialog] has not been checkmarked, peaks between the specified points are removed and the chromatogram display reflects it.

For [Confirmation Dialog]: Refer to "6.4.4.1 Popup menu on the toolbar" on page 219

4. If [Confirmation Dialog] has been checkmarked, the <Reject TL.Peaks> screen will appear. The times of the specified two points will be shown in it. Click the [Analyze] button to add the time program command to the table and perform integration. The result will be shown on the chromatogram. Click the [Add Table] button if all what you need is adding the time program to the table



Note: When this screen is opened from the <Integration Time Program > screen, the [Simulate] button will be shown instead of the [Analyze] button.



6.5

<Data Analysis> - <Results> View

The <Results> view in the <Data Analysis> window consists of three tab pages: "Peak Table," "Compound," "Group," and "Calibration Curve." Each tab page displays the results that have been obtained from calculations using the acquired data, according to the settings in [Method View] (or the <Data Processing Parameters> window).

6.5.1 <Results> View - [Peak Table] Tab

The <Peak Table> tab page displays (i) the results obtained by detecting peaks in accordance with the parameters set on the [Integration] tab page of the <Method> view, and (ii) the peak integration information and quantitative calculation results on each peak.

Click the [Full Size] button to resize the <Method> View to the full range of the <Data Analysis> screen. The [Full Size] button will then turn to the [Normal Size] button. Click the [Normal Size] button to return the view to the original size.

The items displayed on the [Peak Table] tab page are listed below. Only the items that have been selected to display the corresponding columns on the <Table Style> window will be displayed within the view.

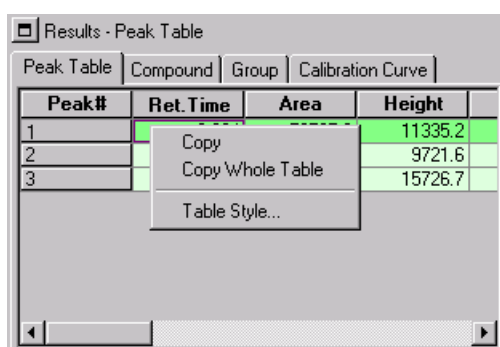
Item displayed	Description
Peak#	Shows the peak number that has been integrated.
Retention Time	Shows the retention time (minutes) of the peak.
Initial Time	Shows the initial time (minutes) of the peak.
Final Time	Shows the final time (minutes) of the peak.
Area	Shows the area of the peak.
Area%	Shows the percentage area of the peak.
Height	Shows the height of the peak.
Height%	Shows the percentage height of the peak.
A/H	Shows the peak area/peak height.
Concentration	Shows the concentration of the quantitatively analyzed peak.
Unit	Shows the concentration unit of the quantitatively analyzed peak.



Item displayed	Description
Mark	Shows a peak detection mark for the integrated peak. This mark consists of a 3-character string as follows: E: Exceeded by 1 V or -5 mV V: Peak after vertical division H: Horizontal baseline correction S: Main peak of tailing/leading T: Peak with tailing processed Note: When it is connected with GC-2010, 'E' mark isn't show.
Compound ID#	Shows the ID number on the compound table corresponding to the identified peak.
Compound Name	Shows the compound name on the compound table corresponding to the identified peak.
Group ID#	Shows the ID number on the group table corresponding to the grouped peaks.
G.Name	Shows the group name on the group table corresponding to the grouped peaks.
T.Plate	Shows the theoretical number of plates.
HETP	Shows the HETP.
Tailing F.	Shows the tailing factor.
Resolution	Shows the Resolution.
k'	Shows the retention capacity (k').
Separation Factor	Shows the separation factor.

Note: To change the displayed items on the table, select [View]-[Peak Table]-[Table Style] from the main menu bar, or click on the peak table area with the right mouse button. A pop-up menu will appear. From this menu, select [Table Style]. The <Table Style> window will appear, which allows you to change the displayed items. ([Refer to "14.5 <Table Style> Window" on page 569](#))

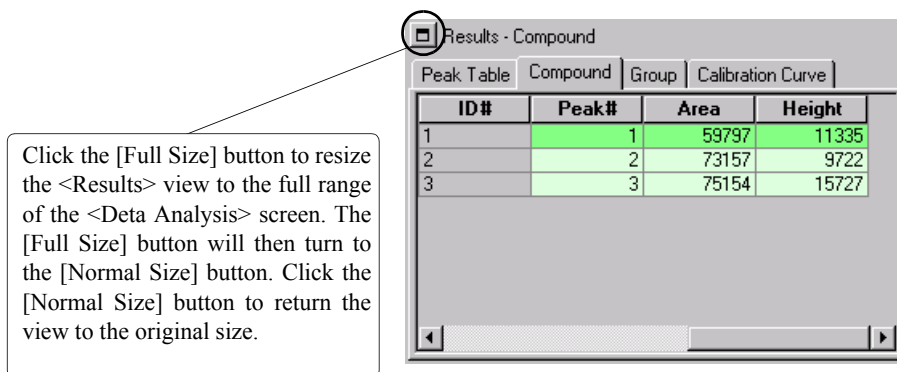
Note: The selected items or the entire table can be copied to the clipboard by selecting [Copy] or [Copy whole Table].





6.5.2 <Results> View - [Compound] Tab

The [Compound] tab page displays the results on each compound, which is required for the quantitative analysis. The quantitative result of each compound will be displayed on the [Peak Table] tab page of the <Results> view.



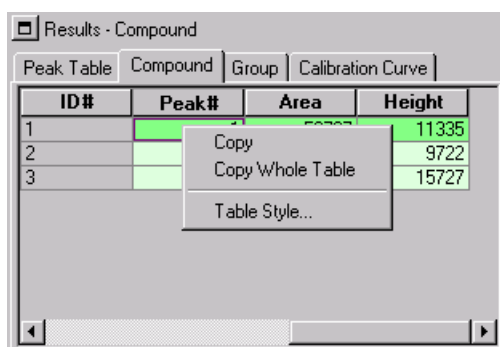
The items displayed on the [Compound] tab page are listed below:

Item displayed	Description
ID#	Shows the ID number on the compound table corresponding to the identified peak.
Name	Shows the compound name on the compound table corresponding to the identified peak.
Ret. Time	Shows the Resolution.Shows the concentration of the quantitatively analyzed peak.
Conc	Shows the concentration of the quantitatively analyzed peak.
Unit	Shows the concentration unit of the quantitatively analyzed peak.
Peak#	Shows the peak number that has been integrated.
Area	Shows the area of the peak.
Height	Shows the height of the peak.
Group ID#	Shows the ID number of the group corresponding to the group table for methods.
Group Name	Shows the group name of the group corresponding to the group table for methods.
Area%	Shows the percentage area of the peak.
Height%	Shows the percentage height of the peak.
ISTD Group	Shows the ISTD Group number.
Type	Shows the compound type.
Area Ratio	Shows the area ratio.
Height Ratio	Shows the area ratio.

Note: To change the displayed items on the table, select [View]-[Peak Table]-[Table Style] from the main menu bar, or click on the peak table area with the right mouse button. A pop-up menu will appear. From this menu, select [Table Style]. The <Table Style> window will appear, which allows you to change the displayed items.(Refer to "14.5 <Table Style> Window" on page 569)

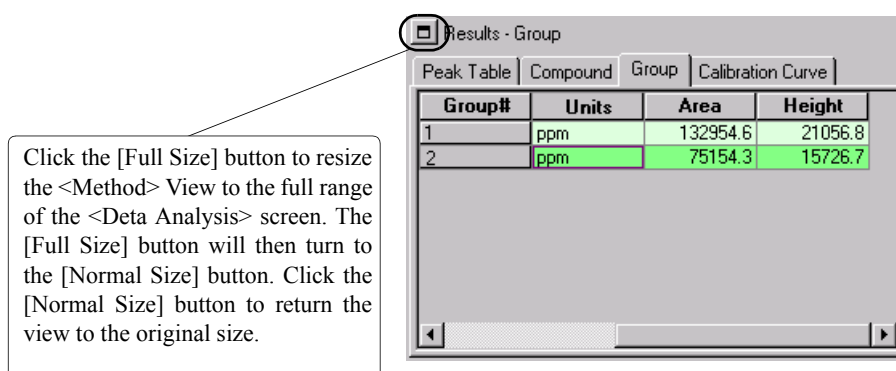


Note: The selected items or the entire table can be copied to the clipboard by selecting [Copy] or [Copy whole Table].



6.5.3 <Results> View - [Group] Tab

The [Group] tab page displays the results obtained by grouping the compounds in accordance with the settings on the group table of the <Method> view.



The items displayed on the [Group Results] tab page are listed below:

Item displayed	Description
Group#	Shows the ID number of the group corresponding to the group table for methods.
G.Name	Shows the group name of the group corresponding to the group table for methods.
Concentration	Shows the concentration for the entire group.
Unit	Shows the concentration unit for the entire group.
Area	Shows the total peak area for the entire group.
Area%	Shows the total peak area for the entire group as the percentage area.
Height	Shows the total peak height for the entire group.
Height%	Shows the total peak height for the entire group as the percentage height.
ISTD Group	Shows the ISTD Group number.
Type	Shows the compound type.

Note: No group results will be displayed unless a group table is selected by specifying grouping in [Quantitative] in the <Method> view.



Note: To change the displayed items on the table, select [View]-[Peak Table]-[Table Style] from the main menu bar, or click on the peak table area with the right mouse button. A pop-up menu will appear. From this menu, select [Table Style]. The <Table Style> window will appear, which allows you to change the displayed items. (*Refer to "14.5 <Table Style> Window" on page 569*)

Note: The selected items or the entire table can be copied to the clipboard by selecting [Copy] or [Copy whole Table].

Results - Group

Peak Table | Compound | Group | Calibration Curve

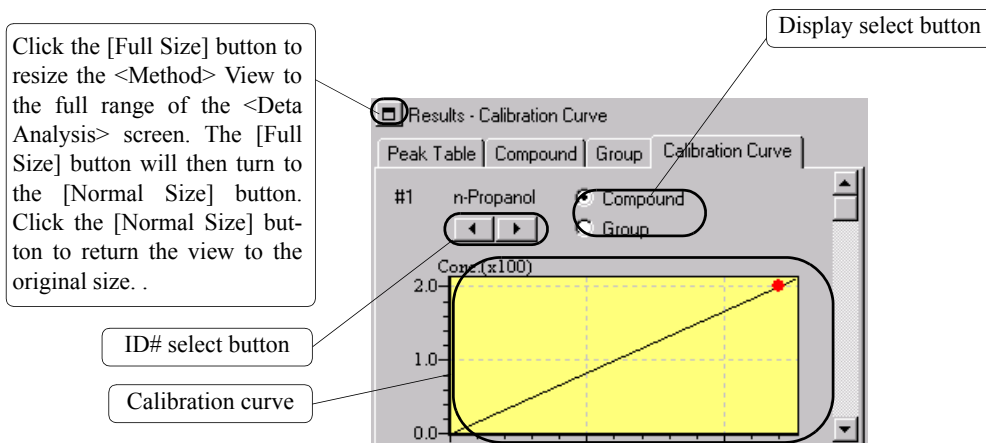
Group#	Units	Area	Height
1	ppm	132954.6	21056.8
2	ppm		15726.7

Copy
Copy whole Table
Table Style...



6.5.4 <Results> View - [Calibration Curve] Tab

The [Calibration Tab] tab page displays the calibration curve for a desired compound used for quantitative analysis and that for a desired group.



Parameter	Description
[Compound]/[Group] button	Toggles between displaying [Compound] and [Group]. When [Compound] is selected, the calibration curve for a desired compound will be displayed. When [Group] is selected, the calibration curve for a desired group will be displayed.
[<][>] button	Selects the compound or group ID number to be displayed. Note: The displayed calibration curve can also be selected by clicking on the ID number of a desired compound table or that of a desired group table in the <Method> view.

Note: To check the detailed information on calibration, click on the calibration curve area with the right mouse button. A pop-up menu will appear. From this menu, select [Calibration Information]. The <Calibration Information> window will appear, which allows you to check the detailed information. (Refer to "6.5.4.1 <Calibration Information> Window" on page 246)



6.5.4.1 <Calibration Information> Window

The <Calibration Information> window displays the detailed information on the calibration curve displayed in the [Calibration Curve] tab page of the <Result> view.

This window is opened by selecting [View]-[Calibration curve]-[Calibration Information] when the [Calibration Curve] tab page is displayed in the <Result> view. In this window, specify whether each of the levels is to be used as a calibration point. For the mean RF, the relative standard deviation (%) is displayed instead of the correlation coefficient.

Calibration Information - Compound ID# 1

Final Col.Display: File Name

Curve Type: Linear

r = 0.0000000

%RSD =

Y = (1.177614e-002)X + (0.0000000)

Date Processed : 7/14/2004 2:48:29 PM

Level	Cal.Point	Average	# of Reps	File
1	☒	8491.8	1	

Parameter	Description	Setting range	Default value
Final Col.Display	Specify the information to be displayed on the final row of the calibration information table.	A/H and file name	File name
Curve Fit Type	Shows the calibration curve type used to create the calibration curve.	-	-
r	Shows the correlation coefficient for the calibration curve. Note: When Curve Fit Type is Point to Point, this value isn't displayed.	-	-
Relative standard deviation	Shows the relative standard deviation (%) for the average RF.	-	-
Y=aX+b	Shows the equation representing the calibration curve.	-	-
Data Processed	Shows the date when the calibration curve was created (updated). Note: The display format for the analysis date and time corresponds to the corresponding setting on Control Panel of Windows.	-	-
Level	Shows each level of the standard sample.	-	-
Cal.Point	Specify whether the data at each level is used for a calibration point.	Checked/Not checked	Checked
Average	Shows the averaged area or height at each level.	-	-



Parameter	Description	Setting range	Default value
Repetition	Shows the number of data sets used for calculation at each level.	-	-
Files (1) to (10)	Shows the data file name that is used for calculation at each level when a file name is specified in the Final Col.Display parameter.	-	-
Area (1) to (10)	Shows the peak area in each data set used for calculation at each level when "A/H" is specified in the Final Col.Display parameter, and when "Area" is used to create the calibration curve.	-	-
Height (1) to (10)	Shows the peak height in each data set used for calculation at each level when "A/H" is specified in the Final Col.Display parameter, and when "Height" is used to create the calibration curve.	-	-



6.6

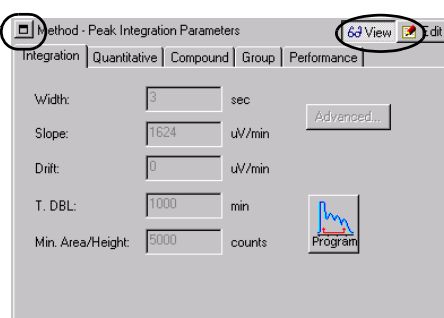
<Data Analysis> - <Method> View

The <Method> view is displayed on the lower right half of the <GC Postrun> screen; or it is displayed by selecting [Method]-[Data Processing Parameters (Ch#)] from the main menu bar on the <GC Real Time Analysis> screen. The <Method> view has the [Integration], [Quantitative], [Compound], [Group], and [Performance] tabs. The data will be analyzed in accordance with the parameters set here.

When the <Data Analysis> window is opened, the <Method> view will be in the read-only View Mode. Clicking on the [Edit Mode] button located at the upper right part of the <Method> view allows you to modify the parameters on each tab page.

View Mode

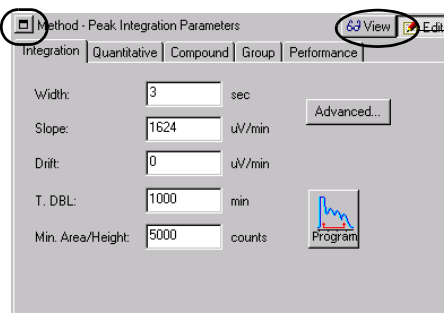
Click the [Full Size] button to resize the <Method> View to the full range of the <Data Analysis> screen. The [Full Size] button will then turn to the [Normal Size] button. Click the [Normal Size] button to return the view to the original size.



Clicking on this button in the View Mode selects the Edit Mode.

Edit Mode

Click the [Full Size] button to resize the <Method> View to the full range of the <Data Analysis> screen. The [Full Size] button will then turn to the [Normal Size] button. Click the [Normal Size] button to return the view to the original size.



Clicking on this button in the Edit Mode selects the View Mode.

Note: In the Edit Mode, you cannot open or load any other method file.

Note: If you modify parameters in the Edit mode and click on the [View Mode] button, peak integration and identification will be carried out automatically. If there is any existing calibration curve, the quantitative analysis will also be carried out automatically using that calibration curve. If the data file is saved, the original data will be over-written by the re-analysis result. To retain the original data, save the data file under a different name.

Note: If the quantitative parameters are modified on the <Method> view, the calibration curves in the data file will be deleted. To create calibration curves using the modified quantitative parameters, edit the method file on the <Calibration Curve> window. (*Refer to "7 <Calibration Curve> Window" on page 283*)

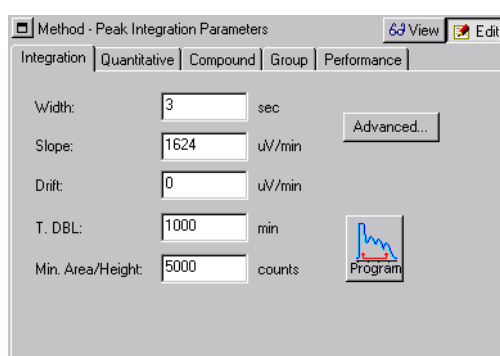


6.6.1 <Method> View - [Integration] Tab

The [Integration] tab page allows you to set the peak integration parameters for the chromatogram. The waveforms will be processed to detect peaks in accordance with the settings for the peak integration parameters. The results of peak integration can be checked on the [Peak Table] tab page of the <Result> view. If proper peak integration cannot be achieved with the peak integration parameters only, the time program for peak integration may be used.

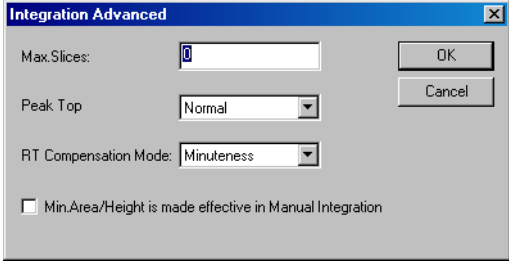
If you select [Method]-[Data Processing Parameters (Ch#)] from the main menu bar on the <GC Real Time Analysis> screen, the same tab page will be displayed.

For a detailed discussion of peak integration, refer to "16.1 Peak Integration Parameters and Peak Integration" on page 591 and "16.4 Calibration Curve" on page 623.



Parameter	Description	Setting range	Default value
Width	Enter the value equivalent to half of the narrowest peak of the chromatogram or a slightly smaller value. Any peak having a width smaller than half of this setting will be excluded from the quantitative calculation.	0.04 to 200.00 (sec)	3.00
Slope	Specify the Slope value for detecting peaks. You may want to perform the slope test on the <GC Real Time Analysis> screen and use this result as the Slope value. <i>For the slope test, refer to "5.4 <Data Acquisition>-<Chromatogram> View" on page 79</i>	0.0 to 4.0×10^{11} ($\mu\text{V}/\text{min}$)	1000.0
Drift	Enter the drift value for the baseline. If this parameter is set to zero, the baseline will be judged automatically.	-0.1×10^7 to 1.0×10^7 ($\mu\text{V}/\text{min}$)	0.0
T.DBL	Specify the time for making the Slope and Width values variable. When the specified time is reached, the Slope value will be halved and the Width value doubled. If this parameter is set to zero, these values will be processed automatically. For such analysis as may extend peak width (e.g., thermostatic analysis), set T.DBL to a time value that will cause the peak width to become larger.	0.00 to 1000.00 (min)	1000.00
Min. Area/Height	Enter the area or height of the minimal peak for which the quantitative calculation result and report are output.	0.00 to 1000.00 (Counts)	1000.00

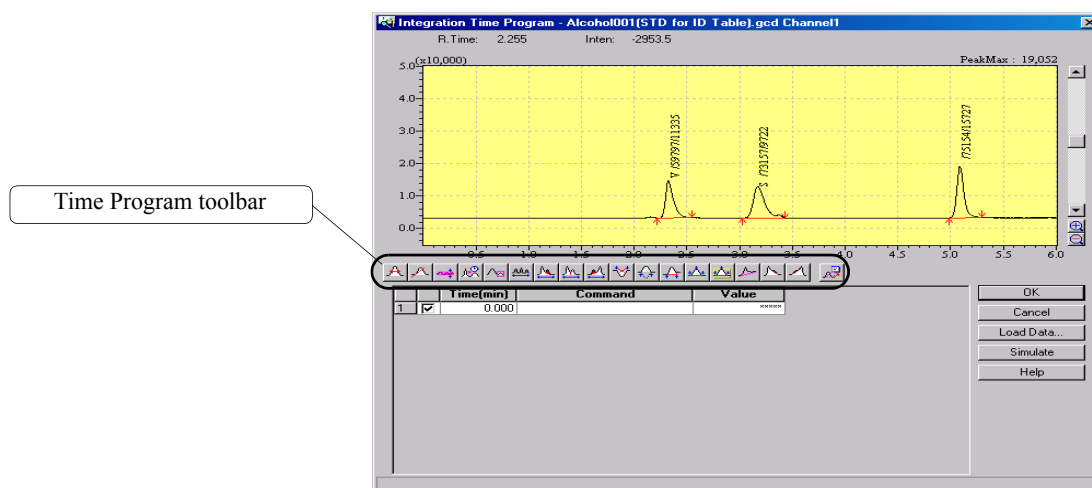


Parameter	Description	Setting range	Default value
[Advanced] button			
Max. Slices	Enter the maximum number of slice data. It is needed when sliced data to be converted to other data format(text format).	0-5000	0
Peak Top	Specify the method to detect a peak apex (retention time). ● Normal: Detects peak apex based on intensity value. The apex detected first is regarded as the peak apex. ● Baseline Subtracted: Detects peak apex based on the intensity value which is corrected by the baseline connecting the peak starting point and ending point. The point with the maximum value between the peak starting and ending points is regarded as the peak apex instead of the apex detected first.	Normal, Baseline Subtracted	Normal
RT Compensation Mode	Specify the mode to correct retention time at the peak apex. ● Normal: The correction method compatible with Chromatopac, CLASS-LC10, CLASS-GC10, and CLASS-VP. If you zoom up a chromatogram graph in this mode, RT appears slightly dislocated from the graph in the forward direction. ● Minuteness: The positions of apexes of RT and graph will not be dislocated even if you zoom up a chromatogram graph in this mode.	Normal, Minuteness	Minute- ness
Min. Area/Height is mode effective in Manual Integration	Specify whether to be effective or not the value specified in the Min.Area/Height for the Manual Integration. For example, if you execute the Insert Peak in the Manual Integration with turning on this check box, the peak having a value lower than the specified Min Area/Height would not be inserted.	Checked, Not checked	Not checked
[Program] button 	When this button is clicked on, the <Integration Time Program (Method)> window, which can be used commonly for all methods, will be opened. If proper peak integration cannot be achieved for common methods or multiple sets of data (e.g., the targeted peak appears after a wide peak), then set the time program for peak integration commonly for methods. <i>Refer to "6.6.1.1 <Integration Time Program> Window" on page 251</i>	0 to 5000	0



6.6.1.1 <Integration Time Program> Window

When integration cannot be performed properly with integration parameters only, use a time program. If you do not obtain satisfactory integration for more than one set of data, click the [Program] button in the [Integration] tab page to create a time program. Integration time programs created here will be saved in a method file. By using this method file, you can apply the same integration setting to other data.



Parameter	Description
Time Program toolbar	The buttons on this toolbar allows you to graphically set up the time program commands on the chromatogram screen.
[Width] button 	Sets the command to change integration parameter "Width" during an integration process. Refer to "6.6.1.2 <Width=>" on page 255
[Slope] button 	Sets the command to change integration parameter "Slope" during an integration process. Refer to "6.6.1.3 <Slope=>" on page 255
[Drift] button 	Sets the command to change integration parameter "Drift" during an integration process. Refer to "6.6.1.4 <Drift=>" on page 256
[T.DBL] button 	Sets the command to change integration parameter "T.DBL" during an integration process. Refer to "6.6.1.5 <T.DBL=>" on page 256
[MIN Area/Height] button 	Sets the command to change integration parameter "MIN Area/Height" during an integration process. Refer to "6.6.1.6 <MIN.Area/Height=>" on page 257
[Integration Off to On] button 	Sets a section in which you wish to turn OFF integration. Refer to "6.6.1.7 <Integration Off to On>" on page 257



Parameter	Description
[Tailing On to Auto] button 	Sets a section in which you wish to turn ON tailing processing. <i>Refer to "6.6.1.8 <Tailing On to Auto>" on page 258</i>
[Tailing Off to Auto] button 	Sets a section in which you wish to turn OFF tailing processing. <i>Refer to " " on page 258</i>
[Leading On to Off] button 	Sets a section in which you wish to turn ON leading processing. <i>Refer to "6.6.1.10 <Leading On to Off>" on page 260</i>
[Negative Peak Reject] button 	Sets a section in which you wish to remove negative peaks. <i>Refer to "6.6.1.11 <Negative Peak Reject>" on page 261</i>
[Negative Peak Invert] button 	Sets a section in which you wish to invert negative peaks. <i>Refer to "6.6.1.12 <Negative Peak Invert>" on page 262</i>
[Horizontal Baseline] button 	Sets a section in which you wish to integrate using a horizontal baseline. <i>Refer to "6.6.1.13 <Horizontal Baseline>" on page 263</i>
[Peak Detect/Top/End] button 	Allows you to detect a peak by specifying the peak starting point, apex, and ending point. <i>Refer to "6.6.1.14 <Peak Detect/Top/End>" on page 264</i>
[Peak Detect(Fixed)/Top/End] button 	The same with [Peak Detect/Top/End] but no correction is made. Use this when [Peak Detect/Top/End] does not work as expected. <i>Refer to "6.6.1.15 <Peak Detect(Fixed)/Top/End>" on page 265</i>
[B.Slope] button 	Sets the slope of the baseline after the specified time. <i>Refer to "6.6.1.16 <B.Slope=>" on page 266</i>
[T.Slope] button 	Sets the slope to automatically detect minute shoulder peaks on tailing peaks. <i>Refer to "6.6.1.17 <T.Slope=>" on page 267</i>
[L.Solpe] button 	Sets the slope to automatically detect minute shoulder peaks on leading peaks. <i>Refer to "6.6.1.18 <L.Slope=>" on page 268</i>
[Slope Test] button 	Allows you to specify the section to perform a slope test (start/end points) and execute one. <i>Refer to "6.6.1.19 <Slope Test>" on page 269</i>
Time Program Table	
Time	Set a time.



Parameter	Description
Command	Select a processing command from the pull-down menu. A processing command for which the manipulation button is available should be set graphically using that button.
Value	If you specify a command marked with "=" in [Command], enter a value here.
[Change Data] button	Allows you to select different data for manipulation reference. For this purpose, a window will be opened. Note: The original data in the <Data Analysis> window will remain unchanged. Note: This button cannot be used in the <Integration Time Program (Data)> window.
[Simulate] button	Allows you to analyze the data under the specified conditions and display the processed result as a chromatogram.

• List of processing commands available in time program for peak integration

Processing command	Description (Unit)
Width=	Changes the Width value (Sec). Setting range:0.04 to 200.0
Slope=	Changes the Slope value ($\mu\text{V}/\text{min}$). Setting range:0.0 to 4.0×10^{11}
Drift=	Changes the Drift value ($\mu\text{V}/\text{min}$). Setting range: -1.0×10^7 to 1.0×10^7
T.DBL=	Changes the T.DBL value (Min). Setting range:0.0 to 1000.0
MIN Area/Height=	Changes the area or height of the minimal peak for which the quantitative calculation and report will be output (Counts).
Integration Off Integration On	Peaks in the section between Integration Off and Integration On are considered to be unwanted peaks and thus removed.
Tailing On Tailing Off Tailing Auto	Tailing On turns on the forced tailing function and Tailing Off turns it off. Peaks after Tailing Auto are subject to automatic tailing
Leading Peak On Leading Peak Off	Peaks in the section between Leading Peak On and Leading Peak Off are treated as leading peaks.
NEG Peak Reject On NEG Peak Reject Off	Peaks in the section between NEG Peak Reject On and NEG Peak Reject Off are considered to be unwanted peaks and thus removed.
NEG Peak Invert On NEG Peak Invert Off	Peaks in the section between NEG Peak Invert On and NEG Peak Invert Off are inverted. It is also reflected on the chromatogram shown on a report.
HORIZ Baseline On HORIZ Baseline Off	The baseline for peaks in the section between HORIZ Baseline On and HORIZ Baseline Off is made horizontal.
Peak Detect Peak Top Peak End	Forces more than one peaks integrated into one peak.
Peak Detect(Fixed)	Starts a peak (fixed).
B.Slope=	Sets the slope of a baseline.
T.Slope=	Sets the slope for detecting minute peaks on a tailing peak.



Processing command	Description (Unit)
L.Slope=	Sets the slope for detecting minute peaks on a leading peak.
Move BL	Moves the peak detecting point.
Move BL(Auto Correct)	Moves the peak detecting point.j
Move BL(Vertical)	Shifts the peak detection point toward the intensity axis.
Insert Peak	Inserts a peak.
Insert Peak(Auto Correct)	Inserts a peak.
Insert Peak Start Insert Peak End	Inserts a peak.
Split Peak	Splits a peak.
Unify Peaks	Unify peaks.
Reject Peak	Deletes a peak.
Reject Peaks	Deletes peaks.
Force B/V	Allows you to specify the midpoint between two peaks and changes separation method for the peaks. ● 0: Force B (vertical separation) ● 1: Force V (complete separation)
Force B Peaks	Forces multiple peaks to be separated completely (Force B).
Force V Peaks	Forces multiple peaks to be separated vertically (Force V).
Force T/L/N/NB	Allows you to specify a peak apex and changes the separation method for the peak. ● 0: Force T (treats it as a tailing peak) ● 1: Force L (treats it as a leading peak) ● 2: Force N (vertical separation) ● 3: Force NB (complete separation)
Force B/V TL.Peak	Changes the forced baseline for a tailing/leading peak. ● 0: Force B (vertical separation) ● 1: Force V (complete separation)
Force B TL Peaks	Changes the forced baseline setting for more than one tailing/leading peak to B.
Force V TL Peaks	Changes the forced baseline setting for more than one tailing/leading peak to V.
Reject TL.Peak	Removes a tailing/leading peak.
Reject TL.Peaks	Removes more than one tailing/leading peak.



6.6.1.2 <Width=>

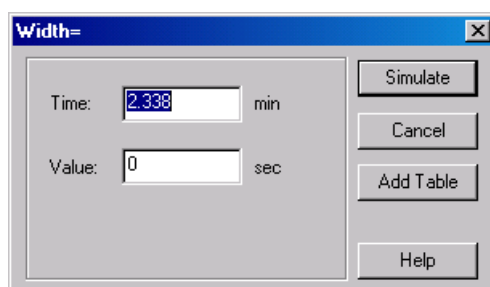
This command allows you to change the value of integration parameter Width during an integration process.

(Time program command)

Command	Time	Value(Units)
Width=	Time to change the parameter	Width value (sec)

(Operational procedure)

1. Select the  button [Width=] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to change the value of Width and click on it. The <Width=> screen will appear.



The dialog box titled "Width=" contains two input fields: "Time:" with the value "2.338" and unit "min", and "Value:" with the value "0" and unit "sec". On the right side, there are four buttons: "Simulate", "Cancel", "Add Table", and "Help".

3. Click the [Simulate] button to reflect the changed Width value to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.

6.6.1.3 <Slope=>

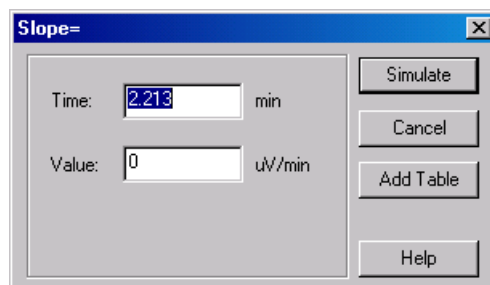
This command allows you to change the value of integration parameter Slope during an integration process.

(Time program command)

Command	Time	Value(Units)
Slope=	Time to change the parameter	Slope value ($\epsilon/\mu\text{V}$)

(Operational procedure)

1. Select the  button [Slope=] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to change the value of Slope and click on it. The <Slope=> screen will appear.



The dialog box titled "Slope=" contains two input fields: "Time:" with the value "2.213" and unit "min", and "Value:" with the value "0" and unit "uV/min". On the right side, there are four buttons: "Simulate", "Cancel", "Add Table", and "Help".

3. Click the [Simulate] button to reflect the changed Slope value to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.



6.6.1.4 <Drift=>

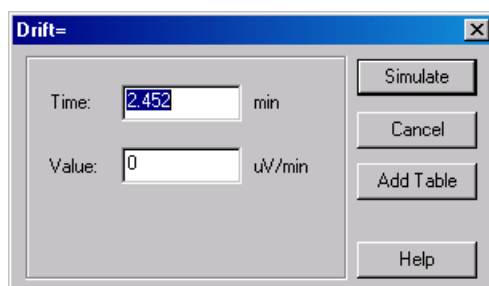
This command allows you to change the value of integration parameter Drift during an integration process.

(Time program command)

Command	Time	Value(Units)
Drift=	Time to change the parameter	Drift value (V/min)

(Operational procedure)

1. Select the  button [Drift=] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to change the value of Drift and click on it. The <Drift=> screen will appear.



3. Click the [Simulate] button to reflect the changed Drift value to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.

6.6.1.5 <T.DBL=>

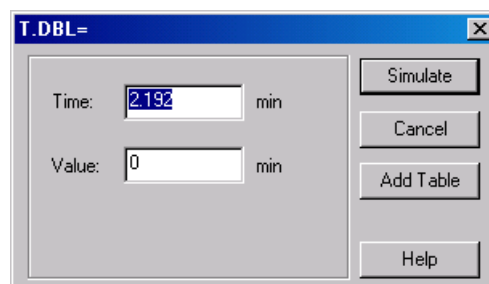
This command allows you to change the value of integration parameter T.DBL during an integration process.

(Time program command)

Command	Time	Value(Units)
T.DBL=	Time to change the parameter	T.DBL (min)

(Operational procedure)

1. Select the  button [T.DBL=] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to change the value of T.DBL and click on it. The <T.DBL=> screen will appear.



3. Click the [Simulate] button to reflect the changed T.DBL value to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.



6.6.1.6 <MIN.Area/Height=>

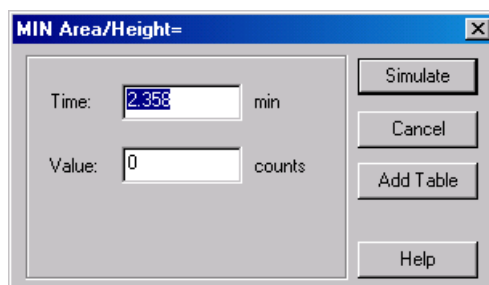
This command allows you to change the value of integration parameter MIN.Area/Height= during an integration process.

(Time program command)

Command	Time	Value(Units)
MIN.Area/Height=	Time to change the parameter	MIN.Area/Height value (count)

(Operational procedure)

1. Select the  button [MIN.Area/Height=] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to change the value of MIN.Area/Height= and click on it. The <MIN.Area/Height=> screen will appear.



3. Click the [Simulate] button to reflect the changed MIN.Area/Height value to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.

6.6.1.7 <Integration Off to On>

This command allows you to set a section in which you wish to turn off the integration processing.

(Time program command)

Command	Time	Value(Units)
Integration Off	Time to start the section	None
Integration On	Time to end the section	None

(Operational procedure)

1. Select the  button [Integration Off to On] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to start the section for turning off integration processing and click on it.



- Next, move the mouse cursor to the time at which you wish to end the section and click on it. The <Integration Off to On> screen will appear.

- Click the [Simulate] button to reflect the specified command to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.

6.6.1.8 <Tailing On to Auto>

This command allows you to set a section in which you wish to turn on the tailing processing.

(Time program command)

Command	Time	Value
Tailing On	Time to start the section	None
Tailing Auto	Time to end the section	None

(Operational procedure)

- Select the  button [Tailing On to Auto] on the toolbar. A vertical line will appear at the mouse cursor position.
- Move the mouse cursor to the time at which you wish to start the section for turning off integration processing and click on it.
- Next, move the mouse cursor to the time at which you wish to end the section and click on it. The <Tailing On to Auto> screen will appear..

- Click the [Simulate] button to reflect the specified command to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.



6.6.1.9 <Tailing Off to Auto>

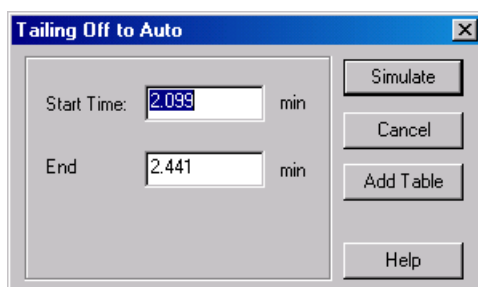
This command allows you to set a section in which you wish to turn off the tailing processing.

(Time program command)

Command	Time	Value
Tailing Off	Time to start the section	None
Tailing Auto	Time to end the section	None

(Operational procedure)

1. Select the  button [Tailing Off to Auto] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to start the section for turning off integration processing and click on it.
3. Next, move the mouse cursor to the time at which you wish to end the section and click on it. The <Tailing Off to Auto> screen will appear.



4. Click the [Simulate] button to reflect the specified command to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.



6.6.1.10 <Leading On to Off>

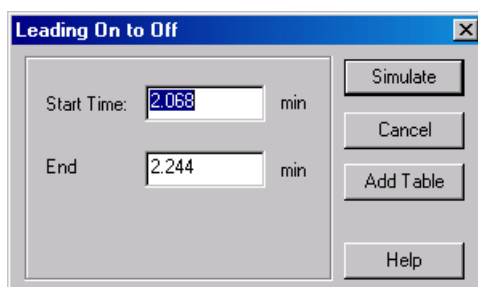
This command allows you to set a section in which you wish to turn on the leading processing.

(Time program command)

Command	Time	Value
Leading Peak On	Time to start the section	None
Leading Peak Off	Time to end the section	None

(Operational procedure)

1. Select the  button [Leading Peak On] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to start the section for turning off integration processing and click on it.
3. Next, move the mouse cursor to the time at which you wish to end the section and click on it. The <Leading On to Off> screen will appear.



4. Click the [Simulate] button to reflect the specified command to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.



6.6.1.11 <Negative Peak Reject>

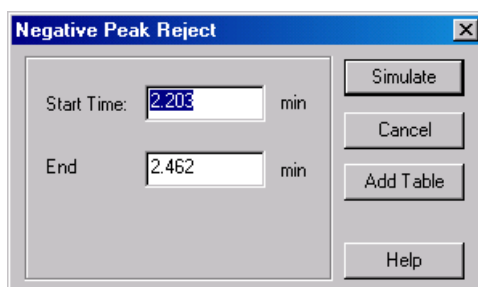
This command allows you to set a section in which you wish to remove negative peaks.

(Time program command)

Command	Time	Value
NEG Peak Reject On	Time to start the section	None
NEG Peak Reject Off	Time to end the section	None

(Operational procedure)

1. Select the  button [Negative Peak Reject] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to start the section for turning off integration processing and click on it.
3. Next, move the mouse cursor to the time at which you wish to end the section and click on it. The <Negative Peak Reject> screen will appear.



4. Click the [Simulate] button to reflect the specified command to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.



6.6.1.12 <Negative Peak Invert>

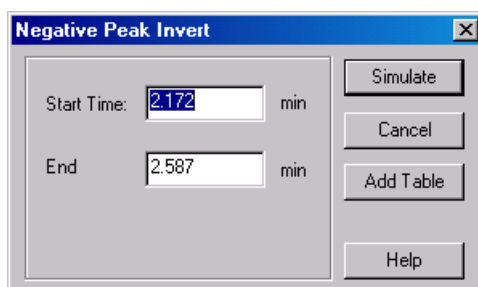
This command allows you to set a section in which you wish to invert negative peaks.

(Time program command)

Command	Time	Value
NEG Peak Invert On	Time to start the section	None
NEG Peak Invert Off	Time to end the section	None

(Operational procedure)

1. Select the  button [Negative Peak Invert] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to start the section for turning off integration processing and click on it.
3. Next, move the mouse cursor to the time at which you wish to end the section and click on it. The <Negative Peak Invert> screen will appear.



4. Click the [Simulate] button to reflect the specified command to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.



6.6.1.13 <Horizontal Baseline>

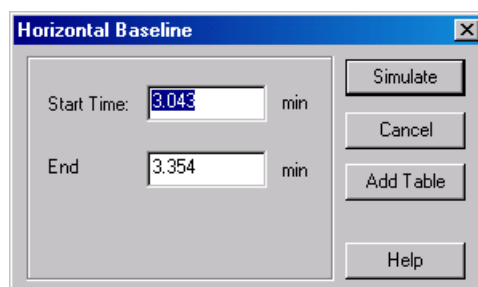
This command allows you to set a section in which you wish to make the baseline horizontal.

(Time program command)

Command	Time	Value
HORIZ Baseline On	Time to start the section	None
HORIZ Baseline Off	Time to start the section	None

(Operational procedure)

1. Select the  button [Integration Off to On] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the time at which you wish to start the section for turning off integration processing and click on it.
3. Next, move the mouse cursor to the time at which you wish to end the section and click on it. The <Integration Off to On> screen will appear.



4. Click the [Simulate] button to reflect the specified command to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.



6.6.1.14 <Peak Detect/Top/End>

This command allows you to specify the peak starting point, apex, and ending point to detect a peak. Times of the starting point, apex, and ending point are just used as a guide in integration, so they will not be necessarily the exact times of the resultant peak.

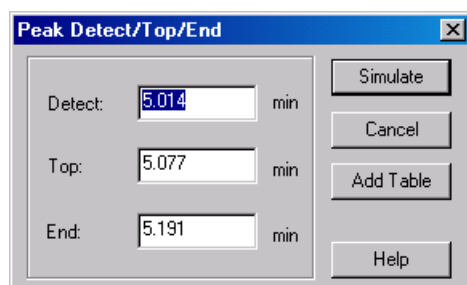
Use this when you wish to integrate divided peaks into one or detect minute peaks on a tailing or leading peak.

(Time program command)

Command	Time	Value
Peak Detect	Time at the peak starting point	None
Peak Top	Time at the peak apex	None
Peak End	Time at the peak ending point	None

(Operational procedure)

1. Select the  button [Peak Detect/Top/End] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the starting point of your desired peak and click on it.
3. Move the mouse cursor to the apex of the peak and click on it.
4. Move the mouse cursor to the ending point of the peak and click on it. The <Peak Detect/Top/End> screen will appear.



Peak Detect/Top/End

Detect: 5.014 min

Top: 5.077 min

End: 5.191 min

Simulate

Cancel

Add Table

Help

5. Click the [Simulate] button to reflect the specified command to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.



6.6.1.15 <Peak Detect(Fixed)/Top/End>

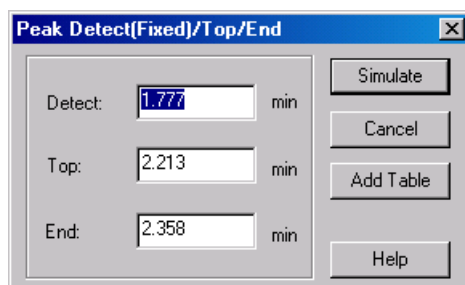
This command allows you to specify the peak starting point, apex, and ending point to detect a peak. This is the same with <Peak Detect/Top/End> described in 6.6.1.14 except that no correction is made in this command. Use this when you cannot obtain satisfactory result with "Peak Detect/Top/End" of <Peak Detect/Top/End> described in 6.6.1.14.

(Time program command)

Command	Time	Value
Peak Detect(Fixed)	Time at the peak starting point	None
Peak Top	Time at the peak apex	None
Peak End	Time at the peak ending point	None

(Operational procedure)

1. Select the  button [Peak Detect(Fixed)/Top/End] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the starting point of your desired peak and click on it.
3. Move the mouse cursor to the apex of the peak and click on it.
4. Move the mouse cursor to the ending point of the peak and click on it. The <Peak Detect(Fixed)/Top/End> screen will appear.



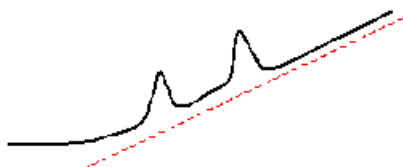
5. Click the [Simulate] button to reflect the specified command to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.



6.6.1.16 <B.Slope=>

This command allows you to set the slope of the baseline for peaks after the specified time. In integration, peaks are detected based on the chromatogram whose baseline is corrected using the slope specified by the B.Slope command, allowing you to obtain the same result with the one obtained using a horizontal baseline.

Use this when the baseline is ascending or descending in such cases as gradient LC or programmed temperature GC.

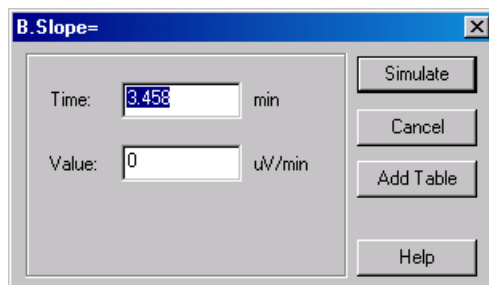


(Time program command)

Command	Time	Value(Units)
B.Slope=	Time to set the command	Baseline slope(uV/min)

(Operational procedure)

1. Select the  button [B.Slope=] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the point you wish to set the B.Slope command and click on it. The <B.Slope=> screen will appear.



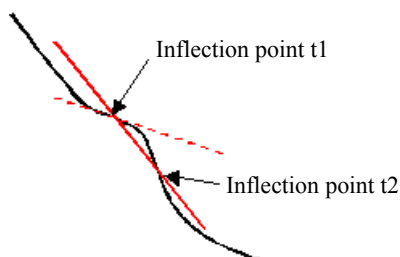
3. Click the [Simulate] button to reflect the specified command to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.



6.6.1.17 <T.Slope=>

This command allows you to set the slope to automatically detect minute shoulder peaks on tailing peaks.

Shoulder peaks are temporarily detected using second derivative and determined by the T.Slope= value



The baseline slope used for detection is the slope of the straight line connecting t1 and t2.

● Relationship with Tailing On/Off/Auto setting

In the Tailing Off setting, a peak is separated vertically at its starting point. In the Tailing Auto or Tailing On setting, a peak is treated as a tailing.

(Time program command)

Command	Time	Value(Units)
T.Slope=	Time to set the command	T.Slope value(uV/min)

(Operational procedure)

1. Select the  button [T.Slope=] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the point you wish to set the T.Slope command and click on it. The <T.Slope=> screen will appear.

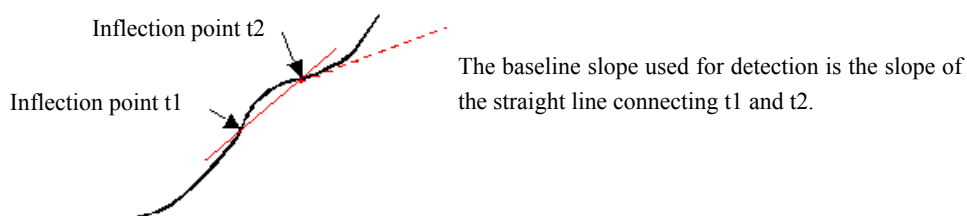
3. Click the [Simulate] button to reflect the specified command to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.



6.6.1.18 <L.Slope=>

This command allows you to set the slope to automatically detect minute shoulder peaks on leading peaks.

Shoulder peaks are temporarily detected using second derivative and determined by the L.Slope value.



● Relationship with Leading On/Off/Auto setting

In the Leading Off setting, a peak is separated vertically at its starting point. In the Leading Auto or Leading On setting, a peak is treated as a leading.

(Time program command)

Command	Time	Value(Units)
L.Slope=	Time to set the command	L.Slope value(uV/min)

(Operational procedure)

1. Select the  button [L.Slope=] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the point you wish to set the L.Slope command and click on it. The <L.Slope=> screen will appear.

L.Slope=

Time: 3.002 min

Value: 0 uV/min

Simulate

Cancel

Add Table

Help

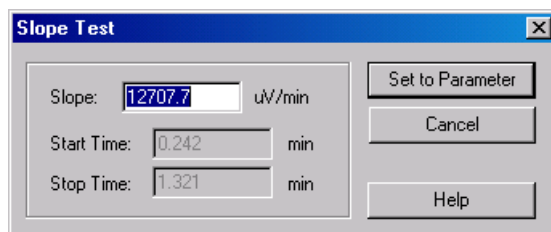
3. Click the [Simulate] button to reflect the specified command to the chromatogram shown on the screen. Click the [Add Table] button if you wish to just add the setting to the table.



6.6.1.19 <Slope Test>

This command allows you to set a section by specifying its starting and ending points and execute a slope test. The result is set to the integration parameter Slope.

1. Select the ? button [Slope Test] on the toolbar. A vertical line will appear at the mouse cursor position.
2. Move the mouse cursor to the starting point of the baseline you wish to conduct a slope test and click on it.
3. Next, move the mouse cursor to the ending point and click on it. The <Slope Test> screen will appear showing the slope value calculated from the noise values of the baseline section specified.



4. Click the [Set to Parameter] button to set the displayed Slope value (result of slope test) to the Slope field in the [Integration] tab page of the <Method> view.

Refer to "6.6.1 <Method> View - [Integration] Tab" on page 249

Refer to "Note: How to determine Slope (Slope Test)" on page 594



6.6.2 <Method> View - [Quantitative] Tab

The [Quantitative] tab page allows you to set the necessary parameters for the peak identification and quantitation. A calibration curve will be created according to the parameters set here. Note that if any quantitative parameter on the [Quantitative] tab page is changed, the calibration curve created using this method will be deleted. (The calibration curve will be re-created in the <Calibration Curve> window according to the changed parameters.)

Refer to "7 <Calibration Curve> Window" on page 283

Method - Quantitative Parameters

Integration Quantitative Compound Group Performance

Quantitation

Quantitative Method: External Standard

Calculated by: ☒ Area ☐ Height

of Calib. Levels: 1 Sample Info...

Curve Fit Type: Linear

Zero: Not Forced

Weighting Method: None

Unit: ppm

X Axis of Calib. Curve: ☐ Conc. ☒ Area/Height

Identification

Window/Band: ☒ Window ☐ Band

Window: 5 %

Default Band Time: 0.01 min

Identification Method: Absolute Rt

Peak Select: All Peaks

Grouping: Conc. Summation

Correction of RT: ☒ No Change ☐ Replace ☐ Average

Parameter	Description	Setting range	Default value
Quantitation	Set the quantitative parameters.	-	-
Quantitative Method	Select a quantitative calculation method. <i>Refer to "16.3 Quantitation Method" on page 609</i>	Area Normalization Corrected Area Normalization Internal Standard External Standard Corrected Area Normalization with Scale Factor Standard Addition	External Standard
Calculated by	Select either peak area or peak height to be used for quantitative calculation.	Area Height	Area



Parameter	Description	Setting range	Default value
# of Calib. Levels	Enter the level of the calibration curve for the standard sample used for quantitation.	1 to 16	1
Sample Information	Displays the sample information of the currently loaded data. Allows you to change the sample amount or internal standard amount to perform recalculation.	-	-
Curve Fit Type	Select a calibration curve type. Note: If "Manual RF" is selected, specify the values for the slope and Y-intercept of the calibration curve in [RF] and [Y(0)] on the compound table. <i>Refer to "6.6.3 <Method> View - [Compound] Tab" on page 273</i> <i>Refer to "16.4 Calibration Curve" on page 623</i>	Line Point to Point Quadratic Cubic Mean RF Exponential Manual RF	Line
Zero	Specify whether the calibration curve to be created passes through the origin. If "Forced through" is selected and the calibration curve is linear, a line will be drawn from the lowest-concentration point to the origin. If the calibration curve is quadratic or cubic, apply infinite weighting to the origin. If "Forced through" is selected and the calibration curve is point-to-point, a line will be drawn from the lowest-concentration point to the origin. If "Not Forced" is selected, a line connecting the second-highest concentration point to the first-lowest concentration point will be extended. <i>Refer to "16.4 Calibration Curve" on page 623</i>	Forced through Not Forced	Not Forced
Weighting Method	Select the weighting method to be used when a calibration curve has been created at multiple levels by the least square method. <i>Refer to "16.3.5 Weighted Least Squares Method" on page 619</i>	None, 1/C ² , 1/C 1/A ² , 1/A	None
Unit	Enter the concentration unit to be displayed on the peak table and grouping result.	Within 7 characters	ppm
X Axis of Calib. Curve	Select an option for the X-axis of the calibration curve graph. <i>Refer to "16.4 Calibration Curve" on page 623</i>	Conc. Area/Height	Area/Height
Identification	Set the identification-related parameters. <i>Refer to "16.2 Peak Identification" on page 602</i>	-	-
Window/Band	Select either the window method or band method to set the allowable time range of peak for the peak identification. <i>Refer to "16.2.2 Window/Band Methods" on page 602</i>	Window or Band	Window
Window	If [Window] is selected in [Window/Band], set the window (%) for the allowable time range.	0 to 100 (%)	5
Default Band Time	If [Band] is selected in [Window/Band], set the default band width.	0.01 to 9999.99 (min)	0.00
Identification Method	Select either the absolute retention time method or relative retention time method for the purpose of peak identification. <i>Refer to "16.2.3 Identification Method" on page 603</i>	Absolute Rt Relative Rt	Absolute Rt



Parameter	Description	Setting range	Default value
Peak Select	If there are multiple peaks within the allowable peak range, you may select one of the following options to specify a peak or peaks. ● All Peaks: Identifies all the peaks within the peak limit as those for the compound. ● Closest Peak: Selects and identifies the peak that has the retention time closest to the standard retention time specified on the compound table. ● Largest Peak: Selects and identifies the peak that has the largest area or height among the peaks within the peak limit. The use of peak area or height depends upon the settings on which one was specified to be used for quantitation. Note: For the identification of an internal standard compound by the internal standard method, the largest peak will be identified as that compound regardless of this setting. <i>Refer to "16.2.4 Identification by Adjacent Peaks" on page 605</i>	All Peaks Closest Peak Largest Peak	All Peaks
Grouping	Select a grouping method to quantify multiple compounds by grouping them. ● Not Used: The compounds will not be grouped. ● Group Quantitation: The compounds will be grouped according to "Group ID#" on the compound table and the settings on the group table. The peak area and peak height of the grouped compounds will be summated and calibration curves will be drawn for each group to perform the quantitation. ● Conc. Summation: The compounds will be grouped according to "Group ID#" on the compound table and the settings on the group table. The sum of concentrations of the grouped compounds will be used as the concentration of that group to perform the quantitation. <i>Refer to "16.2.5 Grouping" on page 607</i>	Not Used Group Quantitation Conc. Summation	Not Used
Correction of RT	Specifies the method for automatically correcting the setting for the standard retention time in the compound table using the retention time of the actually identified peak every time the data on the standard sample is processed. ● Not Corrected: The automatic correction will not be made. ● Replace: The standard retention time for each compound on the compound table will be replaced by the retention time of a newly identified peak. ● Mean: The standard retention time for each compound on the compound table will be replaced by the mean value of the retention time of a newly identified peak and the standard retention time.	Not Corrected Replace Mean	Not Corrected



6.6.3 <Method> View - [Compound] Tab

The [Compound] tab page allows you to enter the information on each compound, which is required for the quantitative analysis. Up to 1,000 rows may be entered on the table.

The quantitative result of each compound will be displayed on the [Peak Table] tab page of the <Results> view.

Method - Compound Table						
View Edit						
Integration Quantitative Compound Group Performance						
ID#	Name	Type	Ret.Time	Conc.1	Band	Group ID#
1	n-Propanol	Target	2.324	200	Default	1
2	Isobutyl Alcoh	Target	3.170	200	Default	1
3	Isoamyl Alcoh	Target	5.089	200	Default	2
4		Target	0.001	200	Default	0

Item displayed	Description	Setting range	Default value
ID#	Displays the ID number.	1 to 1000	-
Compound Name	Enter the compound name.	Up to 127 characters	-
Type	Specify whether the compound is quantified or used for the internal standard, and whether it is used for the reference peak in the relative retention time method. ● Target: The compound will be quantified. ● ISTD: The compound will be used as the internal standard compound in the internal standard method. ● Reference: The compound will be used for the reference peak for the identification based on the relative retention time. ● ISTD & Reference: The compound will be used as the internal standard compound in the internal standard method and for the reference peak for the identification based on the relative retention time. <i>Refer to "16.2.6 Identifying Reference Peaks" on page 608</i>	Target ISTD Reference ISTD & Reference	Target
Retention Time	Specify the standard retention time for identifying the compound. The corresponding value on the peak table may be copied for this purpose.	0.001 to 9999.999 (min)	0.001
Band	If you select the band method for the allowable time range of peaks, specify the default value for each compound or that allowable time range. Note: For the default value, use the value specified on the [Quantitative] tab page.	Default or between 0.000 and 9999.999 (min)	Default



Item displayed	Description	Setting range	Default value
ISTD Group	If [Internal Standard Method] is specified in [Quantitative Method] on the [Quantitative] tab page, specify the same number for the internal standard compounds, including the appropriate one.	1 to 16	1
Concentration (1) to (16)	Enter the concentration of each compound in the standard sample for creating a calibration curve.	0.000 to 99999.999	1.000
Unit	To change the concentration unit for each compound, enter the desired unit here. If this item is left blank, the concentration unit entered on the [Quantitative] tab page will be assumed.	Within 7 characters	-
Group ID#	Enter the ID number for the group of multiple compounds to be analyzed quantitatively.	0 to 100	0
Calculated by	Specify whether the data used for the quantitative calculation for each compound is peak area or peak height. For the default value, use the value specified on the [Quantitative] tab page.	Default Area Height	Default
Calibration Curve	Select a calibration curve for each compound. For the default value, use the value specified on the [Quantitative] tab page.	Default Line Point to point Quadratic Cubic Mean RF Exponential	Default
Zero	Specify whether the calibration to be created for each compound passes through the origin. For the default value, use the value specified on the [Quantitative] tab page.	Default Forced through Not Forced	Default
Weighting Method	Specify the weighting method that is used when a calibration curve has been created for each compound at multiple levels by the least square method. For the default value, use the value specified on the [Quantitative] tab page.	Default None, 1/C ² 1/C 1/A ² 1/A	Default
Window/B	Select either the window method or band method to set the allowable time range of peak for the peak identification for each compound. For the default value, use the value specified on the [Quantitative] tab page.	Default Window Band	Default
Spiked Amount	Enter the spiked amount of the compound, which is used to calculate the recovery.	0.001 to 9999.999	0.000
RF	If [Manual RF] is selected in [Curve Fit Type] on the <Quantitative> tab page, specify the slope of the calibration curve. <i>Refer to "6.6.2 <Method> View - [Quantitative] Tab" on page 270</i>	-	0
Y (0)	If [Manual RF] is selected in [Curve Fit Type] on the <Quantitative> tab page, specify the Y-intercept of the calibration curve. <i>Refer to "6.6.2 <Method> View - [Quantitative] Tab" on page 270</i>	-	0



Note: If you click on the table area with the right mouse button, a pop-up menu will appear. Select [Table Style] from this pop-up menu. The <Table Style> window will be opened, allowing you to change the table display mode.

Note: The selected item or entire table can be copied to the clipboard by selecting [Copy] or [Copy whole Table] from the pop-up menu.

Refer to "14.5 <Table Style> Window" on page 569

6.6.4 <Method> View - [Group] Tab

The [Group] tab page allows you to enter the information on each group, which is required to quantitatively analyze each group consisting of multiple compounds. Up to 100 rows may be entered here. The quantitative result of each group will be displayed in [Group Results] on the <Results> view.

Group ID#	Name	Unit	Conc. 1
1	A		10
2	B		10
3			10

Item displayed	Description	Setting range	Default value
Group ID#	Displays the group ID number.	1 to 100	-
Group Name	Enter the group name.	31 characters	-
Type	Specify whether the compound is quantified or used for the internal standard, and whether it is used for the reference peak in the relative retention time method. ● Target: The compound will be quantified. ● ISTD: The compound will be used as the internal standard compound in the internal standard method. ● Reference: The compound will be used for the reference peak for the identification based on the relative retention time. ● ISTD & Reference: The compound will be used as the internal standard compound in the internal standard method and for the reference peak for the identification based on the relative retention time. <i>Refer to "16.2.6 Identifying Reference Peaks" on page 608</i>	Target ISTD Reference ISTD & Reference	Target
ISTD Group	If [Internal Standard Method] is specified in [Quantitative Method] on the [Quantitative] tab page, specify the same number for the internal standard compounds, including the appropriate one.	1 to 16	1



Item displayed	Description	Setting range	Default value
Concentration (1) to (16)	Enter the concentrations of compounds in each group when group calibration is used.	0.000 to 99999.999	1.000
Unit	To change the concentration unit for each group, enter the desired unit here. If this item is left blank, the concentration unit entered on the [Quantitative] tab page will be assumed.	Within 7 characters	-
Calculated by	Specify whether the data used for the quantitative calculation for each group is peak area or peak height. For the default value, use the value specified on the [Quantitative] tab page.	Default Area Height	Default
Calibration Curve	Select a calibration curve type for each group. For the default value, use the value specified on the [Quantitative] tab page.	Default Line Point to point Quadratic Cubic Mean RF Exponential	Default
Zero	Specify whether the calibration to be created for each group passes through the origin. For the default value, use the value specified on the [Quantitative] tab page.	Default Forced through Not Forced	Default
Weighting Method	Specify the weighting method that is used when a calibration curve has been created for each group at multiple levels by the least square method. For the default value, use the value specified on the [Quantitative] tab page.	Default, None, 1/C ² , 1/C, 1/A ² , 1/A	Default

Note: If you click on the table area with the right mouse button, a pop-up menu will appear. Select [Table Style] from this pop-up menu. The <Table Style> window will be opened, allowing you to change the table display mode.

Note: The selected item or entire table can be copied to the clipboard by selecting [Copy] or [Copy whole Table] from the pop-up menu.

Refer to "14.5 <Table Style> Window" on page 569



6.6.5 <Method> View - [Performance] Tab

The [Performance] tab page allows you to set the parameter for the column performance calculation. The result of the column performance calculation will be displayed on the [Peak Table] tab page of the <Results> view.

Method - Column Performance Parameters

Integration Quantitative Compound Group Performance

Calc. Method: USP

Time of Unretained Peak

☒ Time of 1st Peak

☐ Set Time 0 min

Column Length: 0 mm

☐ Calculate Identified Peaks Only

Parameter	Description	Setting range	Default value
Calc. Method	Set the calculation method for column performance.	USP, JP, JP2, EMG, EMG (50%), A/H, BP, EP or DAB	USP
Time of Unretained Peak	Specify the dead time. If [Set Time] is selected, enter time (min) within the right frame.	Retention time of the first peak and time setting	Retention time of the first peak
Column Length	Specify the column length (mm).	-	0
Calculation for Identified Only	When the check box for this parameter is checked, only the identified peak will be used for the column performance calculation.	Checked/Not checked	Not checked



6.7

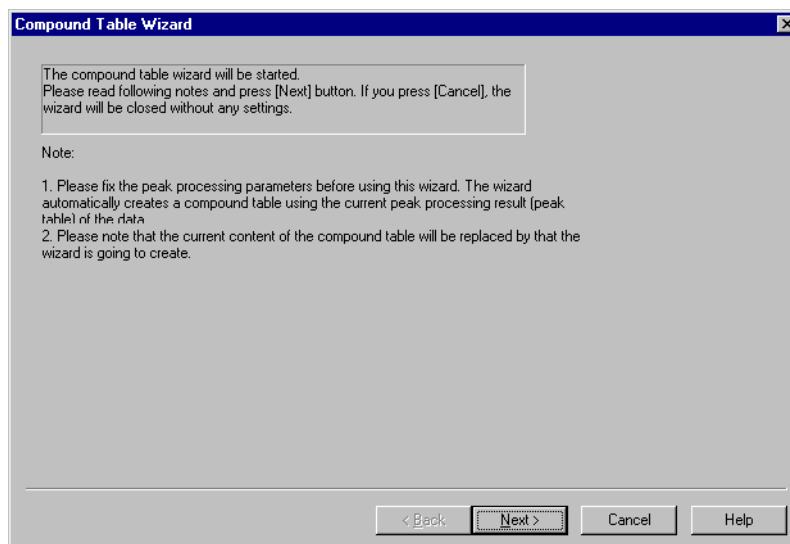
<Compound Table Wizard>

The <Compound Table Wizard> is used to newly create a compound table. When a compound table has been already set up, the settings for it will be replaced by the ones specified in the wizard.

6.7.1 Starting Up <Compound Table Wizard>

The <Compound Table Wizard> is started up by the following operations:

- Select [Edit] - [Compound Table Wizard...] in the <GC Postrun> screen.



Note: When you right-click in the [Compound] tab table under the <Method> view, a pop-up menu is displayed. You can start up the <Compound Table Wizard> also by selecting the [Compound Table Wizard] command on this pop-up menu.

Refer to "6.6.3 <Method> View - [Compound] Tab" on page 273

Note: You can also start up the wizard by selecting [Edit] - [Compound Table Wizard] in the <Calibration Curve> window.



6.7.2 <Compound Table Wizard> - Setting Screen for Quantitative and Peak Identification Parameters

This screen is used for setting the parameters for quantitation and identification of peaks.

The screenshot shows the 'Compound Table Wizard' dialog box with the following settings:

- Quantitation:**
 - Quantitative Method: External Standard
 - Calculated by: ☒ Area ☐ Height
 - # of Calib. Levels: 1
 - Curve Fit Type: Linear
 - Zero: Not Forced
 - Weighting Method: None
 - Unit: ppm
 - X Axis of Calib. Curve: ☐ Conc. ☒ Area/Height
- Identification:**
 - Window/Band: ☒ Window ☐ Band
 - Window: 5 %
 - Default Band Time: 0.01 min
 - Identification Method: Absolute Rt
 - Peak Select: All Peaks
 - Grouping: Not Used
 - Correction of RT: ☒ No Change ☐ Replace ☐ Average

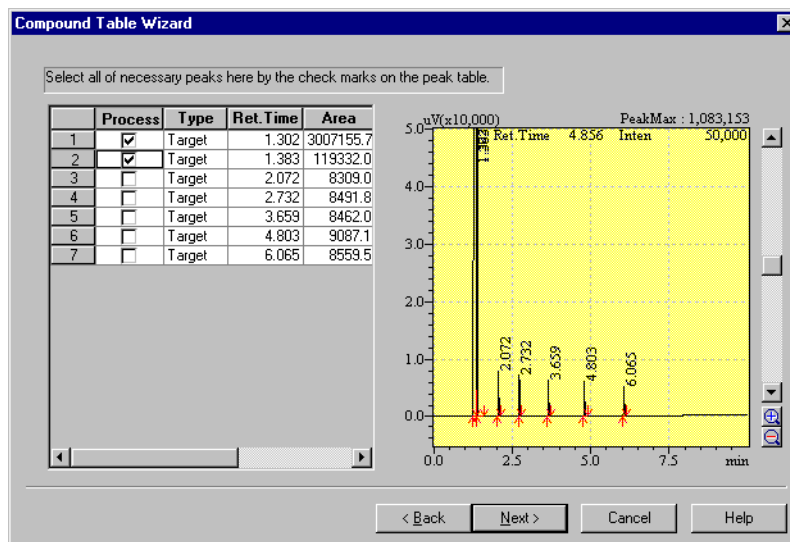
Buttons at the bottom: < Back, Next >, Cancel, Help.

Note: Initially, the values set in the current method have been entered in the parameter fields.



6.7.3 <Compound Table Wizard> - Screen for Selecting Peaks

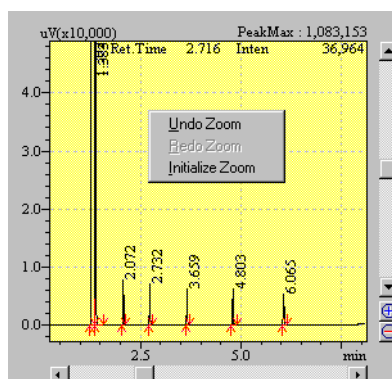
This screen is used for selecting the peaks of target components.



Note: The data is displayed for the selected items.

Parameter	Description
Process	When selected, the peak is included in the compound table.
Type	Select a compound type.
Ret. Time	Displays the peak retention time.
Area	Displays the peak area.
Height	Displays the peak height.

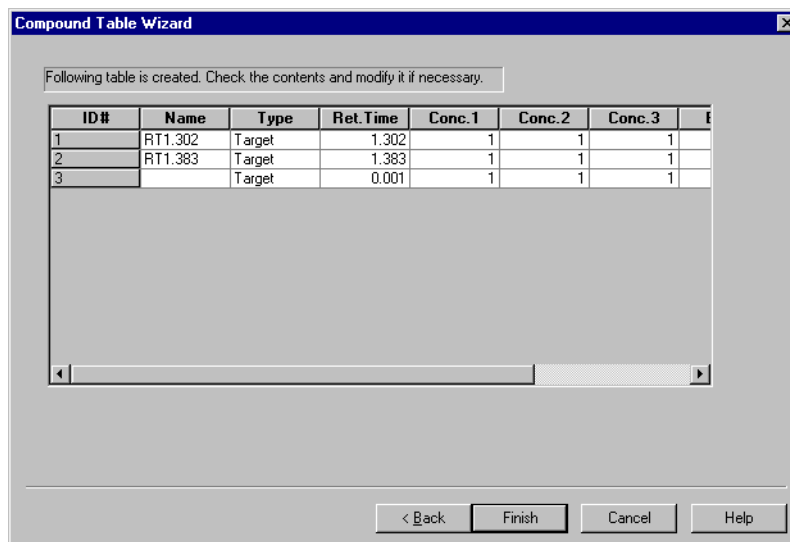
Note: The chromatogram can be zoomed.





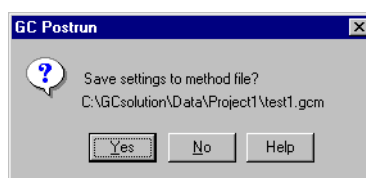
6.7.4 <Compound Table Wizard> - Compound Table Screen

This screen shows the settings made so far for your review.



Note: Settings made are shown in the compound table. You can edit the contents of the table here.

Note: If the [Finish] button is clicked on, a message appears to ask you whether to record the contents set up here as the compound table in the method or not. When the [Yes] button is clicked on, the compound table and related data such as data processing parameters are stored in the method file.





7 <Calibration Curve> Window

7.1

Overview of <Calibration Curve> Window

Calibration curves are plotted, from data acquisition or by performing batch table operations on existing data, with the sample type designated as the standard sample. The <Calibration Curve> window is used to check the plotted calibration curves and to edit the parameters used for identification/quantitation. The <Calibration Curve> window contains the following four windows: <Calibration Curve> View, <Data File Tree> View, <Chromatogram> View, and <Method> View.

7.1.1 Functions of <Calibration Curve> Window

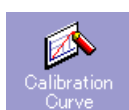
The following functions can be carried out in the <Calibration Curve> window.

Function	Windows to be Used
Display calibration curves	<i>Refer to "7.4 <Calibration Curve> - <Calibration Curve> View" on page 302</i>
Display the chromatogram of the standard sample.	<i>Refer to "7.6 <Calibration Curve> - <Chromatogram> View" on page 307</i>
Plot and change calibration curves manually	<i>Refer to "7.5 <Calibration Curve> - <Data File Tree> View" on page 305</i>
Check and change the method used	<i>Refer to "6.6 <Data Analysis> - <Method> View" on page 248</i>

7.1.2 Opening <Calibration Curve> Window

The <Calibration Curve> window can be opened as follows:

- Click on the Assistant Bar [Calibration Curve] icon, on the <GC Real Time> or the <GC Postrun> screen.

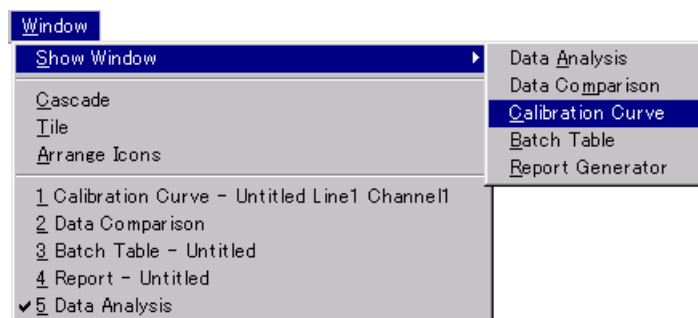




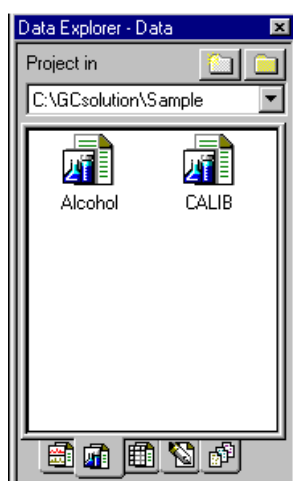
7 <Calibration Curve> Window

7.1 Overview of <Calibration Curve> Window

- Select [Window] - [Show Window]- [Calibration Curve] from the <GC Postrun> menu bar.



- Open a method file that includes calibration curve(s).

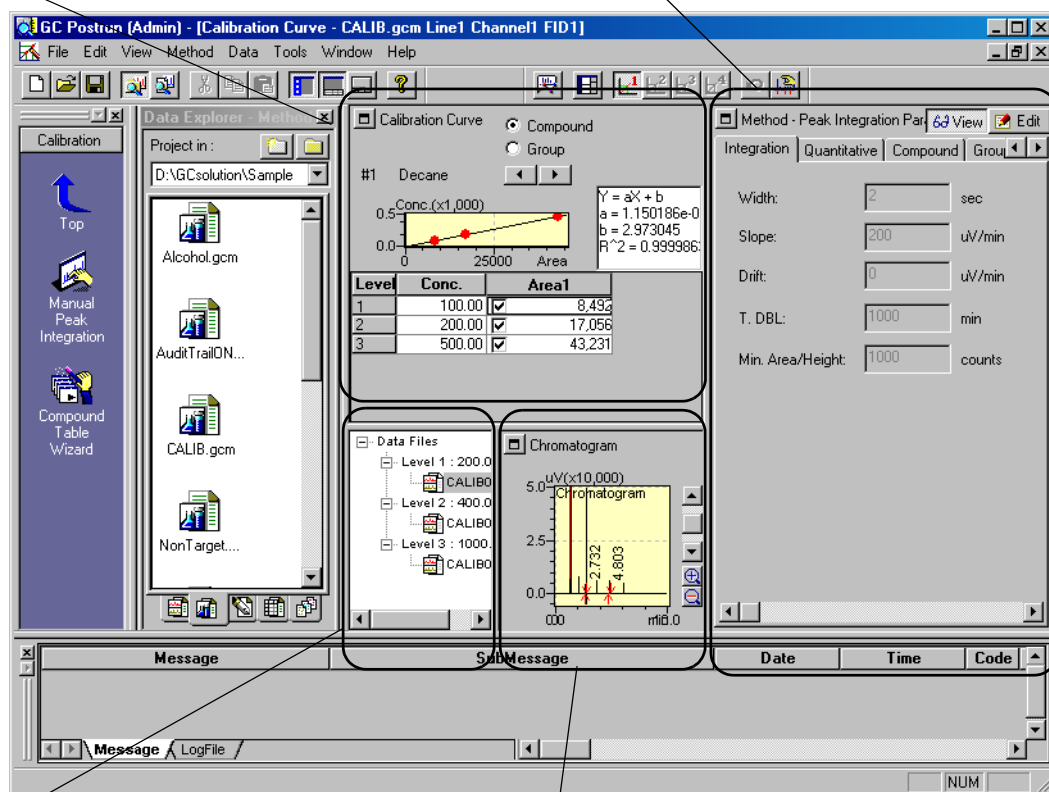




7.1.3 Element Names on <Calibration Curve> Window

<Calibration Curve> View [Refer to "7.4 <Calibration Curve> - <Calibration Curve> View" on page 302](#)

<Method> View [Refer to "6.6 <Data Analysis> - <Method> View" on page 248](#)

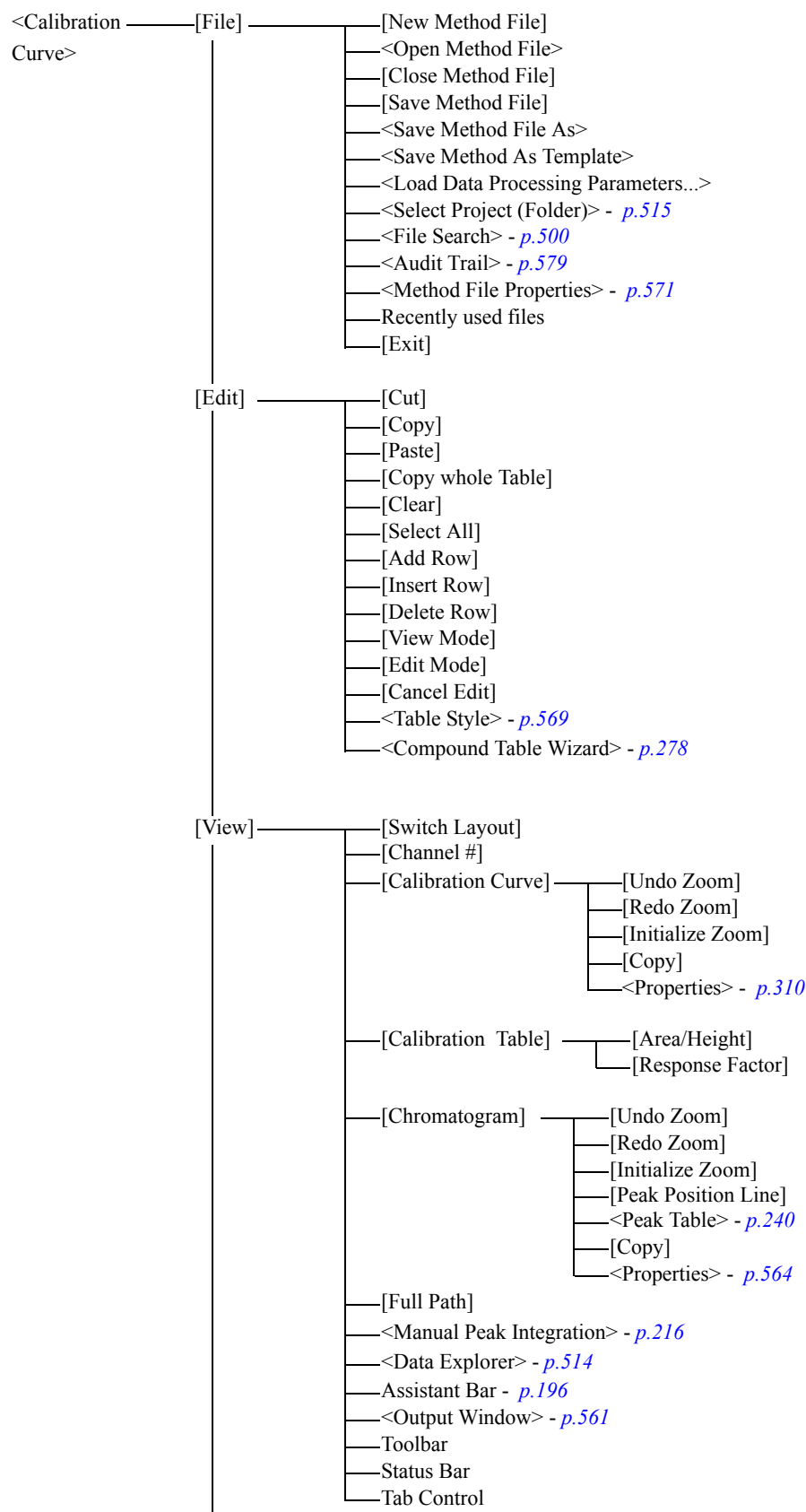


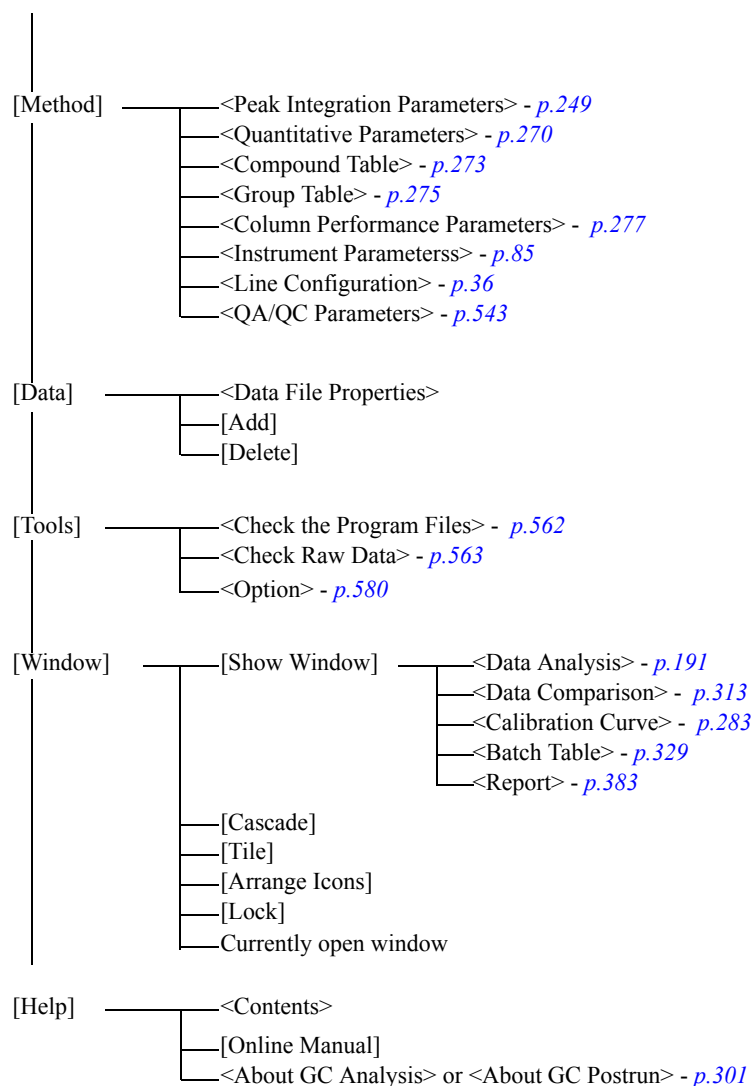
<Data File Tree> View [Refer to "7.5 <Calibration Curve> - <Data File Tree> View" on page 305](#)

<Chromatogram> View [Refer to "7.6 <Calibration Curve> - <Chromatogram> View" on page 307](#)



7.1.4 Menu Tree of <Calibration Curve> Window







7.1.5 Procedure to Plot Calibration Curves in <Calibration Curve> Window

Step 1: The <GC Real Time Analysis> screen will appear.



Step 2: Analysis of an unknown sample will be performed repeatedly until the best separation condition is found.



Step 3: The <GC Postrun> screen will appear.



Step 4: Enter parameters, such as the identification and quantitative methods to be used to plot a calibration curve, using the [Quantitative] tab fields in the <Method> view.



Step 5: Open the data file that has been created in Step 2.



Step 6: Create an ID table using the [Compound Table] mode in the <Method> view.



Step 7: Open the <GC Real Time Analysis> screen again.



Step 8: Start analysis of the standard sample in the [Standard Sample] mode.



7.2

[Calibration] Assistant Bar

The <Calibration Curve> window shows the [Calibration] Assistant Bar.

Icon	Description
Top 	Changes to the [RealTime] Assistant Bar on the <GC Real Time Analysis> screen.Changes to the [Data Analysis] Assistant Bar on the <GC Postrun> screen. <i>Refer to "3.2 [RealTime] Assistant Bar" on page 12</i> <i>Refer to "6.2 [Data Analysis] Assistant Bar" on page 196</i>
Manual Peak Integra- tion 	Displays the <Manual Peak Integration> window. <i>Refer to "6.4.4 <Manual Peak Integration>" on page 216</i>
	Displays the <Compound Table Wizard> window. <i>Refer to "6.7 <Compound Table Wizard>" on page 278</i>



7.3

Menu Bar on <Calibration Curve> Window

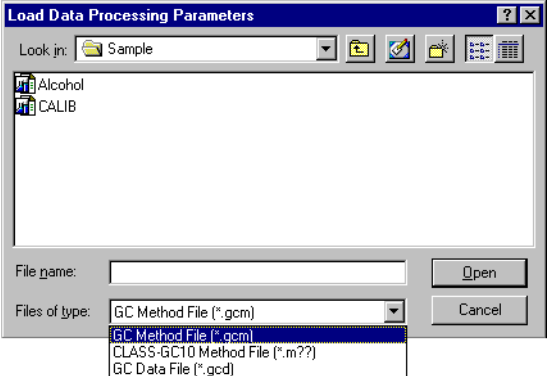
This section describes the menus displayed on the <Calibration Curve> window is activated.

7.3.1 <Calibration Curve> - [File] Menu



Command	Function	Tool Button
New Method File	A new method file will be created and opened. Note: This command's operation settings can be changed using the <Setting Options> window. <i>Refer to "14.9 <Setting Options> Window" on page 580</i>	
Open Method File	An existing method file will be opened. Note: Only one method file can be opened at a time in the <Calibration Curve> window. If you attempt to open another method file, a confirmation window will appear asking if you want to save the currently open method file.	
Close Method File	The currently used method file will be closed. If the method file data has not been saved or if there has been a problem in the method file from the time it was opened, a confirmation window will appear asking how you want to save the currently open method file.	-
Save Method File	The method file data will be overwritten and saved.	
Save Method File As	The method file will be saved under a different name.	-



Command	Function	Tool Button
Save Method As Template	The method file will be saved as a template file.	-
Load Data Processing Parameters	Loads the data processing parameters. Designate a data or method file to be loaded, using the < Load Data Processing Parameters> window. The data processing parameters (related to peak integration, identification, and quantitation) will be loaded. Peak integration, identification, and calibration curve plotting will be performed based upon these loaded parameters.  <i>Refer to "5.7 <Load Method> Window" on page 177</i> <i>Refer to "5.7.1 <Select Method Parameters> Window" on page 178</i>	-
Select Project (Folder)	Toggles the <Project (Folder) Selection> window's display conditions (i.e., Show/Hide). <i>Refer to "11.8 <Project (Folder) Selection> Window" on page 515</i>	
File Search	Displays the <File Search> window, which is used to search for an existing file. <i>Refer to "11.4 <GC File Search> Window" on page 500</i>	
Audit Trail	Displays the <Audit Trail> window, which is used to confirm the file modification history and the file modification reason(s) that was/were entered when the file was modified. <i>Refer to "14.8 <Audit Trail> Window" on page 579</i>	-
Method File Properties	Displays the <File Properties> window, which is used to designate the currently activated method file's file information, description, and audit trail. <i>Refer to "14.6 <Properties> Window" on page 571</i>	-
Recently used files	Displays up to four names of recently used files. When you select one of the names, that file will open.	-
Exit	Exits and closes the <GC Analysis> or <GC Postrun> screen.	-



7.3.2 <Calibration Curve> - [Edit] Menu

The commands contained under the [Edit] menu are used mainly to perform settings for the parameters of compound and group tables in the <Method> view.

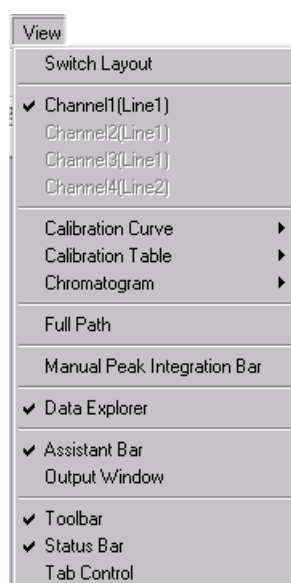


Command	Function	Tool Button
Cut	Moves the currently selected data to the Clipboard.	
Copy	Copies the currently selected data to the Clipboard.	
Paste	Pastes the current Clipboard data to the selected item (or position).	
Copy Table to Clipboard	Copies the currently selected table completely, including all the title cells, to the Clipboard.	-
Clear	Erases the currently selected item.	-
Select All	Selects all the applicable items in a table.	-
Add Row	Adds a new row at the end of the rows. This function is enabled only in the [Edit] mode.	-
Insert Row	Inserts a new row above the row where the cursor is currently located. This function is enabled only in the edit mode.	-
Delete Row	Deletes the row where the cursor is currently located. This function is enabled only in the edit mode.	-
View Mode	Switches from the edit mode to the view mode.	-
Edit Mode	Switches from the view mode to the edit mode.	-



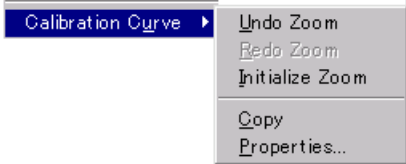
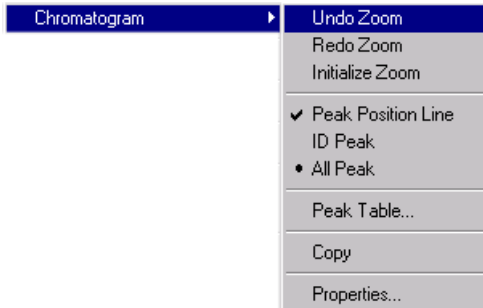
Command	Function	Tool Button
Cancel Edit	Returns the <Method> view data to pre-edited data and switches to the view mode.	-
Table Style	Displays the <Table Style> window that is used to designate a table style. <i>Refer to "14.5 <Table Style> Window" on page 569</i>	-
Compound Table Wizard	Displays the <Compound Table Wizard> window that is used to set the Compound Table easily. <i>Refer to "6.7 <Compound Table Wizard>" on page 278</i>	-

7.3.3 <Calibration Curve> - [View] Menu



Command	Function	Tool Button
Switch Layout	Selecting this command toggles the display ratio between the views.	
Channel1 (Line1)	Switches the current window data to Channel1 (Line1).	
Channel2 (Line1)	Switches the current window data to Channel2 (Line1).	
Channel3 (Line1)	Switches the current window data to Channel3 (Line1).	



Command	Function	Tool Button
Channel4 (Line2)	Switches the current window data to Channel4 (Line2).	
Calibration Curve	 Note: You can also display the same menu shown above by right-clicking on the <Calibration Curve> view graph area.	-
Undo Zoom	Undoes the calibration curve zoom operation. When the calibration curve zoom operation cannot be undone anymore or does not need to be undone, this command will be dimmed.	-
Redo Zoom	Redoes the calibration curve zoom operation. When the calibration curve zoom operation does not need to be redone, this command will be dimmed.	-
Initialize Zoom	Cancels the zoom operation and returns the calibration curve to the initial condition.	-
Copy	Copies the calibration curve to the Clipboard.	-
Properties	Displays the <Calibration Curve> view's <Properties> window. <i>Refer to "7.7 <Calibration Curve Graph Property> Window" on page 310</i>	-
Calibration Table	 Note: You can also display the same menu shown above by right-clicking on the calibration table row (where the cursor is currently positioned) in the <Calibration Curve> view.	-
Area/Height	Displays the calibration table based on the area/height.	-
Response Factor	Displays the calibration table based on the response factor.	-
Chromatogram	 Note: You can also display the same menu shown above by right-clicking on the chromatogram area in the <Calibration Curve> view.	-
Undo Zoom	Undoes the chromatogram zoom operation. When the chromatogram zoom operation cannot be undone anymore or does not need to be undone, this command will be dimmed.	-

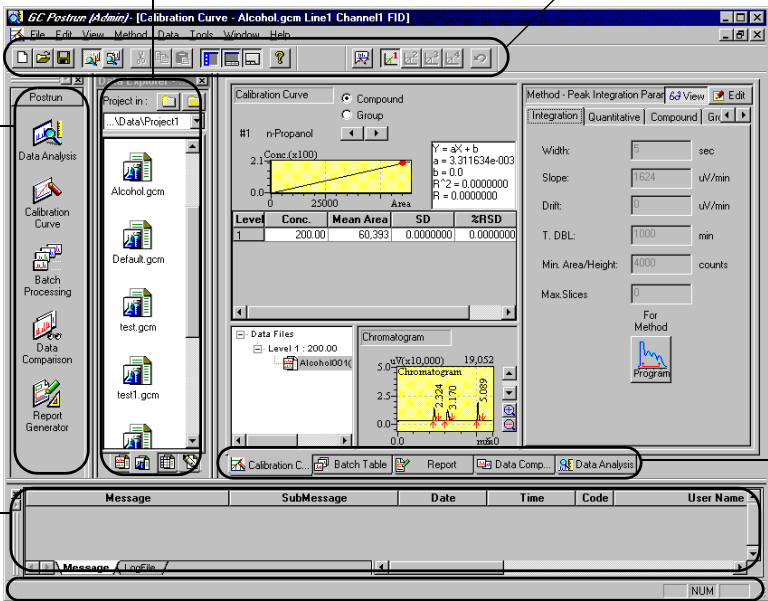


Command	Function	Tool Button
Redo Zoom	Redoes the chromatogram zoom operation. When the chromatogram zoom operation does not need to be redone, this command will be dimmed.	-
Initialize Zoom	Cancels the zoom operation and returns the chromatogram to the initial condition.	-
Peak Position Line	Sets whether to display the peak position line or not. The peak position line is synchronized with the retention time value in the [Compound] tab page of the <Method> View. <i>Refer to "6.6.3 <Method> View - [Compound] Tab" on page 273</i>	-
ID Peak	Switches to the identified peaks display.	-
All Peak	Switches to the all peaks display.	-
Peak Table	Displays all the items related to the chromatogram peak table.	-
Copy	Copies the chromatogram to the Clipboard in the metafile format. Note: Use this function to paste the chromatogram to your MS Word or MS Excel application.	-
Properties	Displays the <Chromatogram Properties> window, which is used to designate the chromatogram display method. <i>Refer to "14.4 <Chromatogram View Properties> Window" on page 564</i>	-
Full Path	Displays the file names displayed in the <Data File Tree> view in full path display. When this function is activated, a check mark will appear on the right side of this command.	-



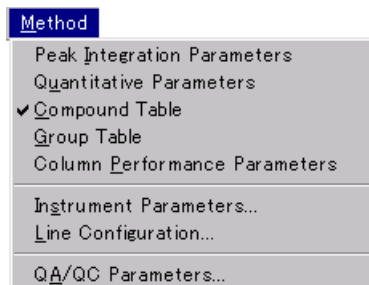
7 <Calibration Curve> Window

7.3 Menu Bar on <Calibration Curve> Window

Command	Function	Tool Button
Data Explorer	Toggles each item's display conditions (i.e., Show/Hide). When an item is displayed, a check mark will be attached to that item.	
Assistant Bar	Assistant Bar (Refer to "3.3 [Postrun] Assistant Bar ." on page 14)	
Output Window	Data Explorer (Refer to "11 <Data Explorer> Window" on page 487)	
Toolbar		-
Status Bar	Status Bar	-
Tab Control	Output Window (Refer to "14.1 <Output Window> Window" on page 561)	



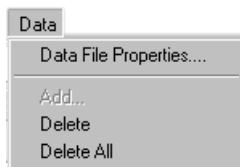
7.3.4 <Calibration Curve> - [Method] Menu

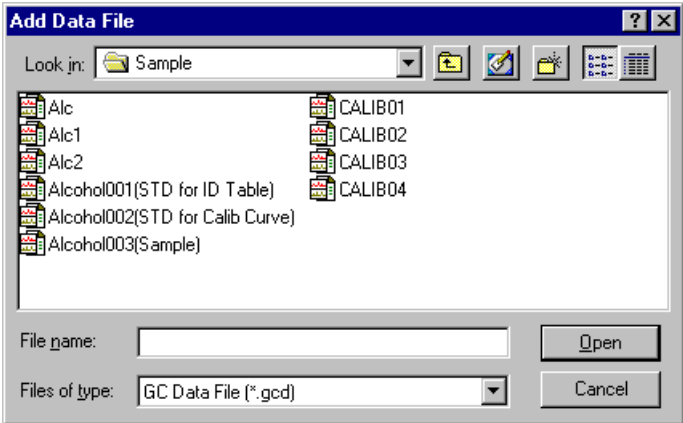
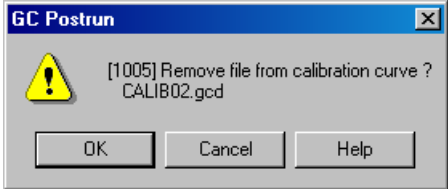


Command	Function
Peak Integration Parameters	Selects the <Method> view's [Peak Integration] tab. <i>Refer to "6.6.1 <Method> View - [Integration] Tab" on page 249</i>
Quantitative Parameters	Selects the <Method> view's [Quantitative] tab. <i>Refer to "6.6.2 <Method> View - [Quantitative] Tab" on page 270</i>
Compound Table	Selects the <Method> view's [Compound] tab. <i>Refer to "6.6.3 <Method> View - [Compound] Tab" on page 273</i>
Group Table	Selects the <Method> view's [Group] tab. <i>Refer to "6.6.4 <Method> View - [Group] Tab" on page 275</i>
Column Performance Parameters	Selects the <Method> view's [Performance] tab. <i>Refer to "6.6.5 <Method> View - [Performance] Tab" on page 277</i>
Instrument Parameterss	Opens the <Instrument Parameterss (View)> window with the "no change" setting designated The Instrument Parameterss to be used when acquiring data will then appear. Note: This command is only displayed on the <GC Postrun> screen. <i>Refer to "5.5 <Data Acquisition> -<Instrument Parameters> View" on page 85</i>
Line Configuration	Opens the <System Configuration> window's [Configured Modules] mode. The GC line configuration to be used when acquiring data will then appear. Here, the system configuration data cannot be modified. Note: This command is only displayed on the <GC Postrun> screen. <i>Refer to "4.2 <System Configuration> Window" on page 17</i>
QA/QC Parameters	Displays the < QA/QC - Ch#> window, which is used to perform the quality control QA/QC parameter settings. <i>Refer to "13 <QA/QC> Window" on page 543</i>

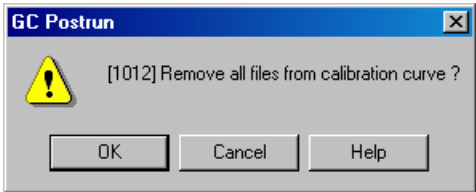


7.3.5 <Calibration Curve> - [Data] Menu

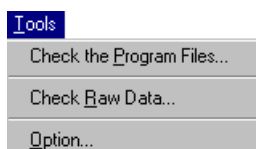


Command	Function
Data File Properties	Displays the <File Properties> window, which is used to check and modify the currently activated data file's file information, description, sample information, and used files. <i>Refer to "14.6 <Properties> Window" on page 571</i>
Add	A data file can be inserted into the currently selected level, using the <Data File Tree> view. In the <Add Data File> window, select a file and click on the [Open] button. The data file will be added. After the data file is added, the integration and identification operations will be performed on the file's data, and a calibration curve will be plotted. 
Delete	The currently selected data file can be deleted using the <Data File Tree> view. When the following message appears, click on the [OK] button to delete the file. After the file is deleted, the current calibration curve will be re-plotted automatically. 



Command	Function
Delete All	Allows you to delete all the data files for all the channels in the <Data File Tree> view. When the following message appears, click on the [OK] button to delete the file. After the file is deleted, the current calibration curve will be re-plotted automatically. 

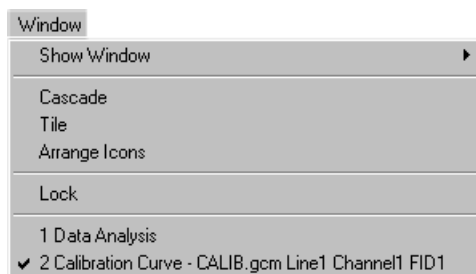
7.3.6 <Calibration Curve> - [Tool] Menu

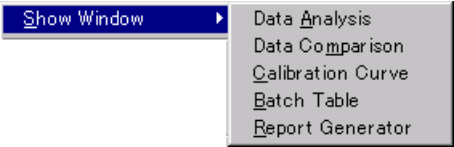
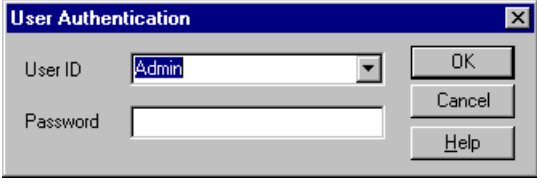


Command	Function
Check the Program Files	Displays the <Program Check> window, which is used to check whether the program has been modified. <i>Refer to "14.2 <Check the Program Files> Window" on page 562</i>
Check Raw Data	Displays the <Check Raw Data> window, which is used to check whether the raw data has been modified. <i>Refer to "14.3 <Check Raw Data> Window" on page 563</i>
Option	Displays the <Setting Options> window, which is used to create new conditions for method, batch, and report files. You can also designate where the template file should be saved, using this window. <i>Refer to "14.9 <Setting Options> Window" on page 580</i>



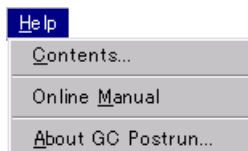
7.3.7 <Calibration Curve> - [Window] Menu

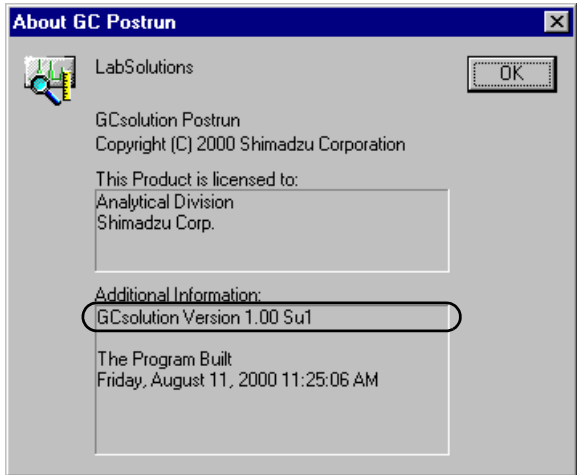


Command	Function
Show Window	Displays the selected window using the sub-menu.  <i>Refer to "6 <Data Analysis> Window" on page 191</i> <i>Refer to "8 <Data Comparison> Window" on page 313</i> <i>Refer to "7 <Calibration Curve> Window" on page 283</i> <i>Refer to "9 <Batch Table> Window" on page 329</i> <i>Refer to "10 <Report> Window" on page 383</i>
Cascade	Displays the following windows in "cascade" layout: <Data Analysis>, <Data Comparison>, <Calibration Curve>, <Batch Table>, and <Report>.
Tile	Displays the following windows in "tile" layout: <Data Analysis>, <Data Comparison>, <Calibration Curve>, <Batch Table>, and <Report>.
Arrange Icons	Re-arranges and displays the minimized window icons on the screen.
Lock	Iconizes the <GC Real Time Analysis> screen or <GC Postrun> screen to prevent access to this screen and displays this icon on the bar next to the [Start] menu located in the lower left corner of the screen. The <GC Real Time Analysis> screen or <GC Postrun> screen cannot be accessed until clicking on the icon with the mouse button, has been clicked on. Note: When you click on [GC Real Time Analysis] icon or [GC Postrun] icon, a window will be opened prompting you to enter your user ID and password. If you did not specify any password, just click on the [OK] button. 
Currently open window	The name of the window currently displayed on <Calibration Curve> screen is displayed.



7.3.8 <Calibration Curve> - [Help] Menu



Command	Function	Tool Button
Contents	Displays the help menu. <i>Refer to "12.1.1 Using Help" on page 107</i>	-
Online Manual	<i>Refer to "12.1.2 Using the Online Manual" on page 108</i>	-
About GC Realtime or About GC Postrun	Displays the GCsolution's version information. 	



7.4

<Calibration Curve> - <Calibration Curve> View

The <Calibration Curve> window's <Calibration Curve> view consists of these three areas: calibration curve graph, calibration curve data, and calibration curve information.

In the <Calibration Curve> view, the single substance or (substance) group's calibration curve type, statistical calculation result(s) (calibration curve information), and the data used for the currently displayed calibration curve (calibration curve data) will be displayed.

7.4.1 Names of the <Calibration Curve> View Components

Click the [Full Size] button to resize the <Calibration Curve> view to the full range of the <Calibration Curve> window. The [Full Size] button will then turn to the [Normal Size] button. Click the [Normal Size] button to return the view to the original size.

Increases and decreases the calibration curve compound ID number (or group ID number) by one (1).

Selects the calibration curve to be displayed (either compound or group).

Displays calibration curve information.
Refer to "7.4.1.1 Calibration Curve Information" on page 303

Displays the calibration curve compound ID number (or group ID number) and compound name.

X axis: Concentration. When using the internal standard method, this axis indicates the concentration ratio.

Y axis: Area. When using the internal standard method, this axis indicates the area ratio.

Calibration curve table
Refer to "7.4.1.2 Calibration Curve Table" on page 303

When a level's check mark is removed from its check box, that level's data will be deleted from the calibration curve calculation, and then, the calibration curve will be recalculated and the calibration curve graph redisplayed (re-plotted).

Level	Conc.	Area1
1	100.00	8.492
2	200.00	17.056
3	500.00	43.231

Note: For the calibration curve graph's scale, when the calibration curve type has been designated as other than "exponential," use the real scale, and when it is designated as "exponential," use the common logarithm scale. Also, the X and Y axes can be switched. To do so, use the <Method> view - [Quantitative] - [X Axis].



7.4.1.1 Calibration Curve Information

Y = aX + b a = 1.150186e-002 b = 2.973045	Calibration curve formula
R^2 = 0.9999863	R^2: Correlative function
R = 0.9999931	R: Contribution rate
External Standard Calib. Curve: Linear Origin: Not Forced Weight: None	
Mean RF : 1.168939e-002	Mean RF: Response factor mean value
RF SD : 1.099337e-004	RF standard deviation: Response factor standard deviation
RF %RSD : 0.9404570	RF relative standard deviation: Response factor relative standard deviation
Date Processed : 7/14/2004 2:48:29 PM	Date and time when the calibration curve was created (updated).

Note: The display format of the analysis date and time conforms to the corresponding setting on Control Panel of Windows.

7.4.1.2 Calibration Curve Table

The calibration curve table has two display items: area/height and response factor. Right-clicking on the calibration table will display the following sub-menu, where you can select a display item. The response factor display is used mainly when quantitative method mean RF is used.

Note: If the quantitative method that does not use calibration curves has been selected or when a calibration curve has not been plotted, the calibration curve table will not appear.

Level	Conc.	Area1
1	100.00	☒
2	180.00	☒
3	300.00	☒

Area/Height
Response Factor

●Area/Height Display

Level	Conc.	Area1
1	100.00	16.710
2	180.00	42.364
3	300.00	85.072

Calibration Curve Table Items	Description
Level	Displays each level number.
Concentration Note: When using the internal standard method, this item will become the concentration ratio.	Displays the concentration values designated in the compound table. Note: When using the internal standard method, concentration ratios designated in the compound table will appear.
Mean Area/Mean Height Note: When using the internal standard method, this item will become the mean area ratio/mean height ratio.	Displays the mean area or mean height values. Note: When using the internal standard method, either mean area ratios or mean height ratios will be displayed.



Calibration Curve Table Items	Description
Standard Deviation	Displays the standard deviation values for either area or height.
Relative Standard Deviation (%)	Displays the relative standard deviation values (%) for either area or height.
Area Ratio/Height Ratio (1 to 10) Note: When using the internal standard method, this item will be displayed.	For each level of data, either area ratio or height ratio will be displayed. Note: Depending on the [Calculate Concentration] tab's [Calculated by] setting in the <Method> view, either area ratio or height ratio will be chosen for display.
Area/Height (1 to 10)	For each level of data, either area or height will be displayed. Note: Depending on the [Calculate Concentration] tab's [Calculated by] setting in the <Method> view, either area or height will be chosen for display.

● Response Factor Display

Level	Conc.		RF1
1	100.00	☒	167.0980
2	180.00	☒	235.3575
3	300.00	☒	283.5734

Refer to "16.4.4 Mean RF" on page 625

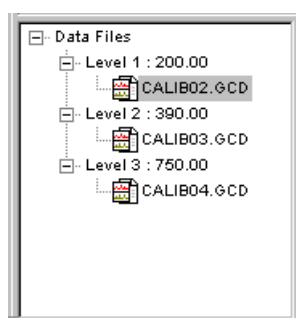
Calibration Curve Table Items	Description
Level	Displays each level number.
Concentration Note: When using the internal standard method, this item will become the concentration ratio.	Displays concentration values designated in the compound table. Note: When using the internal standard method, concentration ratios designated in the compound table will be displayed.
Mean RF	Displays the response factor mean values.
RF standard deviation	Displays the response factor standard deviation values.
RF relative standard deviation (%)	Displays the response factor relative standard deviation (%) values.
RF (1 to 10)	Displays each level data's response factor values.



7.5

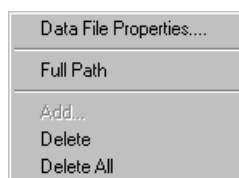
<Calibration Curve> - <Data File Tree> View

The <Calibration Curve> Window's <Data File Tree> view will display data files used for calibration curve plotting in a tree format. The level numbers will be displayed up to the number that has been designated using the <Method> view's [Quantitative] tab. On the levels where data files have been designated, the data file names will also be displayed. Data files can be added or deleted for each level, to perform calibration curve plotting. When data is added or deleted, the calibration curve graph will be redisplayed (renewed).



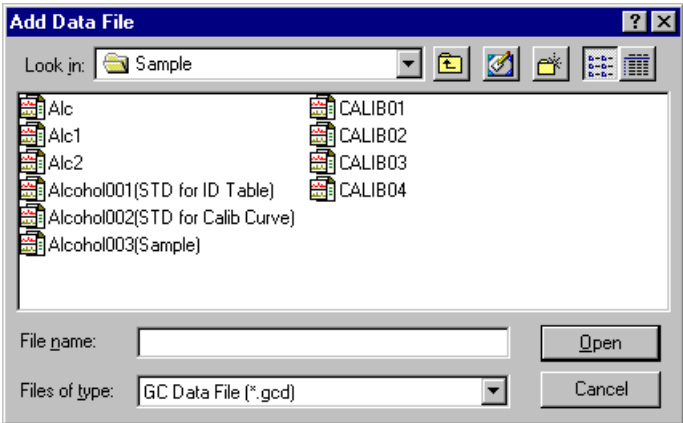
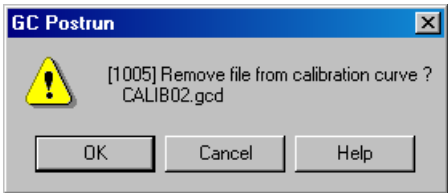
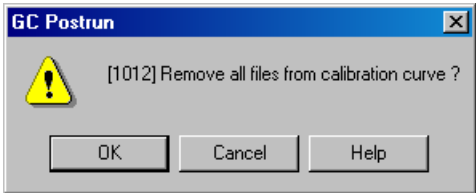
7.5.1 <Data File Tree> View - Pop-up Menu

When you select a data file name in the <Data File Tree> view by clicking the right mouse button, the following popup menu will appear:



Command	Function
Data File Properties	Displays the <File Properties> window, which is used to check and modify the currently activated data file's file information, description, sample information, and used files. <i>Refer to "14.6 <Properties> Window" on page 571</i>
Full Path	Displays the file names displayed in the <Data File Tree> view in full path display. When this function is activated, a check mark will appear on the right side of this command.



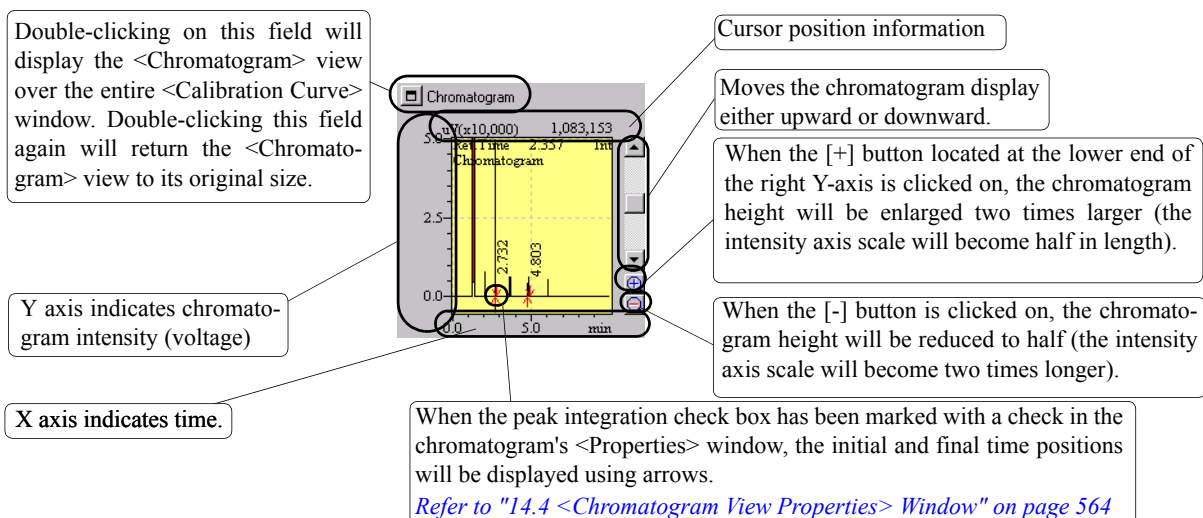
Command	Function
Add	A data file can be inserted into the currently selected level, using the <Data File Tree> view. In the <Add Data File> window, select a file and click on the [Open] button. The data file will be added. After the data file is added, the integration and identification operations will be performed on the file's data, and a calibration curve will be plotted. 
Delete	The currently selected data file can be deleted using the <Data File Tree> view. When the following message appears, click on the [OK] button to delete the file. After the file is deleted, the current calibration curve will be re-plotted automatically. 
Delete All	Allows you to delete all the data files for all the channels in the <Data File Tree> view. When the following message appears, click on the [OK] button to delete the file. After the file is deleted, the current calibration curve will be re-plotted automatically. 

7.6

<Calibration Curve> - <Chromatogram> View

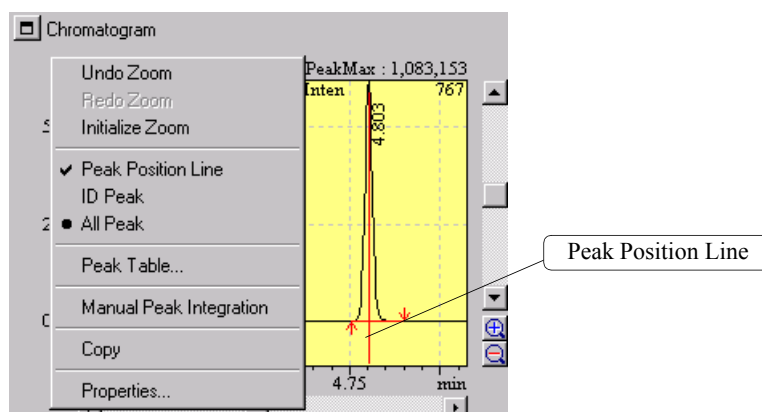
The <Calibration Curve> Window's <Chromatogram> view will display the chromatogram of the data file that is selected using the <Data File Tree> view. Selecting a data file name in the <Data File Tree> view allows you to change the display.

7.6.1 Names of the <Chromatogram> View Components



7.6.2 <Chromatogram> View - Pop-up Menu

Right-clicking on the chromatogram area in <Chromatogram> view will display the following menu:





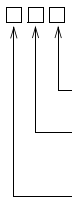
Command	Function
Undo Zoom	Returns to the previous zoom operation.
Redo Zoom	Cancels [Undo Zoom].
Initialize Zoom	Returns to the display condition used when the data file is loaded.
Peak Position Line	Sets whether to display the peak position line or not. The peak position line is synchronized with the retention time value in the [Compound] tab page of the <Method> View. Refer to "6.6.3 <Method> View - [Compound] Tab" on page 273
ID Peak	Switches to the identified peaks display.
All Peak	Switches to the all peaks display.
Peak Table	Displays the <Peak Table> window. Refer to "7.6.2.1 Peak Table" on page 308
Copy	When selecting the [Copy] command by right-clicking on the entire chromatogram area (upper area), the entire chromatogram will be copied to the Clipboard in the metafile format. When selecting the [Copy] command by right-clicking the expanded chromatogram area (lower area), the expanded chromatogram will be copied. Note: Use this function to paste the chromatogram to your MS Word or MS Excel application.
Properties	Displays the <Chromatogram Properties> window, which is used to designate the chromatogram's color, graph background color, etc. Refer to "14.4 <Chromatogram View Properties> Window" on page 564

7.6.2.1 Peak Table

Peak#	Ret. Time	Area	Height	Conc.	Unit
1	1.305	3042882.8	1083290.6	0.00000	
2	1.388	118011.3	96030.0	0.00000	
3	2.082	16709.8	15055.0	102.01777	ppm
4	2.743	17055.7	14461.5	102.03251	ppm
5	3.672	16989.5	12468.8	102.07685	ppm
6	4.816	18221.5	12046.3	102.13438	ppm
7	6.077	17153.0	10384.4	102.18871	ppm

Item displayed	Description
Peak#	Shows the peak number that has been integrated.
Ret. Time	Shows the retention time (minutes) of the peak.
Area	Shows the area of the peak.
Height	Shows the height of the peak.



Item displayed	Description
Conc.	Shows the concentration of the quantitatively analyzed peak.
Units	Shows the concentration unit of the quantitatively analyzed peak.
Mark	Shows a peak detection mark for the integrated peak. This mark consists of a 3-character string as follows:  E: Exceeded by 1 V or -5 mV V: Peak after vertical division H: Horizontal baseline correction S: Main peak of tailing/leading T: Peak with tailing processed Note: When it is connected with GC-2010, 'E' mark isn't show.
Compound ID#	Shows the ID number on the compound table corresponding to the identified peak.
Compound Name	Shows the compound name on the compound table corresponding to the identified peak.
Group ID#	Shows the ID number on the group table corresponding to the grouped peaks.
Group Name	Shows the group name on the group table corresponding to the grouped peaks.
T.Plate	Shows the theoretical number of plates.
HETP	Shows the HETP.
Tailing F.	Shows the tailing factor.
Resolution	Shows the Resolution.
k'	Shows the retention capacity (k').
Separation F.	Shows the separation factor.
Initial Time	Shows the initial time (minutes) of the peak.
Final Time	Shows the final time (minutes) of the peak.
Area%	Shows the percentage area of the peak.
Height%	Shows the percentage height of the peak.
A/H	Shows the peak area/peak height.



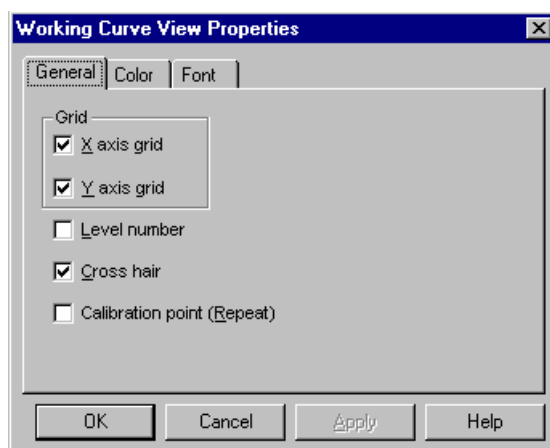
7.7

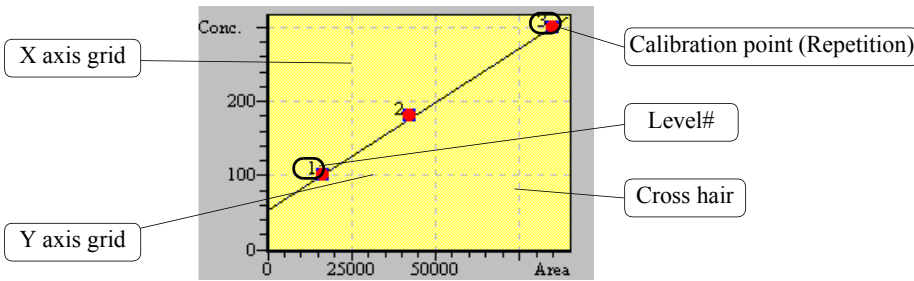
<Calibration Curve Graph Property> Window

In this window, which will appear when you select [View] - [Calibration Curve] - [Properties] from the main menu bar, you can designate the calibration curve display settings. Right-clicking on the calibration curve graph area will display a pop-up menu, where you can also select [Properties] to display the <Calibration Curve Graph Property> window.

7.7.1 <Calibration Curve Graph Property> - [General] Tab

Settings related to the calibration curve graph display can be set using the <Calibration Curve Graph Property> window's [General] tab.

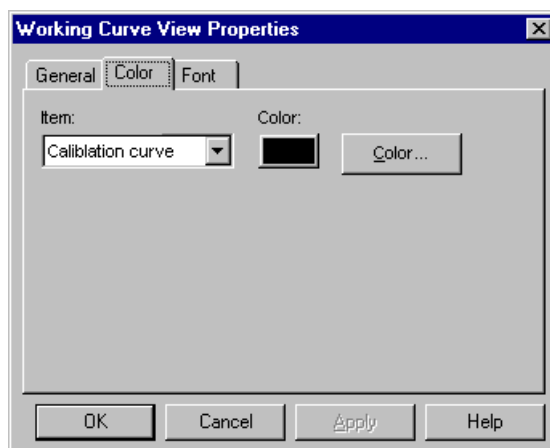


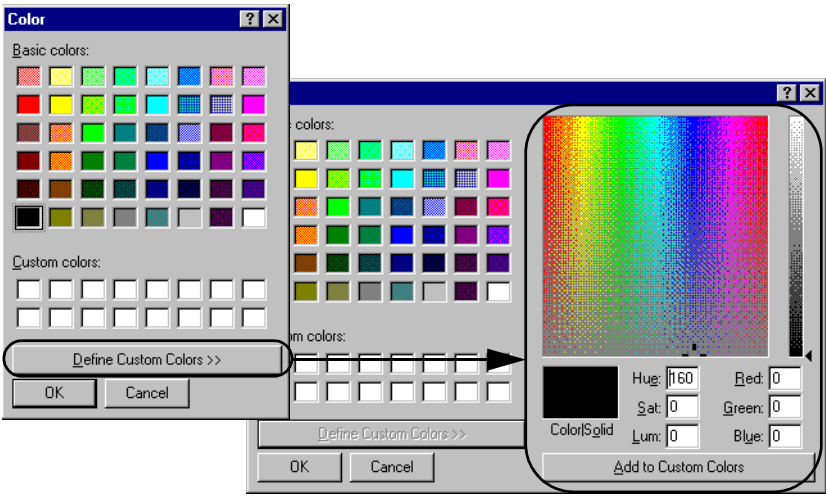
Parameter	Description
X axis grid	Items with a check mark attached will be displayed on the calibration curve graph. 
Y axis grid	
Level#	
Cross hair (Auxiliary Line?)	
Calibration Point (Repetition)	
[Apply] Button	Clicking on this button will reflect the current settings to the calibration curve graph, with the <Calibration Curve Graph Property> window open.



7.7.2 <Calibration Curve Graph Property> - [Color] Tab

Settings related to the calibration curve graph's display colors can be set using the <Calibration Curve Graph Property> window's [Color] tab.

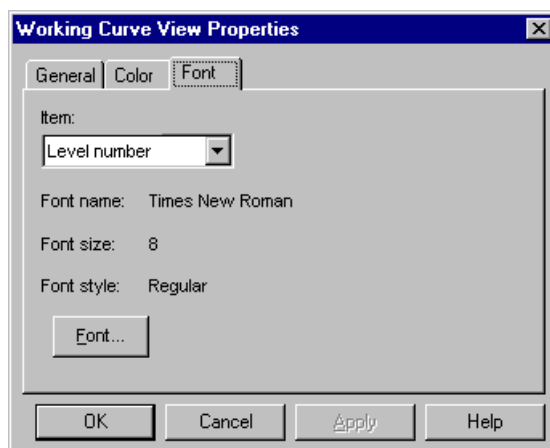


Parameter	Description
Item	Select items whose color is to be designated. The following items can be selected: ● Calibration curve ● Calibration point ● Level# ● Cross hair ● Calibration point (repetition) ● Graph background ● Graph frame ● Coordinate axis ● X axis grid ● Y axis grid ● X axis characters ● Y axis characters ● X axis label ● Y axis label ● X axis scale ● Y axis scale ● Y axis unit
[Color] Button	Clicking on this button will display the <Color> window. Select a desired color from the [Basic colors] colors. If you cannot find any desired color, click on the [Define Custom Colors] button and create and add your own color. 
[Apply] Button	By clicking on this button, the current settings will be reflected on the calibration curve graph, when the <Calibration Curve Graph Property> window is open.



7.7.3 <Calibration Curve Graph Property> - [Font] Tab

Settings related to the calibration curve graph's character fonts can be set using the <Calibration Curve Graph Property> window's [Font] tab.



Parameter	Description
Item	Select the items whose font is designated. The following items can be selected: ● Level# ● X axis characters ● Y axis characters ● X axis label ● Y axis label ● X axis unit ● Y axis unit
[Font] Button	Clicking on this button will display the window. When you select a font, the font information (in the sample field) will change.
[Apply] Button	By clicking on this button, the current settings will be reflected on the calibration curve graph, when the <Calibration Curve Graph Property> window is open.

8 <Data Comparison> Window

8.1 Overview of <Data Comparison> Window

Up to 8 different kinds of chromatograms and peak tables can be displayed in the <Data Comparison> window, allowing you to perform data comparison.

8.1.1 Functions of <Data Comparison> Window

Using the <Data Comparison> window, the following functions will be used for data comparison:

Function	Windows to be Used
Simultaneously displays multiple number of chromatograms.	<i>Refer to "8.4 <Data Comparison> - <Chromatogram> View" on page 324</i>
Changes the display method to one suitable for comparing each chromatogram (Data Shift).	<i>Refer to "8.4 <Data Comparison> - <Chromatogram> View" on page 324</i>
Displays the designated chromatogram's peak table.	<i>Refer to "6.5.1 <Results> View - [Peak Table] Tab" on page 240</i>

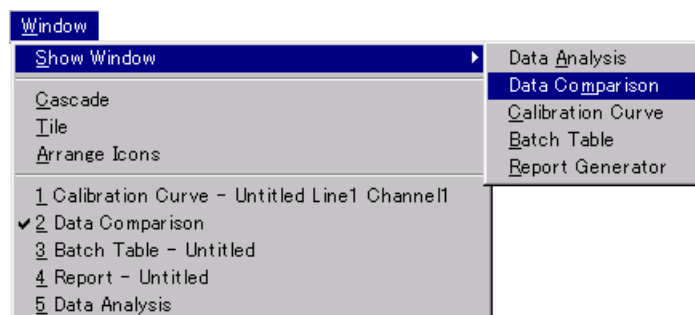
8.1.2 Opening <Data Comparison> Window

You can open the <Data Comparison> window using the following procedures:

- Click on the Assistant Bar's [Data Comparison] icon, on the <GC Postrun> screen.



- Select [Window] - [Show Window] - [Data Comparison] from the <GC Postrun> screen menu bar.





8.1.3 Element Names on <Data Comparison> Window

The <Data Comparison> window consists of two parts: the <Chromatogram> and <Peak Table> views.

When data for multiple channels is contained in a data file, up to 8 different kinds of chromatograms and peak tables can be displayed on the <Data Comparison> window (one kind of data per channel). Data file save and post-run analysis cannot be performed on this window.

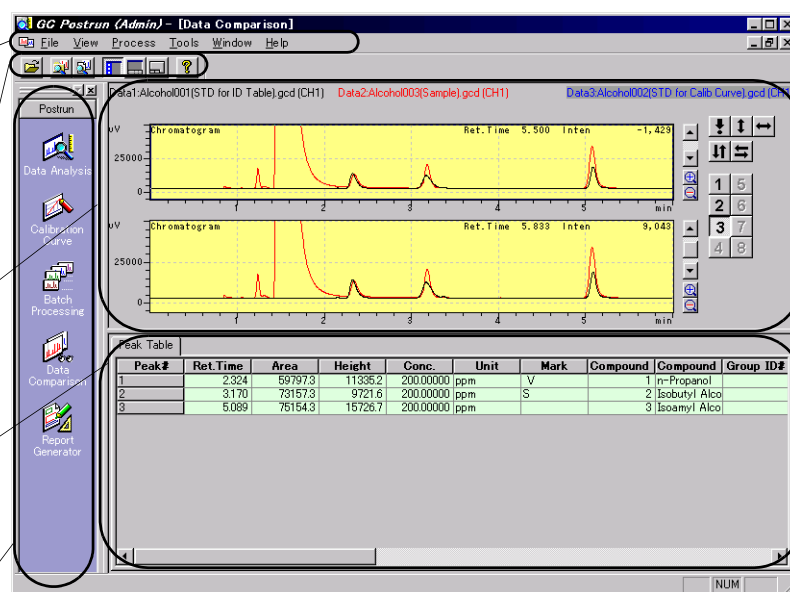
Menu Bar Refer to "8.3 Menu Bar on <Data Comparison> Window" on page 317

Toolbar Refer to "8.3 Menu Bar on <Data Comparison> Window" on page 317

Chromatogram View Refer to "8.4 <Data Comparison> - <Chromatogram> View" on page 324

Peak Table View Refer to "6.5.1 <Results> View - [Peak Table] Tab" on page 240

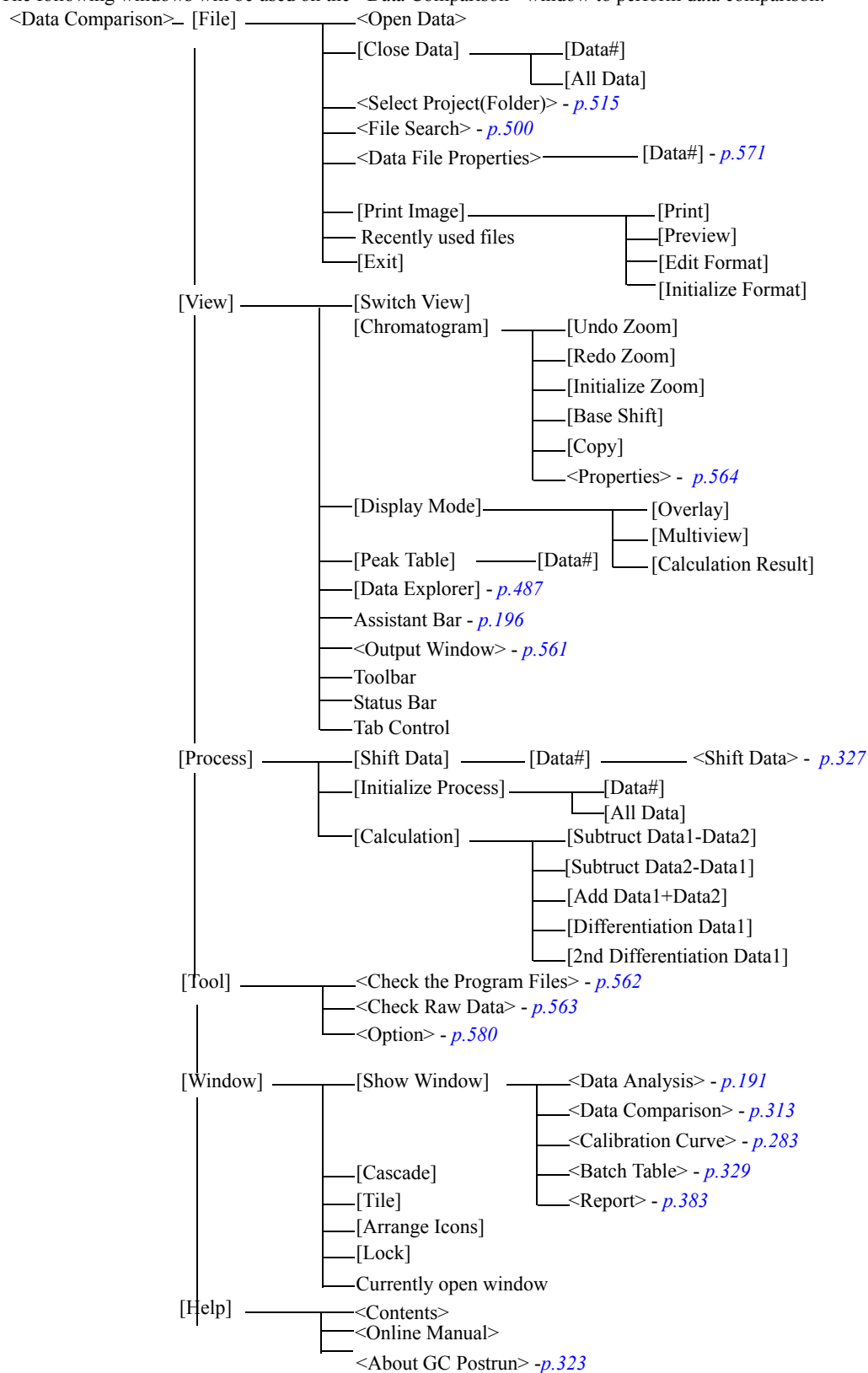
Assistant Bar Refer to "3.3 [Pos-trun] Assistant Bar ." on page 14





8.1.4 Menu Tree of <Data Comparison> Window

The following windows will be used on the <Data Comparison> window to perform data comparison:





8.2

Assistant Bar on <Data Comparison> Window

The <Data Comparison> window shows the [Data Comparison] Assistant Bar, which offers you operation icons for changing display mode, printing, and so on.

Icon	Description
	Changes to the [Data Analysis] Assistant Bar on the <GC Postrun> screen. <i>Refer to "6.2 [Data Analysis] Assistant Bar" on page 196</i>
	Overlays chromatograms when two or more chromatograms are displayed.
	Divides the chromatogram which have been zoomed up in the Overlay mode for display.
	Displays the <Report> window, which allows you to edit the print format for graph images.
	Closes all chromatogram datas.



8.3

Menu Bar on <Data Comparison> Window

This section describes the menus displayed on the <GC Postrun> screen when the <Data Comparison> window is activated.

8.3.1 <Data Comparison> - [File] Menu



Command	Function	Tool Button
Open Data	Displays the existing data file's chromatogram. When chromatogram data for multiple channels is contained in the designated data file, the <Channel Select> window, which is used to designate a channel, is displayed. Then, the designated channel's chromatogram will appear. 	
Close Data	Closes chromatogram data corresponding to the data number that is selected using the sub-menu. In the sub-menu, there are two commands to close data: one is used to close all chromatogram data and the other is used to close an individual chromatogram.	-
Select Project(Folder)	Displays the <Select Project(Folder)> window.	



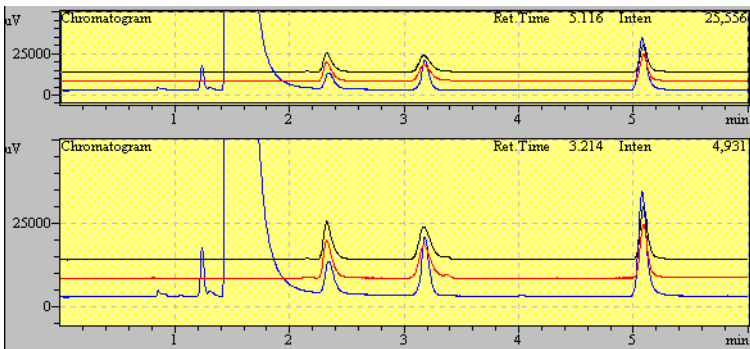
Command	Function	Tool Button
File Search	Displays the <File Search> window, which is used to search for an existing file. <i>Refer to "11.4 <GC File Search> Window" on page 500</i>	
Data File Properties	Displays the <Data File Properties> window corresponding to the data number that is selected using the sub-menu. <i>Refer to "14.6 <Properties> Window" on page 571</i>	-
Print Image	Prints out the chromatogram at the scale setting appearing on the screen.	-
Print	Displays the window on which printing instructions are given.	-
Preview	Displays the <Preview> window, which is used to view the print image.	-
Edit Format	Displays the <Report> window, which allows you to edit the print format for graph images.	-
Initialize Format	The print format is initialized.	-
Recently used files	Displays names of up to four recently used files. When you select one of the names, that file will open.	-
Exit	Exits the <GC Postrun> screen and closes the window(s).	-

8.3.2 <Data Comparison> - [View] Menu



Command	Function	Tool Button
Switch View	Switches the mode.(Overlay mode --> Overlay+base shift mode --> Multiview mode --> Calculation Results mode)	



Command	Function	Tool Button
Chromatogram	Selects a chromatogram display type. When commands contained in the sub-menu cannot be performed, those commands will be dimmed. 	-
Undo Zoom	Undoes the chromatogram zoom operation.	-
Redo Zoom	Redoes the chromatogram zoom operation.	-
Initialize Zoom	Cancels the chromatogram zoom operation and returns to the initial condition.	-
Base Shift	Designates whether the base line is automatically shifted, by attaching or removing the check mark in the check box. 	-
Copy	Copies all the chromatograms to the Clipboard.	-
Properties	Displays the chromatogram screen's <Properties> window.	-
Display Mode	Specifies the display mode for the chromatogram. The superimposed graph is separately displayed, or the addition or subtraction result is displayed.	-
Overlay	Overlays chromatograms when two or more chromatograms are displayed.	
Multiview	Divides the chromatogram which have been zoomed up in the Overlay mode for display.	
Calculation Results	Set the display to show chromatograms resultant from calculations.	-
Peak Table	Displays a peak table for the chromatogram corresponding to the data number that is selected using the sub-menu.	-
Data Explorer	Toggles the <Data Explorer> window's display condition (i.e., Show/Hide). <i>Refer to "11 <Data Explorer> Window" on page 487</i>	



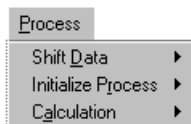
8 <Data Comparison> Window

8.3 Menu Bar on <Data Comparison> Window

Command	Function	Tool Button
Assistant Bar	Toggles each item's display condition (i.e., Show/Hide). A check mark is attached to the items that are currently displayed.	
Output Window	Assistant Bar(Refer to "3.3 [Postrun] Assistant Bar ." on page 14) Toolbar Output window(Refer to "14.1 <Output Window> Window" on page 561)	
Toolbar		-
Status Bar		-
Tab Control	Status Bar Tab Control	



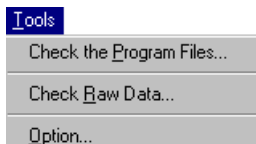
8.3.3 <Data Comparison> - [Process] Menu



Command	Function	Tool Button
Shift Data	Displays, using numerical values, the current degree of shift for the chromatogram corresponding to the data number that is selected, using the sub-menu. You can change the chromatogram display by directly entering time and intensity values. The <Shift Data> window will then appear, and the chromatogram will be shifted for the value designated in this window. In the sub-menu, only the items with the activated (pressed) buttons among the [Chromatogram#] buttons will be displayed. <i>Refer to "8.5 <Shift Data> Window" on page 327</i>	-
Initialize Process	Returns the data shift operation of the chromatogram corresponding to the data number (selected using the sub-menu) or all the data chromatograms, to the initial condition.	-
Calculation	Subtraction, addition, differentiation, or similar calculations are performed for the currently displayed data No. 1 or 2.	-
Subtract Data1 - Data2	Chromatogram 2 for data No. 2 is subtracted from that for data No. 1 and then the resulting chromatogram is displayed.	
Subtract Data2 - Data1	Chromatogram 1 for data No. 1 is subtracted from that for data No. 2 and then the resulting chromatogram is displayed.	
Add Data1+Data2	The chromatogram for data No. 1 is added to that for data No. 2 and then the resulting chromatogram is displayed.	
Differentiation Data1	The chromatogram for data No. 1 is differentiated (primary differentiation) and then displayed.	
2nd Differentiation Data1	The chromatogram for data No. 1 is secondarily differentiated and then displayed.	

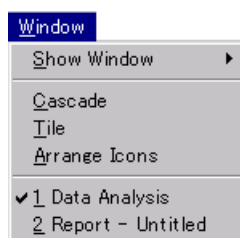


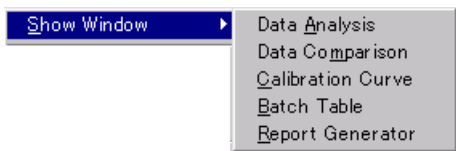
8.3.4 <Data Comparison> - [Tool] Menu



Command	Function
Check the Program Files	Displays the <Program Check> window, which is used to confirm if the program has not been altered. Refer to "14.2 <Check the Program Files> Window" on page 562
Check Raw Data	Displays the <Check Raw Data> window, which is used to confirm if the raw data has not been altered. Refer to "14.3 <Check Raw Data> Window" on page 563
Option	Displays the <Setting Options> window, which is used to create new conditions for method, batch, and report files. You can also designate where the template file should be saved, using this window. Refer to "14.9 <Setting Options> Window" on page 580

8.3.5 <Data Comparison> - [Window] Menu

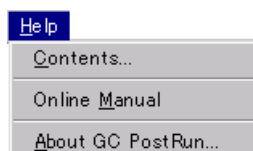


Command	Function
Show Window	Displays the window selected using the sub-menu.  Refer to "6 <Data Analysis> Window" on page 191 Refer to "7 <Calibration Curve> Window" on page 283 Refer to "9 <Batch Table> Window" on page 329 Refer to "10 <Report> Window" on page 383
Cascade	Displays the following windows in "cascade" layout: <Data Analysis>, <Data Comparison>, <Calibration Curve>, <Batch Table>, and <Report>.
Tile	Displays the following windows in "tile" layout: <Data Analysis>, <Data Comparison>, <Calibration Curve>, <Batch Table>, and <Report>.



Command	Function
Arrange Icons	Re-arranges and displays the minimized window icons, on the screen.
Currently open window	The name of the window currently displayed <Data Comparison> screen is displayed.

8.3.6 <Data Comparison> - [Help] Menu



Command	Function	Tool Button
Contents	Displays the help menu. <i>Refer to "12.1.1 Using Help" on page 107</i>	-
Online Manual	<i>Refer to "12.1.2 Using the Online Manual" on page 108</i>	-
About GC Postrun	Displays the <GP Postrun> screen's version information. 	



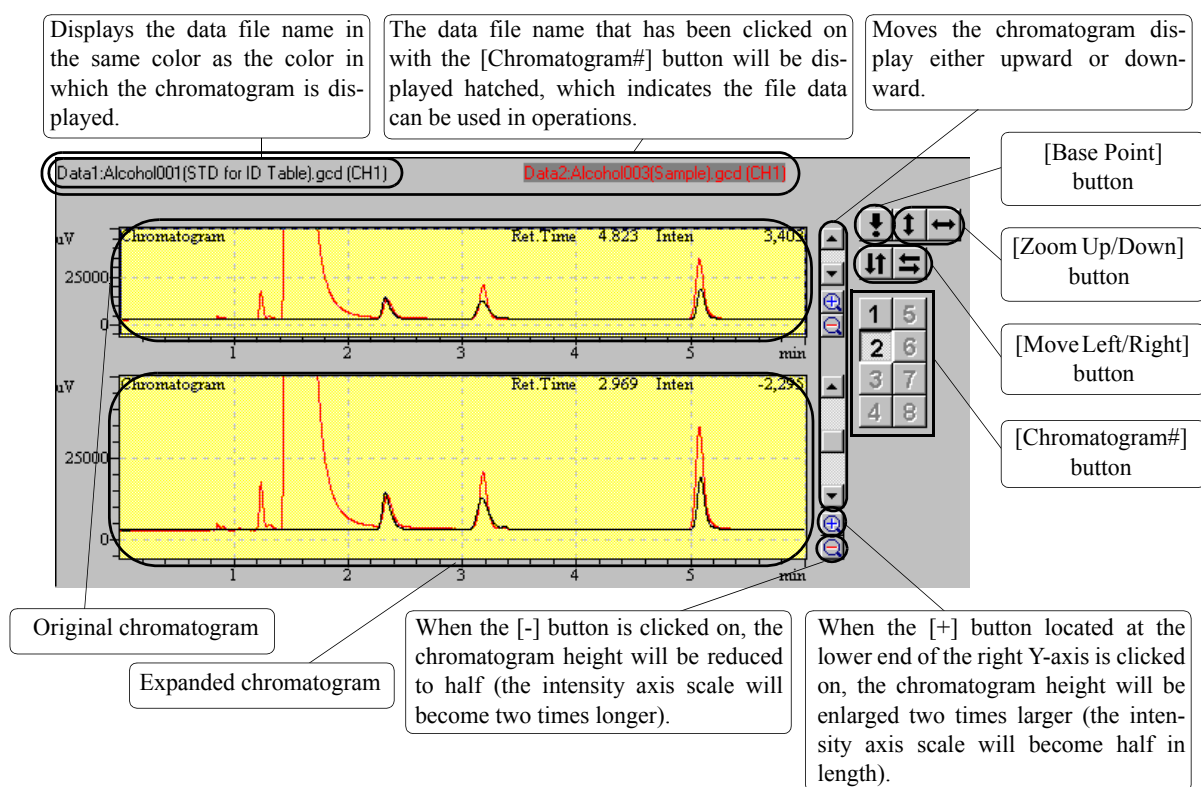
8.4

<Data Comparison> - <Chromatogram> View

The <Data Comparison> window's <Chromatogram> view will display a chromatogram for one channel contained in the data file that is selected using the [Chromatogram#] button. After setting the base point with the [Base Point] button, this chromatogram can be compared with other chromatograms, using the [Zoom Up/Down] button (X axis, Y axis) and [Move Left/Right] button (X axis, Y axis).

8.4.1 Names and Functions of <Chromatogram> View Components

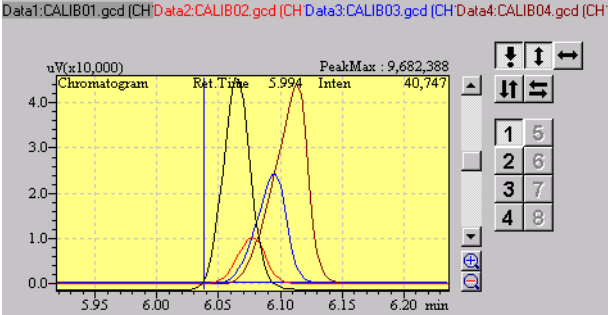
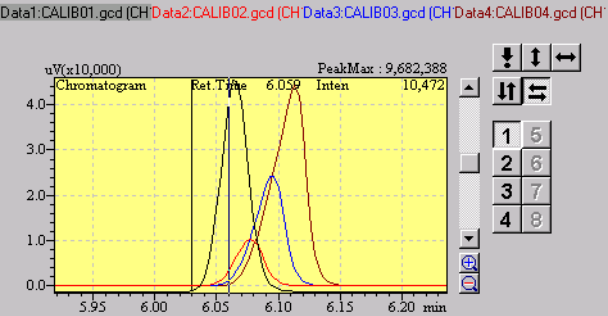
Displays chromatograms for up to 8 channels, on the <Chromatogram> view.



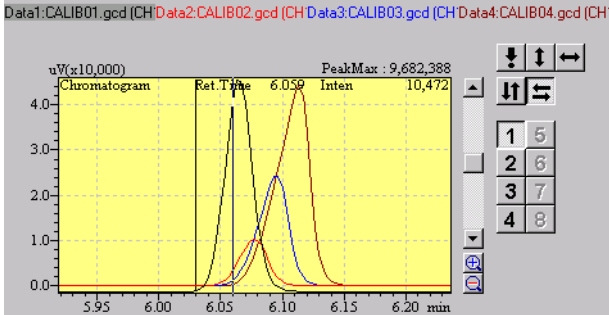
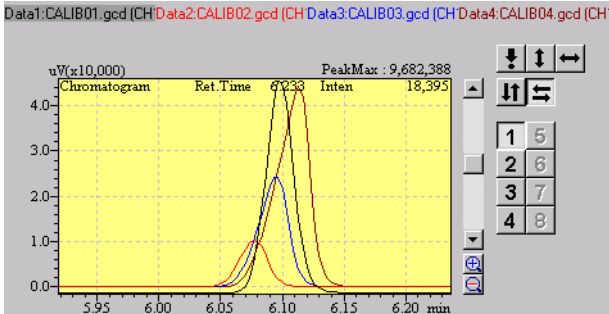
Note: Each chromatogram's color can be changed.

Refer to "14.4 <Chromatogram View Properties> Window" on page 564



Button	Description
[Chromatogram#] Buttons Currently selected chromatogram number 	Chromatogram numbers 1 to 8 will be allocated in the order that each chromatogram is opened (displayed). Among the buttons, the currently selected chromatogram number's button will remain pressed. At this time, clicking on either the [Base Point], [Zoom Up/Down], or [Move Left/Right] buttons will allow you to work with the selected chromatogram number's chromatogram data.
Base Point Button 	●Chromatogram zoom up/down operation First, click on the [Base Point] button. The button will remain pressed. Then, click on the chromatogram's base point where zoom up/down processing will be performed. The currently set base point will be marked, so you will know where the base point is.
[Zoom Up/Down] Button  (Time axis direction)  (Intensity axis direction)	 Next, click on the [Zoom Up/Down] button, and drag it onto the chromatogram. Then, based on the selected base point, the selected data's chromatogram will contract (from the start point to the end point, in either the time or intensity axis direction). 

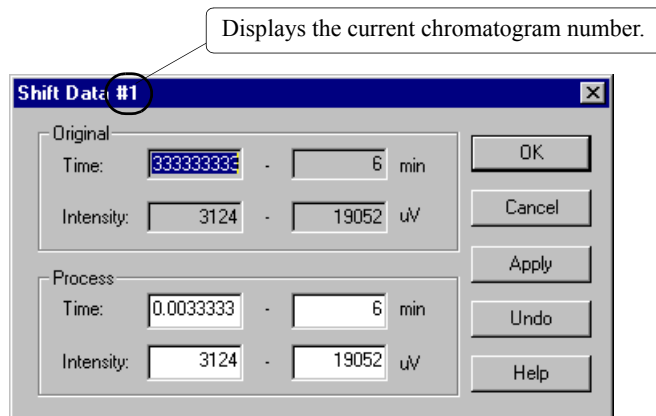


Button	Description
[Move Left/Right] Button  (Time axis direction)  (Intensity axis direction)	●Chromatogram movement operation Next, click on the [Move Left/Right] button, and drag it onto the chromatogram. Then, based on the selected base point, the selected data's chromatogram will move (from the start point to the end point, in either the time or intensity axis direction).  

8.5

<Shift Data> Window

Displays, using numerical values, the current degree of shift for the chromatogram corresponding to the data number that is selected, using the sub-menu. You can change the chromatogram display by directly entering time and intensity values. The <Shift Data> window will then appear, and the chromatogram will be shifted for the value designated in this window. In the sub-menu, only the items with the activated (pressed) buttons among the [Chromatogram#] buttons will be displayed.



Command	Description
Original	-
Time	Shows the range of the time axis of the original chromatogram.
Intensity	Shows the range of the intensity axis of the original chromatogram.
Process	-
Time	Designates the chromatogram data shifting range in the direction of the time axis.
Intensity	Designates the chromatogram data shifting range in the direction of the intensity axis.
[Refresh] Button	Applies the changed settings to the chromatogram.
[Undo] Button	Cancels the chromatogram data shifting operation and returns to the initial condition.



8 <Data Comparison> Window

8.5 <Shift Data> Window

9.1

9 <Batch Table> Window

Overview of <Batch Table> Window

This chapter describes the batch function for sequential analysis or post-run analysis of multiple data sets. To perform sequential analysis (realtime batch analysis), use the <Batch Table> window on the <GC Real Time Analysis> screen. To perform sequential post-run analysis (postrun batch analysis), use the <Batch Table> window on the <GC Postrun> screen. The settings on the <Batch Table> window are slightly different between the <GC Real Time Analysis> and <GC Postrun> screens, but the basic operations on these two screens are same and described together in this chapter. Each row on the <Batch Table> window is used as a single data set for the sequential analysis or post-run analysis. (This function is equivalent to the "Sample Schedule/Batch Schedule" function of the former model CLASS-GC10.)

9.1.1 Function of <Batch Table> Window

The batch function is useful for:

- analyzing many samples under the same analytical conditions; e.g., in routine analysis;
- analyzing the same sample using multiple different method files and finding the most suitable method for that sample; or
- analyzing multiple standard samples of different concentrations and creating calibration curve with more than one calibration level.

The batch function allows you to perform the following operations

Operation	Main window used
Performing the data acquisition sequentially for multiple samples.	<Batch Table> window on <GC Real Time Analysis> screen
Performing sequential post-run analysis ;e.g., quantitative calculation; of multiple data sets.	<Batch Table> window on <GC Postrun> screen
Creating batch tables easily.	<i>Refer to "9.8 <Batch Table Wizard> Window" on page 358</i> Note: Realtime Batch analysis only <i>Refer to "9.6 <Select Data File> Window" on page 356</i> Note: Post-run batch analysis only
Selecting an operation mode for each row.	<i>Refer to "9.10.1 <Run Mode> Window" on page 366</i>
Printing out the analysis result in the specified format.	<i>Refer to "9.4 <Batch Table> Window" on page 348</i>
Setting the user-specified program so that it is executed before and after each analyses.	<i>Refer to "9.10.4 <User Program> Window" on page 369</i> Note: Post-run batch analysis only after data processing
Editing the batch table in the Edit Mode during batch analysis under the another batch table.	<Batch Table> window in the GC Analysis (Editor) Mode Note: Realtime Batch analysis only



Operation	Main window used
Performing statistical calculations and establishing pass/failure criteria.	<i>Refer to "9.10.6 <Schedule Action> Window" on page 371</i> <i>Refer to "9.11.7 <Settings> - [QAQC] Tab" on page 380</i>
Using the barcode for each sample.	<i>Refer to "9.4 <Batch Table> Window" on page 348</i>
Setting the software to carry out a system check during batch processing.	<i>Refer to "9.10.6 <Schedule Action> Window" on page 371</i>
Toggling between displaying and hiding the item rows displayed on the batch table, and selecting the font and character size displayed on the batch table.	<i>Refer to "14.5 <Table Style> Window" on page 569</i>
Selecting sequential execution of multiple batch files. Changing the processing order of batch files or adding another batch file during batch processing (interrupt).	<i>Refer to "9.9 <Batch Queue> Window" on page 365</i>

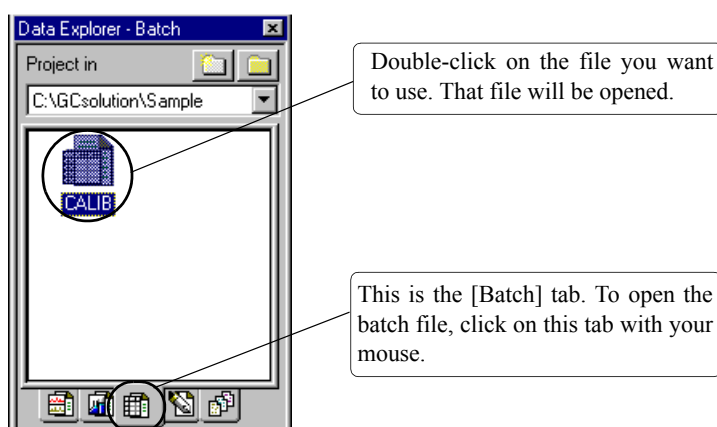
9.1.2 Opening <Batch Table> Window

●For realtime batch analysis

- Click on the [Batch Processing] icon on the [Analysis] Assistant Bar on the <GC Real Time Analysis> screen.

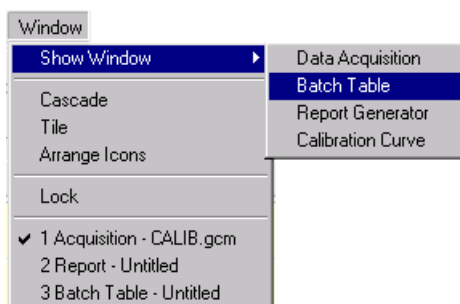


- Select the [Batch] tab of the <Data Explorer> window, and double-click on the [Batch File] icon to open the batch file.





- Select [Window]-[Show Window]-[Batch Table] on the <GC Real Time Analysis> screen.

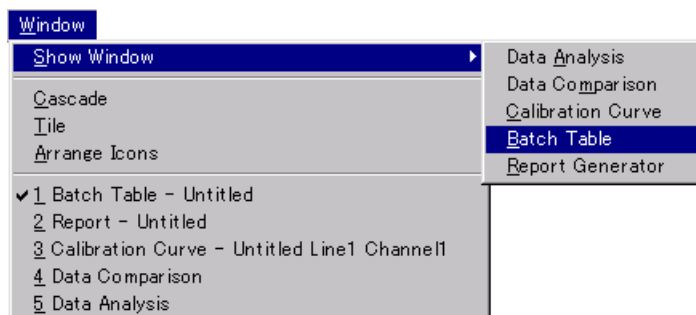


●For post-run batch analysis

- Click on the [Batch Processing] icon on the [Postrun] Assistant Bar on the <GC Postrun> screen.



- Select the [Batch] tab of the <Data Explorer> window, and double-click on the [Batch File] icon to open the batch file.
- Select [Window]-[Show Window]-[Batch Table] on the <GC Postrun> screen.



Note: The <Batch Table> window allows you to open only a single batch file at a time. The batch file contains a batch table, on which you can set the parameters for realtime batch analysis or post-run batch analysis. Batch files are commonly used on both the <GC Real Time Analysis> and <GC Postrun> screens.



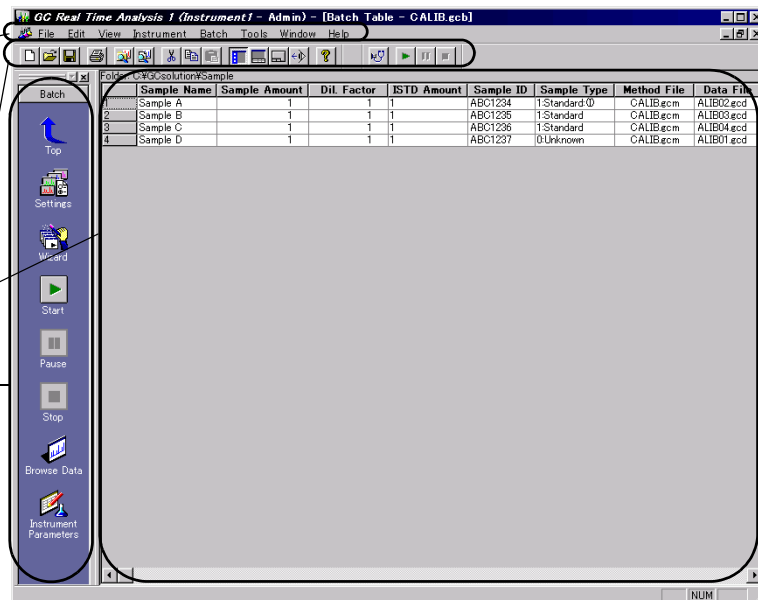
9.1.3 Element Names on <Batch Table> Window

Menu Bar (Refer to "9.3 Menu Bar on <Batch Table> Window" on page 337)

Toolbar (Refer to "9.3 Menu Bar on <Batch Table> Window" on page 337)

Batch Table (Refer to "9.4 <Batch Table> Window" on page 348)

Assistant Bar (Refer to "9.2 Assistant Bar" on page 335)



●For using only a single analytical line for batch processing

Select All cell

Column name

Sample Name	Sample Amount	Dil. Factor	ISTD Amount	Sample ID	Sample Type	Method File	Data File	Baseline Data File
Sample A	1	1	1	ABC1234	1-Standard	CALIB.gcm	ALIB02.gcd	
Sample B	1	1	1	ABC1235	1-Standard	CALIB.gcm	ALIB03.gcd	
Sample C	1	1	1	ABC1236	1-Standard	CALIB.gcm	ALIB04.gcd	
Sample D	1	1	1	ABC1237	0-Unknown	CALIB.gcm	ALIB01.gcd	

Row No.

Column

Cell

Batch row

●For using two analytical lines for batch processing

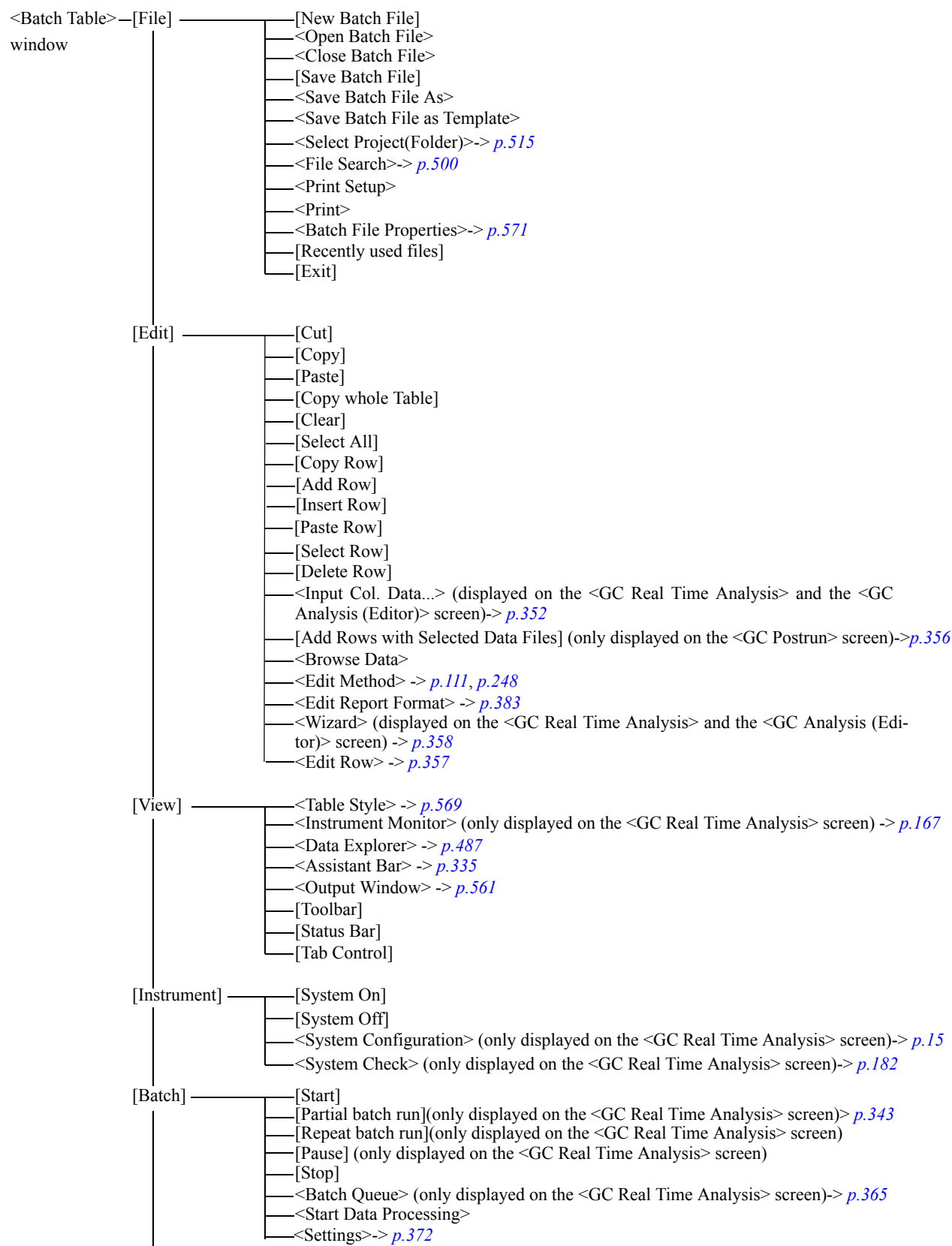
	Sample Type	Method File	Data File	Level#	ISTD Amount	Report Outp
1-1	1-Standard	CALIB.gcm	TD001.gcd	1	1	☐ Print
1-2	1-Standard	CALIB.gcm	TD002.gcd	1	1	☐ Print
2-1	1-Standard	CALIB.gcm	TD003.gcd	2	1	☐ Print
2-2	1-Standard	CALIB.gcm	TD004.gcd	2	1	☐ Print
3-1	0-Unknown	CALIB.gcm	NK001.gcd	1	0	☐ Print
3-2	0-Unknown	CALIB.gcm	NK002.gcd	1	0	☐ Print

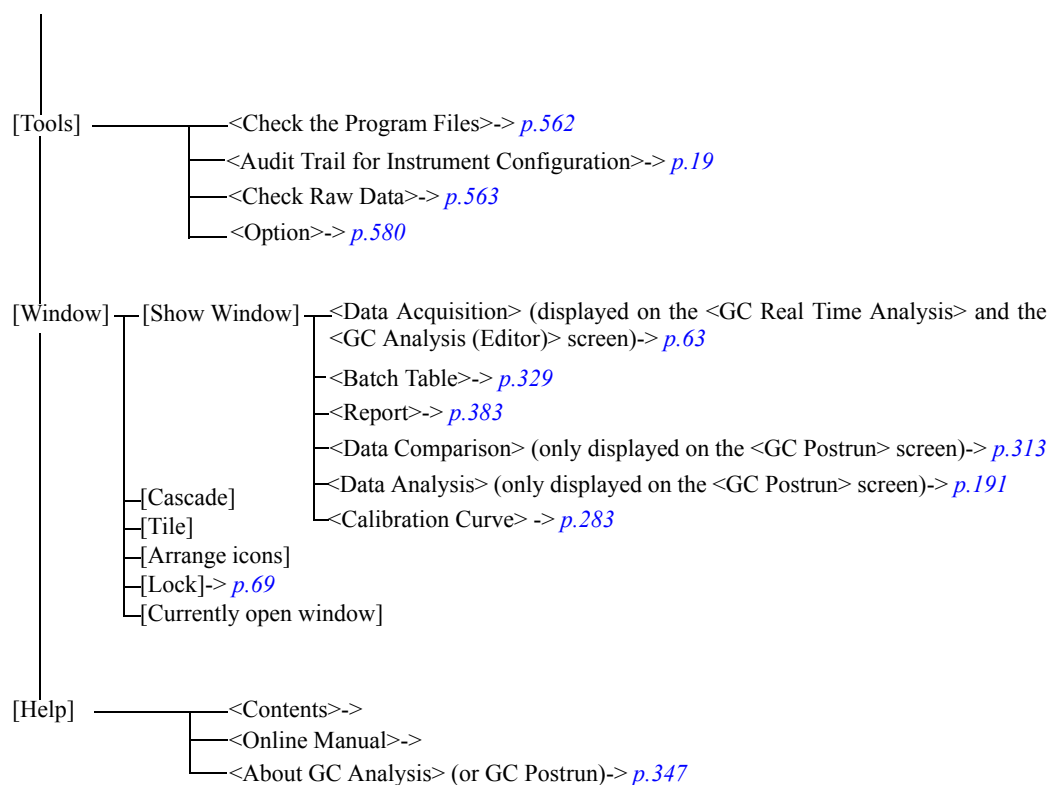
For line 1, "-1" is added to each row number. For line 2, "-2" is added to each row number and rows are deleted or selected on a two-row basis.



9.1.4 Menu Tree of <Batch Table> Window

The batch function uses the following windows to perform batch processing:





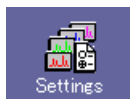


9.2

Assistant Bar

The icons on the Assistant Bar in the <Batch Table> window are different between the <GC Real Time Analysis> and <GC Postrun> windows. In the <Batch Table> window on the <GC Real Time Analysis> screen, the [Batch](Analysis) Assistant Bar appears showing the icons from top to bottom in the order of analysis operations in batch for sequential data acquisition. In the <Batch Table> window on the <GC Postrun> screen, the [Batch](Postrun) Assistant Bar appears showing the icons from top to bottom in the order of post-run analysis operations in batch for sequential data analysis.

9.2.1 [Batch] (Analysis) Assistant Bar

Icon	Function
Top 	Changes over to the [Analysis] Assistant Bar. <i>Refer to "3.2 [RealTime] Assistant Bar" on page 12</i>
Settings 	Displays the <Settings> window, which allows you to set up the batch table. <i>Refer to "9.11 <Settings> Window" on page 372</i>
Wizard 	Displays the <Batch Table Wizard> window, which allows you to easily set up the batch table. <i>Refer to "9.8 <Batch Table Wizard> Window" on page 358</i>
Start 	Performs sequential analysis in batch starting with the batch row specified in [Start from#] in the <Settings> window. <i>Refer to "9.11 <Settings> Window" on page 372</i> <i>Refer to "5 <Data Acquisition> Window" on page 63</i>
Pause 	Becomes available once batch analysis is started. If this icon is selected, the current batch analysis will be temporarily stopped when it is completed. You can then edit the settings on the batch lines that have not yet been analyzed. When this icon is selected while the batch analysis is temporarily stopped.
Stop 	Becomes available once batch analysis is started. If this icon is selected, a window will appear prompting you to select whether you want to stop the analysis immediately or stop the current analysis when it is completed. Batch analysis will be stopped according to this selection.
Browse Data 	Loads an existing data file if its name is specified in [Data File Column] on the selected batch row, and displays the <Data Analysis> window on the <GC Postrun> screen.



Icon	Function
Instrument Parameters 	Loads an existing method file if its name is specified in [Method File] column on the selected batch row, and displays the <Instrument Parameters> View on the <Data Acquisition> window at 80% of the height of that window.

9.2.2 [Batch] (Postrun) Assistant Bar

Icon	Function
Top 	Changes over to the [Postrun] Assistant Bar. <i>Refer to "3.3 [Postrun] Assistant Bar ." on page 14</i>
Settings 	Displays the <Settings> window, which allows you to set up the batch table. <i>Refer to "9.11 <Settings> Window" on page 372</i>
Start 	Performs sequential post-run analysis in batch starting with the batch row specified in [Start from#] on the <Settings> window. Note: The data files that share the method contained in the data file used for the post-run analysis and those which are used for any other purpose will be closed automatically. <i>Refer to "9.11 <Settings> Window" on page 372</i>
Stop 	Becomes available once batch post-run analysis is started. If this icon is selected, the batch analysis will be stopped.
Browse Data 	Displays the <Data Analysis> screen. Loads and displays an existing data file if its name is specified in [Data File] on the batch row selected with the cursor. <i>Refer to "6 <Data Analysis> Window" on page 191</i>
Edit Method 	Displays the [Calibration Curve] window. Loads and displays a method file if its name is specified in [Method File] on the batch row selected with the cursor. Changes over to the [Postrun] Assistant Bar. <i>Refer to "7 <Calibration Curve> Window" on page 283</i> <i>Refer to "3.3 [Postrun] Assistant Bar ." on page 14</i>

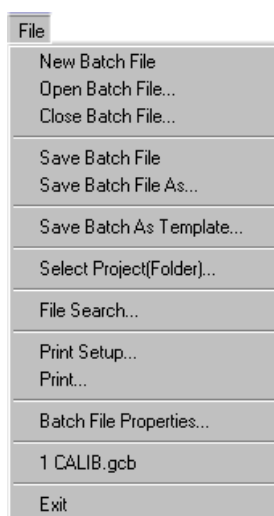


9.3

Menu Bar on <Batch Table> Window

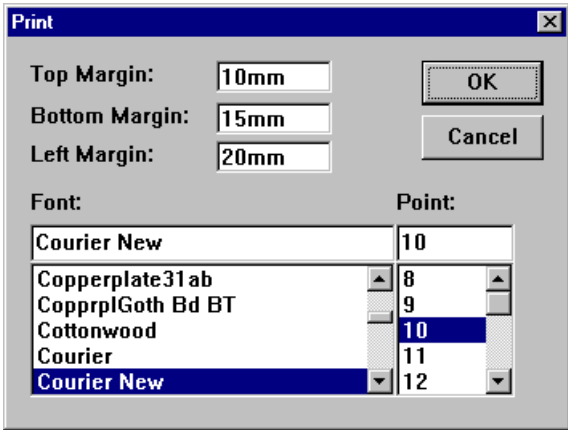
This section describes the menus that are displayed on the <GC Real Time Analysis> screen or <GC Postrun> screen when the <Batch Table> window is active.

9.3.1 <Batch Table> - [File] Menu



Command	Description	Tool button
New Batch File	Opens a new batch file. Note: The action in creating a new batch file can be changed on the <Setting Options> window. <i>Refer to "14.9 <Setting Options> Window" on page 580</i>	
Open Batch File	Opens an existing batch file. Note: Only one batch file can be opened on the <Batch Table> window at a time. When you try to open another batch file, a window will appear prompting you to save the currently used batch file if it has been modified in any way.	
Close Batch File	Closes the currently used batch file. If the contents of the batch file are not saved or if its original contents are modified, a window will appear prompting you to select a mode for saving the batch file.	-
Save Batch File	Saves the contents of the batch file.	
Save Batch File As	Saves the batch file as another file.	-
Save Batch File as Template	Saves the batch file as a template file.	-



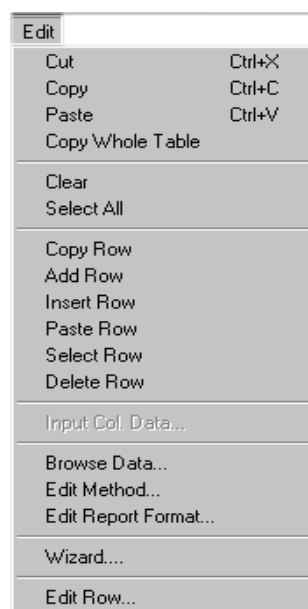
Command	Description	Tool button
Select Project(Folder)	Toggles between displaying and hiding the <Select Project(Folder)> window. <i>Refer to "11.8 <Project (Folder) Selection> Window" on page 515</i>	
File Search	Searches for an existing file.	
Print Setup	Displays the <Printer Setup> window.	-
Print	Displays the window allowing you to specify the conditions for printing the batch file. 	
Batch File Properties	Allows you to check the updating history of the currently opened batch file, or to enter a comment. <i>Refer to "14.6 <Properties> Window" on page 571</i>	-
Recently used files	Displays the names of recently used files (up to four files). If a file name is selected, that file will be opened.	-
Exit	Exits the <GC Real Time Analysis> screen or <GC Postrun> screen and closes the window(s).	-



9.3.2 <Batch Table> - [Edit] Menu

The commands on the [Edit] menu are used to set the parameters in the table that appears in the <Method> View.

●On <GC Real Time Analysis> screen



●On <GC Postrun> screen



Command	Description	Tool button
Cut	Moves the selected data to the clipboard.	
Copy	Copies the selected data to the clipboard.	
Paste	Pastes the data on the clipboard to the selected item.	
Copy whole Table	Copies the entire table including its title to the clipboard.	-
Clear	Deletes the selected item. Note: The deleted parameter cannot be restored. Note: If you select a cell in which the parameter is set to the default value and click on [Clear], nothing will change.	-
Select All	Selects all the selectable items contained in the table.	-
Copy Row	Copies the selected row.	



Command	Description	Tool button
Add Row	Adds a new row after the final row.	
Insert Row	Inserts a new row just above the selected row.	
Paste Row	Paste the row copied by the [Copy Row] command below the currently selected row.	
Select Row	To perform batch processing using multiple lines, set the corresponding parameters for the respective lines on consecutive rows. When the [Select Row] command is selected, not just the selected row, but also those rows that have the batch processing parameters set for the other lines will be selected.	
Delete Row	Deletes the selected row.	
Input Col. Data...	Allows you to enter the same sample conditions on multiple rows at a time. Note: This command is displayed on the <GC Real Time Analysis> screen and the <GC Analysis (Editor) screen>. Refer to "9.5 [Input Col. Data...] Menu" on page 352	
Add Rows with Selected Data Files...	Extracts information from the data file selected in the <Select Data File> window, and generates and adds one batch row. Note: This command is only displayed on the <GC Postrun> screen. Refer to "9.6 <Select Data File> Window" on page 356	
Browse Data	Displays the data from the data file, which is selected on the batch row indicated by the cursor, in the <Data Analysis> window. Refer to "6 <Data Analysis> Window" on page 191	-
Edit Method	Displays the <Data Acquisition> window of the <Batch Analysis> window or the <Calibration Curve> window of the <Batch Postrun> window, allowing you to edit the method file entered on the batch row. Refer to "5.5 <Data Acquisition> -<Instrument Parameters> View" on page 85 Refer to "7 <Calibration Curve> Window" on page 283	-
Edit Report Format	Displays the <Report> window, which allows you to edit the report format entered on the batch row. Refer to "10 <Report> Window" on page 383	-
Wizard	Displays the <Batch Table Wizard> window, which allows you to easily set the parameters on the batch line by entering the sequentially displayed batch wizard items. Note: This command is displayed on the <GC Real Time Analysis> screen and the <GC Analysis (Editor) screen>. Refer to "9.8 <Batch Table Wizard> Window" on page 358	-
Edit Row	Opens the line edit window. One line in the batch table can be easily edited on a single window without scrolling the batch table. Refer to "9.7 <Edit Row> Window" on page 357	

9.3.3 <Batch Table> - [View] Menu

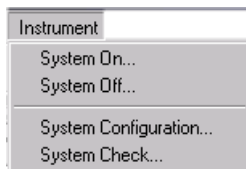


Command	Description	Tool button
Table Style	Displays the <Table Style> window. <i>Refer to "14.5 <Table Style> Window" on page 569</i>	-
Instrument Monitor Note: This command is only displayed on the <GC Real Time Analysis> screen.	Toggles between displaying and hiding each item. Each item is marked with a check when it is displayed. Assistant Bar<i>(Refer to "9.2 Assistant Bar" on page 335)</i> Instrument Monitor<i>(Refer to "5.6 <Instrument Monitor> Window" on page 167)</i>	
Data Explorer	Data Explorer<i>(Refer to "11 <Data Explorer> Window" on page 487)</i> Toolbar	
Assistant Bar		
Output Window		
Toolbar		-
Status Bar		-
Tab Control	Output Window<i>(Refer to "14.1 <Output Window> Window" on page 561)</i> Tab Control Status Bar	



9.3.4 <Batch Table> - [Instrument] Menu

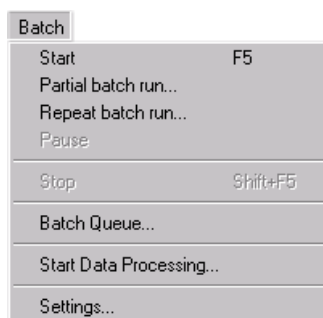
Note: This menu is only displayed on the <GC Real Time Analysis> screen.

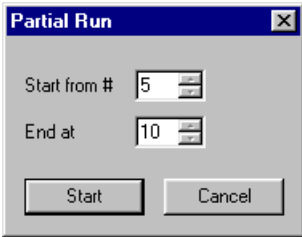


Command	Description	Tool button
System On	Displays the <Instrument Monitor> window and starts the GC. A short time later, the system will be turned ON. Note: If you click on this icon before downloading the parameters to the GC, a window will appear prompting you to confirm whether or not you wish to download the parameters. Clicking on the [OK] button will download the parameters and start the GC in accordance with those parameters. <i>Refer to "5.6 <Instrument Monitor> Window" on page 167</i>	
System Off	Displays the <Instrument Monitor> window and stops the GC. A short time later, the system will be turned OFF. <i>Refer to "5.6 <Instrument Monitor> Window" on page 167</i>	
System Configuration	Displays the <System Configuration> window, which allows you to set up the GC's units used for data acquisition. Note: This command cannot be used during analysis. Note: No setting for the system configuration can be changed in the [GC Analysis (Editor)] mode. <i>Refer to "4.2 <System Configuration> Window" on page 17</i>	-
System Check	Displays the <System Check> window, which allows you to diagnose the GC. Note: This command cannot be used during analysis. Note: This command is not displayed in the [GC Analysis (Editor)] mode. <i>Refer to "5.10 <System Check> Window" on page 182</i>	

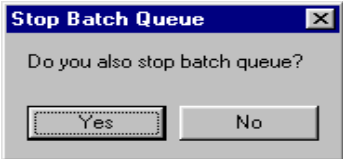


9.3.5 <Batch Table> - [Batch] Menu



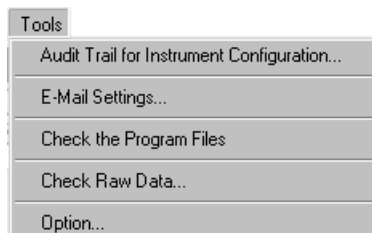
Command	Description	Tool button
Start	Starts batch processing. Note: This command is not displayed in the [GC Analysis (Editor)] mode.	
Partial batch run	Displays the <Partial Run> window and runs only the line extent specified by [Start form#] and [End at#] in the batch table. After the line extent has been specified, clicking the [Start] button will run the specified line extent in batch. 	-
Repeat batch run	Returns to the 1st line after the final line of the batch has been completed, and then runs it. Repeats this process until [Stop] has been selected. Note: This command is only displayed on the <GC Analysis> screen.	-
Pause	Toggles between choosing and canceling Pause. When you choose Pause, batch processing will be paused and the current row will not proceed to the next one. At this time, you may edit/add any row that has not yet been used for analysis. When you cancel Pause, the analysis will be resumed after the data has been checked. Note: This command is not displayed on the <GC Postrun> screen or in the [GC Analysis (Editor)] mode.	



Command	Description	Tool button
Stop	Stops batch processing. When this command is selected, a message will appear prompting you to select (i) aborting the current analysis and stopping batch processing, (ii) waiting for the current processing to be completed successfully and then finishing batch processing, or (iii) canceling your selection. Note: This command is not displayed in the [GC Analysis (Editor)] mode.  In the case of using the Batch Queue, the software asks you whether you want to stop the queue too. 	
Batch Queue	Displays the <Batch Queue> window, which allows you to reserve the batch file you want to use after the current batch analysis run has been finished. Refer to "9.9 <Batch Queue> Window" on page 365	-
Start Data Processing	Starts a batch post-run analysis. Before the analysis starts, the following screen appears. In this screen, select whether to run a batch for the whole or in part. Note: This command is not displayed on the <GC Postrun> screen or in the [GC Analysis (Editor)] mode.	
Settings	Allows you to set up the batch table that is now being edited. Refer to "9.11 <Settings> Window" on page 372	-



9.3.6 <Batch Table> - [Tools] Menu

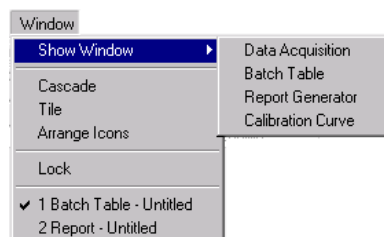


Command	Description
Audit Trail for Instrument Configuration	Displays the <Audit Trail Settings For Instrument Configuration File> dialog box, which allows you to set up the audit trail of the configuration file. Note: This command is displayed only in the <GC Real Time Analysis> screen. <i>Refer to "4.2.1 Audit Trail Settings for Instrument Configuration File" on page 19</i>
E-Mail Settings	Display the <E-Mail Settings> window. <i>Refer to "5.13 <E-Mail Settings>" on page 188</i>
Check the Program Files	Displays the <Check the Program Files> window, which allows you to check for any program corruption. <i>Refer to "14.2 <Check the Program Files> Window" on page 562</i>
Check Raw Data	Displays the <Check Raw Data> window, which allows you to check for any raw data corruption of raw data file. <i>Refer to "14.3 <Check Raw Data> Window" on page 563</i>
Option	Displays the <Option> window, which allows you to specify the conditions for creating a new method file, batch file, or report file. This window also allows you to specify the destination for saving a template file. <i>Refer to "14.9 <Setting Options> Window" on page 580</i>

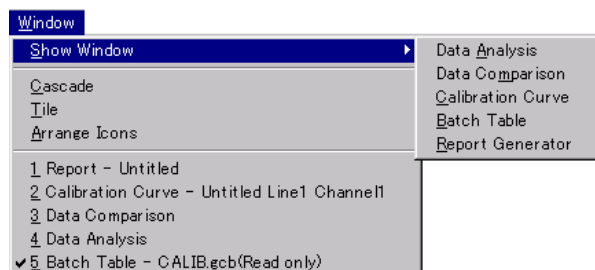


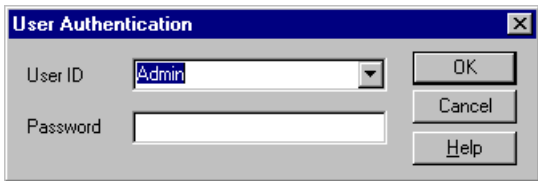
9.3.7 <Batch Table> - [Window] Menu

●On <GC Real Time Analysis> screen



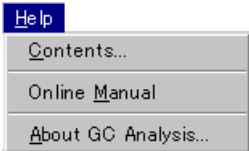
●On <GC Postrun> screen



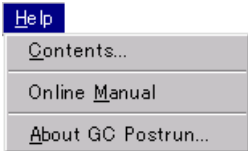
Command	Description
Show Window	Displays the window selected from the submenu. <i>Refer to "5 <Data Acquisition> Window" on page 63</i> <i>Refer to "6 <Data Analysis> Window" on page 191</i> <i>Refer to "7 <Calibration Curve> Window" on page 283</i> <i>Refer to "8 <Data Comparison> Window" on page 313</i> <i>Refer to "10 <Report> Window" on page 383</i>
Cascade	Cascades windows, such as the <Data Acquisition>, <Batch Table>, and <Report> windows.
Tile	Tiles windows, such as the <Data Acquisition>, <Batch Table>, and <Report> windows.
Arrange icons	Displays the minimized window icons in an arranged state.
Lock	Iconizes the <GC Real Time Analysis> or <GC Postrun>screen to prevent access to this screen and displays this icon on the bar next to the [Start] menu located in the lower left corner of the screen. The <GC Real Time Analysis> screen cannot be accessed until clicking on the icon with the mouse button, has been clicked on. Note: When you click on [GC Real Time Analysis] or [GC Postrun] icon, a window will be opened prompting you to enter your user ID and password. If you did not specify any password, just click on the [OK] button. 
Currently open window	The name of the window currently displayed on <Batch Table> screen is displayed.

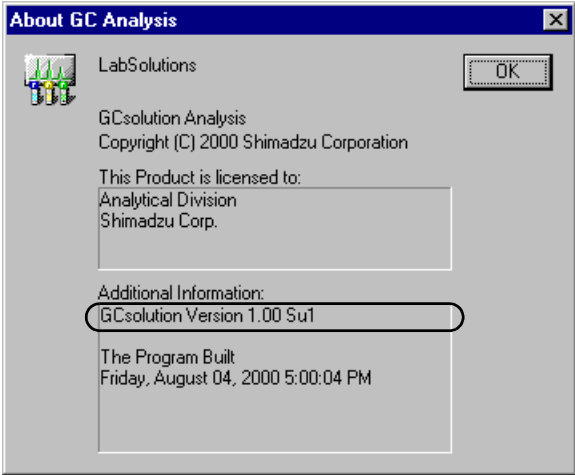
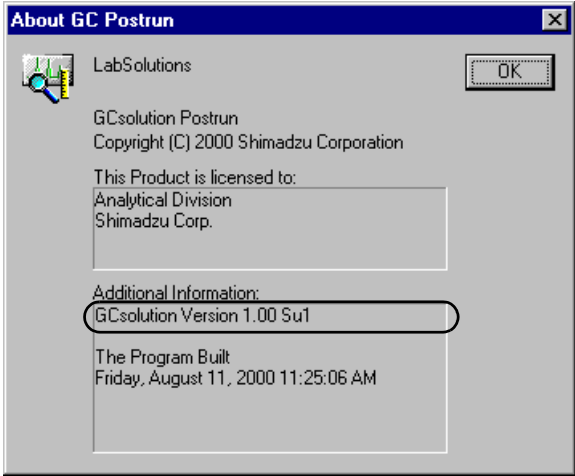
9.3.8 <Batch Table> - [Help] Menu

●On the <GC Real Time Analysis> screen



●On the <GC Postrun> screen



Command	Description	Tool button
Contents	Displays the help menu. <i>Refer to "12.1.1 Using Help" on page 107</i>	-
Online Manual	<i>Refer to "12.1.2 Using the Online Manual" on page 108</i>	-
About GC Analysis or GC Postrun	Displays the version information, etc. ●[About GC Analysis] dialog box  ●[About GC Postrun] dialog box 	



9.4

<Batch Table> Window

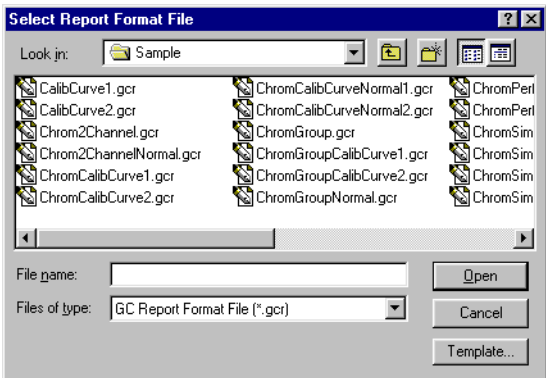
To set up batch processing, enter the necessary items on each row of the batch table. Enter the settings for each processing step on a single row, and complete the necessary rows for the sequential processing steps. The settings on the batch table may be used on both the <GC Real Time Analysis> and <GC Postrun> screens, except for those for data acquisition, which are invalid on the <GC Postrun> screen.

Setting item	Description
Run Mode	If you click on the button for this item cell, the <Run Mode> window will be opened. Specify a "Mode" and "Process" on a batch row. If you specify data acquisition as uses dual lines in the batch settings, the second row will be the same that the first row (except the settings for data acquisition and data processing) and cannot be edited. ● W (numeric): Waits (in cycle) before data acquisition ● P: Pauses before data acquisition ● AQ: Acquires data ● DP: Processes the data Refer to "9.10.1 <Run Mode> Window" on page 366 Refer to "9.11.3 <Settings> - [Type] Tab" on page 375
Vial #	This item is displayed on the <GC Real Time Analysis> and the <GC Analysis (Editor)> screen. Enter a vial number between 0 and the maximum number of vials for the autosampler. The default value is 1. If you enter 0, no injection will be made, when the AOC-20 is used. Select a row, and then select [View]-[Input Col. Data...]. The <Vial #> window will be opened, allowing you to enter all the data for that row. Note: "Data Acquisition" and "Data Processing" are not marked with a check in [Process] on the <Run Mode> window, "0" will be displayed. Refer to "9.10.1 <Run Mode> Window" on page 366 Note: To perform sequential analysis under different analysis conditions (different methods), create a batch row containing the vial number of 0 before the batch row specifying the use of a different method file, and perform conditioning of the column and flow path. Note: For manual injection, you do not need to enter a vial number. Even if a vial number is entered, the actual operation will not be affected by that setting. Refer to "9.5.1 <Vial #> Window" on page 352
Sample Name	Enter a sample name of 63 characters or less. Select a row, and then select [View]-[Input Col. Data...]. The <Sample Name> window will be opened, allowing you to enter all the data for that row. (Applicable on the <GC Real Time Analysis> screen only.) Refer to "9.5.2 <Sample Name> Window" on page 353
Sample ID	Enter a sample ID within 31 characters. Select a row, and then select [View]-[Input Col. Data...]. The <Sample ID> window will be opened, allowing you to enter all the data for that row. (Applicable on the <GC Real Time Analysis> screen only.) Refer to "9.5.3 <Sample ID> Window" on page 354
Sample Type	Click on the  button located on the right of this item. The <Sample Type> window will be opened. Enter a sample type. Note: For batch processing using multiple lines, the second row is the same as the first one and, therefore, cannot be edited. Refer to "9.10.2 <Sample Type> Window" on page 367



Setting item	Description
Injection Volume	These items are displayed on the <GC Real Time Analysis> and the <GC Analysis (Editor)> screen. Enter the volume of each injection. The entered value is only valid when the AOC-20 is used. The default value is 1. If [Use Method Inj. Volume & Multi-Inj. Counts] is marked with a check, this item will not be displayed. Refer to "9.11.3 <Settings> - [Type] Tab" on page 375
Multi-injection	
Method File	Enter the method name used for the analysis. (If a new batch file is created on the <GC Real Time Analysis> screen, the name of the method file displayed on the <Data Acquisition> screen will be assumed.) If you click on the  button located on the right of this item, the <Select Method File> screen will be opened. Note: For batch processing using multiple lines, the second row is the same as the first one and, therefore, cannot be edited. Select a file on the <Select Method File> window and click the [Open] or [Template] button. The <Select Template> window will appear. On this window, create a new method file having the same name as that of the selected template and then click the [Open] button to select the method file used. If you double-click any blank part of the cell, the <GC Analysis (Edit)> - <Data Acquisition> window and <GC Postrun> - <Calibration Curve> window will appear and the method file specified in the cell will be loaded.
Data File	Enter the data file name used for the analysis. If you click on the  button located on the right of this item, the <Select Data File> screen will be opened. If you select a row and then select [View]-[Input Col. Data ...] on the <GC Real Time Analysis> screen, the <Data File> window will be opened, allowing you to enter all the data for that row. Refer to "9.5.4 <Data File> Window" on page 355 Refer to "9.11.5 <Settings> - [Data Filename] Tab" on page 378 If you double-click any blank part of the cell, the <GC Postrun> - <Data Acquisition> window will appear and the method file specified in the cell will be loaded.
Baseline Data File	Allows you to enter the name of the baseline chromatogram data file used to compensate the background. If you click on the  button located on the right of this item, the <Select Data File> window will be opened. In order to compensate the background, the data processing will be carried out with the chromatogram removed on the same channel in the data file. Note that if there is no chromatogram on the corresponding channel, a baseline will be created for only the channels that have the corresponding chromatogram. The data file for a baseline must exist before that baseline has been created. This means that the data file created with a previous row of the same batch table may be specified.



Setting item	Description
Level #	Enter the calibration point level number (between 1 and 16) for the standard sample. If the sample type is standard, up to 10 calibration points may be specified at the same level. The calibration points specified at the same level will be averaged and then calibrated. Note: If Calibration is specified for the report type by the QA/AC parameter, a setting of more than 10 calibration points will be ignored. Note: For batch processing using dual lines, the second row is the same as the first one and, therefore, cannot be edited.
Internal Standard Amount	Enter the mass values for up to 16 internal standard substances that are to be added to an unknown sample that is quantitatively analyzed by the internal standard method. The default value is 1. If you click on the  button located on the right of this item, the <Internal Standard Amount> window will be opened. Note: This setting is only valid when [Internal Standard Method] is selected for the quantitative calculation. Refer to "9.10.3 <ISTD Amount> Window" on page 368
Sample Amount	Enter the sample amount used for the quantitative calculation. The default value is 1. Note: For the internal standard method, enter the sample volume that will exist prior to the subsequent adding of the internal standard substance.
Dilution Factor	Enter the dilution factor used to quantitatively analyze the diluted sample. Refer to "16.3.6 Quantitative Calculation Methods using Dilution Factor" on page 622
User Program	These items are displayed on the <GC Real Time Analysis> screen and the <GC Analysis (Editor) screen>. Specify whether the user program will be used. The default value is "No." If you click on the  button located on the right of this item, the <User Program> window will be opened. Note: For batch processing using multiple lines, the second row is the same as the first one, and therefore cannot be edited. Refer to "5.10 <System Check> Window" on page 182
Report Output	Specify whether the report will be output. If the check box is marked with a check, the report will be output. The default value is "No."
Report Format File	Enter a report file name. If you click on the  button located on the right of this item, the <Select Report File> window will be opened. The report file must be set up on a line basis (for 3 channels maximum).  Select a file in the <Select Report File > window, and then click the [Open] or [Template] button. The <Select Template> window will be opened. On this screen, create a new report file having the same name as the selected template, and then click the [Open] button to select the report file used. If you double-click any blank part of the cell, the <Report> window will be opened and the report file specified in the cell will be loaded.



Setting item	Description
Data Description	Enter a comment on the data. If you click on the button located on the right of this item, the <Data Description> window will be opened. <i>Refer to "9.10.4 <User Program> Window" on page 369</i>
System Check	This item is only displayed on the <GC Real Time Analysis> screen and the <GC Analysis (Editor) screen>. Specify whether the system check will be performed. The default value is "No." If you click on the  button located on the right of this item, the <System Check> window will be opened. Note: For batch processing using multiple lines, the second row is the same as the first one and, therefore, cannot be edited. <i>Refer to "9.10.6 <Schedule Action> Window" on page 371</i>
Action	Specify an action; e.g., the QA/QC test or system check. If you click on the  button located on the right of this item, the <Batch Action> window will be opened. Note: For batch processing using multiple lines, the second row is the same as the first one and, therefore, cannot be edited. <i>Refer to "9.10.5 <Data Description> Window" on page 370</i>
Barcode	The value read from a barcode of autosampler is automatically entered.
Options 1 to 5	You may freely set options 1 to 5. A title may be customized so that it can be used as an additional item for the sample information. Up to 31 characters may be entered. <i>Refer to "9.11.8 <Settings> - [Option Items] Tab" on page 381</i>
Summary Report Output	Select whether to output the summary report. • None • Summary Start • Summary Analysis • Summary End • Summary Start & End • Summary End & Start
Summary Report Format File	Enter the summary report format file name. Click the button at the right of this item to open <Select Summary Report Format File> and select the report format file.

Note: For manual injection, inject the samples in the order specified in the batch table, and then press the Start button located on the GC to start the analysis.



9.5 [Input Col. Data...] Menu

In order to minimize the operations for creating the batch table used for batch analysis, use the [Edit]-[Input Col. Data...], which allows you to enter consecutive data under each column at one time from the menu bar.

9.5.1 <Vial #> Window

This window is used to enter consecutive data under the [Vial #] column of the batch table at one time. To display the <Vial #> window, select the [Vial #] column and then select the [Edit]-[Input Col. Data...] menus.

●When [Auto-increment] is used

The Vial# dialog box has the following settings: Line: 1 (selected), 2, 1&2; Row#: 1 to 6; Vial#: 1; Repetition: 1; and the Auto-increment checkbox is checked. OK and Cancel buttons are at the bottom.

	Vial#
1	1
2	2
3	3
4	4
5	5
6	6

●When [Auto-increment] and [Repetition] are used

The Vial# dialog box has the following settings: Line: 1 (selected), 2, 1&2; Row#: 1 to 6; Vial#: 1; Repetition: 3; and the Auto-increment checkbox is checked. OK and Cancel buttons are at the bottom.

	Vial#
1	1
2	1
3	1
4	2
5	2
6	2

●When [Auto-increment] is not used

The Vial# dialog box has the following settings: Line: 1 (selected), 2, 1&2; Row#: 1 to 6; Vial#: 1; Repetition: 1; and the Auto-increment checkbox is unchecked. OK and Cancel buttons are at the bottom.

	Vial#
1	1
2	1
3	1
4	1
5	1
6	1



Parameter	Description
Line	Select the line you want to use.
Row #	Specify the row numbers on which you want to enter the consecutive data under the same column.
Vial #	Enter the first vial number.
Repetition	This parameter is valid when [Auto-increment] is marked with a check. Enter the number of times the vial number will be repeatedly entered.
Auto-increment	If this parameter is marked with a check, the incremental vial numbers will be entered the number of times specified in [Repetition].

9.5.2 <Sample Name> Window

This window is used to enter all the data under the [Sample Name] column of the batch table at one time. To display the <Sample Name> window, select the column and then select the [Edit]-[Input Col. Data...] commands.

●When [Auto-increment] is not used

The dialog box titled "Sample Name" has a "Row#:" field with values 1 and 6. The "Sample Name:" field contains the text "Sample". The "Auto-increment" checkbox is unchecked. There are "OK" and "Cancel" buttons at the bottom.



	Sample Name
1	Sample
2	Sample
3	Sample
4	Sample
5	Sample
6	Sample

●When [Auto-increment] is used

The dialog box titled "Sample Name" has a "Row#:" field with values 1 and 6. The "Sample Name:" field contains the text "Sample". The "Auto-increment" checkbox is checked. There are "OK" and "Cancel" buttons at the bottom.



	Sample Name
1	Sample
2	Sample001
3	Sample002
4	Sample003
5	Sample004
6	Sample005

Parameter	Description
Row #	Specify the row numbers on which you want to enter all the data under the same column at one time.
Sample Name	Enter the sample name you want to enter on all the rows under the same column at one time.
Auto-increment	If this parameter is marked with a check, the sample name will be suffixed with an incremental number on each row.



9.5.3 <Sample ID> Window

This window is used to enter all the data under the [Sample ID] column of the batch table at one time. To display the <Sample ID> window, select the column and then select the [Edit]-[Input Col. Data ...] commands.

●When [Auto-increment] is not used

Sample ID

Row#: 1 - 6

Sample ID: UNK

☐ Auto-increment

OK Cancel

	Sample ID
1	UNK
2	UNK
3	UNK
4	UNK
5	UNK
6	UNK

●When [Auto-increment] is used

Sample ID

Row#: 1 - 6

Sample ID: UNK

☒ Auto-increment

OK Cancel

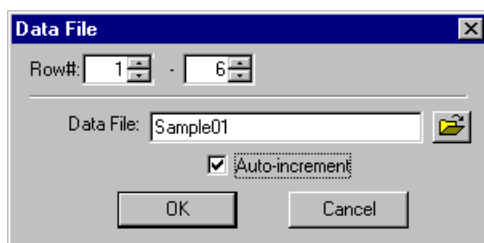
	Sample ID
1	UNK
2	UNK001
3	UNK002
4	UNK003
5	UNK004
6	UNK005

Parameter	Description
Row #	Specify the row numbers on which you want to enter all the data under the same column at one time.
Sample ID	Enter the sample ID you want to enter on all the rows under the same column at one time.
Auto-increment	If this parameter is marked with a check, the sample ID will be suffixed with an incremental number on each row.



9.5.4 <Data File> Window

This window is used to enter all the data under the [Data File] column of the batch table at one time. To display the <Data File> window, select the column and then select the [Edit]-[Input Col. Data ...] commands.



	Data File
1	Sample01.gcd
2	Sample02.gcd
3	Sample03.gcd
4	Sample04.gcd
5	Sample05.gcd
6	Sample06.gcd

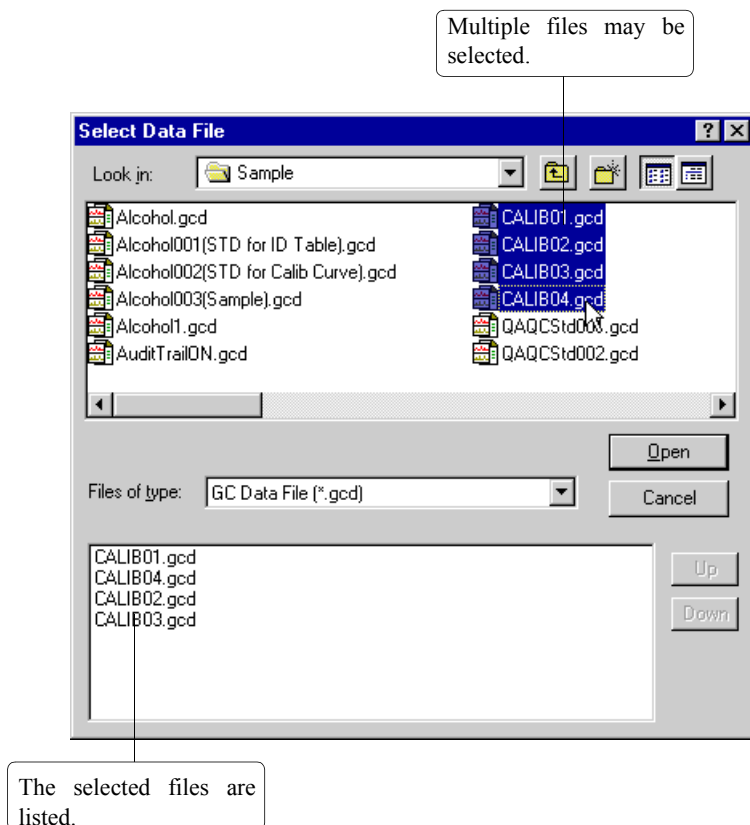
Parameter	Description
Row #	Specify the row numbers on which you want to enter all the data under the same column at one time.
Data File	Enter the data file name you want to enter on all the rows under the same column at one time.
Auto-increment	If this parameter is marked with a check, the data file name will be suffixed with an incremental number on each row.



9.6

<Select Data File> Window

This window allows you to specify multiple existing data files to create a batch table for postrun analysis. From the data files specified here, not only the data file names but also the information, such as sample name and sample ID, is displayed on batch lines.



Button	Description
[Up] button	Select a data file name from the data file list (to the left of the button) that was selected and then displayed, and then click this button. This allows you to change the registration order (i.e., processing order) in the batch table.
[Down] button	
[Open] button	Creates a batch table reflecting the settings and closes this window.
[Cancel] button	Cancels the settings and closes this window.

9.7

<Edit Row> Window

This window allows you to edit one-line information in the batch table. The use of the window eliminates the need of scrolling the batch table as you do when editing the batch table. The window is not affected by the settings for the table style. Therefore, this screen can be effectively used; e.g., when any hidden item must be edited.

Batch Table

Line Number : 3

Vial # 3 Type Unknown

Sample Name : Unknown Sample

Sample ID : UNK-0003

Method File TEST.gcm

Data File : ABC.gcd

Baseline Data File

Calib Level # : 1

ISTD Amount 1

☐ Report

Data Description :

Advanced >> < Back Next > OK Cancel Help

Button	Description
[Detail] button	Displays the detailed settings under the data file, thus allowing you to edit them.
[Next>] button	Moves by one line in the batch table.
[<Back] button	When this button is clicked, the currently edited setting is established and then reflected in the batch table.
[OK] button	Reflects the currently entered data in the batch line displayed in Line Number and then closes this window.
[Cancel] button	Cancels the currently entered data and then closes this window.

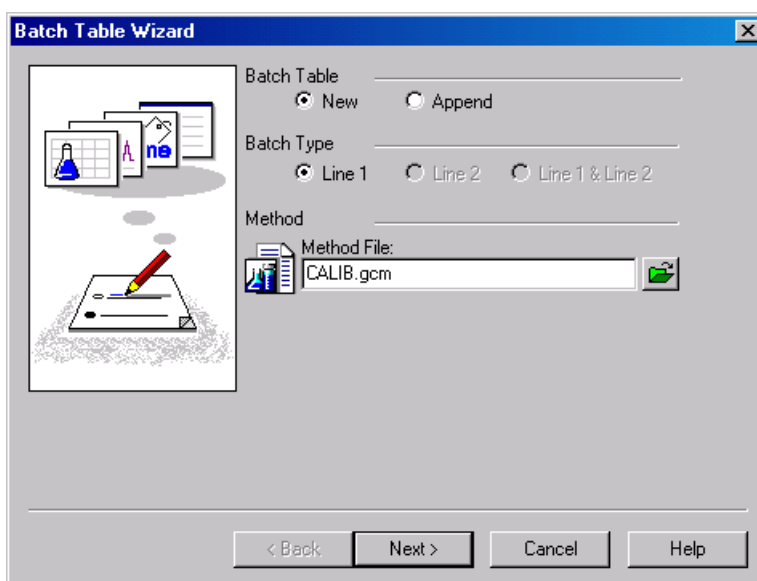


9.8

<Batch Table Wizard> Window

The <Batch Table Wizard> window will sequentially display the parameters allowing you to easily set up the batch analysis. To display this window, select the [Edit]-[Wizard] commands on the <Batch Table> window.

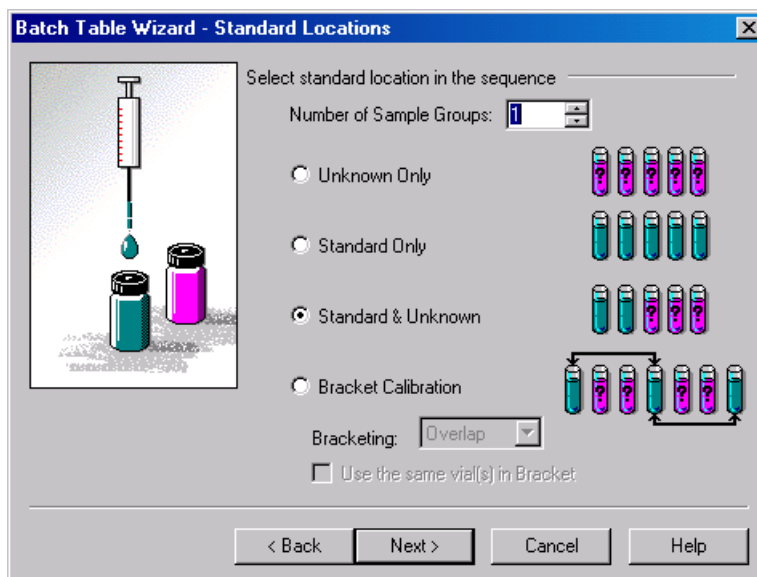
9.8.1 <Batch Table Wizard> - Basic Settings



Parameter	Description	Default value
Batch Table	Select whether you are creating a new batch table or adding (or appending) your settings to the currently opened batch table. If you click on [Append], the settings will be added to the last row of the current batch table. Note: If dual lines are selected in [Batch Type] and the original batch table has an odd number of rows, then one blank row will be inserted before the last row on which the settings will be added.	If the batch table has any row entered, select [Append]; otherwise select [New].
Batch Type	Set up the line configuration for batch processing. Some values cannot be entered depending on your system configuration.	Values on [Type] tab page of <Batch Processing> window
Method	Enter the method file name used for batch processing. The method file name loaded to the <Data Acquisition> window is displayed as default. If you click on the  button located on the right of this item, the <Select Method File> window will be opened, allowing you to select an arbitrary method file.	-
[Next] button	Puts you forward to the next page. If you select [Standard & Unknown] for [Sample Type], the following page will be opened, allowing you to complete the settings for the standard and unknown samples. If you select [Unknown Only], the next page will be opened, allowing you to complete the settings for the unknown sample only.	-



9.8.2 <Batch Table Wizard - Standard Locations> Window



Parameter	Description	Default value
Number of sample groups	Specify the number of repetitions of analyses with the same pattern. When 2 or above is specified for the number of groups in the bracket calibration, standard samples positioned intermediately are used not only the posterior standard sample for the last group but the prior standard sample for the next group.	1 to 1000(1)
Unknown Only Standard Only & Unknown Bracket Calibration	Select the sample type(s) used in each batch line currently created.	-
Bracketing	Select one of the following as the Bracket type. ● Succession: Performs the quantitative calculation with standard samples positioned before and after the sample group. ● Blanket: Performs the quantitative calculation after completing all lines configured in the batch table. ● Average: Performs the quantitative calculation with all previous standard samples.	(Succession), Blanket, Average
Use the same vial(s) in Bracket	Specifies the same vial for the standard samples used before and after the bracketing.	-
[Back] button	Moves you back to the previous page, allowing you to change or check the settings.	-
[Next] button	Moves you forward to the next page.	-



9.8.3 <Batch Table Wizard - Line1 Standard Sample (1)> Window

Note: If you select [Unknown Only] on <Batch Table Wizard - Standard Locations> window, this window will be opened.

Batch Table Wizard - Line1 Standard Sample (1)

Calibration

of Calib. Levels: 3 Repetition: 1

Standard Sample

Vial #: 1 ~ 3

Sample Name: Standard Sample

☐ Auto-increment

Sample ID: STD-0001

☒ Auto-increment

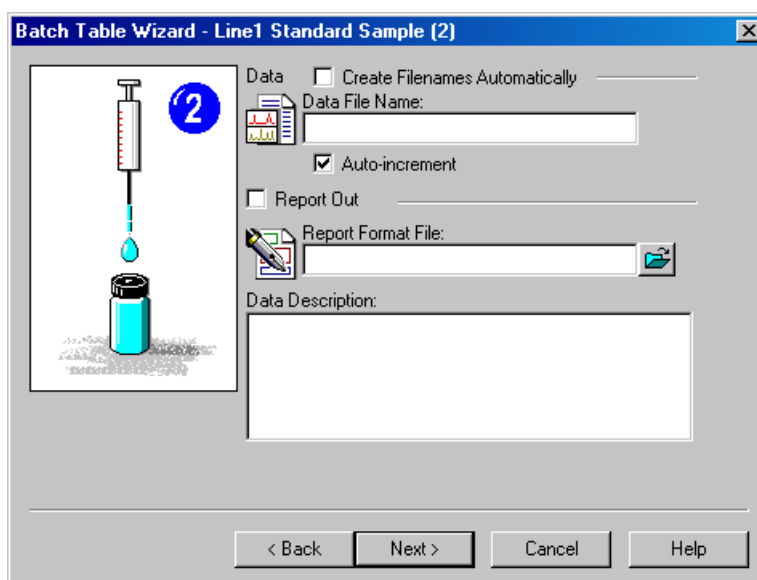
< Back Next > Cancel Help

Parameter	Description
Calibration Curve	
# of Calib. Levels	Enter the number of calibration levels. Normally, the corresponding value in the method file specified on the basic screen will be loaded and displayed. You may want to change this value.
Repetition	Specify the number of times for repeated injection of the sample at the same calibration level. The sample will be injected from the same vial for the specified number of times. The batch analysis rows for the standard sample will be created for the number equivalent to the number of calibration levels times the number of repetitions.
Standard Sample	
Vial #	Select a vial number. The right box only indicates the value calculated from the number of calibration levels (vial # + number of calibration levels - 1).
Injection Volume	Enter injection volume and injection count.
Multi-injection	If [Use Method Inj. Volume & Multi-Inj. Counts] is not marked with a check on the [Type] tab page of the <Settings> window, these parameters are dimmed. Refer to "9.11.3 <Settings> - [Type] Tab" on page 375
Sample Name	Enter a sample name.
Auto-increment	If this parameter is marked with a check, the sample name will be suffixed with an incremental number on each row.
Sample ID	Enter sample ID.
Auto-increment	If this parameter is marked with a check, the sample ID will be suffixed with an incremental number on each row.
[Back] button	Moves you back to the previous page, allowing you to change or check the settings.
[Next] button	Moves you forward to the next page.



9.8.4 <Batch Table Wizard - Line1 Standard Sample (2)> Window

Note: If you select [Unknown Only] on <Batch Table Wizard - Standard Locations> window, the <Batch Table Wizard: Standard Sample (2)> window will be opened.



Parameter	Description
Data	
Create Filenames Automatically	If checked, automatically creates a data file name in accordance with the data entered using the [Batch Processing] - [Setup] - [Data Filename] tabbed page. Note: In this state, no data file name and automatic number can be entered. Refer to "9.11.5 <Settings> - [Data Filename] Tab" on page 378.
Data File Name	Enter a data file name. If you select the automatic creation of data files on the [Folder] tab page of the <Settings> window, this parameter cannot be set. Refer to "9.11.4 <Settings> - [Folder] Tab" on page 376
Auto-increment	Specify whether the data file name is suffixed with an incremental number on each row.
Report Output	If this parameter is marked with a check, the batch processing result will be output using the specified report format.
Report Format File	Enter a report file name in the box below. If you click on the right button of this box, the <Select Report Name> window will be opened, allowing you to select a report file name.
Data Description	Enter a comment.
[Back] button	Moves you back to the previous page, allowing you to change or check the settings.
[Next] button	Moves you forward to the next page.



9.8.5 <Batch Table Wizard - Line1 Unknown Sample (1)> Window

Batch Table Wizard - Line1 Unknown Sample (1)

Unknown Sample

Sample Count: 1 Repetition: 1

Vial #: 4 ~ 4

Sample Name: Unknown Sample

☐ Auto-increment

Sample ID: UNK-0001

☒ Auto-increment

ISTD Amount: 1

< Back Next > Cancel Help

Parameter	Description
Unknown Sample	
Sample Count	Specify how many times the batch processing is to be performed under the settings on this window. The batch analysis rows for the unknown sample are created in the number entered here.
Vial #	Select a vial number. The right box only indicates the value calculated from the number of calibration levels (vial # + number of calibration levels - 1).
Injection Volume	Specify the injection volume.
Multi-inj.	Enter an injection count.
Sample Name	Enter a sample name.
Auto-increment	If this parameter is marked with a check, the sample name will be suffixed with an incremental number on each row.
Sample ID	Enter sample ID.
Auto-increment	If this parameter is marked with a check, the sample ID will be suffixed with an incremental number on each row.
ISTD Amount	Enter the internal standard amount for the internal standard method. Refer to "9.10.3 <ISTD Amount> Window" on page 368
[Back] button	Moves you back to the previous page, allowing you to change or check the settings.
[Next] button	Moves you forward to the next page.

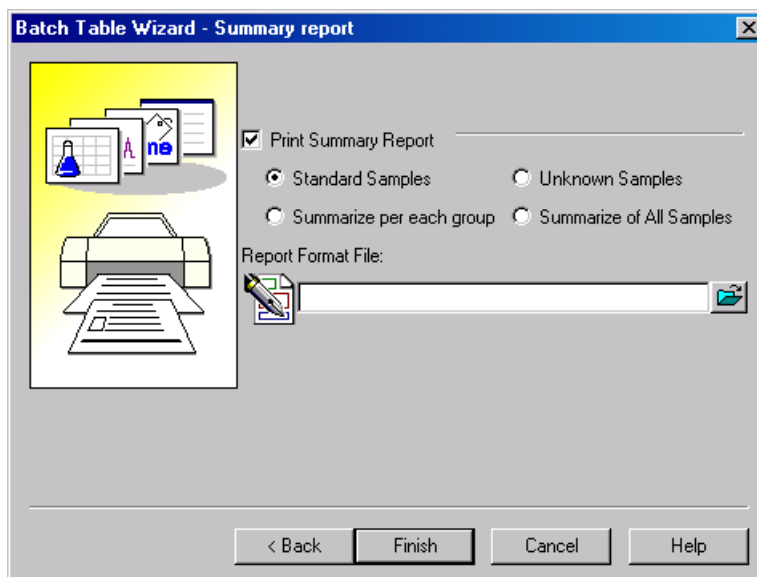


9.8.6 <Batch Table Wizard - Line1 Unknown Sample (2)> Window

Parameter	Description
Data	
Create Filenames Automatically	If checked, automatically creates a data file name in accordance with the data entered using the [Batch Processing] - [Setup] - [Data Filename] tabbed page. Note: If data was entered in the <Batch Table Wizard - Line1 Standard Sample (2)> window, it takes the priority over this setting. Note: When this parameter is checked, no data file name and automatic number can be entered. Refer to "9.11.5 <Settings> - [Data Filename] Tab" on page 378
Data File Name	Enter a data file name. If you select the automatic creation of data files on the [Data File] tab page of the <Settings> window, this parameter cannot be set. Refer to "9.11.4 <Settings> - [Folder] Tab" on page 376
Auto-increment	If this parameter is marked with a check, the data file name (including an extension) will be suffixed with an incremental number on each row.
Report Out	If this parameter is marked with a check, the batch processing result will be output using the specified report file.
Report Format File	Enter a report file name in the box below. If you click on the right button of this box, the <Select Report Name> window will be opened, allowing you to select a report file name.
Data Description	Enter a comment.
[Back] button	Moves you back to the previous page, allowing you to change or check the settings.
[Finish] button	Moves you forward to the next page.



9.8.7 <Batch Table Wizard - Summary report> Window



Parameter	Description
Standard Samples	Specify the group(s) for which to output the summary report. Note: In case of a table with unknown samples only, [Standard Sample] is indicated in gray. In case of a table with standard samples only, [Unknown Sample] is indicated in gray.
Unknown Samples	
Summarize of All Samples	
Report Format File	
[Back] button	Moves you back to the previous page, allowing you to change or check the settings.
[Finish] button	After you have finished setting the parameters on the <Batch Table Wizard> window, click on this button. The batch table will be created. Note: If you select [Line 1 & Line 2] for [Batch Type] on the first page of the <Batch Table Wizard> window, similar steps will be subsequently repeated for line 2. However, you cannot set the parameters common for both lines on the page for line 2.

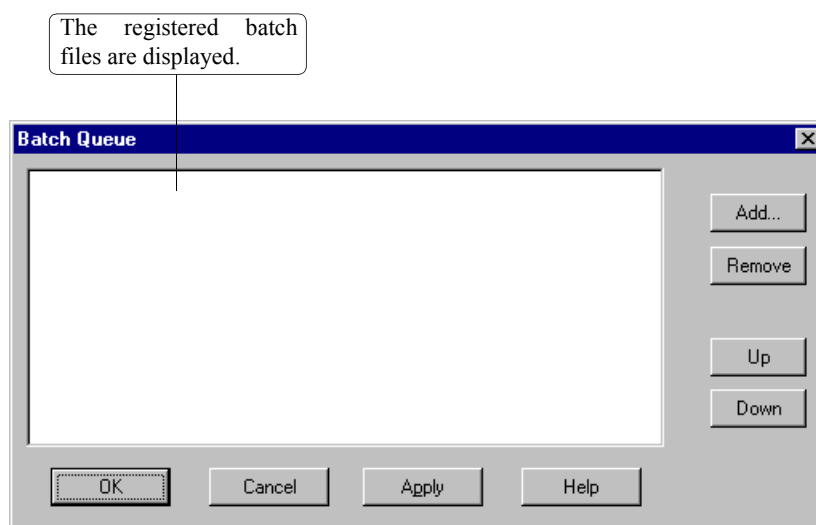


9.9

<Batch Queue> Window

The <Batch Queue> window allows you to add batch processing on a batch file basis. The batch files registered on this window will be sequentially executed in descending order after the current batch analysis has been completed. The used files will be automatically deleted from the list. To display the <Batch Queue> window, select the [Batch]-[Batch Queue] commands on the <Batch Table> window on the <GC Real Time Analysis> screen.

Note: Batch queue can not be performed after a single analysis run.



Button	Description
[Add] button	If you click on this button, the <Select File> window will be opened. The batch file selected on this window will be added to the end of the batch queue.
[Remove] button	If you select a batch file name and click on this button, the batch file will be deleted from the batch queue.
[Up] button	If you select a batch file name and click on this button, the order of the registered batch files (processing order) can be changed.
[Down] button	
[OK] button	This window will be closed reflecting the settings.
[Apply] button	This window will remain open reflecting the settings.

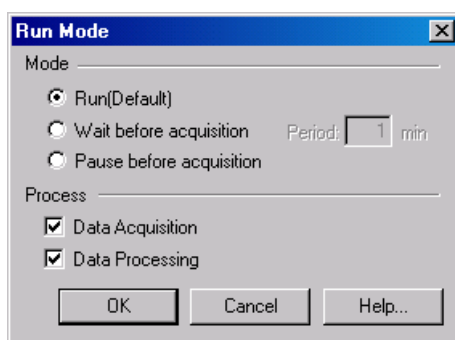


9.10

Setting the Parameters in the Batch Table

9.10.1 <Run Mode> Window

The <Run Mode> window is used to specify an action on each row of the batch table. To display this window, click on the  button located on the right of the [Run Mode] cell of the batch table.

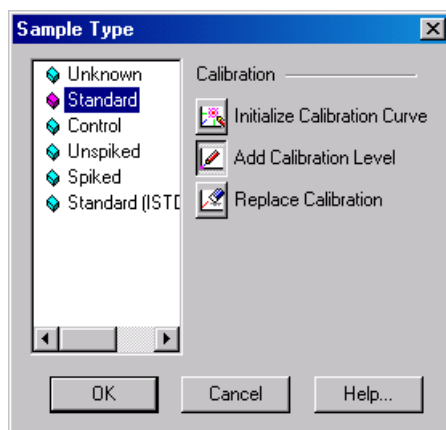


Parameter	Description
Mode	Select one of the following modes.
Run (Default)	Runs the analysis sequentially as usual.
Wait before acquisition	Normally, the contents of the method file are downloaded to the instrument before data acquisition. The batch processing waits for the specified time before this downloading. [Period] may be set in a range between 1 and 9999 minutes.
Pause before acquisition	Normally, the contents of the method file are downloaded to the instrument before data acquisition. The batch processing pauses for the specified time before this downloading. The batch processing remains paused until you have canceled the pause by selecting the [Batch]-[Start] commands and then clicking on the [Pause] button on the Toolbar or Assistant Bar.
Process	
Data Acquisition	To acquire data, check-mark this parameter. If the check is removed, no data file will be created.
Data Processing	To perform data analysis (such as integration), check this parameter. Normally, the acquired data is analyzed, but if an existing data file name is specified without checking the check box for data acquisition, that data will be reanalyzed. If there is no data file, the data processing is skipped.



9.10.2 <Sample Type> Window

The <Sample Type> window is used to specify a sample type. If you select [Standard] for the sample type, also specify an option regarding the creation of a calibration curve. This window is displayed by selecting [Sample Type] from <Data Acquisition> - <Sample Login> or by clicking on the  button located in the [Sample Type] cell.



Parameter	Description
Unknown	Calculates the quantitation using the already created calibration curve.
Standard	The standard sample is used to create a calibration curve. Select how to add points to the calibration curve.
Initialize Calibration Curve	Initializes all the calibration curves in the method file, and creates calibration points at the level specified in [Level#] under <Data Acquisition> - <Sample Login> or [Level#] in the batch table. Normally, select this parameter for the first standard sample in the batch table.
Add Calibration Level	Creates calibration points at the level specified in the [Level #] column of the batch table. If there are any points at that level, the results up to now and the mean value will be assumed as calibration points.
Replace Calibration Level	Creates calibration points at the level specified in [Level#] under <Data Acquisition> - <Sample Login> or [Level#] in the batch table. If there are any points at that level, the result up to now will be deleted and new points will be created.
Control	Uses the result of batch analysis and batch post run analysis for the QA/QC calculation. The processing is the same as in the case with an unknown sample.
Unspiked	
Spiked	
Standard (ISTD Recovery)	It is used in case it asks for the recovery rate of ISTD(internal standard) using a QA/QC function. It is not used in the usual analysis.

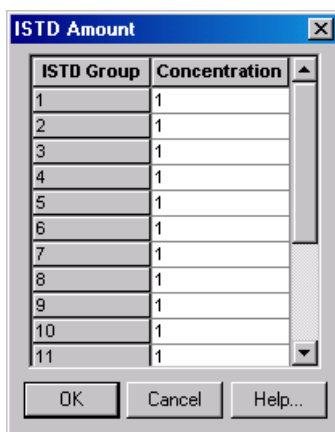


9.10.3 <ISTD Amount> Window

If you use the internal standard method to quantitatively analyze the sample and if [Sample Type] is other than [Standard], you must enter internal standard amounts on this window. The concentrations of internal standard substances need to be entered up to the number of the internal standard substances that are actually specified in the compound table. Up to 16 concentrations of internal standard substances may be entered here.

To display the <Internal Standard Amount> window, click on the  button located in the [Internal Standard Amount] cell of the batch table. The concentrations entered here will be displayed in the [Internal Standard Amount] cell of the batch table by separating them with a blank space.

Note: If you select "Standard" for the sample type, the concentrations entered as "ISTD" or "ISTD & Reference" in the compound table will be used as internal standard amounts. Therefore, you do not need to specify the internal standard amounts here (refer to the description of the compound table).



ISTD Group	Concentration
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
10	1
11	1

OK Cancel Help...



9.10.4 <User Program> Window

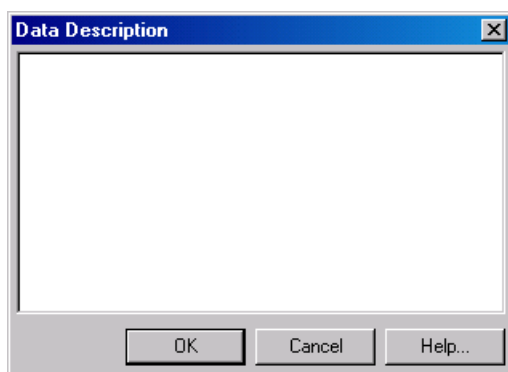
The <User Program> window allows you to set up the program that is executed after data acquisition and data processing. To display this window, click on the  button located in the [User Program] cell of the batch table.

Parameter	Description	Default value
Before Data Acquisition	If this check box is checked, the program that is executed before data acquisition can be specified. To do so, use [Program File], [Parameter], and [Action]. Note: The parameters for the pre-run program are only displayed on the <GC Real Time Analysis> screen.	Not checked
Program File	Specify the program file to be executed. Alternatively, you may click on the right button. The <Select Program File> window will be opened, allowing you to select the program file.	-
Parameter	Allows you to enter the parameters that are passed over to the command lines in the program specified in the Program File parameter.	-
Action	Allows you to select an action from the list. Either of the following actions may be selected. ● Run the data acquisition immediately. ● Wait for an executed program to close.	Immediately after the program has been started up, the next row is executed.
After Data Processing	If this check box is checked, the program to be executed after data processing can be specified.	Not checked
Program File	Specify the program file to be executed. Alternatively, you may click on the right button. The <Select Program File> window will be opened, allowing you to select the program file.	-
Parameter	Allows you to enter the parameters that are passed over to the command lines in the program specified in the Program File parameter. ● If you click on the button, the following items can be specified: Data file name, method file name, ASCII file name, QA/QC output file name, sampler file name, vial number, .and row number.	-
Action	Allows you to select an action from the list. Either of the following actions may be selected. ● Run the next data acquisition immediately. ● Wait for an executed program to close.	Immediately after the program has been started up, the next row is executed.



9.10.5 <Data Description> Window

The <Data Description> window allows you to enter the data description to be added to the data file that is created during batch analysis. The entered comment will be stored as properties in the data file. There is no limit to the number of characters that may be entered here. The data in the data description may also be used for keywords that are used to search for files. To display the <Data Description> window, click on the  button that is displayed by selecting the [Data Description] cell in the batch table.

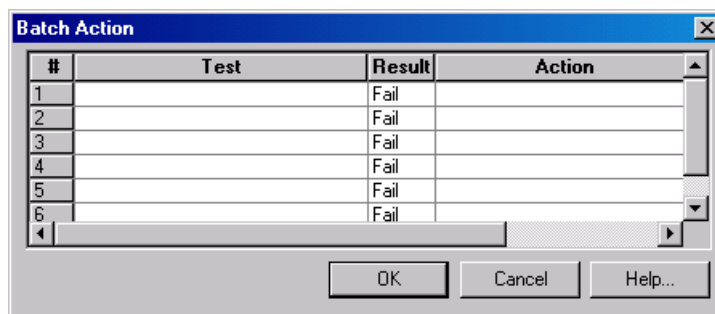




9.10.6 <Schedule Action> Window

The <Schedule Action> window allows you to select up to 6 actions for batch processing according to the judgments in the QA/QC and system check. To display this window, click on the  button that is displayed by selecting the [Action] cell in the batch table.

Refer to "13 <QA/QC> Window" on page 543



Parameter	Description
#	Allows you to enter up to 6 action numbers.
Test	Select the items to be judged, from the following options: ● QA/QC (All) ● QA/QC (System accuracy) ● QA/QC (Calibration curve) ● QA/QC (Quality control) ● QA/QC (Recovery) ● System Check
Result	Select either of the following judgments to perform the action: ● Pass: The action will be performed when the judgment is "pass." ● Fail: The action will be performed when the judgment is "fail."
Action	Select one of the following actions that will be performed when the judgment result specified in [Result] is obtained: ● Pause: The batch processing is paused. ● Stop: The batch processing is stopped. ● Reinject: Executes the appropriate row again. ● Execute User Program: The command specified in [Parameter] is executed. ● Goto: Execute the rows starting the specified row.
Parameter	Specify the program file name to be executed if you select [Execute User Program] in [Action].

Note: Reinject and Goto are executed only once on the same row.

Note: If the specified range is exceeded during partial run by using Goto, the rows after Goto will be executed.

Note: Do not use Goto during bracket run.

Note: If Goto is executed on either line 1 or 2 during dual-line analysis, the execution row will be shifted after data processing on both lines has been finished.

Note: If you are using the head space sampler, the QA/QC items in "Test" and only "Stop" in "Action" are available.

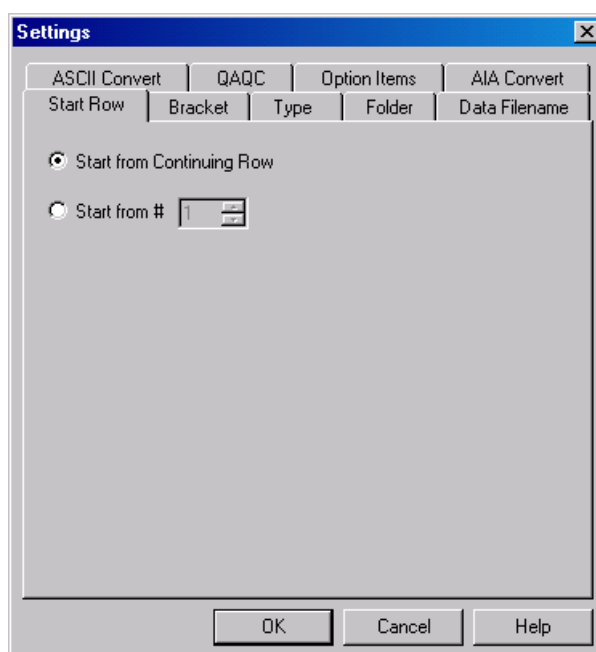


9.11 <Settings> Window

The <Settings> window is used to set up the batch table. To display this window, click on the [Settings] icon on the [Batch](Analysis) Assistant Bar or select the [Batch]-[Settings] commands from the menu.

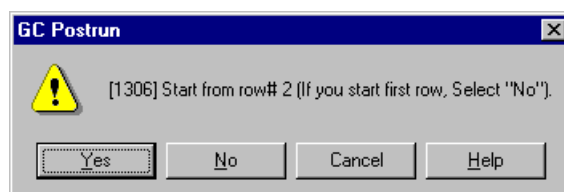
Note: The [Data File Name] tab page is not displayed on the <GC Postrun> screen.

9.11.1 <Settings> - [Start Row] Tab



Parameter	Description
Start from Continuing Row	Starts batch processing at the row next to the one stopped last. However, if no data file was created because the analysis was being prepared when batch processing was stopped, the batch processing will be started at the last stopped row. If batch processing is stopped, the row number next to the stopped one (or the stopped row number if no data file is created) will be marked with [▲] or [▼] buttons on the right side.
Start from #	Starts batch processing at the row specified here.

Note: In either case, if you start batch processing at any non-first row, the following message will appear, prompting you to confirm whether batch processing should be started at the continuing row or the first row:





9.11.2 <Settings> - [Bracket] Tab

Select the [Batch] - [Settings] command to open the <Settings> window.

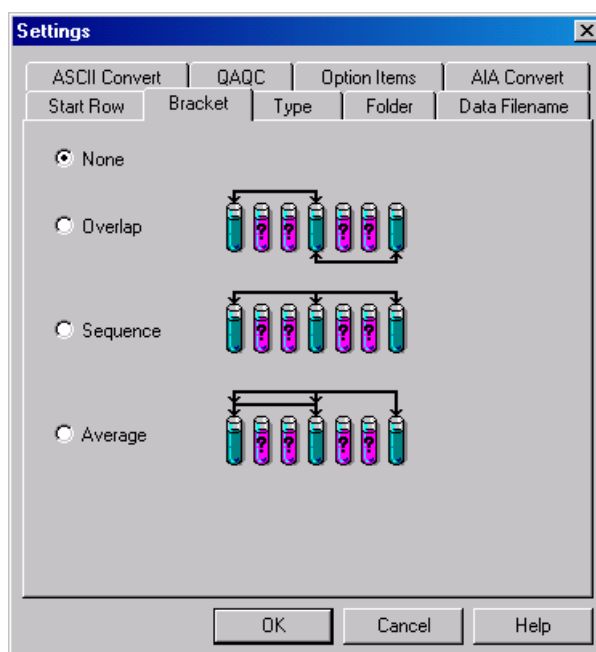
For printing the settings on the <Settings> window, set up <Report> Window - [Batch Table] Item - [Settings] Tab.

<Settings> window opens by selecting [Batch Processing] -<Setting> command.

For printing settings on <Settings> window, Set up [Settings] Tab of [Batch Table] Item on <Report> window.

Specifies the bracketing method for creating the calibration curve implemented in batch processing.

The bracketed analysis gives more reliable response factors for processing all data files.



Parameter	Description
None	Does not bracket.
Overlap	The bracket calibration (succession) performs the quantitative calculation of each unknown sample group, based on the response factor that is determined by the calibration analyses executed immediately before and after the analysis of the unknown sample group on the schedule.
Sequence	The bracket calibration (Sequence) performs the quantitative calculation of unknown samples based on the response factor that is determined by calibration analyses in the entire schedule regardless, the position of samples in the schedule. The calibration calculation is performed after completing all analyses.
Average	The bracket calibration (average) performs the quantitative calculation based on the response factor that is determined by averaging the response factor calculated in analyses before and after the unknown sample on the schedule, and the response factor obtained in previous analyses.

**[Reference]: Bracket Calibration**

With following bracketing in the batch table, unknown samples are quantitatively calculated as below.

	Type
S11	Standard
U1	Unknown
S12	Standard
U2	Unknown
S13	Standard

● In case of [Average] bracketing

The unknown sample U1 is quantified based on the calibration curved calculated with the mean value of (S11 + S12).

The unknown sample U2 is quantified based on the calibration curved calculated with the mean value of (S11 + S12 + S13).

● In case of [Succession] bracketing

The unknown sample U1 is quantified based on the calibration curved calculated with the mean value of (S11 + S12).

The unknown sample U2 is quantified based on the calibration curved calculated with the mean value of (S12 + S13).

● In case of [Sequence] bracketing

The unknown sample U1 is quantified based on the calibration curved calculated with the mean value of (S11 + S12 + S13).

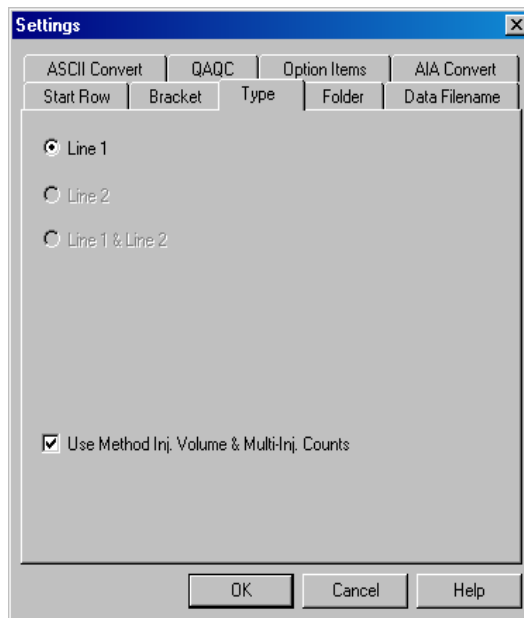
The unknown sample U2 is quantified based on the calibration curved calculated with the mean value of (S11 + S12 + S13).



9.11.3 <Settings> - [Type] Tab

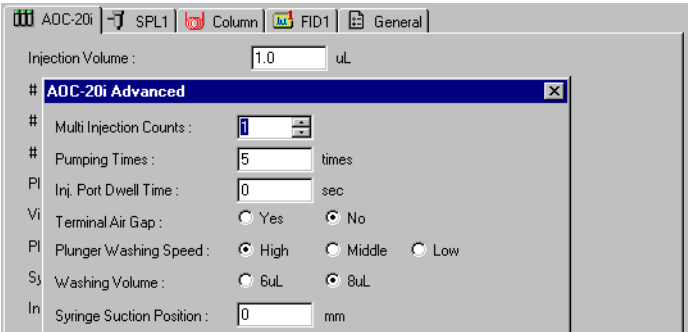
This tab page is used to specify the line(s) for which batch analysis or batch post-run analysis is performed.

Note: If the MS detector is selected for line 2, the single line configuration is displayed.



Parameter	Description
Line 1	Specify which line is used for the batch table. Note: If you specify "Line 1 & Line 2," batch rows are always added or deleted in pairs so that the settings for lines 1 and 2 can be completed in combination.
Line 2	
Line 1 & Line 2	



Parameter	Description
Use Method Inj. Volume & Multi-Inj. Counts	Specify either of the following options for the sample injection volume and multi-injection count. ● To use the setting in the method file specified in the [Method File] column of the batch table, mark this parameter with a check. ● To use the settings in [Injection Volume] and [Multi-injection] in the batch table, remove the check (in this case, different injection volume and multi-injection count may be specified for each analysis run). Note: If the check is removed, the settings in the batch table will become valid and the setting for this parameter in the method file will be ignored. If the parameter is marked with a check, the items under the [Injection Volume] and [Multi-injection] columns of the batch table will not be displayed. Note: To use the settings in the method file, enter the necessary data in the following window. 

9.11.4 <Settings> - [Folder] Tab

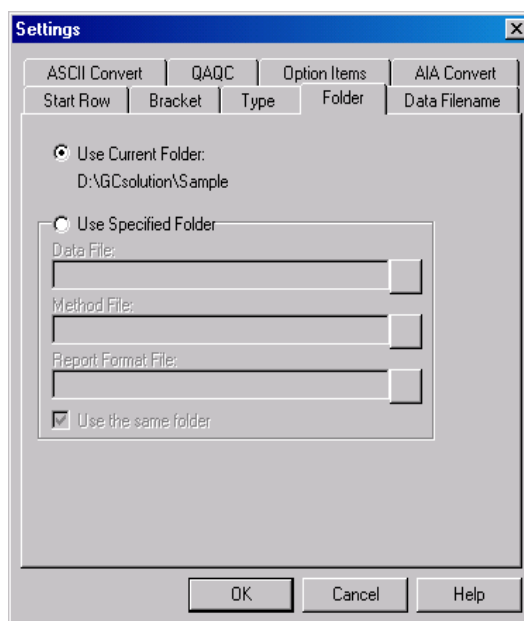
This tab page is used to specify the folder in which to save various files that have been created from the batch table (file).

The folder specified here is used as the default folder for the items in the batch table. For example, if you enter only a file name in the Data File parameter, that file will be regarded as a file in the default folder. When GCsolution is newly installed, the default setting is "Use Current Folder."

- If the "Use Current Folder" parameter is marked with a check, the current folder will be used. The current folder means the folder that the Batch table file is saved.



- If the "Use Specified Folder" parameter is marked with a check, the folder entered in the edit box below will be used as the default holder. If the "Use the Same Holder" parameter is marked with a check, the folder entered in [Data File] will be used for all file types.



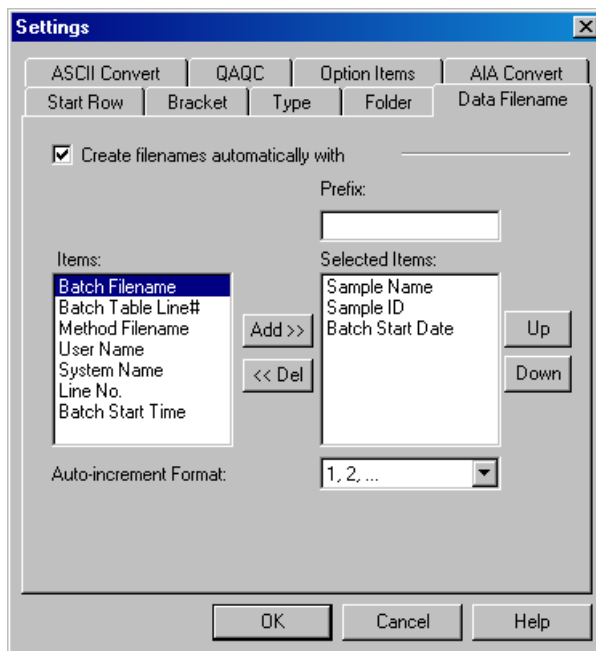
Parameter	Description
Use Current Folder	Saves the file that has been created after batch processing in the currently used folder (project).
Use Specified Folder	Allows you to specify the folder in which to save the file that has been created after batch processing.
Data File	Saves the data file that has been created after batch processing in the folder specified here. If you click on the button located on the right of this parameter, the <Browse for Folder> window will be opened, allowing you to select an arbitrary folder.
Method File	If the [Use the Same Folder] parameter is marked with a check, the method file will be saved in the same folder as that containing the data file. Therefore, this parameter will be dimmed. If the check is removed from the [Use the Same Folder] parameter, an arbitrary folder can be specified.
Format File	If the [Use the Same Folder] parameter is marked with a check, the report file will be saved in the same folder as that containing the data file. Therefore, this parameter will be dimmed. If the check is removed from the [Use the Same Folder] parameter, an arbitrary folder can be specified.
Use the Same Folder	Specify whether the method file and report file that have been created after batch processing are saved in the same folder as that containing the data file.



9.11.5 <Settings> - [Data Filename] Tab

This tab page allows you to specify what to name the data file that will be created when the batch analysis is started. If the [Auto-increment Format] parameter is marked with a check, a data file name will be created automatically. You will not be able to enter the data file column of the batch table, and the specified data file name will be ignored.

Note: This tab page is not displayed on the <GC Postrun> screen.



Parameter	Description
Auto-increment Format	Automatically creates a data file name using the settings in the batch table. You will not be able to enter any character in the data file column of the batch table. If the check is removed from this parameter, you can specify an arbitrary file name in the data file column of the batch table.
Item List	Displays the setting items that are available for the automatic creation of a data file name, but not used when the file name is created, among those in the batch table.
Selected Items	Displays the setting items that are available for the automatic creation of a data file name, but not used when the file name is created, among those in the batch table. The data file name is created by linking the data in the setting items displayed here using underbars. (Example: (sample name)_(sample ID)_(date of creation)"test sample_ABC001_20001001.gcd")
Prefix	Enter a character string to prefix the file name. Note: If you default setting this parameter, the file name created by the selected item will be assumed.
Incremental Number Format	Select one of the following formats for adding a number to the end of each file name: ● 1,2... ● 01,02... ● 001,002... ● 0001,0002...
[Add>>] button	Allows you to display only the items that you want to use for the data file name, in [Selected Items].
[<<Del] button	

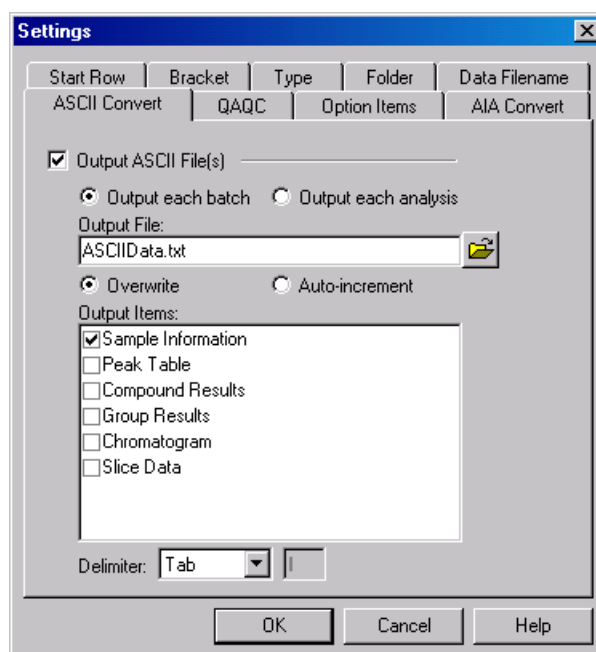


Parameter	Description
[Up] button	Allows you to change the order of [Selected Items].
[Down] button	

9.11.6 <Settings> - [ASCII Convert] Tab

This tab page allows you to convert the batch processing result into an ASCII file and output it under a specified name.

The output text file can be easily viewed on the Notepad or a commercially available spreadsheet application. If your spreadsheet application has a macro function, it will allow you to process the data.



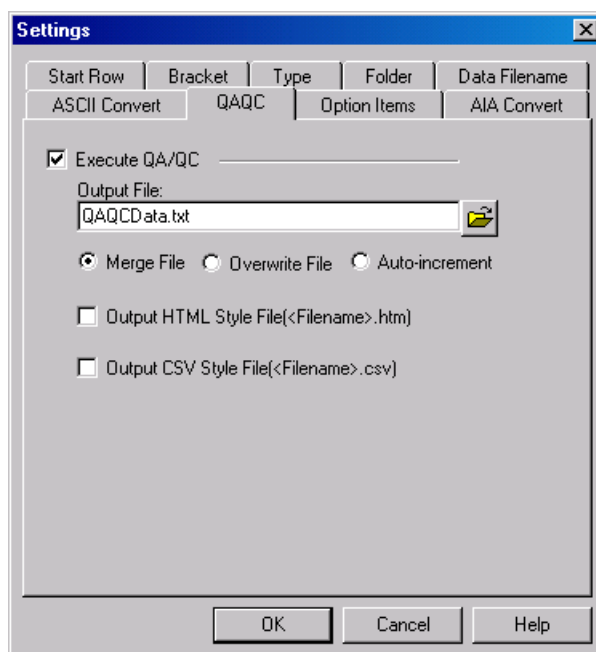
Parameter	Description
Output ASCII File(s)	If this parameter is marked with a check, the ASCII file will be output under the following settings.
Output each batch	If this radio button is selected, the final row of the batch table will be processed and then all the processed data in that table will be grouped into a file.
Output each analysis	If this radio button is selected, the processed data on each row of the batch table will be grouped into a file.
Output File	Specify the ASCII file name.
Overwrite	Overwrites any file of the same name in the destination folder. Note: If "Output each analysis" is selected, setting this parameter will cause each line of the file to be overwritten.
Auto-increment	If the ASCII file specified in "Output File" already exists on the disk, the file name will be given a serial number so that it cannot be overwritten.



Parameter	Description
Output Items	Loads the selected items to the ASCII file: ● Sample Information ● Peak Table ● Compound Results ● Group Results ● Chromatogram
Delimiter	Specify one of the following delimiters for data: ● Tab: Delimits the items with a tab; this is the most common delimiter. ● Comma: Delimits the items with a comma. ● Other: Allows you to enter an arbitrary character string in the field to the right.

9.11.7 <Settings> - [QAQC] Tab

This tab page is used to specify whether QA/QC is performed during batch processing.



Parameter	Description
Execute QA/QC	If this parameter is marked with a check, the QA/QC calculation will be performed under the following settings.
Output File	Specify the output file name for QA/QC result.
Merge File	If the file of the same name exists in the destination folder, the calculation result will be added to the end of that file.
Overwrite File	If the file of the same name exists in the destination folder, that file will be overwritten.
Auto-increment	Consecutive numbers are attached to an output file name.
Output HTML Style File (<Filename>.htm)	It outputs also in HTML form.
Output CSV Style File (<Filename>.csv)	It outputs also in CSV form.



9.11.8 <Settings> - [Option Items] Tab

This tab page allows you to enter up to 31 characters for the title of an optional item in the batch table. Once you enter this title, you can confirm the settings under the column for the optional item in the batch table, as data file properties, or you can output them as sample information to a report.

The title entered in [Option Items] is displayed for the corresponding column of the batch table.

To display the title entered in [Option Items] in the batch table, add it to [Display Items] on the <Table Style> window.

Refer to "14.5 <Table Style> Window" on page 569

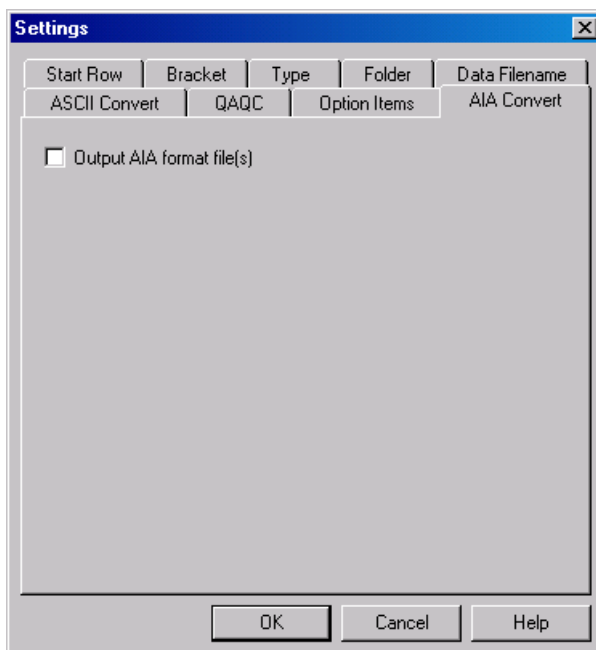
Folder: C:\GCsolution\Sample

	Option 1	Option 2	Option 3	Option 4	Option 5
1					



9.11.9 <Settings> - [AIA Convert] Tab

If [Output AIA format file] is checked, a data file will be converted to AIA format file and saved under the same folder with the data file itself after each row is analyzed. AIA files are named after data files but with the extension of ".cdf."



10 <Report> Window

10.1 Overview of <Report> Window

To print out a data file or a method file, use the <Report> window. In this window, first prepare a report format (print format) specifying the items and other details you want to print out, then load the data file or method file to that report format. The <Report> window contains many other windows that allow you to prepare a report format easily.

10.1.1 Functions of <Report> Window

The <Report> window allows you to perform the following operations:

Operation	Main window used
Prepare, edit, and print a new report file.	<Report> window on <GC Real Time Analysis> or <GC Postrun> screen
Edit the settings for the report items.	<Properties> of each report item in <Report> window Refer to "10.8 <System Configuration Properties> Window" on page 406 Refer to "10.9 <Sample Information Properties> Window" on page 410 Refer to "10.10 <Method File Properties> Window" on page 413 Refer to "10.11 <Batch Table Properties>" on page 423 Refer to "10.12 <Peak Table Properties> Window" on page 429 Refer to "10.13 <Chromatogram Properties> Window" on page 434 Refer to "10.14 <Quantitative Results Properties> Window" on page 441 Refer to "10.15 <Group Results Properties> Window" on page 444 Refer to "10.16 <Calibration Curve Properties> Window" on page 448 Refer to "10.17 <Status Information Properties> Window" on page 458 Refer to "10.18 <GC Summary(Conc.) Properties> Window" on page 460 Refer to "10.19 <GC Summary(Compound) Properties> Window" on page 468 Refer to "10.20 <Picture Properties> Window" on page 475 Refer to "10.21 <Text Properties> Window" on page 478 Refer to "10.22 <Shape Properties> Window" on page 483
Edit the report items.	<Item List> window Refer to "10.7 <Item List> Window" on page 405
Set the print paper size and its margins.	<Page Setup> window
Insert the object created using another application.	<Insert Object> window
Edit the header and footer for the report format.	<Header/Footer> window Refer to "10.5 <Header/Footer>" on page 402
Set the other items for the report format.	<Option> window Refer to "10.6 <Option> Window" on page 404



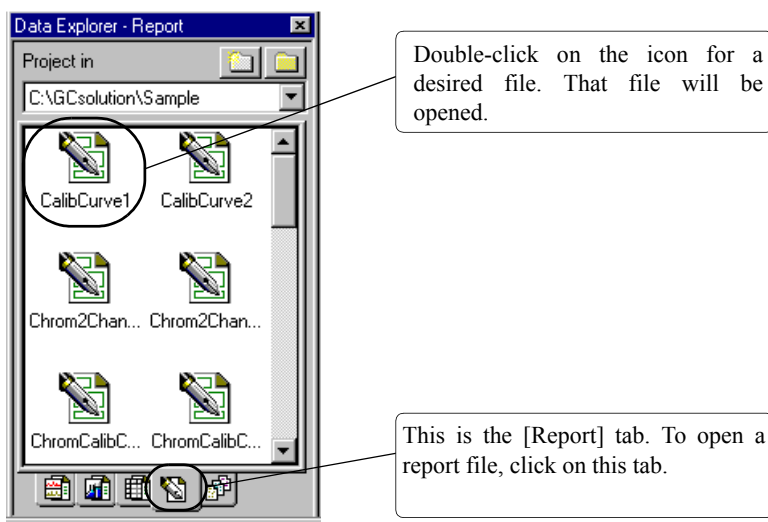
10.1.2 Opening the <Report> Window

To open the <Report> window, perform the following steps:

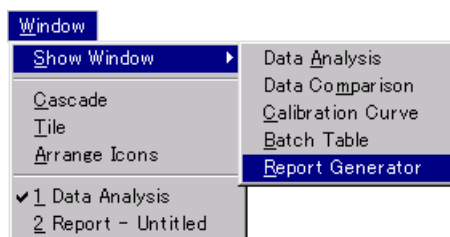
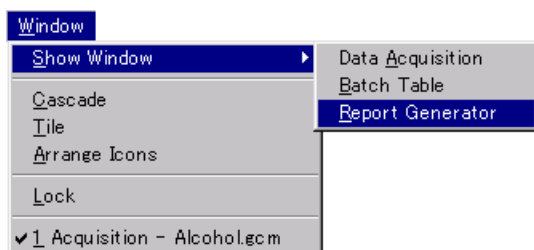
- Click on the [Report Generator] icon located on the [Postrun] Assistant Bar on the <GC Postrun> screen.



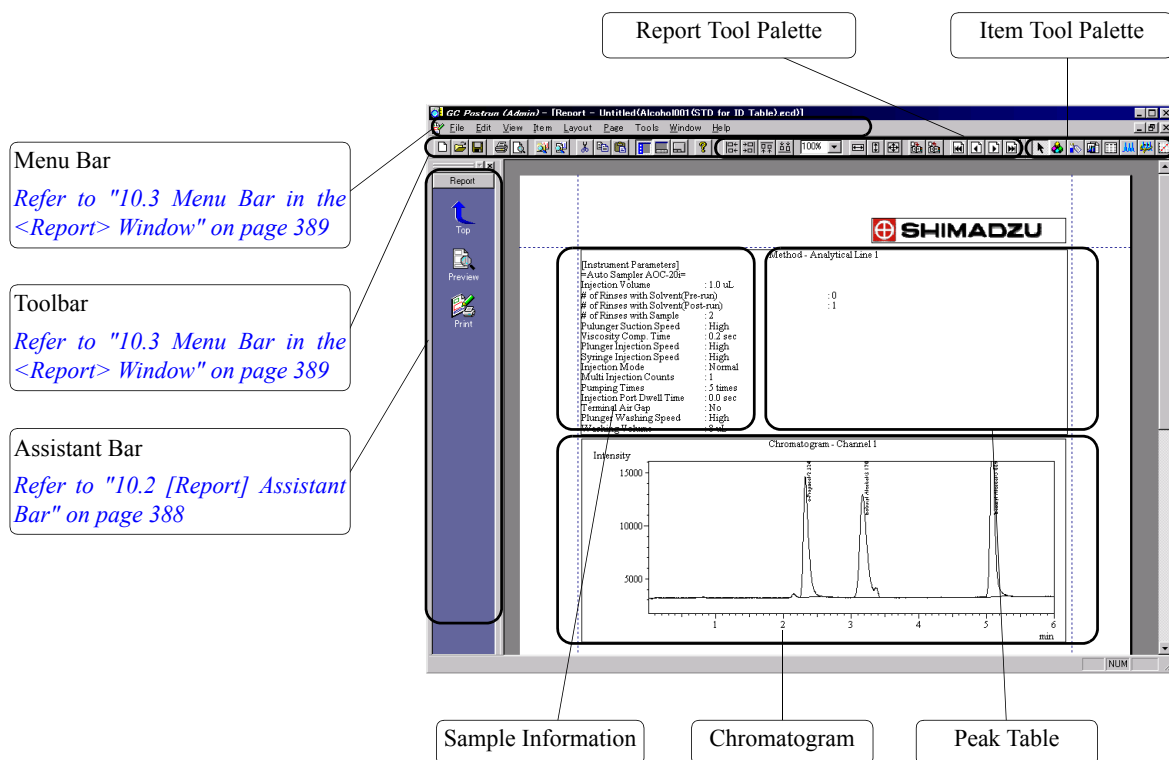
- Select [File]-[Open Format File] from the main menu bar, or click on the [Open] button located on the Toolbar. A report file will be opened. Alternatively, you may want to double-click on the Report icon for a desired file on the [Report] tab page of the <Data Explorer> window.



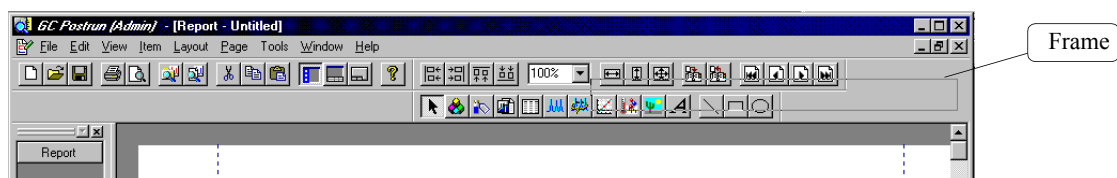
- Select [Window]-[Show Window]-[Report Generator] from the main menu bar on the <GC Real Time Analysis> or <GC Postrun> screen.



10.1.3 Element Names on <Report> Window



Note: The report creation tool palette and item tool palette may be made independent from the tools and moved to any desired position. To do this, drag the desired tool palette to the desired position with your mouse. The tool palette will be moved in the displayed frame.

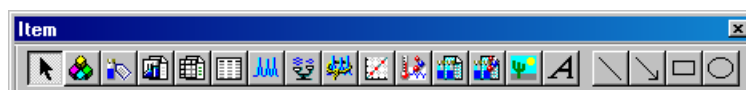


Note: If you open the <Create Report> window by clicking on the Report in Data File icon on the [Data Analysis] Assistant Bar or selecting Report from the <Data Analysis> - [File] menu, the report in the data file will appear on the title bar. (Refer to "6.2 [Data Analysis] Assistant Bar" on page 196, Refer to "6.3 Menu Bar of <Data Analysis>" on page 197)

● Report tool palette



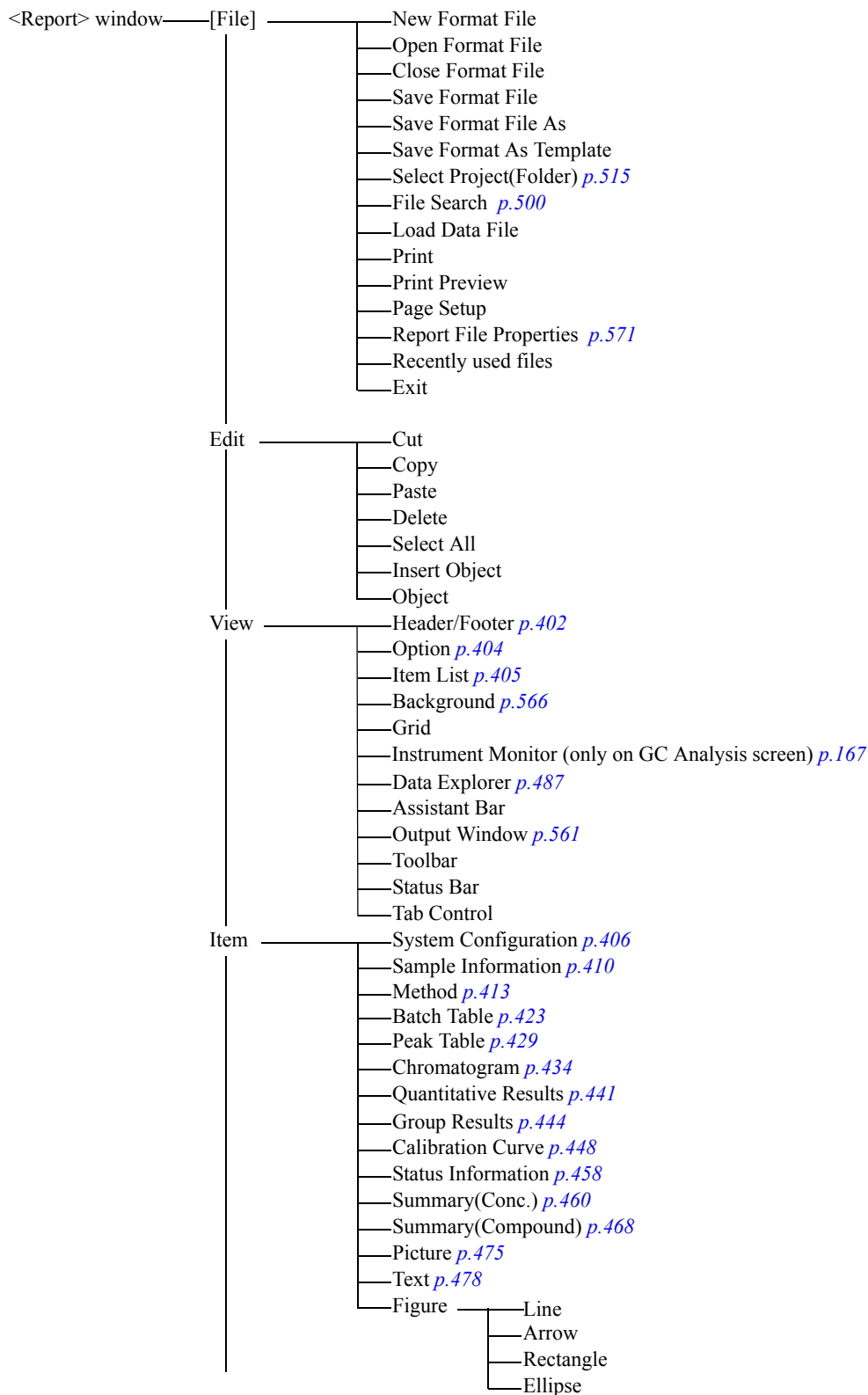
● Item tool palette

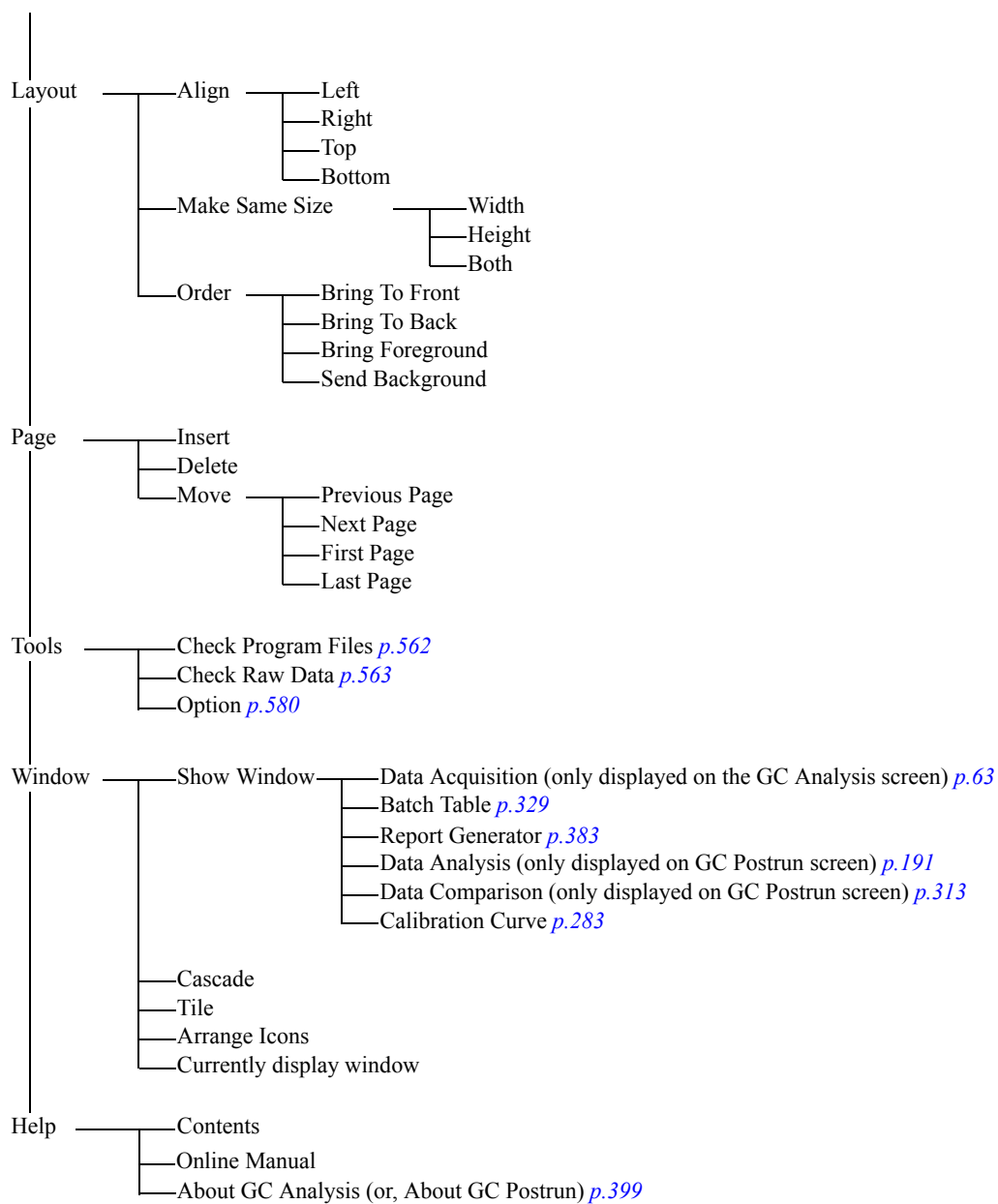




10.1.4 Menu Tree of <Report> Window

In the <Report> window, create a report format using the following windows:

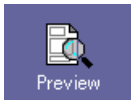






10.2 [Report] Assistant Bar

When the <Report> window is opened, the following [Report] Assistant Bar will appear showing the icons from the top to the bottom in the order of steps for preparing a report.

Icon	Function
Top 	Changes over to the [Postrun] Assistant Bar. <i>Refer to "3.3 [Postrun] Assistant Bar ." on page 14</i>
Preview 	Displays the <Preview> window, which allows you to view the printed image of the report. <i>Refer to "10.23 <Preview> Window" on page 485</i>
Print 	Displays the <Print> window, which allows you to print out the report.

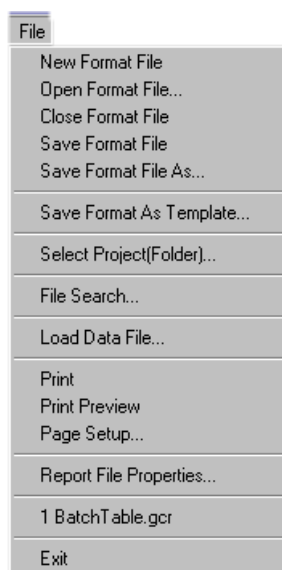


10.3

Menu Bar in the <Report> Window

This section describes the commands available on the Menu Bar in the <Report> window.

10.3.1 <Report> - [File] Menu



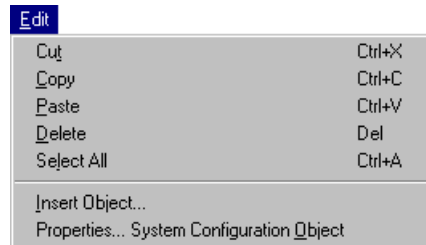
Command	Description	Tool Button
New Format File	Opens a new report file.	
Open Format File	Opens an existing report file. Note: If a report in the data file is opened, another report format will be imported to the data file. Note: Only a single report file can be opened on the <Report> window at one time. If you try to open any additional report files, a window will appear prompting you to save the current report file.	
Close Format File	Closes the report format in the current report file or data file. Note: If a report in the data file is opened, this command is dimmed. To close the report, click on the button located in the upper right corner of the window. Note: If the contents of the report file are not saved or if they are modified after the report file has been opened, a window will appear prompting you to select a mode for saving the report file.	-
Save Format File	Saves the contents of the report file. If a data file is open, it will be updated.	



Command	Description	Tool Button
Save Format File As	Saves the report file as another file. If a data file is open and to be saved in the report file format, the report format in the data file will be saved as a report file.	-
Save Format As Template	Saves the report file as a template. If a data file is open, the report format in the data file will be saved as a template.	-
Select Project (Folder)	Displays the <Select Project(Folder)> window. Refer to "11.8 <Project (Folder) Selection> Window" on page 515	
File Search	Displays the <File Search> window, which allows you to search for an existing file. Refer to "11.4 <GC File Search> Window" on page 500	
Load Data File	Loads data to a report file. A window will appear, allowing you to specify a file name. Enter a file name, and click on the [OK] button. The data in the specified file will be loaded to the report file.	-
Print	Displays a window for printing.	
Print Preview	Displays the <Preview> window, which allows you to view the image to be printed.	
Page Setup	Displays the <Page Setup> window, which allows you to set the paper size, orientation, and margins.	-
Report File Properties	Allows you to check the update history of the opened report file, or enter a comment. Refer to "14.6 <Properties> Window" on page 571	-
Recently used files	Displays names of up to four recently used files. When you select one of the names, that file will open.	-
Exit	Exits the <GC Real Time Analysis> or <GC Postrun> screen and closes the windows.	-



10.3.2 <Report> - [Edit] Menu



Command	Description	Tool Button
Cut	Cuts the currently selected item. .	
Copy	Copies the currently selected item.	
Paste	Pastes the cut or copied item to the currently selected position.	
Delete	Deletes the selected item. Note: The deleted item cannot be restored.	-
Select All	Selects all the items on the page.	-
Insert Object	Displays the <Insert Object> window, which allows you to create a new OLE object, or insert an existing OLE object by specifying a file name.	-
Object	Displays the properties of the selected object. For the properties of each object, see the corresponding page.	-



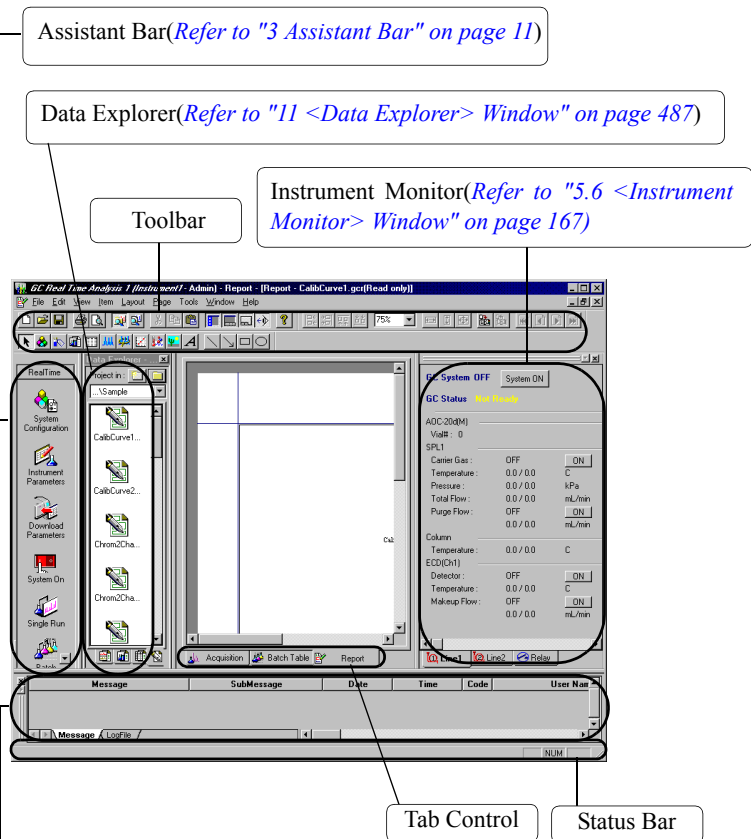
10.3.3 <Report> - [View] Menu



Command	Description	Tool Button
Header/Footer	Displays the <Header/Footer> window, which allows you to specify a page header or page number. <i>Refer to "10.5 <Header/Footer>" on page 402</i>	-
Option	Displays a window that allows you to select options for the report format. This window also allows you to specify a magnification for the report format. <i>Refer to "10.6 <Option> Window" on page 404</i>	
Item List	Lists the objects and items that are specified in the report format. <i>Refer to "10.7 <Item List> Window" on page 405</i>	-
Background	Displays the <Color> window, which allows you to select a background color. <i>Refer to "14.4.2 <Chromatogram View Properties> - [Color] Tab" on page 566</i>	-
Grid	Toggles between displaying and hiding the grid.	



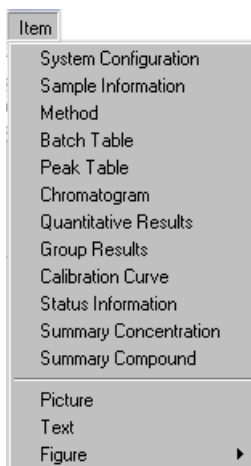
Command	Description	Tool Button
Instrument Monitor	Toggles between displaying and hiding each item. The displayed items are marked with a check.	-
Data Explorer	Assistant Bar(Refer to "3 Assistant Bar" on page 11) Data Explorer(Refer to "11 <Data Explorer> Window" on page 487)	
Assistant Bar	Instrument Monitor(Refer to "5.6 <Instrument Monitor> Window" on page 167)	
Output Window	Toolbar	
Toolbar		-
Status Bar		-
Tab Control	Tab Control Status Bar Output Window(Refer to "14.1 <Output Window> Window" on page 561)	





10.3.4 <Report> - [Item] Menu

This menu is used to select the item to be printed out. The commands from the [Item] menu are also available on the Toolbar and Item Bar.



Command	Description	Tool Button
System Configuration	Prints out the contents of the system configuration. <i>Refer to "10.8 <System Configuration Properties> Window" on page 406</i>	
Sample Information	Prints out the sample information. <i>Refer to "10.9 <Sample Information Properties> Window" on page 410</i>	
Method	Prints out the contents of the method file. <i>Refer to "10.10 <Method File Properties> Window" on page 413</i>	
Batch Table	Prints out the contents of the batch table. <i>Refer to "10.11 <Batch Table Properties>" on page 423</i>	
Peak Table	Prints out the contents of the peak table. <i>Refer to "10.12 <Peak Table Properties> Window" on page 429</i>	
Chromatogram	Prints out the chromatogram. <i>Refer to "10.13 <Chromatogram Properties> Window" on page 434</i>	
Quantitative Results	Prints out the Quantitative results. <i>Refer to "10.14 <Quantitative Results Properties> Window" on page 441</i>	

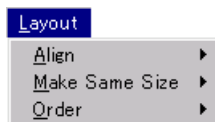


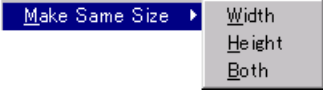
Command	Description	Tool Button
Group Results	Prints out the group results. <i>Refer to "10.15 <Group Results Properties> Window" on page 444</i>	
Calibration Curve	Prints out the calibration curve. <i>Refer to "10.16 <Calibration Curve Properties> Window" on page 448</i>	
Status Information	Prints out the status information. <i>Refer to "10.17 <Status Information Properties> Window" on page 458</i>	
Summary(Conc.)	Prints out the summary(Conc.). <i>Refer to "10.18 <GC Summary(Conc.) Properties> Window" on page 460</i>	
Summary(Compound)	Prints out the summary(Compound). <i>Refer to "10.19 <GC Summary(Compound) Properties> Window" on page 468</i>	
Picture	Prints out the contents of the image file. <i>Refer to "10.22 <Shape Properties> Window" on page 483</i>	
Text	Prints out the text. <i>Refer to "10.21 <Text Properties> Window" on page 478</i>	
Figure	Prints out the figure.  <i>Refer to "10.22 <Shape Properties> Window" on page 483</i>	-
Line	Used to draw a line.	
Arrow	Used to draw an arrow.	
Rectangle	Used to draw a rectangle.	
Ellipse	Used to draw an ellipse.	



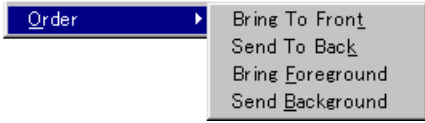
10.3.5 <Report> - [Layout] Menu

This menu is used to specify the positions, sizes, and context of multiple items. To use the [Layout]-[Make Same Size] command, previously select multiple items with the mouse.



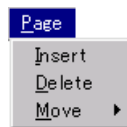
Command	Description	Tool Button
Align	Specifies the layout of the selected item. 	-
Left	Align multiple items with the leftmost item.	
Right	Align multiple items with the rightmost item.	
Top	Align multiple items with the top item.	
Bottom	Align multiple items with the bottom item.	
Make Same Size	Makes the selected items the same size as the largest one. 	-
Width	Makes multiple items the same width as the widest one.	
Height	Makes multiple items the same height as the tallest one.	
Both	Makes multiple items the same width and height as the largest ones.	



Command	Description	Tool Button
Order	Specifies the order (context) for displaying the selected items. 	-
Bring To Front	Moves the item to the top.	-
Send To Back	Moves the item to the bottom.	-
Bring Foreground	Moves the item up by one row.	-
Send Background	Moves the item down by one row.	-

10.3.6 <Report> - [Page] Menu

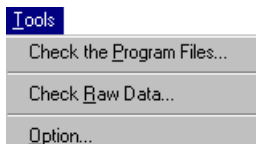
This menu is used to insert, delete, or move a page.



Command	Description	Tool Button
Insert	Inserts a new page after the displayed page.	
Delete	Deletes the displayed page. Note: When the page is deleted, all the items laid out on that page will be deleted. Whenever you try to delete the page, a warning message will appear.	
Move	Used to move across pages.	-
Previous Page	Displays the previous page.	
Next Page	Displays the next page.	
First Page	Displays the first page.	
Last Page	Displays the last page.	



10.3.7 <Report> - [Tools] Menu

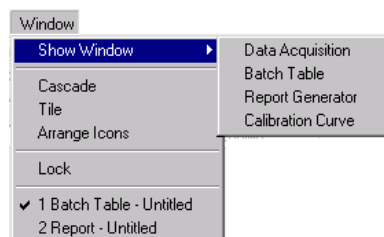


Command	Description
Check Program Files	Displays the <Check Program Files> window, which allows you to check for any corrupted program. Refer to "14.2 <Check the Program Files> Window" on page 562
Check Raw Data	Displays the <Check Raw Data> window, which allows you to check for any corrupted raw data file. Refer to "14.3 <Check Raw Data> Window" on page 563
Option	Displays the <Option> window, which allows you to specify the conditions for creating a new method file, batch file, or report file. This window also allows you to specify the destination at which to save a template file. Refer to "14.9 <Setting Options> Window" on page 580

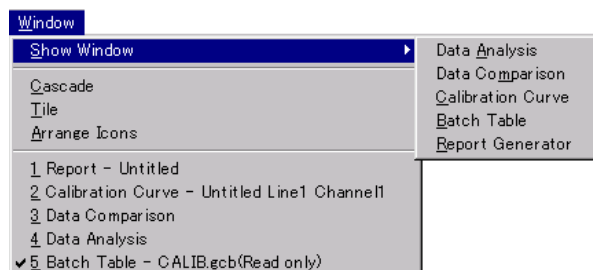


10.3.8 <Report> - [Window] Menu

●On <GC Real Time Analysis> screen



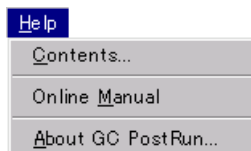
●On <GC Postrun> screen

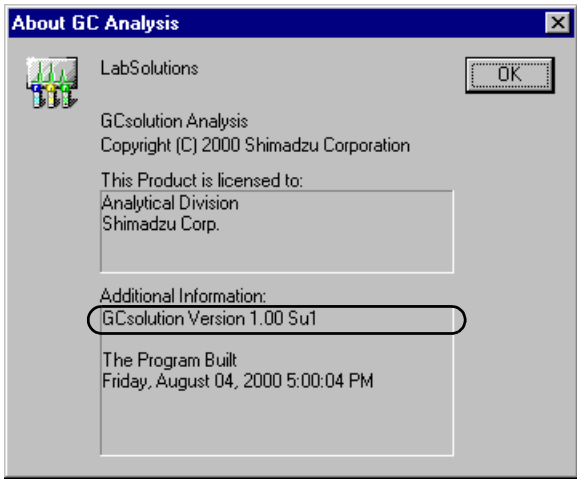
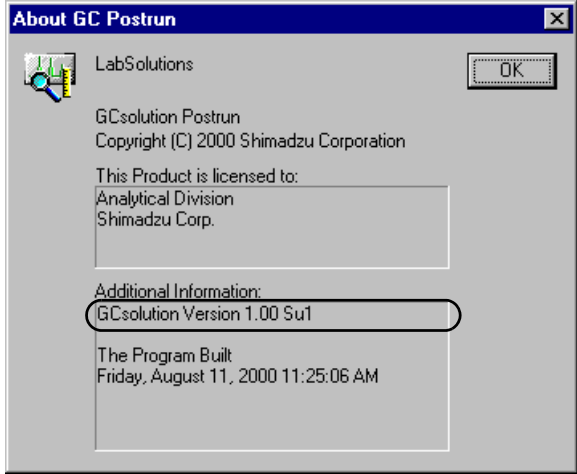


Command	Description
Show Window	Used to display the following windows: <i>Refer to "5 <Data Acquisition> Window" on page 63</i> <i>Refer to "6 <Data Analysis> Window" on page 191</i> <i>Refer to "7 <Calibration Curve> Window" on page 283</i> <i>Refer to "8 <Data Comparison> Window" on page 313</i> <i>Refer to "10 <Report> Window" on page 383</i>
Cascade	Cascades the windows.
Tile	Tiles the windows.
Arrange Icons	Arranges the icons for the above windows.
Currently display window	The name of the window currently displayed on <Report> screen is displayed.



10.3.9 <Report> - [Help] Menu

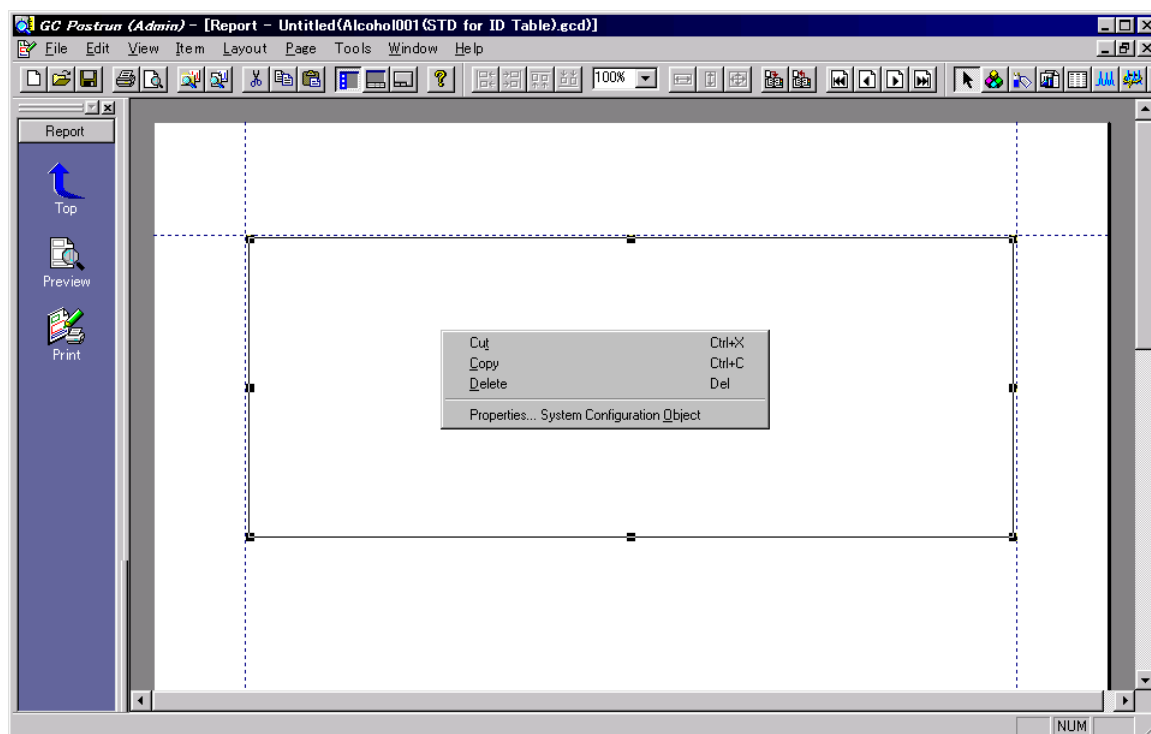


Command	Description	Tool Button
Contents	Displays the help menu. <i>Refer to "12.1.1 Using Help" on page 107</i>	-
Online Manual	<i>Refer to "12.1.2 Using the Online Manual" on page 108</i>	-
About GC Analysis (or GC Postrun)	Displays the information on the program version, etc. ●On the [GC Analysis] screen  ●On the [GC Postrun] screen 	

10.4

Pop-up Menu in Handle

If you use the right mouse to click on button items that are currently selected, the <Pop-up Menu> window for report items will appear. The use of the <Pop-up Menu> allows you to edit items and check properties easily.

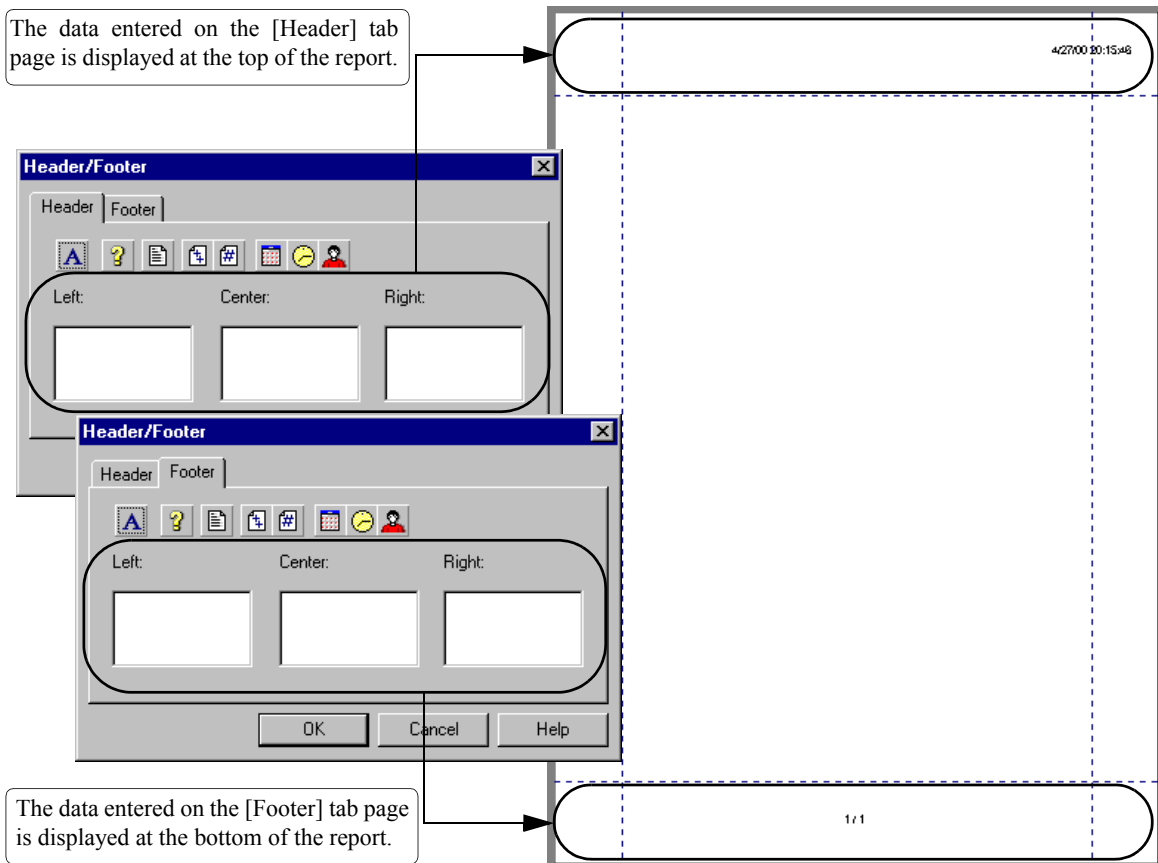


Parameter	Description
Cut	Cuts the selected item.
Copy	Copies the selected item.
Delete	Deletes the selected item.
Properties***Object	Displays the <*** Properties> window allowing you to specify the detail settings of the selected item.



10.5 <Header/Footer>

The <Header/Footer> window is used to insert a header or footer into the report. To display this window, select [View]-[Header/Footer] from the main menu bar. The <Header/Footer> window has the [Header] and [Footer] tabs. The parameters are the same on these tab pages.



Parameter	Description
[Left]	In the field given below, enter the data you want to display as a header or footer. ● To print the characters in the left-justified position, enter the header/footer information in the [Left] field. ● To print the characters at the center, enter the header/footer information in the [Center] field. ● To print the characters in the right-justified position, enter the header/footer information in the [Right] field.
[Center]	
[Right]	
[Font] button 	Displays the window allowing you to change the font of the character string that is currently being edited. Different fonts may be specified on the [Header] and [Footer] tab pages.
[Version] button 	Inserts the "\$Version\$" command that is used to print the version number of the GCsolution software in the header and footer.

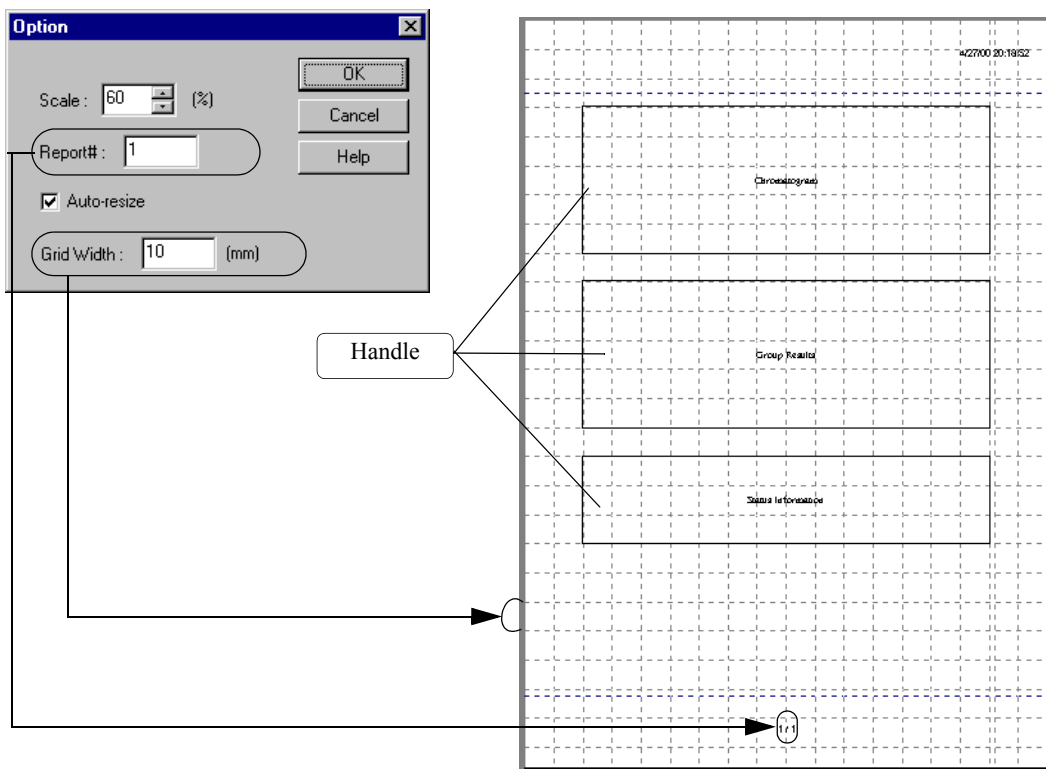


Parameter	Description
[File Name] button 	Inserts the "\$Filename\$" command that is used to print the data file name in the header and footer.
[Report] button 	Inserts the report number specified in [Report#] in the <Option> window that is displayed, when [View]-[Option] is selected from the main menu bar, into the "\$Report# \$" command. The report number is displayed in the format of (report number - page/total page), together with the page number. For sequential analysis, such as in batch, the report number automatically changes in increments. <i>Refer to "10.6 <Option> Window" on page 404</i>
[Page] button 	Inserts the "\$Page# \$" command that is used to print the page number (page/total page) in the header and footer.
[Date] button 	Inserts the "\$Date\$" command that is used to print the print date in the header and footer.
[Time] button 	Inserts the "\$Time\$" command that is used to print the print time in the header and footer.
[User Name] button 	Inserts the "\$User\$" command that is used to print the user name in the header and footer.



10.6 <Option> Window

The <Option> window is used to set various parameters including Scale, Report#, and Grid Width. To display this window, select the [View]-[Option] command from the menu bar.



Parameter	Description
Scale	Set the magnification for displaying the report image either by clicking on the [▲] or [▼] button located on the right, or by directly entering a value in a range between 50 and 200. Note: The magnification can also be changed easily using the Toolbar. 
Report#	Enter the number the report to be printed in the header/footer. For batch processing, the print order numbers instead, of the number entered here, are printed as report numbers.
Auto-resize	● If this parameter is marked with a check, the vertical size is automatically adjusted when the data cannot be printed out in the specified range. If the data cannot be printed out on the current page, the remaining portion of that data will be printed out on the next page. ● If the check mark is removed, the data will be printed out exactly to the position and size of the specified format. Note that any portion of the data exceeding the handle will not be printed out. Note: The horizontal size is not automatically adjusted. This means that any portion of the data exceeding the handle will not be printed out regardless of this setting.
Grid Width	Enter grid width in millimeters. When you select the [View]-[Grid] command from the menu bar, the grid with the specified grid width will be displayed.

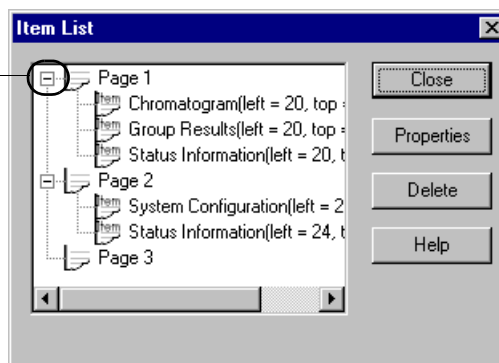


10.7

<Item List> Window

The <Item List> window is used to check the types and order of the items specified for the report file, delete items, or edit properties. To display this window, select the [View]-[Item List] command from the menu bar.

Clicking on the [+] mark will display all the report items specified on that page.



Parameter	Description
Item List	Displays a tree listing the items specified in the report format. To delete an item or edit its properties, select that item here.
[Properties] button	Displays the window that allows you to specify the properties of the selected item. Double-clicking on an item in the item list functions the same as selecting the item and then clicking on the [Properties] button.
[Delete] button	Deletes the selected item.



10.8

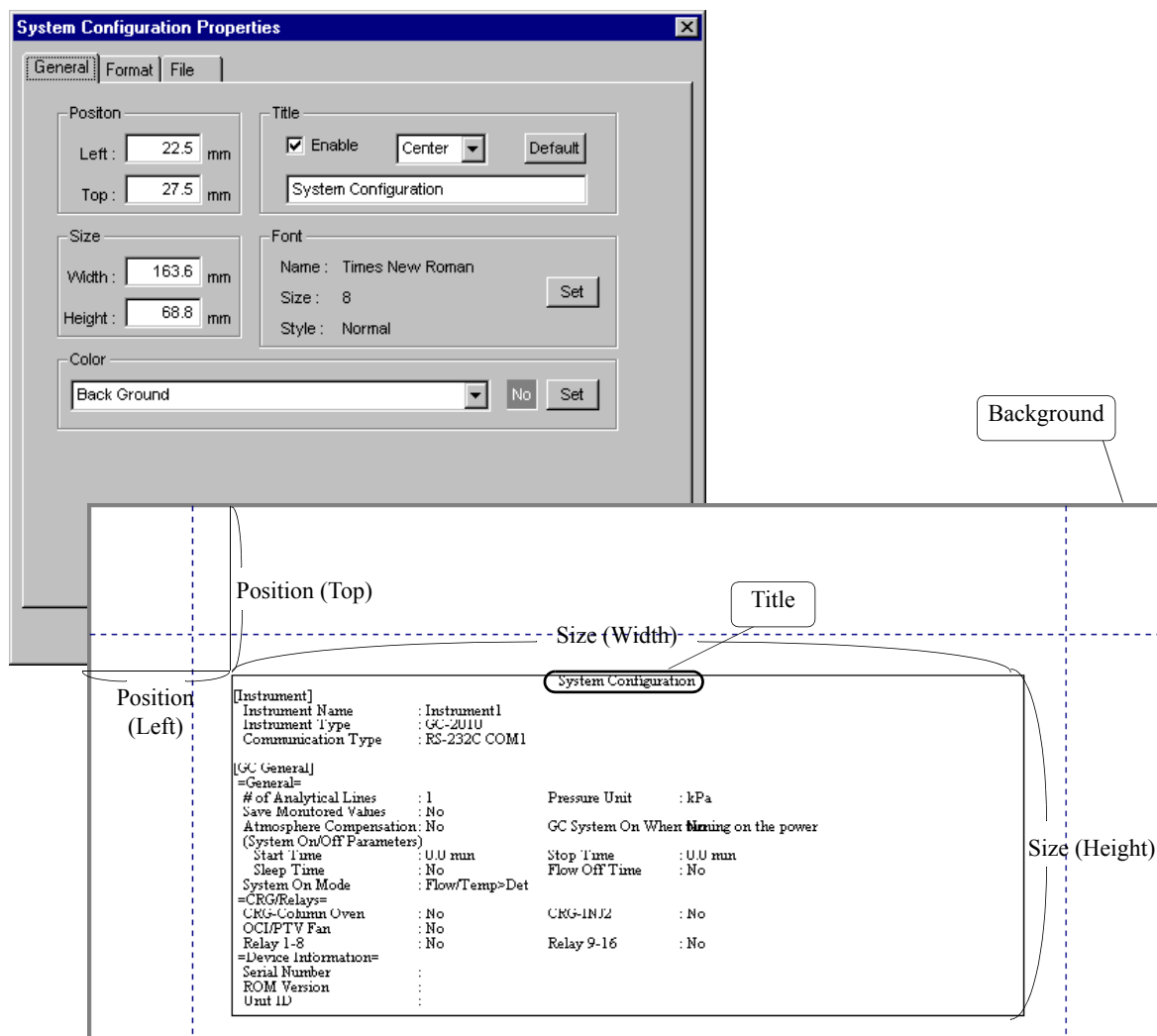
<System Configuration Properties> Window

The <System Configuration Properties> window is used to specify the data you want to print out within a system configuration item.

To display this window, draw a system configuration item or double-click on an existing system configuration item.

10.8.1 <System Configuration Properties> - [General] Tab

On the [General] tab page, specify the position, color, etc. of the item.



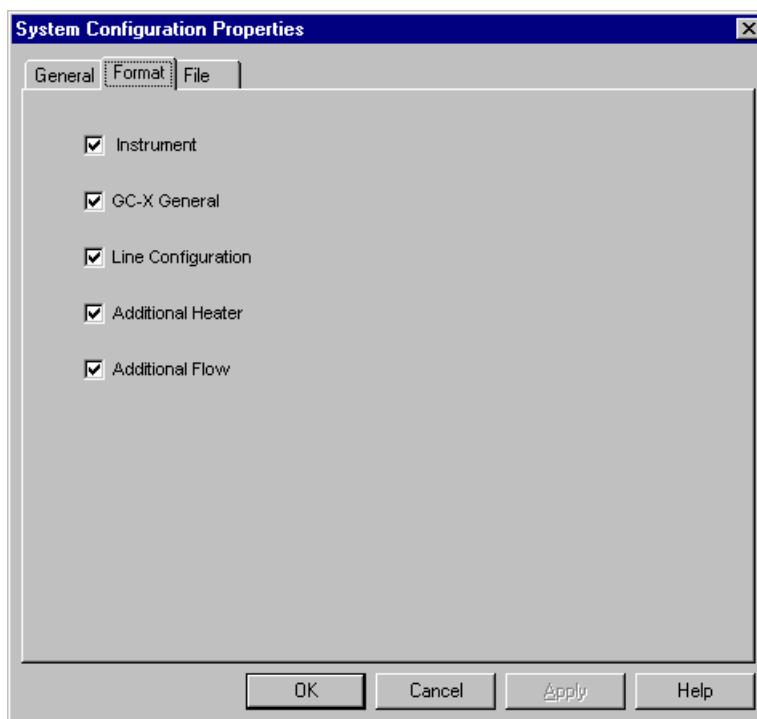


Parameter	Description
Position	Specifies the print position of the item.
Left	Enter the left margin of the item.
Top	Enter the top margin of the item.
Size	Specifies the size of the item.
Width	Enter the width of the item.
Height	Enter the height of the item.
Title	Specifies whether the title will be displayed or hidden, the position of the title if the title is displayed, and the character string for the displayed title.
Enable	To display the title, place a check mark in the box. To hide the title, remove the check mark.
Display position box	Click on the [▼] button located to the right of the cell, and then select the title position from the displayed list. ● Left ● Center ● Right
Title character string box	Enter the character string displayed as the title.
[Default] button	Resets the title setting to the default value.
Font	Displays the currently selected font name and size. If you click on the [Set] button, the window will appear, allowing you to change the font.
Color	Specifies the background color and text color.
Color-specified item box	Click on the [▼] button located to the right of the cell, and then select, from the displayed list, the item for which you want to specify a color. ● Background ● Common Text
Color box	Displays the currently selected color. If you click on this box, [No] will become active, disabling the use of the selected color.
[Set] button	Click on this button after you have selected the item for which you want to specify a color. The <Color> window will appear allowing you to select the color.
Language	Select the language used to output the report, from the list displayed by clicking on the [▼] button located to the right of the cell.



10.8.2 <System Configuration Properties> - [Format] Tab

On the [Format] tab page, specify the details of the report item.



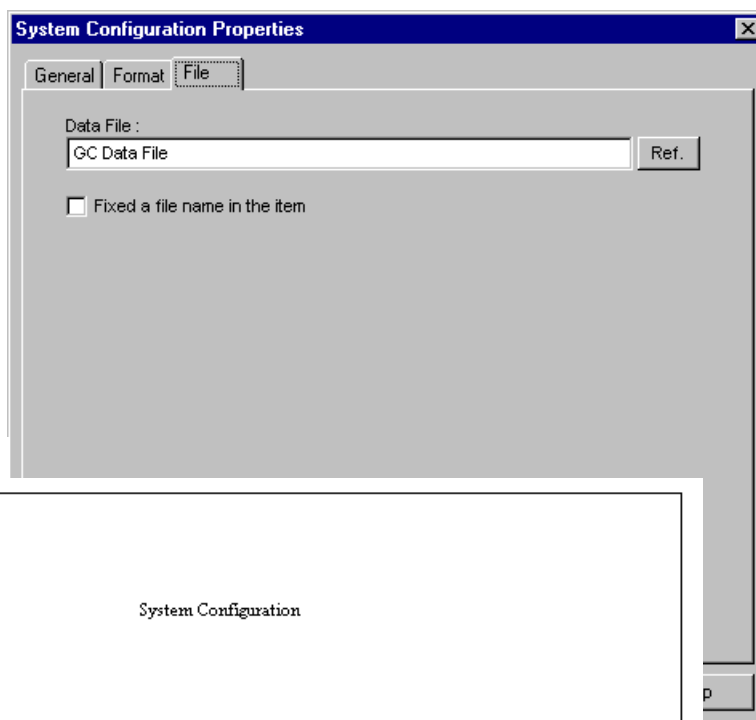
Parameter	Description
Instrument	Prints out the settings on the <Instrument Properties> window if the check box is checked. Refer to "4.3 <Instrument> Window" on page 20
GC-2010 General	Prints out the settings on the <GC Properties> window if the check box is marked. Refer to "4.4 <GC> Window" on page 23
Line Configuration	Prints out the analytical line configuration if the check box is marked. Refer to "4.5 <Analytical Line> Window" on page 36
Additional Heater	Prints out the following information related to the additional heater if the check box is marked. Refer to "4.6 <Additional Heater> Window" on page 60
Additional Flow	Prints out the following information related to the additional flow if the check box is marked. Refer to "4.7 <Additional Flow> Window" on page 62



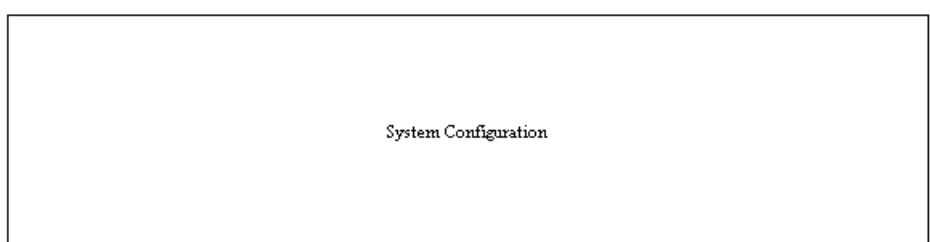
10.8.3 <System Configuration Properties> - [File] Tab

On the [File] tab page, specify the data file to be actually displayed within the active handle.

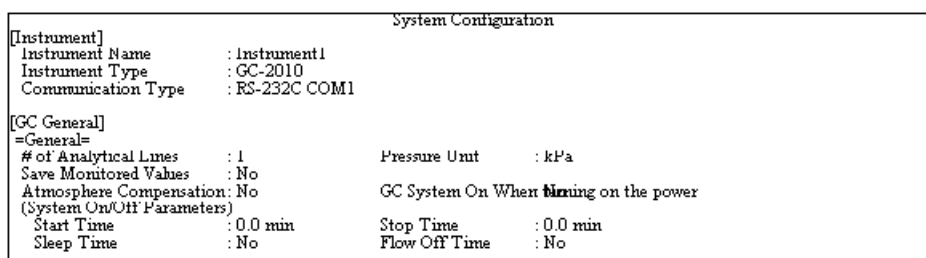
When the [Enforce the filename on each item] option under the <System Policy> window has been enabled, the setting under the [File] tab cannot be edited.



If no data file is loaded:



If a data file is loaded:



Parameter	Description
Data File	Specify the data file name you want to print out within the handle. You may want to select it on the <Open> window by clicking on the [Ref.] button. Note: When the [Enforce the filename on each item] option under the <System Policy> window is enabled, data file name will be printed on title part of the item.
Fixed a file name in the item	To establish the data file to be printed, check this parameter. If the parameter is checked, the specified data file will always be displayed under this item.



10.9

<Sample Information Properties> Window

The <Sample Information Properties> window is used to specify the details to be printed out within the sample information handle.

To display this window, draw a sample information handle or double-click on an existing sample information handle.

10.9.1 <Sample Information Properties> - [General] Tab

Refer to "10.8.1 <System Configuration Properties> - [General] Tab" on page 406

The screenshot shows the 'Sample Information Properties' dialog box with the 'General' tab selected. The dialog has three sub-tabs: 'General', 'Format', and 'File'. The 'General' tab contains the following settings:

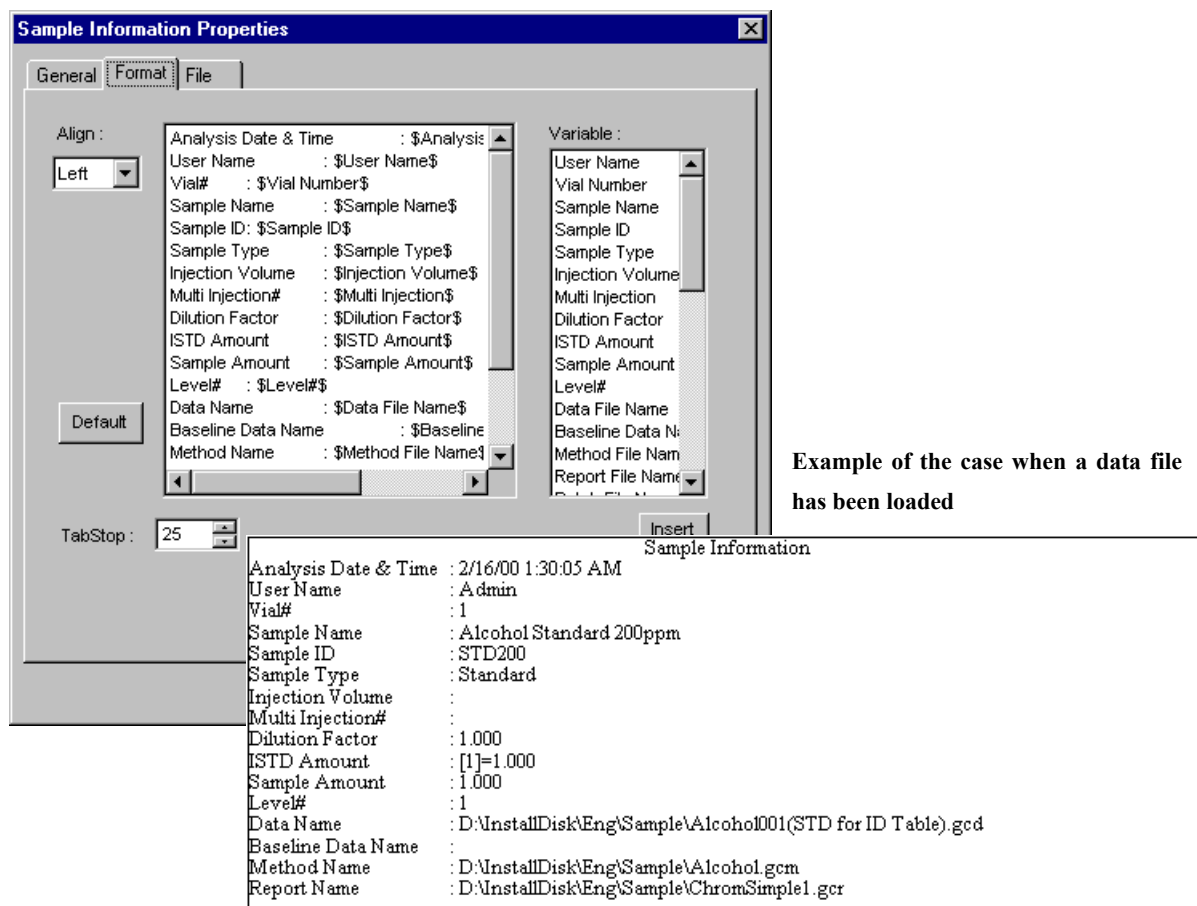
- Position:** Left: 24.4 mm, Top: 29.6 mm
- Size:** Width: 153.5 mm, Height: 64.3 mm
- Title:** ☒ Enable, Center (dropdown), Default (button). The title text field contains 'Sample Information'.
- Font:** Name: Times New Roman, Size: 10, Style: Normal. There is a 'Set' button next to the font settings.
- Color:** Back Ground (dropdown menu), No (button), Set (button).

At the bottom of the dialog are four buttons: OK, Cancel, Apply, and Help.



10.9.2 <Sample Information Properties> - [Format] Tab

On the [Format] tab, specify the information to be displayed within the handle.



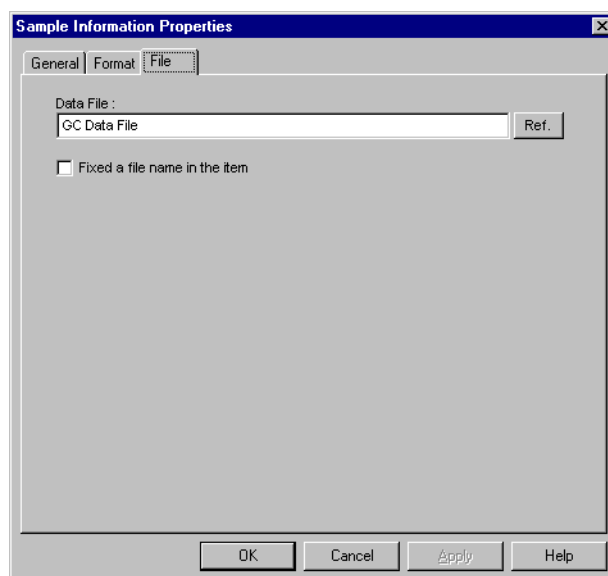
Parameter	Description
Align	Select the print position of the sample information from the list displayed by clicking on the [▼] button located to the right of the cell. ● Left ● Center ● Right
[Default] button	Resets the report items to the default settings.
Tab Stop	Enter the number of characters equivalent to the desired item interval.
Edit box	Lists up the report items. Specify the items as variables. Most of the item names and variables are specified with the default values. To add any item, select a variable (item) from the [Variable] list, and then click on the [Insert] button.



Parameter	Description																																																																															
Variable	Lists the variables (items) that can be printed out within the handle. After selecting a variable (item), click on the [Insert] button. The item will be inserted to the specified position within the edit box.																																																																															
	Variable	Description	Variable	Description	User Name	Log-in user	Vial Number	Vial number	Sample Name	Sample name	Sample ID	Sample number	Sample Type	Sample type	Injection Volume	Injection volume	Multi Injection	Injection count	Dilution Factor	Dilution factor	ISTD Amount	Internal standard amount	Sample Amount	Sample amount	Level#	Calibration point level	Data File Name	Data file name	Baseline Data Name	Baseline data file name	Method File Name	Method file name	Report File Name	Report file name	Batch File Name	Batch file name	Discription	Description	Analysis Year	Analysis year	Analysis NMonth	Analysis month	Analysis EMonth	Analysis month	Analysis Day	Analysis day	Analysis Wday	Analysis day	Analysis Hour	Analysis hour	Analysis Minute	Analysis minute	Analysis Second	Analysis second	Analysis Date	Analysis date	Analysis Time	Analysis time	Barcode	Barcode	Option1 Title	Title of option 1 column	Option1	Data of option 1 column	Option2 Title	Title of option 2 column	Option2	Data of option 2 column	Option3 Title	Title of option 3 column	Option3	Data of option 3 column	Option4 Title	Title of option 4 column	Option4	Data of option 4 column	Option5 Title	Title of option 5 column	Option5	Data of option 5 column
	Variable	Description	Variable	Description																																																																												
	User Name	Log-in user	Vial Number	Vial number																																																																												
	Sample Name	Sample name	Sample ID	Sample number																																																																												
	Sample Type	Sample type	Injection Volume	Injection volume																																																																												
	Multi Injection	Injection count	Dilution Factor	Dilution factor																																																																												
	ISTD Amount	Internal standard amount	Sample Amount	Sample amount																																																																												
	Level#	Calibration point level	Data File Name	Data file name																																																																												
	Baseline Data Name	Baseline data file name	Method File Name	Method file name																																																																												
	Report File Name	Report file name	Batch File Name	Batch file name																																																																												
	Discription	Description	Analysis Year	Analysis year																																																																												
	Analysis NMonth	Analysis month	Analysis EMonth	Analysis month																																																																												
	Analysis Day	Analysis day	Analysis Wday	Analysis day																																																																												
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	Analysis Second	Analysis second	Analysis Date	Analysis date																																																																												
	Analysis Time	Analysis time	Barcode	Barcode																																																																												
	Option1 Title	Title of option 1 column	Option1	Data of option 1 column																																																																												
	Option2 Title	Title of option 2 column	Option2	Data of option 2 column																																																																												
	Option3 Title	Title of option 3 column	Option3	Data of option 3 column																																																																												
	Option4 Title	Title of option 4 column	Option4	Data of option 4 column																																																																												
	Option5 Title	Title of option 5 column	Option5	Data of option 5 column																																																																												
	[Insert] button	Inserts the variable (item) selected in [Variable] into the specified position within the edit box.																																																																														

10.9.3 <Sample Information Properties> - [File] Tab

Refer to "10.8.3 <System Configuration Properties> - [File] Tab" on page 409





10.10 <Method File Properties> Window

The <Method File Properties> window is used to specify the print data within the active method item.
To display this window, draw a method item or double-click on an existing method item.

10.10.1 <Method File Properties> - [General] Tab

On the [General] tab page, specify the display position and color of the item.

Parameter	Description
Channel Select	Specifies the line or the channel on which data is printed out for the item if the data file contains data on multiple lines.
Line 1	Prints out the line 1 data contained in the data file.
Line 2	Prints out the line 2 data contained in the data file.
ALL	Prints out the line1 and line 2 data contained in the data file.
Channel 1	Prints out the channel 1 data contained in the data file.
Channel 2	Prints out the channel 2 data contained in the data file.
Channel 3	Prints out the channel 3 data contained in the data file.
Position	Specifies the position of the item to be printed.
Left	Enter the left margin for the item.
Top	Enter the top margin for the item.

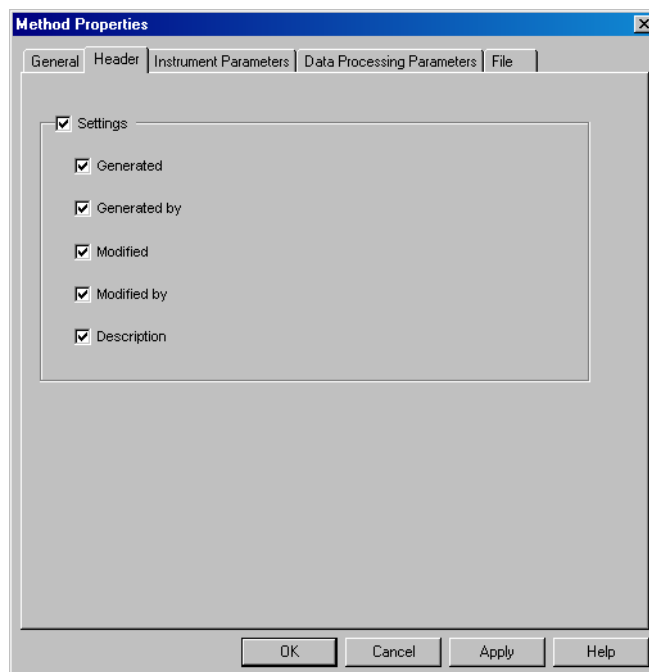


Parameter	Description
Size	Specifies the size of the item.
Width	Enter the width of the item.
Height	Enter the height of the item.
Title	Specifies whether the title is displayed or hidden, the display position if applicable, and the displayed character string.
Enable	To display the title, place a check mark in the check box. To hide the title, remove the check.
Display position	Select a position of the displayed title, from the list displayed by clicking on the  button located to the right of the cell. ● Left ● Center ● Right
Title character string box	Enter the character string to be displayed as a title. For the peak table item, if \$DataFile\$ is entered here, the actual data file name will be printed in the title during the print. The same function is also available in the title character string boxes for the chromatogram item and grouping result item.
[Default] button	Resets the title setting to the default value.
Font	Indicates the currently selected font name and size. To change them, click on the [Set] button. The window will appear, allowing you to change them.
Color	Specify the background color and text color.
Item selection box	Select the item for which color is to be specified, from the list displayed, by clicking on the  button located to the right of the cell. ● Back Ground ● Common Text ● Table-Text ● Table-Grid ● Table-Back Ground
Color box	Shows the currently selected color. Clicking on this button selects [No], which disables the selected color.
[Set] button	After selecting the item for which color is to be specified, click on this button. The <Color> window will appear, allowing you to select the color. <i>Refer to "14.4.2 <Chromatogram View Properties> - [Color] Tab" on page 566</i>



10.10.2 <Method File Properties> - [Header] Tab

On the [Header] tab page, specify the information to be displayed in the item.

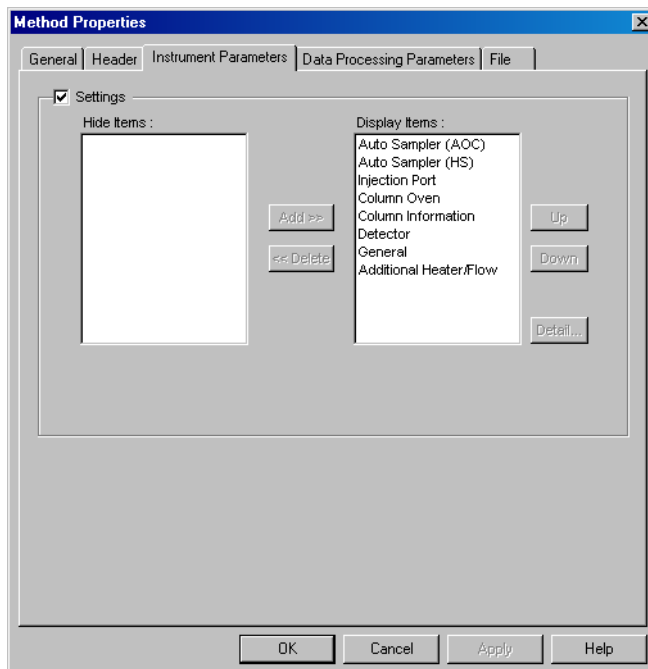


Parameter	Description
Settings	Specify whether to indicate header information
Generated	Specify whether to indicate the date when the file was created.
Generated by	Specify whether to indicate the name of the user who created the file.
Modified	Specify whether to indicate the date when the file was modified.
Modified by	Specify whether to indicate the name of the user who modified the file.
Description	Specify whether to indicate the discription of the file.



10.10.3 <Method File Properties> - [Instrument Parameters] Tab

On the [Instrument Parameters] tab page, specify the print data from the Instrument Parameters.

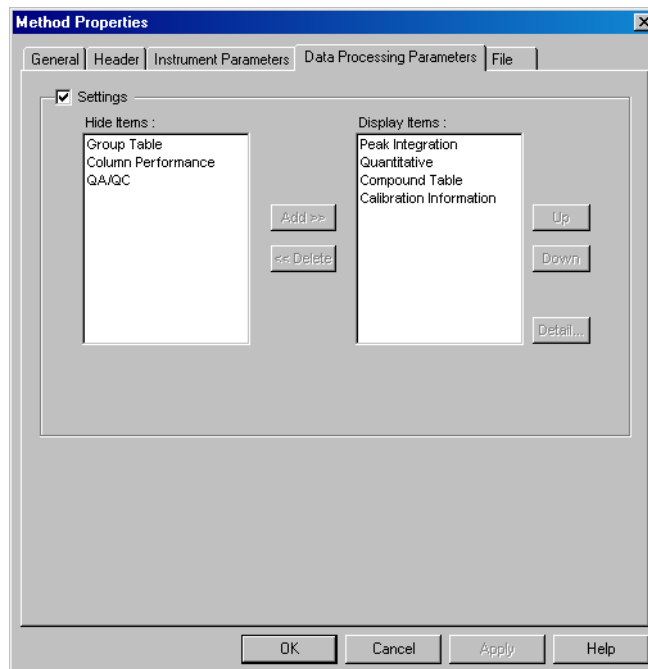


Parameter	Description
Settings	Specify whether to indicate instrument parameters
Hide Items	Items listed in [Hide Items] are not currently displayed.
Display Items	Items listed in [Display Items] are currently displayed. Select an item and specify the detailed items with [Detail].
[Add] button	Select an item from [Hide Items] and press [Add] to move the item to [Display Items].
[Delete] button	Select an item from [Display Items] and press [Delete] to move the item to [Hide Items].
[Up] button	The item which has been selected moves up.
[Down] button	The item which has been selected moves down.
[Detail] button	Select an item from [Display Items] and press [Detail] to display the detailed settings window.



10.10.4 <Method File Properties> - [Data Processing Parameters] Tab

On the [Data Processing Parameters] tab page, specify the print data from the Data Processing Parameters.



Parameter	Description
Settings	Specify whether to indicate data processing parameters
Hide Items	Items listed in [Hide Items] are not currently displayed.
Display Items	Items listed in [Display Items] are currently displayed. Select an item and specify the detailed items with [Detail].
[Add] button	Select an item from [Hide Items] and press [Add] to move the item to [Display Items].
[Delete] button	Select an item from [Display Items] and press [Delete] to move the item to [Hide Items].
[Up] button	The item which has been selected moves up.
[Down] button	The item which has been selected moves down.
[Detail] button	Select an item from [Display Items] and press [Detail] to display the detailed settings window.

<



10.10.4.1 [Data Processing Parameters] Tab-<Compound Table Format>

The <Compound Table Format> window is used to specify the print data from the compound table.

Parameter	Description
Hide Items	Items listed in [Hide Items] are not currently displayed.
Display Items	Items listed in [Display Items] are currently displayed. Select an item and specify the display format with [Format].
[Add] button	Select an item from [Hide Items] and press [Add] to move the item to [Display Items].
[Delete] button	Select an item from [Display Items] and press [Delete] to move the item to [Hide Items].
[Up] button	The item which has been selected moves up in the [Display Items].
[Down] button	The item which has been selected moves down in the [Display Items].
Column Index	Specify the column name indicated on the column index row.
Position	Select the position of the column index row from the list.
Ref. String	Specify the column width by the number of characters when 0 is entered in [Width].
Width	Specify the column width. Note: When 0 is specified, [Ref. String] determines the column width.
Format	Pressing [format] button displays <Format> Window.



Parameter	Description																																																																																				
Display Grid Display Column Index	Specifies whether the grid and column names of the compound table are printed. ● Mark both [Grid] and [Column Index] with a check. <table border="1"><caption>[Compound Table - Channel 1]</caption><tr><th>ID#</th><th>Name</th><th>Type</th><th>Ret.Time</th><th>Conc.1</th><th>Unit</th></tr><tr><td>1</td><td>n-Propanol</td><td>Target</td><td>2.324</td><td>200.000</td><td>ppm</td></tr><tr><td>2</td><td>Isobutyl Alcohol</td><td>Target</td><td>3.170</td><td>200.000</td><td>ppm</td></tr><tr><td>3</td><td>Isoamyl Alcohol</td><td>Target</td><td>5.089</td><td>200.000</td><td>ppm</td></tr></table> ● Mark only [Grid] with a check. <table border="1"><caption>[Compound Table - Channel 1]</caption><tr><td>1</td><td>n-Propanol</td><td>Target</td><td>2.324</td><td>200.000</td><td>ppm</td></tr><tr><td>2</td><td>Isobutyl Alcohol</td><td>Target</td><td>3.170</td><td>200.000</td><td>ppm</td></tr><tr><td>3</td><td>Isoamyl Alcohol</td><td>Target</td><td>5.089</td><td>200.000</td><td>ppm</td></tr></table> ● Mark only [Column Index] with a check. <table border="1"><caption>[Compound Table - Channel 1]</caption><tr><th>ID#</th><th>Name</th><th>Type</th><th>Ret.Time</th><th>Conc.1</th><th>Unit</th></tr><tr><td>1</td><td>n-Propanol</td><td>Target</td><td>2.324</td><td>200.000</td><td>ppm</td></tr><tr><td>2</td><td>Isobutyl Alcohol</td><td>Target</td><td>3.170</td><td>200.000</td><td>ppm</td></tr><tr><td>3</td><td>Isoamyl Alcohol</td><td>Target</td><td>5.089</td><td>200.000</td><td>ppm</td></tr></table> ● Remove the checks from both [Grid] and [Column Index]. <table border="1"><caption>[Compound Table - Channel 1]</caption><tr><td>1</td><td>n-Propanol</td><td>Target</td><td>2.324</td><td>200.000</td><td>ppm</td></tr><tr><td>2</td><td>Isobutyl Alcohol</td><td>Target</td><td>3.170</td><td>200.000</td><td>ppm</td></tr><tr><td>3</td><td>Isoamyl Alcohol</td><td>Target</td><td>5.089</td><td>200.000</td><td>ppm</td></tr></table>	ID#	Name	Type	Ret.Time	Conc.1	Unit	1	n-Propanol	Target	2.324	200.000	ppm	2	Isobutyl Alcohol	Target	3.170	200.000	ppm	3	Isoamyl Alcohol	Target	5.089	200.000	ppm	1	n-Propanol	Target	2.324	200.000	ppm	2	Isobutyl Alcohol	Target	3.170	200.000	ppm	3	Isoamyl Alcohol	Target	5.089	200.000	ppm	ID#	Name	Type	Ret.Time	Conc.1	Unit	1	n-Propanol	Target	2.324	200.000	ppm	2	Isobutyl Alcohol	Target	3.170	200.000	ppm	3	Isoamyl Alcohol	Target	5.089	200.000	ppm	1	n-Propanol	Target	2.324	200.000	ppm	2	Isobutyl Alcohol	Target	3.170	200.000	ppm	3	Isoamyl Alcohol	Target	5.089	200.000	ppm
ID#	Name	Type	Ret.Time	Conc.1	Unit																																																																																
1	n-Propanol	Target	2.324	200.000	ppm																																																																																
2	Isobutyl Alcohol	Target	3.170	200.000	ppm																																																																																
3	Isoamyl Alcohol	Target	5.089	200.000	ppm																																																																																
1	n-Propanol	Target	2.324	200.000	ppm																																																																																
2	Isobutyl Alcohol	Target	3.170	200.000	ppm																																																																																
3	Isoamyl Alcohol	Target	5.089	200.000	ppm																																																																																
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3	Isoamyl Alcohol	Target	5.089	200.000	ppm																																																																																
1	n-Propanol	Target	2.324	200.000	ppm																																																																																
2	Isobutyl Alcohol	Target	3.170	200.000	ppm																																																																																
3	Isoamyl Alcohol	Target	5.089	200.000	ppm																																																																																
Cell Height	Specify the cell height in millimeters. If "0" is specified, the cell height will be automatically determined according to the selected font height.																																																																																				
Calibration Level	Normally, remove the check when specifying the number of calibration levels. ● If the check mark is removed, the "Conc." item will be printed out according to the "# of Calib. Levels" parameter among the quantitative parameters for data files. ● If this parameter is marked with a check, an arbitrary range of calibration levels will be set regardless of the "# of Calib. Levels" parameter setting, and the "Conc." item will be printed out in the set range.																																																																																				



10.10.4.2 [Data Processing Parameters] Tab-<Group Table Format> Window

The <Group Table Format> window is used to specify the print data from the group table.

Parameter	Description
Hide Items	Items listed in [Hide Items] are not currently displayed.
Display Items	Items listed in [Display Items] are currently displayed. Select an item and specify the display format with [Format].
[Add] button	Select an item from [Hide Items] and press [Add] to move the item to [Display Items].
[Delete] button	Select an item from [Display Items] and press [Delete] to move the item to [Hide Items].
[Up] button	The item which has been selected moves up in the [Display Items].
[Down] button	The item which has been selected moves down in the [Display Items].
Column Index	Specify the column name indicated on the column index row.
Position	Select the position of the column index row from the list.
Ref. String	Specify the column width by the number of characters when 0 is entered in [Width].
Width	Specify the column width. Note: When 0 is specified, [Ref. String] determines the column width.
Format	Pressing [format] button displays <Format> Window.

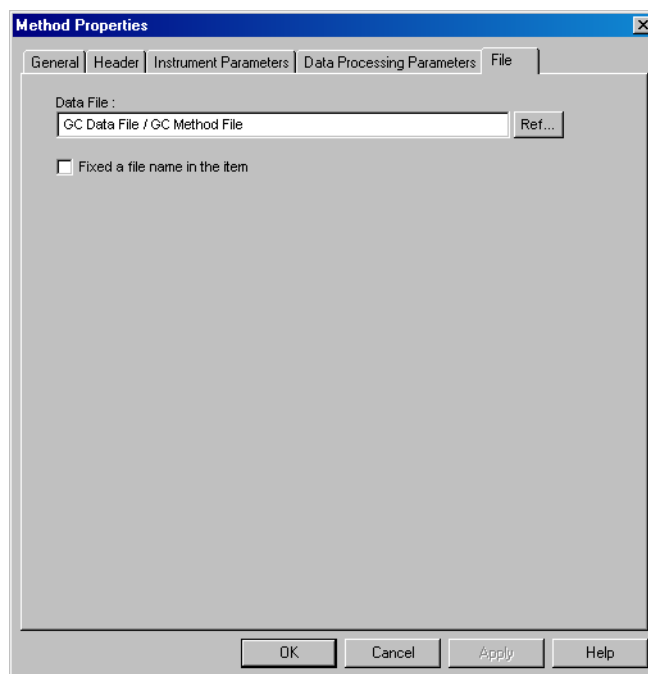


Parameter	Description																																																																																				
Display Grid Display Column Index	Specifies whether the grid and column names of the group table are printed. ● Mark both [Grid] and [Column Index] with a check. <table border="1"><tr><th colspan="6">[Group Table - Channel 1]</th></tr><tr><th>ID#</th><th>Name</th><th>Conc.1</th><th>Conc.2</th><th>Conc.3</th><th>Unit</th></tr><tr><td>1</td><td>Group A</td><td>200.000</td><td>390.000</td><td>750.000</td><td></td></tr><tr><td>2</td><td>Group B</td><td>195.000</td><td>385.000</td><td>700.000</td><td></td></tr></table> ● Mark only [Grid] with a check. <table border="1"><tr><th colspan="6">[Group Table - Channel 1]</th></tr><tr><td>1</td><td>Group A</td><td>200.000</td><td>390.000</td><td>750.000</td><td></td></tr><tr><td>2</td><td>Group B</td><td>195.000</td><td>385.000</td><td>700.000</td><td></td></tr></table> ● Mark only [Column Index] with a check. <table border="1"><tr><th colspan="6">[Group Table - Channel 1]</th></tr><tr><th>ID#</th><th>Name</th><th>Conc.1</th><th>Conc.2</th><th>Conc.3</th><th>Unit</th></tr><tr><td>1</td><td>Group A</td><td>200.000</td><td>390.000</td><td>750.000</td><td></td></tr><tr><td>2</td><td>Group B</td><td>195.000</td><td>385.000</td><td>700.000</td><td></td></tr></table> ● Remove the checks from both [Grid] and [Column Index]. <table border="1"><tr><th colspan="6">[Group Table - Channel 1]</th></tr><tr><td>1</td><td>Group A</td><td>200.000</td><td>390.000</td><td>750.000</td><td></td></tr><tr><td>2</td><td>Group B</td><td>195.000</td><td>385.000</td><td>700.000</td><td></td></tr></table>	[Group Table - Channel 1]						ID#	Name	Conc.1	Conc.2	Conc.3	Unit	1	Group A	200.000	390.000	750.000		2	Group B	195.000	385.000	700.000		[Group Table - Channel 1]						1	Group A	200.000	390.000	750.000		2	Group B	195.000	385.000	700.000		[Group Table - Channel 1]						ID#	Name	Conc.1	Conc.2	Conc.3	Unit	1	Group A	200.000	390.000	750.000		2	Group B	195.000	385.000	700.000		[Group Table - Channel 1]						1	Group A	200.000	390.000	750.000		2	Group B	195.000	385.000	700.000	
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2	Group B	195.000	385.000	700.000																																																																																	
Cell Height	Specify the cell height in millimeters. If "0" is specified, the cell height will be automatically determined according to the selected font height.																																																																																				
Calibration Level	Normally, remove the check when specifying the number of calibration levels. ● If the check mark is removed, the "Conc." item will be printed out according to the "# of Calib. Levels" parameter among the quantitative parameters for data files. ● If this parameter is marked with a check, an arbitrary range of calibration levels will be set regardless of the "# of Calib. Levels" parameter setting, and the "Conc." item will be printed out in the set range.																																																																																				



10.10.5 <Method File Properties> - [File] Tab

Refer to "10.8.3 <System Configuration Properties> - [File] Tab" on page 409





10.11 <Batch Table Properties>

10.11.1 <Batch Table Properties>-[General] Tab

On the [General] tab page, specify the display position and color of the item.

Batch Table Properties

General | Settings | Batch Table | File

Position
Left : 10.6 mm
Top : 23.8 mm

Title
☒ Enable Center Default
Batch Table
☐ Filename

Size
Width : 46 mm
Height : 11.9 mm

Font
Name : Times New Roman
Size : 10
Style : Normal Set...

Color
Background Set...

OK Cancel Apply Help

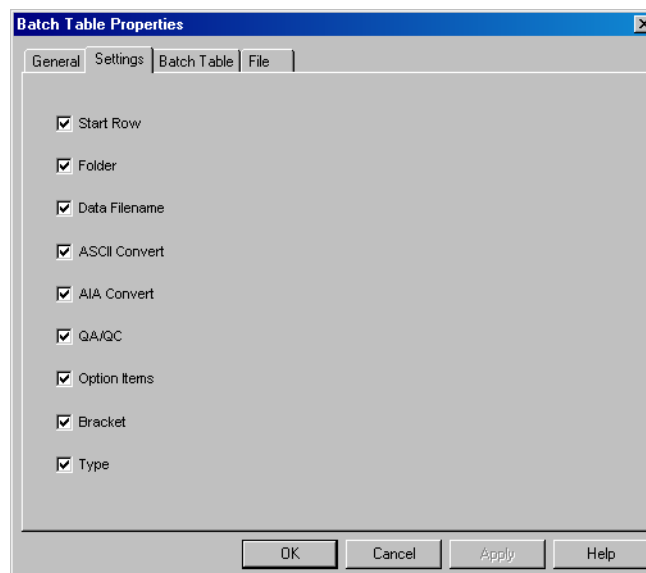
Parameter	Description
Position	Specifies the position of the item to be printed.
Left	Enter the left margin for the item.
Top	Enter the top margin for the item.



Parameter	Description
Size	Specifies the size of the item.
Width	Enter the width of the item.
Height	Enter the height of the item.
Title	Specifies whether the title is displayed or hidden, the display position if applicable, and the displayed character string.
Enable	To display the title, place a check mark in the check box. To hide the title, remove the check.
Display position	Select a position of the displayed title, from the list displayed by clicking on the  button located to the right of the cell. ● Left ● Center ● Right
Title character string box	Enter the character string to be displayed as a title. For the peak table item, if \$DataFile\$ is entered here, the actual data file name will be printed in the title during the print. The same function is also available in the title character string boxes for the chromatogram item and grouping result item.
[Default] button	Resets the title setting to the default value.
Font	Indicates the currently selected font name and size. To change them, click on the [Set] button. The window will appear, allowing you to change them.
Color	Specify the background color and text color.
Item selection box	Select the item for which color is to be specified, from the list displayed, by clicking on the  button located to the right of the cell. ● Back Ground ● Common Text ● Table-Text ● Table-Grid ● Table-Back Ground
Color box	Shows the currently selected color. Clicking on this button selects [No], which disables the selected color.
[Set] button	After selecting the item for which color is to be specified, click on this button. The <Color> window will appear, allowing you to select the color. <i>Refer to "14.4.2 <Chromatogram View Properties> - [Color] Tab" on page 566</i>



10.11.2 <Batch Table Properties>-[Settings] Tab

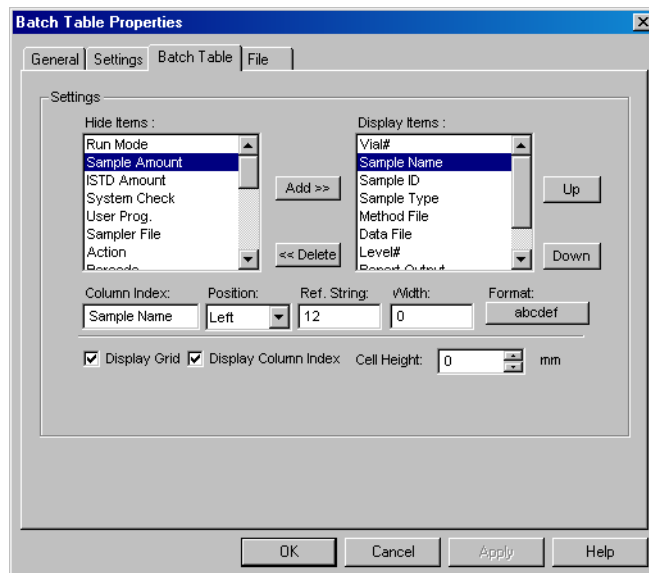


Parameters	Description
Start Row	Specify whether to indicate parameters of [Start Row] tab on <Settings> window.
Folder	Specify whether to indicate parameters of [Folder] tab on <Settings> window.
Data Filename	Specify whether to indicate parameters of [Data Filename] tab on <Settings> window.
ASCII Convert	Specify whether to indicate parameters of [ASCII Convert] tab on <Settings> window.
AIA Convert	Specify whether to indicate parameters of [AIA Convert] tab on <Settings> window.
QA/QC	Specify whether to indicate parameters of [QAQC] tab on <Settings> window.
Option Items	Specify whether to indicate parameters of [Option Items] tab on <Settings> window.
Bracket	Specify whether to indicate parameters of [Bracket] tab on <Settings> window.
Type	Specify whether to indicate parameters of [Type] tab on <Settings> window.

Refer to "9.11 <Settings> Window" on page 372



10.11.3 <Batch Table Properties>-[Batch Table] Tab



Parameter	Description
Hide Items	Items listed in [Hide Items] are not currently displayed.
Display Items	Items listed in [Display Items] are currently displayed. Select an item and specify the display format with [Format].
[Add] button	Select an item from [Hide Items] and press [Add] to move the item to [Display Items].
[Delete] button	Select an item from [Display Items] and press [Delete] to move the item to [Hide Items].
[Up] button	The item which has been selected moves up in the [Display Items].
[Down] button	The item which has been selected moves down in the [Display Items].
Column Index	Specify the column name indicated on the column index row.
Position	Select the position of the column index row from the list.
Ref. String	Specify the column width by the number of characters when 0 is entered in [Width].
Width	Specify the column width. Note: When 0 is specified, [Ref. String] determines the column width.
Format	Pressing [format] button displays <Format> Window.

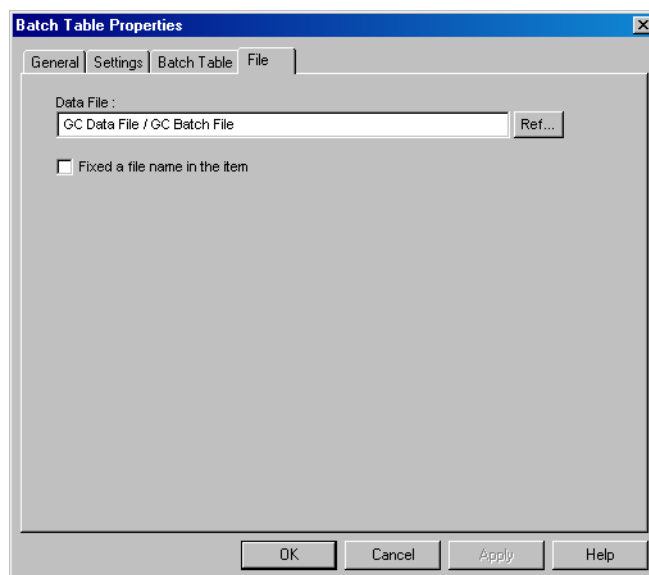


Parameter	Description																																																																																																																																				
Display Grid Display Column Index	Specifies whether the grid and column names of the group table are printed. ● Mark both [Grid] and [Column Index] with a check. <table><tr><th colspan="6">Batch Table</th></tr><tr><th>Vial#</th><th>Sample Name</th><th>Sample ID</th><th>Sample Type</th><th>Method File</th><th>Data File</th></tr><tr><td>4</td><td>Sample A</td><td>ABC1234</td><td>Standard(T)</td><td>CALIB.gcm</td><td>CALIB01.gcd</td></tr><tr><td>5</td><td>Sample B</td><td>ABC1235</td><td>Standard</td><td>CALIB.gcm</td><td>CALIB02.gcd</td></tr><tr><td>0</td><td>Sample C</td><td>ABC1236</td><td>Standard</td><td>CALIB.gcm</td><td>CALIB03.gcd</td></tr><tr><td>3</td><td>Sample D</td><td>ABC1237</td><td>Unknown</td><td>CALIB.gcm</td><td>CALIB04.gcd</td></tr></table> ● Mark only [Grid] with a check. <table><tr><th colspan="6">Batch Table</th></tr><tr><td>4</td><td>Sample A</td><td>ABC1234</td><td>Standard(T)</td><td>CALIB.gcm</td><td>CALIB01.gcd</td></tr><tr><td>5</td><td>Sample B</td><td>ABC1235</td><td>Standard</td><td>CALIB.gcm</td><td>CALIB02.gcd</td></tr><tr><td>0</td><td>Sample C</td><td>ABC1236</td><td>Standard</td><td>CALIB.gcm</td><td>CALIB03.gcd</td></tr><tr><td>3</td><td>Sample D</td><td>ABC1237</td><td>Unknown</td><td>CALIB.gcm</td><td>CALIB04.gcd</td></tr></table> ● Mark only [Column Index] with a check. <table><tr><th colspan="6">Batch Table</th></tr><tr><th>Vial#</th><th>Sample Name</th><th>Sample ID</th><th>Sample Type</th><th>Method File</th><th>Data File</th></tr><tr><td>4</td><td>Sample A</td><td>ABC1234</td><td>Standard(T)</td><td>CALIB.gcm</td><td>CALIB01.gcd</td></tr><tr><td>5</td><td>Sample B</td><td>ABC1235</td><td>Standard</td><td>CALIB.gcm</td><td>CALIB02.gcd</td></tr><tr><td>0</td><td>Sample C</td><td>ABC1236</td><td>Standard</td><td>CALIB.gcm</td><td>CALIB03.gcd</td></tr><tr><td>3</td><td>Sample D</td><td>ABC1237</td><td>Unknown</td><td>CALIB.gcm</td><td>CALIB04.gcd</td></tr></table> ● Remove the checks from both [Grid] and [Column Index]. <table><tr><th colspan="6">Batch Table</th></tr><tr><td>4</td><td>Sample A</td><td>ABC1234</td><td>Standard(T)</td><td>CALIB.gcm</td><td>CALIB01.gcd</td></tr><tr><td>5</td><td>Sample B</td><td>ABC1235</td><td>Standard</td><td>CALIB.gcm</td><td>CALIB02.gcd</td></tr><tr><td>0</td><td>Sample C</td><td>ABC1236</td><td>Standard</td><td>CALIB.gcm</td><td>CALIB03.gcd</td></tr><tr><td>3</td><td>Sample D</td><td>ABC1237</td><td>Unknown</td><td>CALIB.gcm</td><td>CALIB04.gcd</td></tr></table>	Batch Table						Vial#	Sample Name	Sample ID	Sample Type	Method File	Data File	4	Sample A	ABC1234	Standard(T)	CALIB.gcm	CALIB01.gcd	5	Sample B	ABC1235	Standard	CALIB.gcm	CALIB02.gcd	0	Sample C	ABC1236	Standard	CALIB.gcm	CALIB03.gcd	3	Sample D	ABC1237	Unknown	CALIB.gcm	CALIB04.gcd	Batch Table						4	Sample A	ABC1234	Standard(T)	CALIB.gcm	CALIB01.gcd	5	Sample B	ABC1235	Standard	CALIB.gcm	CALIB02.gcd	0	Sample C	ABC1236	Standard	CALIB.gcm	CALIB03.gcd	3	Sample D	ABC1237	Unknown	CALIB.gcm	CALIB04.gcd	Batch Table						Vial#	Sample Name	Sample ID	Sample Type	Method File	Data File	4	Sample A	ABC1234	Standard(T)	CALIB.gcm	CALIB01.gcd	5	Sample B	ABC1235	Standard	CALIB.gcm	CALIB02.gcd	0	Sample C	ABC1236	Standard	CALIB.gcm	CALIB03.gcd	3	Sample D	ABC1237	Unknown	CALIB.gcm	CALIB04.gcd	Batch Table						4	Sample A	ABC1234	Standard(T)	CALIB.gcm	CALIB01.gcd	5	Sample B	ABC1235	Standard	CALIB.gcm	CALIB02.gcd	0	Sample C	ABC1236	Standard	CALIB.gcm	CALIB03.gcd	3	Sample D	ABC1237	Unknown	CALIB.gcm	CALIB04.gcd
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Cell Height	Specify the cell height in millimeters. If "0" is specified, the cell height will be automatically determined according to the selected font height.																																																																																																																																				



10.11.4 <Batch Table Properties>-[File] Tab

Refer to "10.8.3 <System Configuration Properties> - [File] Tab" on page 409



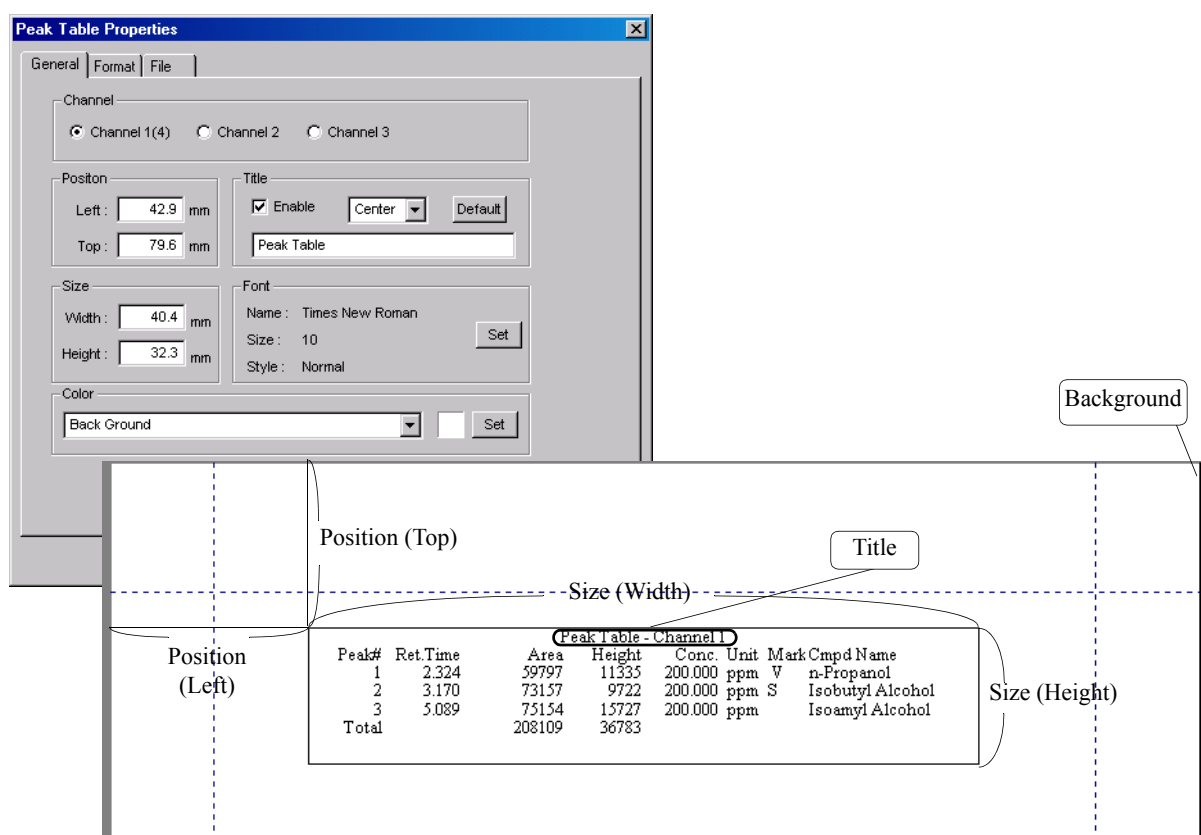


10.12 <Peak Table Properties> Window

The <Peak Table Properties> window is used to set the print data within the peak table handle.
To display this window, draw a peak table item or double-click on an existing peak table item.

10.12.1 <Peak Table Properties> - [General] Tab

On the [General] tab page, specify the display position and color of the item.



Parameter	Description
Channel Select	Specifies the channel on which data is printed out for the item if the data file contains data on multiple channels.
Channel 1	Prints out the channel 1 data contained in the data file.
Channel 2	Prints out the channel 2 data contained in the data file.
Channel 3	Prints out the channel 3 data contained in the data file.
Position	Specifies the position of the item to be printed.
Left	Enter the left margin for the item.
Top	Enter the top margin for the item.

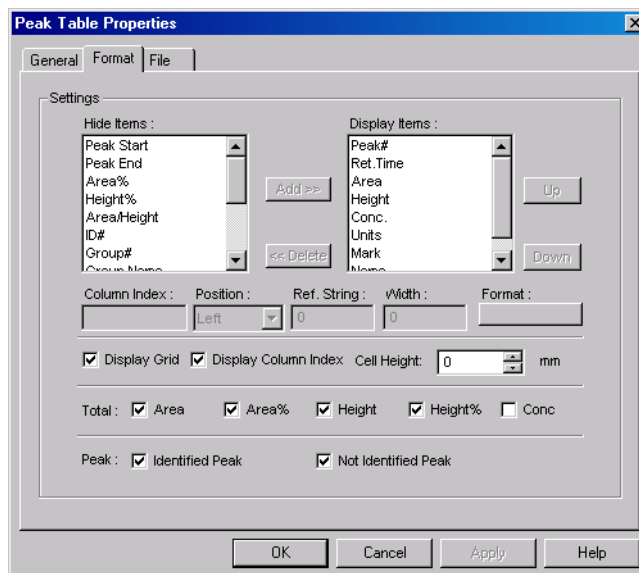


Parameter	Description
Size	Specifies the size of the item.
Width	Enter the width of the item.
Height	Enter the height of the item.
Title	Specifies whether the title is displayed or hidden, the display position if applicable, and the displayed character string.
Enable	To display the title, place a check mark in the check box. To hide the title, remove the check.
Display position	Select a position of the displayed title, from the list displayed by clicking on the  button located to the right of the cell. ● Left ● Center ● Right
Title character string box	Enter the character string to be displayed as a title. For the peak table item, if \$DataFile\$ is entered here, the actual data file name will be printed in the title during the print. The same function is also available in the title character string boxes for the chromatogram item and grouping result item.
[Default] button	Resets the title setting to the default value.
Font	Indicates the currently selected font name and size. To change them, click on the [Set] button. The window will appear, allowing you to change them.
Color	Specify the background color and text color.
Item selection box	Select the item for which color is to be specified, from the list displayed, by clicking on the  button located to the right of the cell. ● Back Ground ● Common Text ● Table-Text ● Table-Grid ● Table-Back Ground
Color box	Shows the currently selected color. Clicking on this button selects [No], which disables the selected color.
[Set] button	After selecting the item for which color is to be specified, click on this button. The <Color> window will appear, allowing you to select the color. <i>Refer to "14.4.2 <Chromatogram View Properties> - [Color] Tab" on page 566</i>



10.12.2 <Peak Table Properties> - [Format] Tab

On the [Format] tab page, specify the print data for the peak table.



Parameter	Description
Hide Items	Items listed in [Hide Items] are not currently displayed.
Display Items	Items listed in [Display Items] are currently displayed. Select an item and specify the display format with [Format].
[Add] button	Select an item from [Hide Items] and press [Add] to move the item to [Display Items].
[Delete] button	Select an item from [Display Items] and press [Delete] to move the item to [Hide Items].
[Up] button	The item which has been selected moves up in the [Display Items].
[Down] button	The item which has been selected moves down in the [Display Items].
Column Index	Specify the column name indicated on the column index row.
Position	Select the position of the column index row from the list.
Ref. String	Specify the column width by the number of characters when 0 is entered in [Width].
Width	Specify the column width. Note: When 0 is specified, [Ref. String] determines the column width.
Format	Pressing [format] button displays <Format> Window.

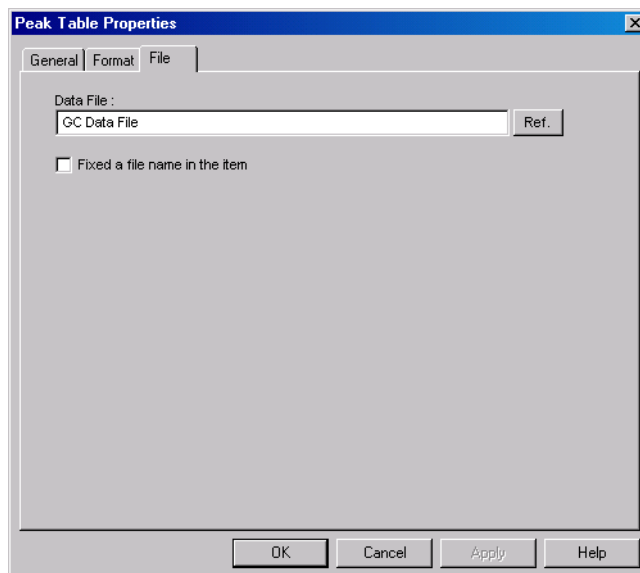


Parameter	Description																																																																																																																																																																																
Display Grid Display Column Index	Specifies whether the grid and column names of the compound table are printed. ● Mark both [Grid] and [Column Index] with a check. <table><tr><th colspan="8">Peak Table - Channel 1</th></tr><tr><th>Peak#</th><th>Ret.Time</th><th>Area</th><th>Height</th><th>Conc.</th><th>Unit</th><th>Mark</th><th>Cmpd Name</th></tr><tr><td>1</td><td>2.324</td><td>59797</td><td>11335</td><td>200.000</td><td>ppm</td><td>V</td><td>n-Propanol</td></tr><tr><td>2</td><td>3.170</td><td>73157</td><td>9722</td><td>200.000</td><td>ppm</td><td>S</td><td>Isobutyl Alcohol</td></tr><tr><td>3</td><td>5.089</td><td>75154</td><td>15727</td><td>200.000</td><td>ppm</td><td></td><td>Isoamyl Alcohol</td></tr><tr><td>Total</td><td></td><td>208109</td><td>36783</td><td></td><td></td><td></td><td></td></tr></table> ● Mark only [Grid] with a check. <table><tr><th colspan="8">Peak Table - Channel 1</th></tr><tr><td>1</td><td>2.324</td><td>59797</td><td>11335</td><td>200.000</td><td>ppm</td><td>V</td><td>n-Propanol</td></tr><tr><td>2</td><td>3.170</td><td>73157</td><td>9722</td><td>200.000</td><td>ppm</td><td>S</td><td>Isobutyl Alcohol</td></tr><tr><td>3</td><td>5.089</td><td>75154</td><td>15727</td><td>200.000</td><td>ppm</td><td></td><td>Isoamyl Alcohol</td></tr><tr><td>Total</td><td></td><td>208109</td><td>36783</td><td></td><td></td><td></td><td></td></tr></table> ● Mark only [Column Index] with a check. <table><tr><th colspan="8">Peak Table - Channel 1</th></tr><tr><th>Peak#</th><th>Ret.Time</th><th>Area</th><th>Height</th><th>Conc.</th><th>Unit</th><th>Mark</th><th>Cmpd Name</th></tr><tr><td>1</td><td>2.324</td><td>59797</td><td>11335</td><td>200.000</td><td>ppm</td><td>V</td><td>n-Propanol</td></tr><tr><td>2</td><td>3.170</td><td>73157</td><td>9722</td><td>200.000</td><td>ppm</td><td>S</td><td>Isobutyl Alcohol</td></tr><tr><td>3</td><td>5.089</td><td>75154</td><td>15727</td><td>200.000</td><td>ppm</td><td></td><td>Isoamyl Alcohol</td></tr><tr><td>Total</td><td></td><td>208109</td><td>36783</td><td></td><td></td><td></td><td></td></tr></table> ● Remove the checks from both [Grid] and [Column Index]. <table><tr><th colspan="8">Peak Table - Channel 1</th></tr><tr><td>1</td><td>2.324</td><td>59797</td><td>11335</td><td>200.000</td><td>ppm</td><td>V</td><td>n-Propanol</td></tr><tr><td>2</td><td>3.170</td><td>73157</td><td>9722</td><td>200.000</td><td>ppm</td><td>S</td><td>Isobutyl Alcohol</td></tr><tr><td>3</td><td>5.089</td><td>75154</td><td>15727</td><td>200.000</td><td>ppm</td><td></td><td>Isoamyl Alcohol</td></tr><tr><td>Total</td><td></td><td>208109</td><td>36783</td><td></td><td></td><td></td><td></td></tr></table>	Peak Table - Channel 1								Peak#	Ret.Time	Area	Height	Conc.	Unit	Mark	Cmpd Name	1	2.324	59797	11335	200.000	ppm	V	n-Propanol	2	3.170	73157	9722	200.000	ppm	S	Isobutyl Alcohol	3	5.089	75154	15727	200.000	ppm		Isoamyl Alcohol	Total		208109	36783					Peak Table - Channel 1								1	2.324	59797	11335	200.000	ppm	V	n-Propanol	2	3.170	73157	9722	200.000	ppm	S	Isobutyl Alcohol	3	5.089	75154	15727	200.000	ppm		Isoamyl Alcohol	Total		208109	36783					Peak Table - Channel 1								Peak#	Ret.Time	Area	Height	Conc.	Unit	Mark	Cmpd Name	1	2.324	59797	11335	200.000	ppm	V	n-Propanol	2	3.170	73157	9722	200.000	ppm	S	Isobutyl Alcohol	3	5.089	75154	15727	200.000	ppm		Isoamyl Alcohol	Total		208109	36783					Peak Table - Channel 1								1	2.324	59797	11335	200.000	ppm	V	n-Propanol	2	3.170	73157	9722	200.000	ppm	S	Isobutyl Alcohol	3	5.089	75154	15727	200.000	ppm		Isoamyl Alcohol	Total		208109	36783				
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Identified Peak	The peak top comment is printed on the peak not identified when checking this checkbox. To print the peak top comment on all peaks, both the identification peak and the unidentification peak are checked.																																																																																																																																																																																
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10.12.3 <Peak Table Properties> - [File] Tab

Refer to "10.8.3 <System Configuration Properties> - [File] Tab" on page 409





10.13 <Chromatogram Properties> Window

The <Chromatogram Properties> window is used to set the print data within the chromatogram item handle.
To display this window, draw a chromatogram item handle, or double-click on an existing chromatogram item handle.

10.13.1 <Chromatogram Properties> - [General] Tab

Refer to "10.12.1 <Peak Table Properties> - [General] Tab" on page 429

The screenshot shows the 'Chromatogram Properties' dialog box with the 'General' tab selected. The dialog has a title bar with a close button. Below the title bar are several tabs: 'General', 'Graph General', 'Graph Range', 'PeakTop Comment', 'Graph Overlap', and 'File'. The 'General' tab contains the following settings:

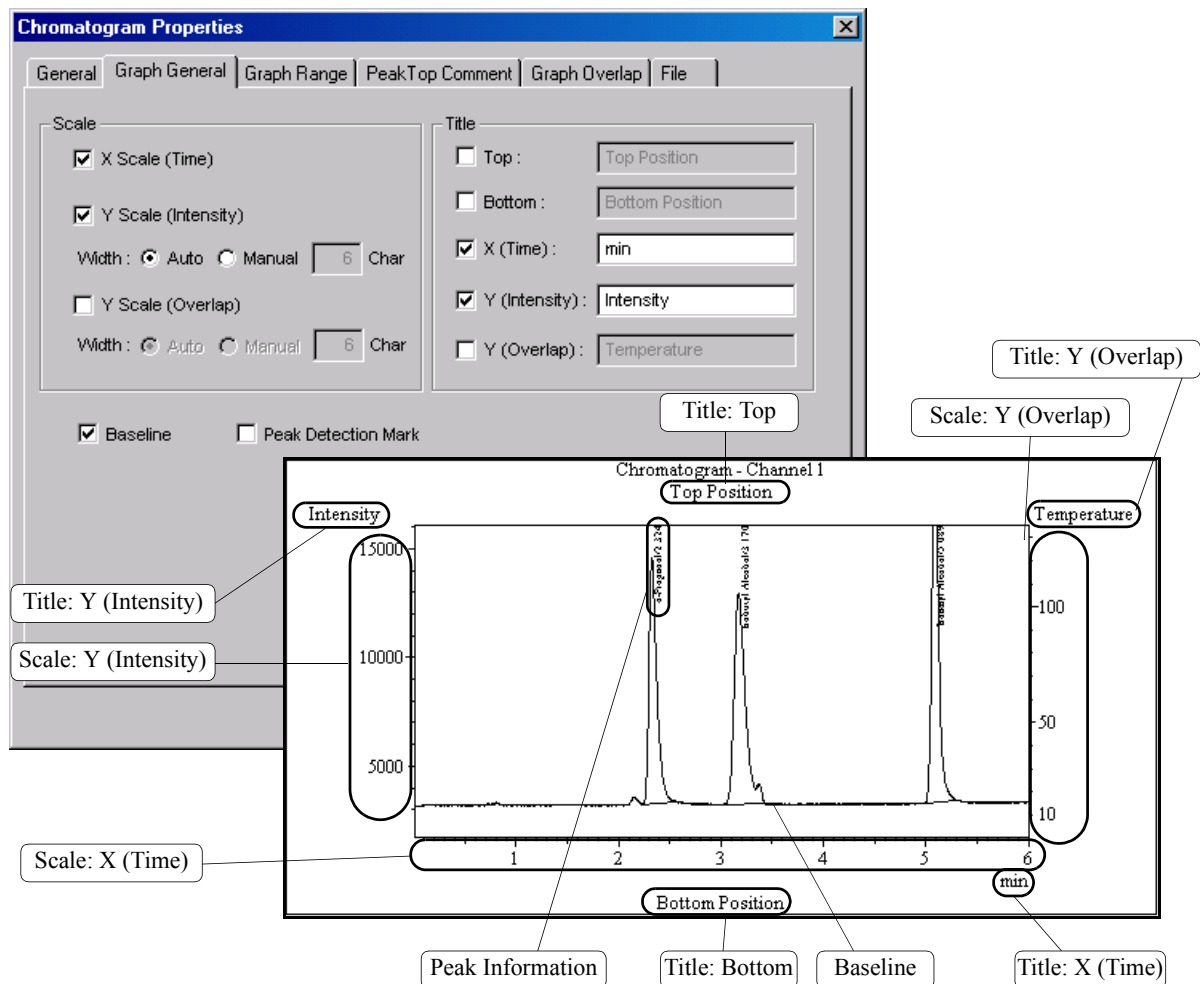
- Channel:** Radio buttons for 'Channel 1(4)', 'Channel 2', and 'Channel 3'. 'Channel 1(4)' is selected.
- Position:** Input fields for 'Left' (39.2 mm) and 'Top' (38.9 mm).
- Size:** Input fields for 'Width' (85.7 mm) and 'Height' (66.6 mm).
- Title:** A checked 'Enable' checkbox, a 'Center' dropdown menu, a 'Default' button, a text field containing 'Chromatogram', and three checked checkboxes: 'Sample Name', 'Data File', and 'Channel No'.
- Font:** 'Name' set to 'Times New Roman', 'Size' set to '10', 'Style' set to 'Normal', and a 'Set' button.
- Color and Line:** A 'Back Ground' color selector (white), a 'Color' button, a 'Line Type' dropdown set to 'Solid line', and a 'Line Width' spinner set to '1 pt'.

At the bottom of the dialog are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.



10.13.2 <Chromatogram Properties> - [Graph General] Tab

The [Graph General] tab page is used to set the printing parameters for the chromatogram.

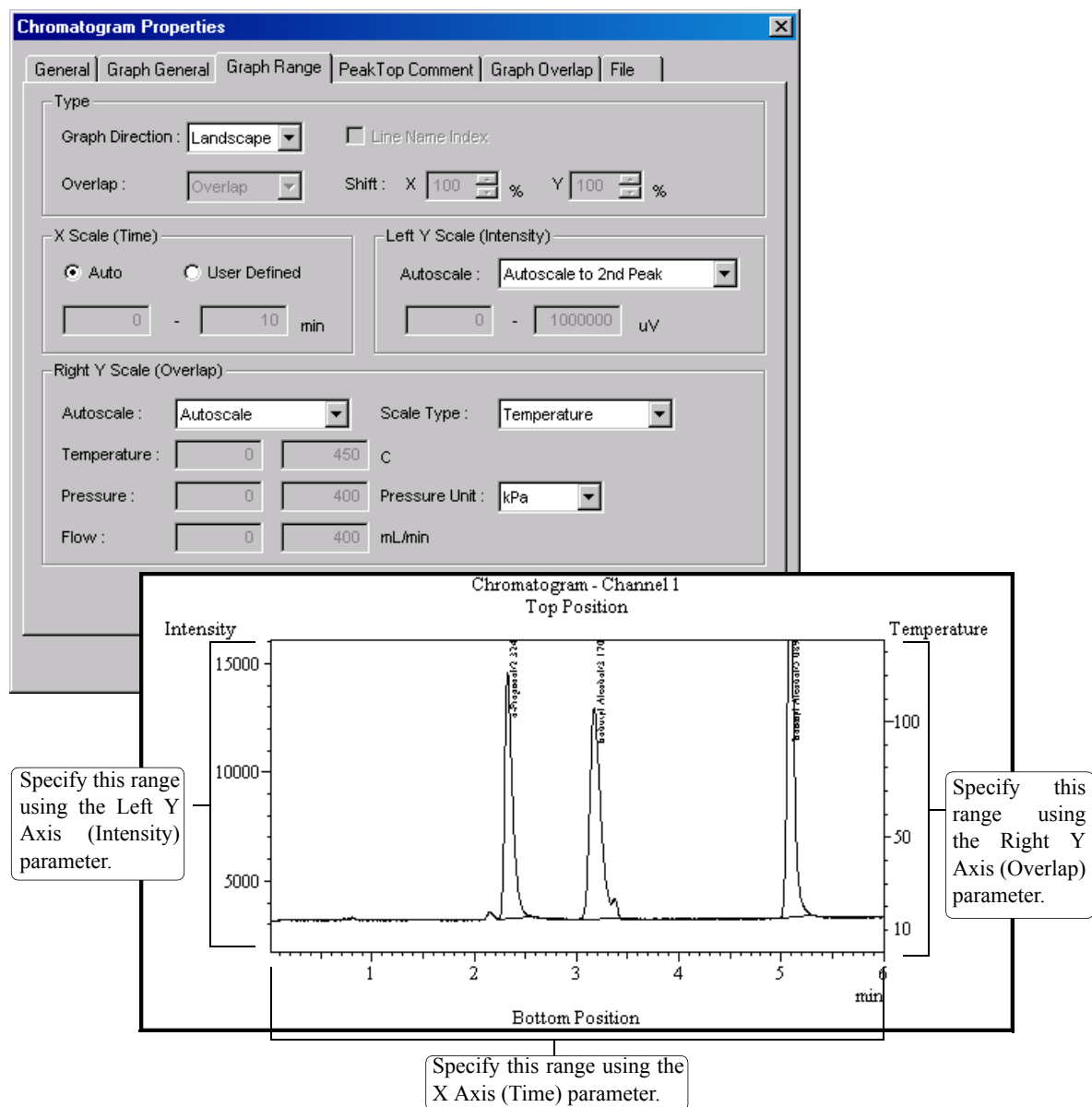


Parameter	Description
X Scale (Time)	To print the graph x scale, place a check mark in the check box.
Y Scale (Intensity)	To print the graph y scale (intensity), place a check mark in the check box.
Y Scale (Overlap)	To print the graph y scale(overlap), place a check mark in the check box.
Title	To print the graph or scale title, place a check mark in the check box and enter the title name.
Top	
Bottom	
X (Time)	
Y (Inten.)	
Y (Overlap)	
Baseline	To print the baseline, place a check mark in the check box.
Peak Detection Mark	To print the peak detection mark, place a check mark in the check box.



10.13.3 <Chromatogram Properties> - [Graph Range] Tab

On the [Graph Range] tab page, specify the range of the graph to be printed.



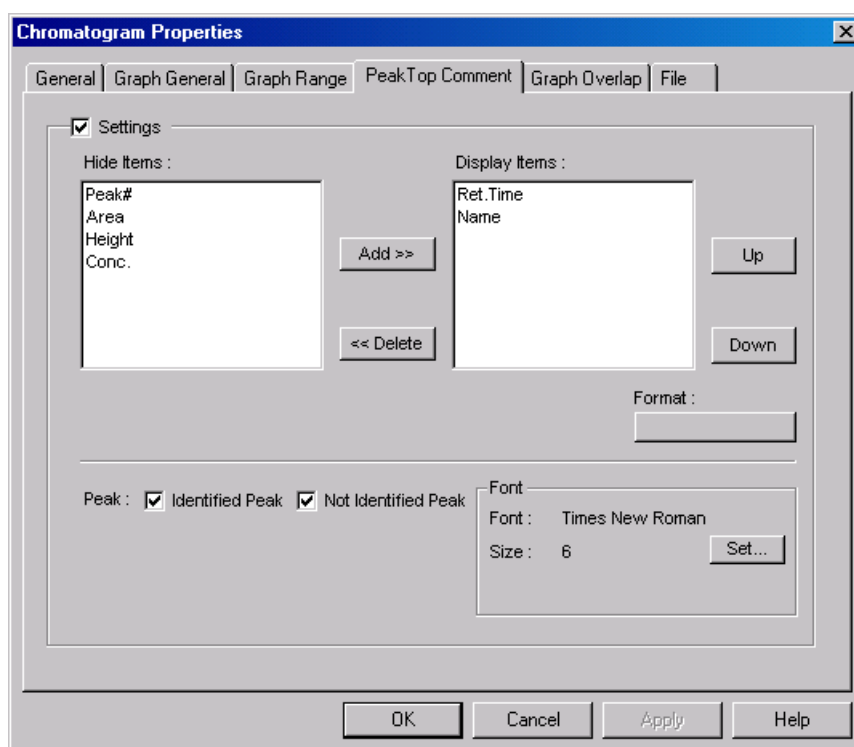
Parameter	Description
X Axis (Time)	Specify whether the range of the time axis for the chromatogram will be set automatically or manually.
Auto	Automatically sets the time axis according to the analysis time, if this button is clicked on.
Manual	Allows you to print only the chromatogram within an arbitrary time range. To set, click on this button and set the range of the time axis.



Parameter	Description
Left Y Axis (Intensity)	
Normalize	Select a scale for the left Y axis from the list displayed by clicking on the [▼] button located to the right of the cell. ● If [Manual] is selected, the chromatogram in an arbitrary range of intensity can be printed by specifying that range in the fields given below. ● If [Normalize (1st)] is selected, the intensity axis will be automatically set according to the largest peak. ● If [Normalize (2nd)] is selected, the intensity axis will be automatically set according to the 2nd largest peak. ● If [Normalize (3rd)] is selected, the intensity axis will be automatically set according to the 3rd largest peak.
Right Y Axis (Overlap)	Specifies the scale type that will be displayed on the right Y axis for the variable value marked with a check on the [Graph Overlap] tab page, and the range of the scale to be printed.
Normalize	Select a scale of the right Y axis (overlap) from the list displayed by clicking on the [▼] button located to the right of the cell. ● If [Normalize] is selected, the range will be automatically set according to the value. ● If [Manual] is selected and a range is specified, the variable values in an arbitrary range can be printed. If you specify the range of [Pressure], also specify [Pressure Unit].
Temperature	If you select [Manual] in [Normalize], set the range of the scale to be printed on the right Y axis.
Pressure	If you select [Manual] in [Normalize], set the range of the scale to be printed on the right Y axis.
Pressure Unit	Select a pressure unit for the scale to be printed on the right Y axis, from the list displayed by clicking on the [▼] button located to the right of the cell. ● kPa ● bar ● psi
Flow	If you select [Manual] in [Normalize], set the range of the scale to be printed on the right Y axis.
Type	Select a scale type to be printed on the right Y axis, from the list displayed by clicking on the [▼] button. ● If [Temperature] is selected, the temperature scale will be printed. ● If [Pressure/Flow] is selected, the pressure/flow scale will be printed.



10.13.4 <Chromatogram Properties> - [Peak Top Comment] Tab



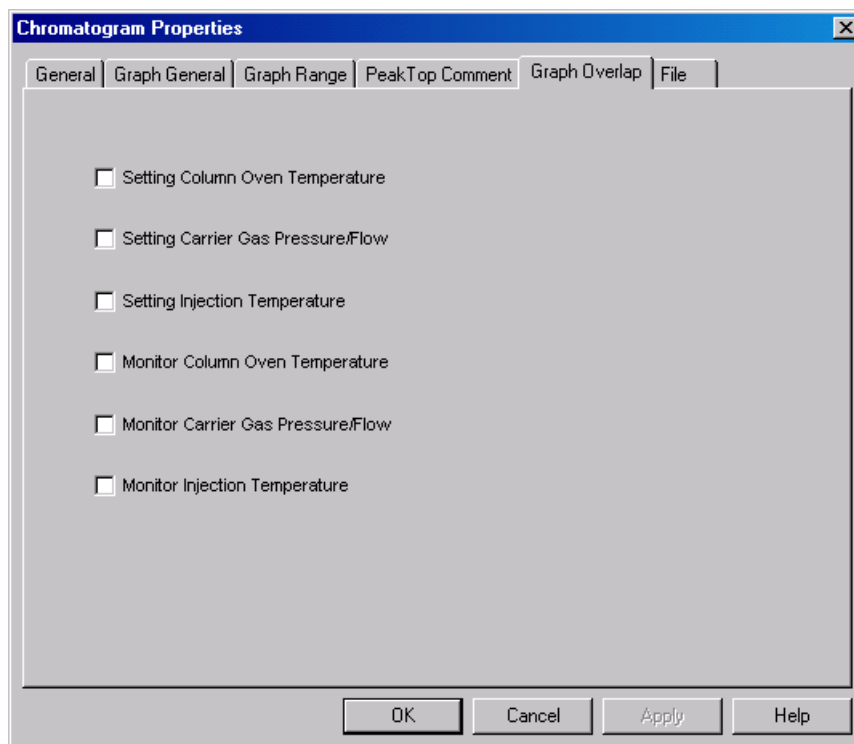
Parameter	Description
Settings	Specify whether to indicate peak top comments
Hide Items	Items listed in [Hide Items] are not currently displayed.
Display Items	Items listed in [Display Items] are currently displayed. Select an item and specify the display format with [Format].
[Add] button	Select an item from [Hide Items] and press [Add] to move the item to [Display Items].
[Delete] button	Select an item from [Display Items] and press [Delete] to move the item to [Hide Items].
Format	Pressing [Format] button displays <Format> Window.
[Up] button	The item which has been selected moves up.
[Down] button	The item which has been selected moves down.
Font	Displays the currently selected font name and size of peak top comment. If you click on the [Set] button, the window will appear, allowing you to change the font.
Identified Peak	The peak top comment is printed on the peak not identified when checking this checkbox. To print the peak top comment on all peaks, both the identification peak and the unidentification peak are checked.
Not Identified Peak	The peak top comment is printed on the peak not identified when checking this checkbox.



10.13.5 <Chromatogram Properties> - [Graph Overlap] Tab

On the [Graph Overlap] tab, select a data type to be overwritten on the chromatogram.

Each monitored value can only be printed from the data acquired by the GC-2010 or GC-2014.

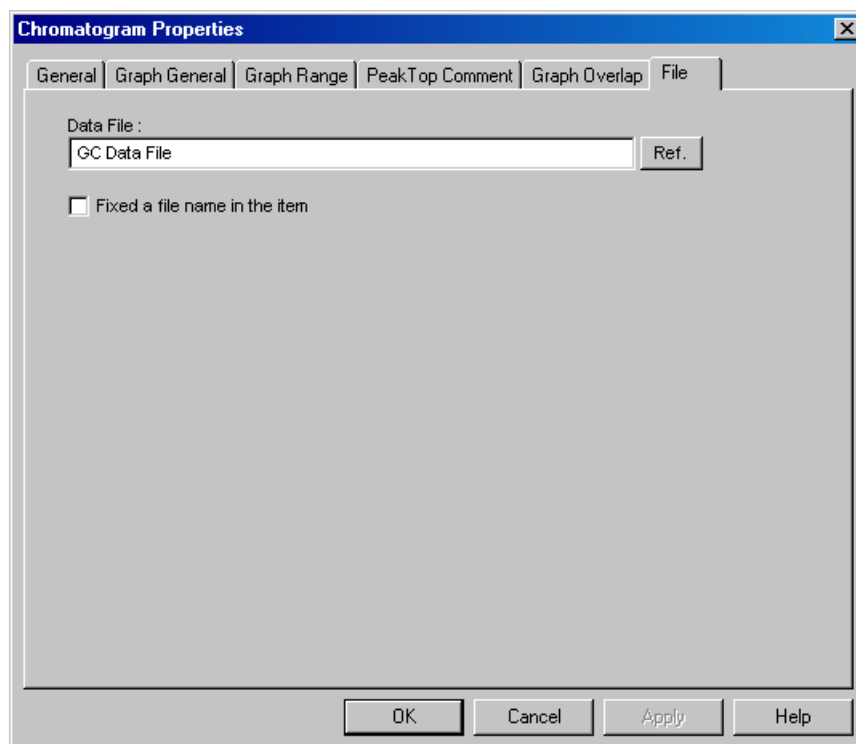


Parameter	Description
Setting Column Oven Temperature	Overwrites the setting value for the column oven temperature in the chromatogram area, if the check box is marked with a check.
Setting Carrier Gas Pressure/Flow	Overwrites the setting value for carrier gas/flow rate in the chromatogram area, if the check box is marked with a check.
Setting Injection Temperature	Overwrites the setting value for the injection unit temperature in the chromatogram area, if the check box is marked with a check.
Monitor Column Oven Temperature	Overwrites the monitored value for the column oven temperature in the chromatogram area, if the check box is marked with a check.
Monitor Carrier Gas Pressure/Flow	Overwrites the monitored value for the carrier gas pressure/flow rate in the chromatogram area, if the check box is marked with a check.
Monitor Injection Temperature	Overwrites the monitored value for the injection unit temperature in the chromatogram area, if the check box is marked with a check.



10.13.6 <Chromatogram Properties> - [File] Tab

Refer to "10.8.3 <System Configuration Properties> - [File] Tab" on page 409





10.14 <Quantitative Results Properties> Window

The <Quantitative Results Properties> window is used to set the print data within the quantitative results item handle. To display this window, draw a quantitative results item handle, or double-click on an existing quantitative results item handle.

10.14.1 <Quantitative Results Properties> - [General] Tab

Refer to "10.12.1 <Peak Table Properties> - [General] Tab" on page 429

The screenshot shows the 'Quantitative Results Properties' dialog box with the 'General' tab selected. The dialog has three tabs: 'General', 'Format', and 'File'. The 'General' tab contains the following settings:

- Channel:** Radio buttons for 'Channel 1(4)', 'Channel 2', and 'Channel 3'. 'Channel 1(4)' is selected.
- Position:**
 - Left: 28.6 mm
 - Top: 31.2 mm
- Title:**
 - ☒ Enable
 - Center (dropdown menu)
 - Default (button)
 - Title text: Quantitative Results
- Size:**
 - Width: 38.9 mm
 - Height: 27.3 mm
- Font:**
 - Name: Times New Roman
 - Size: 10
 - Style: Normal
 - Set (button)
- Color:**
 - Back Ground (dropdown menu)
 - Set (button)

At the bottom of the dialog are four buttons: OK, Cancel, Apply, and Help.



10.14.2 <Quantitative Results Properties> - [Format] Tab

On the [Format] tab page, specify the print data for the peak table.

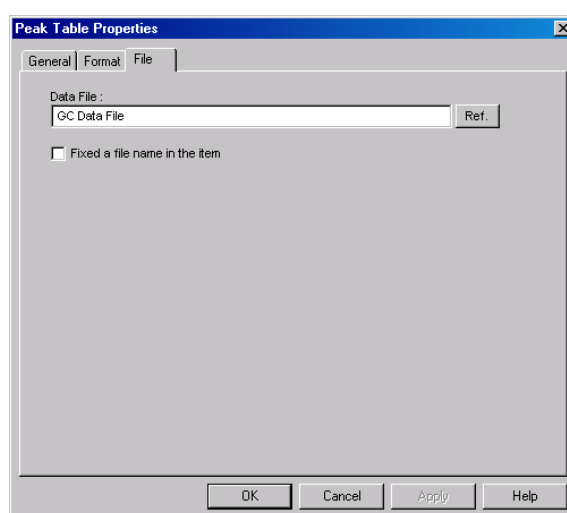
Parameter	Description
Display Items	Items listed in [Display Items] are currently displayed. Select an item and specify the display format with [Column Index], [Position], [Ref. String], [Width], and [Format].
Hide Items	Items listed in [Hide Items] are not currently displayed.
[Add] button	Select an item from [Hide Items] and press [Add] to move the item to [Show Items].
[Delete] button	Select an item from [Display Items] and press [Delete] to move the item to [Hide Items].
Column Index	Specify the column name indicated on the column index row.
Position	Select the position of the column index row from the list.
Ref. String	Specify the column width by the number of characters when 0 is entered in [Width].
Width	Specify the column width. Note: Note: When 0 is specified, [Ref. String] determines the column width.
Format	Pressing [format] button displays <Format> Window. Refer to "10.24 <Format> Window" on page 486
Display Grid	Specify whether to print grids on the table.



Parameter	Description
Display Column Index	Specify whether to print the column index.
Cell Height	Specify the column height. Note: When 0 is specified, the character size automatically adjusts the column height.

10.14.3 <Quantitative Results Properties> - [File] Tab

Refer to "10.8.3 <System Configuration Properties> - [File] Tab" on page 409





10.15 <Group Results Properties> Window

The <Group Results Properties> window is used to set the data to be printed within the group results item. To display this window, draw a group results item or double-click on an existing group results item.

10.15.1 <Group Results Properties> - [General] Tab

Refer to "10.12.1 <Peak Table Properties> - [General] Tab" on page 429

The screenshot shows the 'Group Results Properties' dialog box with the 'General' tab selected. The dialog has three tabs: 'General', 'Format', and 'File'. The 'General' tab contains the following settings:

- Channel:** Radio buttons for 'Channel 1 (4)', 'Channel 2', and 'Channel 3'. 'Channel 1 (4)' is selected.
- Position:** Input fields for 'Left' (35.2 mm) and 'Top' (37.8 mm).
- Title:** A checked 'Enable' checkbox, a 'Center' dropdown menu, and a 'Default' button. The title text field contains 'Group Results'.
- Size:** Input fields for 'Width' (140.3 mm) and 'Height' (59 mm).
- Font:** Fields for 'Name' (Times New Roman), 'Size' (10), and 'Style' (Normal), along with a 'Set' button.
- Color:** A 'Back Ground' dropdown menu, a 'No' button, and a 'Set' button.

At the bottom of the dialog are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.



10.15.2 <Group Results Properties> - [Format] Tab

On the [Format] tab page, specify the items to be printed in the group results table.

Parameter	Description
Hide Items	Items listed in [Hide Items] are not currently displayed.
Display Items	Items listed in [Display Items] are currently displayed. Select an item and specify the display format with [Format].
[Add] button	Select an item from [Hide Items] and press [Add] to move the item to [Display Items].
[Delete] button	Select an item from [Display Items] and press [Delete] to move the item to [Hide Items].
[Up] button	The item which has been selected moves up in the [Display Items].
[Down] button	The item which has been selected moves down in the [Display Items].
Column Index	Specify the column name indicated on the column index row.
Position	Select the position of the column index row from the list.
Ref. String	Specify the column width by the number of characters when 0 is entered in [Width].
Width	Specify the column width. Note: When 0 is specified, [Ref. String] determines the column width.
Format	Pressing [format] button displays <Format> Window.



Parameter	Description																																																																																																												
Display Grid Display Column Index	Specifies whether the grid and column names of the compound table are printed. ● Mark both [Grid] and [Column Index] with a check. <table><tr><th colspan="6">Group Results - Channel 1</th></tr><tr><th>Group#</th><th>Name</th><th>Conc</th><th>Unit</th><th>Area</th><th>Height</th></tr><tr><td>1</td><td>Group A</td><td>34.662</td><td>ppm</td><td>17396</td><td>13965</td></tr><tr><td>2</td><td>Group B</td><td>33.851</td><td>ppm</td><td>17051</td><td>12389</td></tr><tr><td colspan="2">Total</td><td></td><td></td><td>34447</td><td>26354</td></tr></table> ● Mark only [Grid] with a check. <table><tr><th colspan="6">Group Results - Channel 1</th></tr><tr><td>1</td><td>Group A</td><td>34.662</td><td>ppm</td><td>17396</td><td>13965</td></tr><tr><td>2</td><td>Group B</td><td>33.851</td><td>ppm</td><td>17051</td><td>12389</td></tr><tr><td colspan="2">Total</td><td></td><td></td><td>34447</td><td>26354</td></tr></table> ● Mark only [Column Index] with a check. <table><tr><th colspan="6">Group Results - Channel 1</th></tr><tr><th>Group#</th><th>Name</th><th>Conc</th><th>Unit</th><th>Area</th><th>Height</th></tr><tr><td>1</td><td>Group A</td><td>34.662</td><td>ppm</td><td>17396</td><td>13965</td></tr><tr><td>2</td><td>Group B</td><td>33.851</td><td>ppm</td><td>17051</td><td>12389</td></tr><tr><td colspan="2">Total</td><td></td><td></td><td>34447</td><td>26354</td></tr></table> ● Remove the checks from both [Grid] and [Column Index]. <table><tr><th colspan="6">Group Results - Channel 1</th></tr><tr><td>1</td><td>Group A</td><td>34.662</td><td>ppm</td><td>17396</td><td>13965</td></tr><tr><td>2</td><td>Group B</td><td>33.851</td><td>ppm</td><td>17051</td><td>12389</td></tr><tr><td colspan="2">Total</td><td></td><td></td><td>34447</td><td>26354</td></tr></table>	Group Results - Channel 1						Group#	Name	Conc	Unit	Area	Height	1	Group A	34.662	ppm	17396	13965	2	Group B	33.851	ppm	17051	12389	Total				34447	26354	Group Results - Channel 1						1	Group A	34.662	ppm	17396	13965	2	Group B	33.851	ppm	17051	12389	Total				34447	26354	Group Results - Channel 1						Group#	Name	Conc	Unit	Area	Height	1	Group A	34.662	ppm	17396	13965	2	Group B	33.851	ppm	17051	12389	Total				34447	26354	Group Results - Channel 1						1	Group A	34.662	ppm	17396	13965	2	Group B	33.851	ppm	17051	12389	Total				34447	26354
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Cell Height	Specify the cell height in millimeters. If "0" is specified, the cell height will be automatically determined according to the selected font height.																																																																																																												
Total	If the check box for each item is marked with a check, the total of the item will be printed as follows:																																																																																																												
Area Total	<table><tr><th colspan="8">Group Results - Channel 1</th></tr><tr><th>Group#</th><th>Name</th><th>Type</th><th>ISTD#</th><th>Conc.</th><th>Unit</th><th>Area</th><th>Height</th></tr><tr><td>1</td><td>A</td><td>Target</td><td>1</td><td>201.946</td><td>ppm</td><td>17396</td><td>13965</td></tr><tr><td>2</td><td>B</td><td>Target</td><td>1</td><td>202.073</td><td>ppm</td><td>17051</td><td>12389</td></tr><tr><td colspan="6">Total</td><td>34447</td><td>26354</td></tr></table>	Group Results - Channel 1								Group#	Name	Type	ISTD#	Conc.	Unit	Area	Height	1	A	Target	1	201.946	ppm	17396	13965	2	B	Target	1	202.073	ppm	17051	12389	Total						34447	26354																																																																				
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2		B	Target	1	202.073	ppm	17051	12389																																																																																																					
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10.15.3 <Group Results Properties> - [File] Tab

Refer to "10.8.3 <System Configuration Properties> - [File] Tab" on page 409





10.16 <Calibration Curve Properties> Window

The <Calibration Curve Properties> window is used to set the data to be printed within the calibration curve item. To display this window, draw a calibration curve item or double-click an existing calibration curve item.

10.16.1 <Calibration Curve Properties> - [General] Tab

Refer to "10.12.1 <Peak Table Properties> - [General] Tab" on page 429

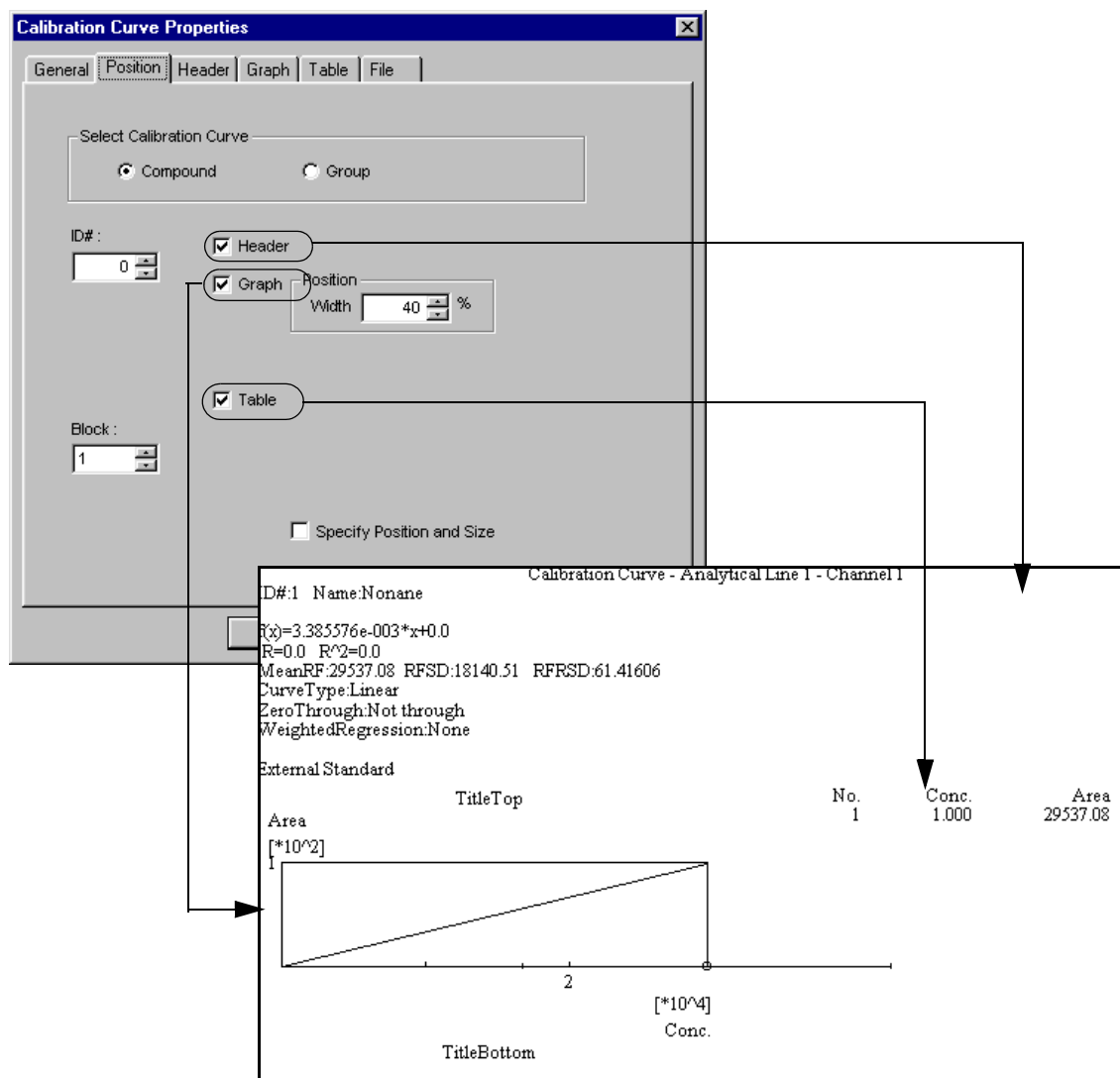
The screenshot shows the 'Calibration Curve Properties' dialog box with the 'General' tab selected. The dialog has a title bar with a close button. Below the title bar are tabs for 'General', 'Position', 'Header', 'Graph', 'Table', and 'File'. The 'General' tab contains several sections: 'Channel' with three radio buttons (Channel 1(4) is selected), 'Position' with 'Left' (33.1 mm) and 'Top' (36.5 mm) input fields, 'Size' with 'Width' (145.1 mm) and 'Height' (106.1 mm) input fields, 'Color' with a 'Back Ground' dropdown and 'No'/'Set' buttons, 'Title' with an 'Enable' checkbox (checked), a 'Center' dropdown, a 'Default' button, and a text field containing 'Calibration Curve', and 'Font' with 'Name' (Times New Roman), 'Size' (10), 'Style' (Normal), and a 'Set' button. At the bottom are 'OK', 'Cancel', 'Apply', and 'Help' buttons.

Section	Property	Value
Channel	Channel 1(4)	Selected
	Channel 2	Not Selected
	Channel 3	Not Selected
Position	Left	33.1 mm
	Top	36.5 mm
Size	Width	145.1 mm
	Height	106.1 mm
Color	Back Ground	Default
	Buttons	No, Set
Title	Enable	Checked
	Center	Center
Font	Name	Times New Roman
	Size	10
Font	Style	Normal
	Buttons	Set



10.16.2 <Calibration Curve Properties> - [Position] Tab

On the [Position] tab, set the data to be printed for the calibration curve



Parameter	Description
Select Calibration Curve	Specifies whether the calibration for the compound or that for the group is printed. ● compound ● group
ID#	Enter the ID number to be printed. If "0" is specified, all the ID numbers will be printed.
Header	Prints the header, if the check box is marked with a check. To edit the header to be printed, use [Header] tab. Refer to "10.16.3 <Calibration Curve Properties> - [Header] Tab" on page 452



Parameter	Description
Graph	Prints the calibration curve, if the check box is marked with a check. To edit the calibration curve to be printed, use the [Graph] tab page. Whether the graph is printed based on its position and size or its width is determined by whether [Specify Position and Size] is checked or not. <i>Refer to "10.16.4 <Calibration Curve Properties> - [Graph] Tab" on page 454</i>
Position	Specifies the print position (X: horizontal, Y: vertical) of the graph by the distance (in mm) from the lower left edge of the previously printed item.
Size	Specify the size of this graph (X: width, Y: height) on the report paper in millimeters.
Width	Specifies the graph size (%) that fills the report paper, by the graph width against the entire width of the item.
Table	Prints the table, if the check box is marked with a check. To edit the table to be printed, use [Table]. If [Specify Position and Size] is not checked, the size and position of the table is determined by the setting for the graph width. For example, if the graph width is set to 40%, the table width is 60% of the item. <i>Refer to "10.16.5 <Calibration Curve Properties> - [Table] Tab" on page 455</i>
Position	Specify the printed position of this item (X: horizontal position, Y: vertical position) relative to the left top of the report paper in millimeters. The default value is the position at which you start dragging to set the area.
Size	Specify the size of this item (X: width, Y: height) on the report paper in millimeters.

Parameter	Description
Block	Specify how many selected items are horizontally laid out when they are printed. Note: Make sure that (the item width x the number of blocks) falls within the print paper width. Example: If [Block] is set to 2, the following report will be printed out. Calibration Curve - Analytical Line 1 - Channel 1 ID#1 Name:Nonane $f(x)=3.385576e-003*x+0.0$ $R=0.0 \quad R^2=0.0$ MeanRF:29537.08 RFRSD:18140.51 RFRSD:61.41606 CurveType:Linear ZeroThrough:Not through WeightedRegression:None External Standard TitleTop Area [*10²] Calibration Curve - Analytical Line 1 - Channel 1 ID#1 Name:Nonane $f(x)=3.385576e-003*x+0.0$ $R=0.0 \quad R^2=0.0$ MeanRF:29537.08 RFRSD:18140.51 RFRSD:61.41606 CurveType:Linear ZeroThrough:Not through WeightedRegression:None External Standard TitleTop Area [*10²] TitleBottom Calibration Curve - Analytical Line 1 - Channel 1 ID#2 Name:Decane $f(x)=3.317478e-003*x+0.0$ $R=0.0 \quad R^2=0.0$ MeanRF:30143.38 RFRSD:18508.78 RFRSD:61.40245 CurveType:Linear ZeroThrough:Not through WeightedRegression:None External Standard TitleTop Area [*10²] TitleBottom



10.16.3 <Calibration Curve Properties> - [Header] Tab

On the [Header] tab page, set the print format for the header.

On the [Header] tab page, specify the data to be printed here.

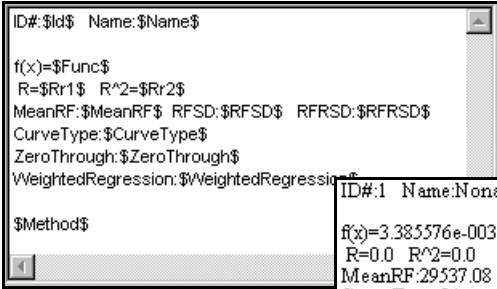
Calibration Curve - Analytical Line 1 - Channel 1

TitleTop	No.	Conc.	Area
	1	1.000	29537.08

TitleBottom

Area [*10²]

Conc. [*10⁴]

Parameter	Description
Align	Select a position of the printed header information from the list displayed by clicking on the [▼] button located to the right of the cell. ● Left ● Center ● Right
[Default] button	Resets the header information to the initial setting. The initial setting is shown below:  ID#:1 Name:Nonane f(x)=3.385576e-003*x+0.0 R=0.0 R^2=0.0 MeanRF:29537.08 RFSD:18140.51 RFRSD:61.41606 CurveType:Linear ZeroThrough:Not through WeightedRegression:None Method\$ External Standard



Parameter	Description
Header format edit box	Allows you to edit the header information. Set the format used to print the header information using character strings placed between \$.

[Reference] To enter the header information, the following command may also be used:

Command	Description
\$If\$ (<condition>) <character_string> \$EndIf\$	When <condition> is true, <character_string> is displayed. Note: The character string is compared in the format of <condition>:[<character_string> <variable>] [==!=] [<character_string> <variable>]. Since a null character (space), tab, and line feed are recognized as parts of the character string, do not use any unnecessary delimiters, etc.

[Reference] To enter the header information, the following commands may also be used:

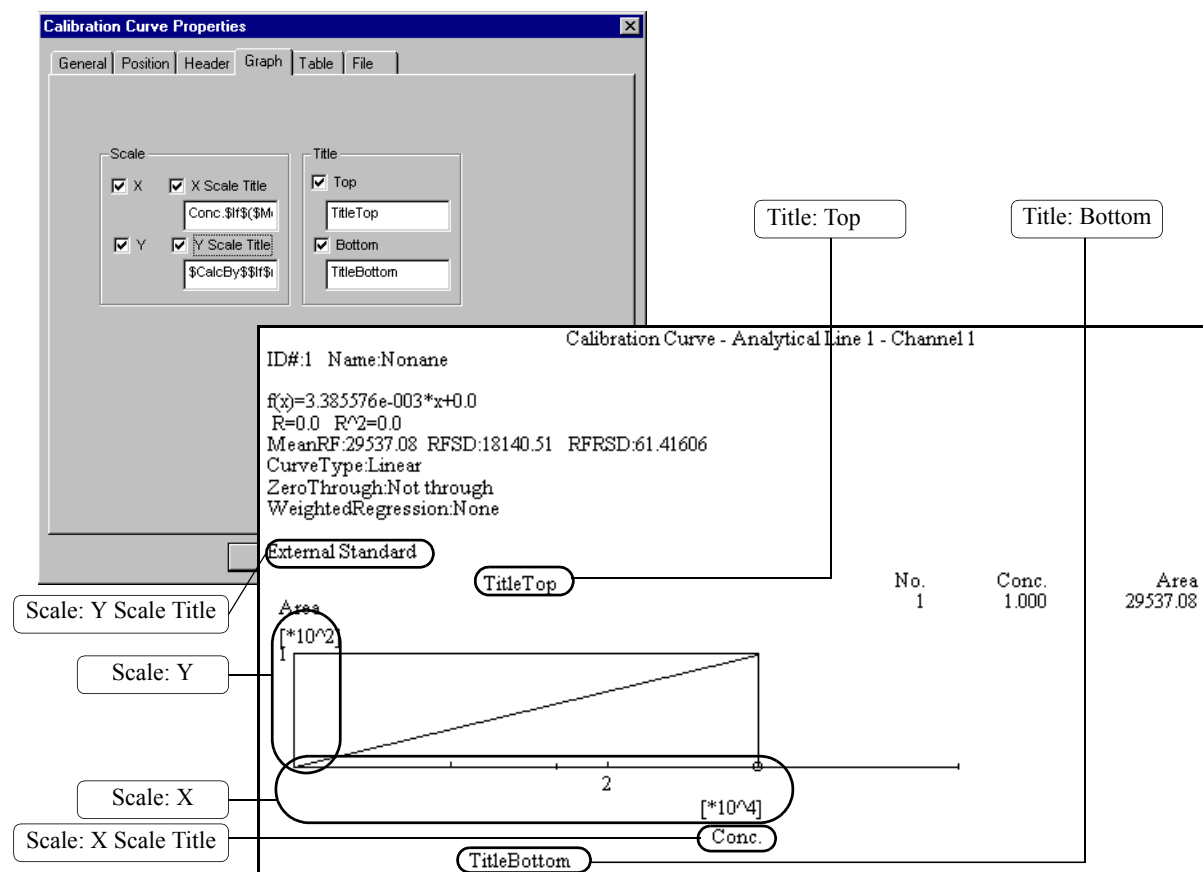
Variable	Description														
\$Id\$	ID number														
\$Name\$	Compound name														
\$F0\$	Coefficient for x ⁰ in the equation representing the calibration line.														
\$F1\$	Coefficient for x ¹ in the equation representing the calibration line.														
\$F2\$	Coefficient for x ² in the equation representing the calibration line.														
\$F3\$	Coefficient for x ³ in the equation representing the calibration line.														
\$Func\$	Equation representing the calibration curve														
\$Method#\$	Quantitative calculation method number <table border="1"> <tr> <th>Method No.</th><th>Description</th></tr> <tr> <td>1</td><td>Area percentage method</td></tr> <tr> <td>2</td><td>Modified area percentage method</td></tr> <tr> <td>3</td><td>Internal standard method</td></tr> <tr> <td>4</td><td>External standard method</td></tr> <tr> <td>5</td><td>Modified percentage method with scale factor</td></tr> <tr> <td>6</td><td>Standard addition method</td></tr> </table>	Method No.	Description	1	Area percentage method	2	Modified area percentage method	3	Internal standard method	4	External standard method	5	Modified percentage method with scale factor	6	Standard addition method
Method No.	Description														
1	Area percentage method														
2	Modified area percentage method														
3	Internal standard method														
4	External standard method														
5	Modified percentage method with scale factor														
6	Standard addition method														
\$Method\$	Quantitative calculation method name Value: area percentage method; modified area percentage method; internal standard method; external standard method; modified percentage method with scale factor; or standard addition method														
\$Rr1\$	R ² (contribution factor)														
\$Rr2\$	R (correlation coefficient)														
\$CalcBy\$	Data used Value: Area or height														
\$MeanRF\$	Average RF (average response factor)														
\$RFSD\$	RF standard deviation (standard deviation of response factor)														



Variable	Description
\$RFRSD\$	RF relative standard deviation (relative standard deviation of response factor)
\$CurveType\$	Calibration curve type Value: Line; point-to-point; quadratic; cubic; mean RF; exponential curve; or manual coefficient input
\$ZeroThrough\$	Passing through the zero point Value: Yes or No
\$WeightRegression\$	Weighting Value: No weighting, 1/C^2, 1/C, 1/A^2, or 1/A

10.16.4 <Calibration Curve Properties> - [Graph] Tab

On the [Graph] tab page, specify the scale and title for the graph.



Parameter	Description
Scale	Specifies the types and names of the axes printed on the graph.



Parameter	Description
X	To print the graph scale for each axis, place a check mark in the check box.
Y	
X Axis Title	To print the name of each axis, place a check mark in the check box and enter an axis name.
Y Axis Title	
Title	Specifies whether the title is printed at the top and bottom of the calibration curve graph.
Top	To print the title at the top and bottom, place a check mark in the check boxes and enter title names.
Bottom	

10.16.5 <Calibration Curve Properties> - [Table] Tab

On the [Table] tab page, specify the print data for the calibration curve.

Calibration Curve Properties

General Position Header Graph **Table** File

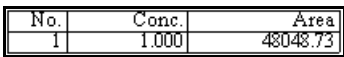
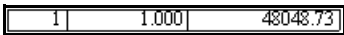
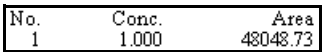
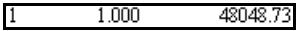
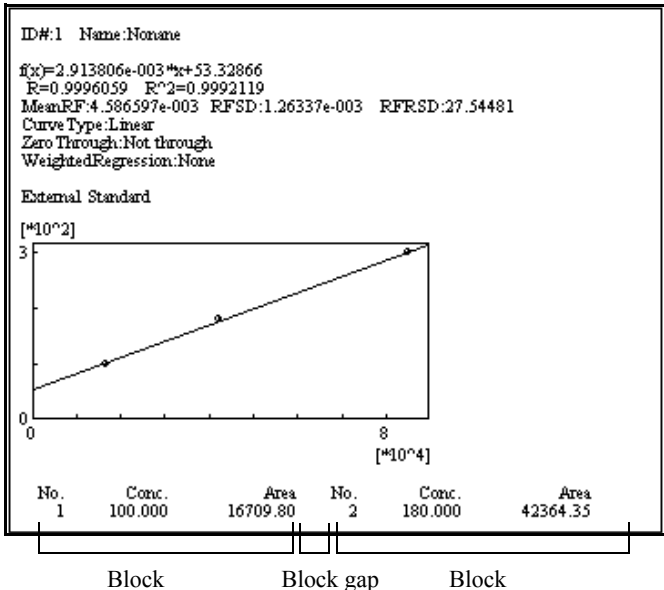
☐ Grid Cell Height: 0 mm Block: 2 BlockGap: 2 mm

☒ Col. Index

Enable	Position	Width	Align	Index	Format
No. ☒	1	10	Right	No.	%d
Conc. ☒	2	20	Right	Conc.	%.3lf
AorH ave. ☒	3	25	Right	\$CalcBy\$	%.2lf

OK Cancel Apply Help



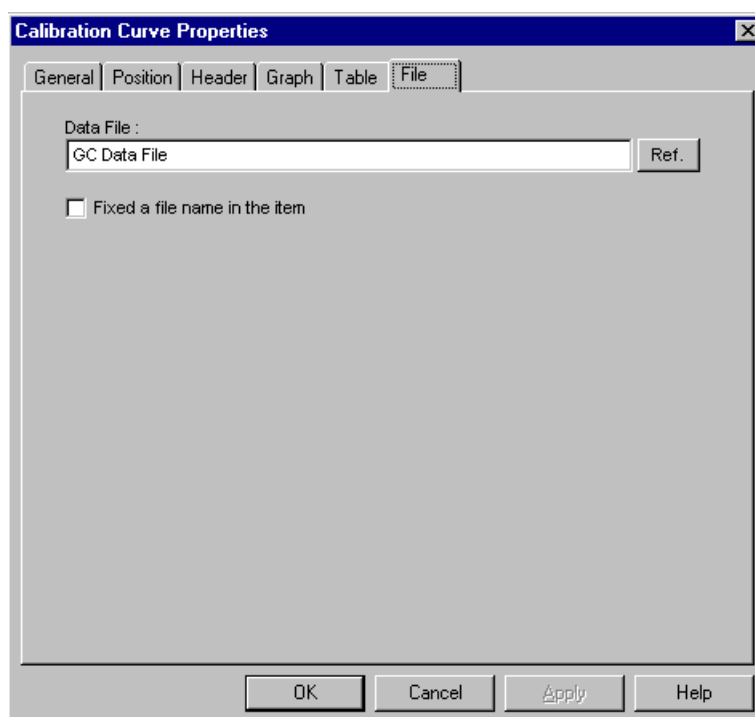
Parameter	Description
Style	Specifies whether the grid and column names of the compound table are printed.
Grid	● Mark both [Grid] and [Column Index] with a check. 
Column Index	● Mark only [Grid] with a check. ● Mark only [Column Index] with a check. ● Remove the checks from both [Grid] and [Column Index].   
Cell Height	Specify the cell height in millimeters. If "0" is specified, the cell height will be automatically determined according to the selected font height.
Block	To print multiple blocks, specify the gap between blocks.
Block Gap	Example: If Block is set to 2 and Block Gap to 20, the following report will be printed out:  The report preview shows a graph titled 'ID#:1 Name:Noname' with a linear regression equation $f(x)=2.913806e-003*x+53.32866$, $R=0.9996059$, $R^2=0.9992119$, $MeanRF:4.586597e-003$, $R^2SD:1.26337e-003$, $RFRSD:27.54481$, $CurveType:Linear$, $ZeroThrough:Not through$, and $WeightedRegression:None$. Below the graph is a table with two blocks of data, separated by a gap. The first block contains data for No. 1, Conc. 100.000, and Area 16709.80. The second block contains data for No. 2, Conc. 180.000, and Area 42364.35. The labels 'Block', 'Block gap', and 'Block' are placed under the respective sections of the report.
Enable	Prints out the item for which the check box is marked with a check.
Position	Specify the order of displayed items by clicking on the [▲] or [▼] button, or by directly entering numbers.
Width	Specify the number of characters for the item by clicking on the [▲] or [▼] button, or by directly entering a value.
Align	Select a display position of the item from the list displayed by clicking on the [▼] button located to the right of the cell. ● Left ● Center ● Right
Index	To change the print settings for the displayed item, enter an arbitrary character string. An item name is displayed as the default value.



Parameter	Description
[Format] button	Displays the <Format> window, which allows you to set the format used to display the item. <i>Refer to "10.24 <Format> Window" on page 486</i>

10.16.6 <Calibration Curve Properties> - [File] Tab

Refer to "10.8.3 <System Configuration Properties> - [File] Tab" on page 409





10.17 <Status Information Properties> Window

The <Status Information Properties> window is used to specify the data to be printed within the status information item. To display this window, draw a status information item or double-click on an existing status information item.

10.17.1 <Status Information Properties> - [General] Tab

Refer to "10.8.1 <System Configuration Properties> - [General] Tab" on page 406

The screenshot shows the 'Status Information Properties' dialog box with the 'General' tab selected. The dialog has a title bar with the text 'Status Information Properties' and a close button. Below the title bar are two tabs: 'General' and 'File'. The 'General' tab contains several groups of controls:

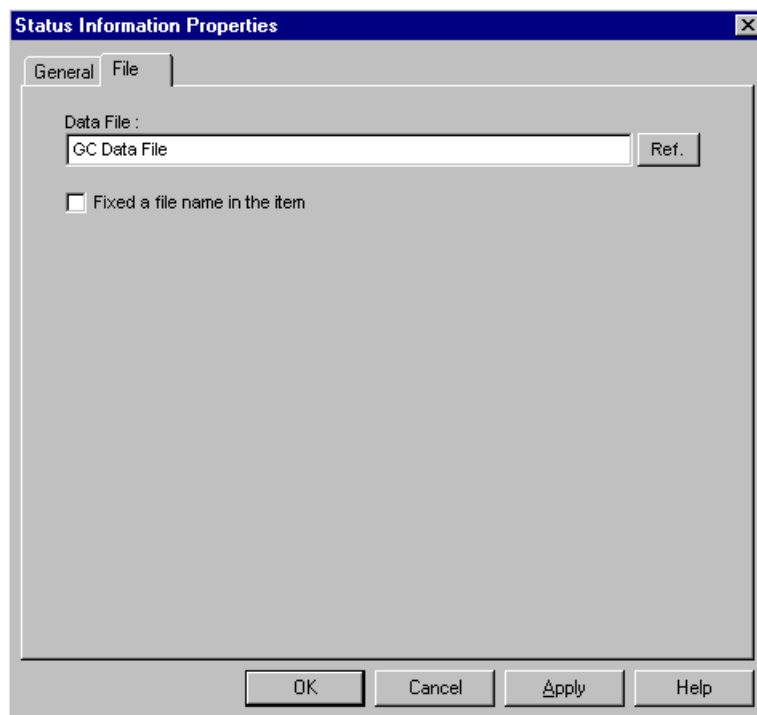
- Position:** Two input fields, 'Left' and 'Top', both with 'mm' units. The 'Left' field contains '30.5' and the 'Top' field contains '33.1'.
- Title:** A checkbox labeled 'Enable' is checked. To its right is a dropdown menu set to 'Center' and a 'Default' button. Below these is a text field containing 'Status Information'.
- Size:** Two input fields, 'Width' and 'Height', both with 'mm' units. The 'Width' field contains '152.7' and the 'Height' field contains '70.9'.
- Font:** A section with 'Name' set to 'Times New Roman', 'Size' set to '10', and 'Style' set to 'Normal'. There is a 'Set' button to the right of the 'Size' field.
- Color:** A dropdown menu labeled 'Back Ground' with a downward arrow. To its right are 'No' and 'Set' buttons.

At the bottom of the dialog are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.



10.17.2 <Status Information Properties> - [File] Tab

Refer to "10.8.3 <System Configuration Properties> - [File] Tab" on page 409





10.18 <GC Summary(Conc.) Properties> Window

The <GC Summary(Conc.) Properties> window is used to specify the data to be printed within the summary(conc.) item. To display this window, draw a summary(conc.) item or double-click on an existing summary(conc.) item.

10.18.1 <GC Summary(Conc.) Properties> - [General] Tab

On the [General] tab page, specify the position, color, etc. of the item.

Parameter	Description
Position	Specifies the print position of the item.
Left	Enter the left margin of the item.
Top	Enter the top margin of the item.
Size	Specifies the size of the item.
Width	Enter the width of the item.
Height	Enter the height of the item.
Title	Specifies whether the title will be displayed or hidden, the position of the title if the title is displayed, and the character string for the displayed title.



Parameter	Description
Enable	To display the title, place a check mark in the box. To hide the title, remove the check mark.
Display position box	Click on the button located to the right of the cell, and then select the title position from the displayed list. ● Left ● Center ● Right
Title character string box	Enter the character string displayed as the title.
[Default] button	Resets the title setting to the default value.
Font	Displays the currently selected font name and size. If you click on the [Set] button, the window will appear, allowing you to change the font.
Color and Line	Specifies the background color and text color.
Color-specified item box	Click on the button located to the right of the cell, and then select, from the displayed list, the item for which you want to specify a color.
Color box	Displays the currently selected color. If you click on this box, [No] will become active, disabling the use of the selected color.
Line Type	Specifies the line type, when you select [Graph-Chromatogram#] for color-specified item box.
Line Width	Specifies the line width, when you select [Graph-Chromatogram#] for color-specified item box.
Max Chromato Line	Specifies the number of chromato, when you select [Graph-Chromatogram#] for color-specified item box
[Set] button	Click on this button after you have selected the item for which you want to specify a color. The <Color> window will appear allowing you to select the color.



10.18.2 <GC Summary(Conc.) Properties> - [View] Tab

Parameter	Description
Display Chromatogram	Specify whether to display chromatograms.
Display Table	Specify whether to display tables.
Display Data File Name with Full Path	Indicates the data file name displayed on the title column in the full path.
Arrangement	Designate the display ratio between the chromatogram and table.
Block	Specifies how many item frames are horizontally positioned upon printing. Applicable only to chromatograms. Chromatograms are evenly divided and displayed (printed) in the section where the item is pasted. Note: The item width multiplied by the number of blocks must be accommodated within the width of the printing paper.
Block Gap	Specify the gap between blocks.



Parameter	Description
Item	Select items to be printed. Note: Average: $\bar{X} = \frac{\sum x_i}{n}$ %RSD: $RSD = \frac{sd \times 100}{\bar{X}}$ Standard Deviation: $sd = \sqrt{\frac{\sum x_i^2 - \frac{(\sum x_i)^2}{n}}{n-1}}$ x: Sample value i: Sample number n: Total of sample

10.18.3 <GC Summary(Conc.) Properties> - [Graph General] Tab

Parameter	Description
Scale	Specify the type and titles of the axis printed on the graph.
Title	Specify whether to print the title on the graph.
Base line	Select whether to display the baseline.
Peak Detention Mark	Select whether to display the peak detection mark.



10.18.4 <GC Summary(Conc.) Properties> - [Graph Range] Tab

GC Summary(Conc.) Properties

General View Graph General Graph Range Peak Top Comment Table File

Type

Graph Direction : Landscape ☒ Line Name Index

Overlap : Overlap Shift : X 100 % Y 100 %

X Scale (Time)

☒ Auto ☐ User Defined

0 - 60 min

Left Y Scale (Intensity)

Autoscale : Autoscale to Largest Peak

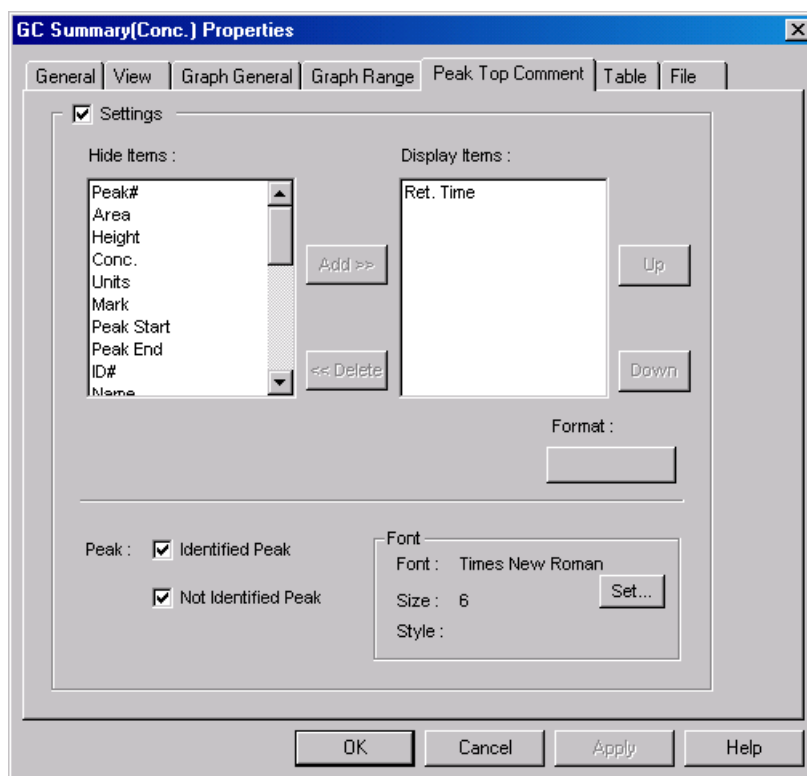
0 - 1000000 uV

OK Cancel Apply Help

Parameter	Description
Graph Direction	Select the direction of drawing the graph from [Portrait] and [Landscape].
Type	Select the display style. Overlap: Multiple chromatograms are superimposed in a single graph. Separate: The graph is created for each chromatogram
Line Name Index	Select whether to display the names of lines.
X Y	Specify in what % of the entire area one graph is drawn when selecting [Overlap] for [Type]. Note: Note: Valid only when selecting [Overlap].
X Scale (Time)	Select whether the range for the chromatogram's time axis is automatically specified or user-specified. Auto:The time axis is automatically specified according to the analysis time. User Defined:Specify the value to print a specific time range of the chromatogram
Left Y Scale (Inten.)	Select whether the range for the chromatogram's left intensity axis is automatically specified or user-specified. ● User Defined:Specify the intensity range in the field box below to print a specific intensity range of the chromatogram. ● Autoscale to Largest Peak:Specifies the intensity axis according to the maximum peak. ● Autoscale to 2nd Peak:Specifies the intensity axis according to the second peak. ● Autoscale to 3rd Peak:Specifies the intensity axis according to the third peak. ● Autoscale to Intensity:Specifies the intensity axis according to the maximum intensity.



10.18.5 <GC Summary(Conc.) Properties> - [Peak Top Comment] Tab



Parameter	Description
Settings	Specify whether to indicate peak top comments
Hide Items	Items listed in [Hide Items] are not currently displayed.
Display Items	Items listed in [Display Items] are currently displayed. Select an item and specify the display format with [Format].
[Add] button	Select an item from [Hide Items] and press [Add] to move the item to [Display Items].
[Delete] button	Select an item from [Display Items] and press [Delete] to move the item to [Hide Items].
Format	Pressing [Format] button displays <Format> Window.
[Up] button	The item which has been selected moves up.
[Down] button	The item which has been selected moves down.
Font	Displays the currently selected font name and size of peak top comment. If you click on the [Set] button, the window will appear, allowing you to change the font.
Identified Peak	The peak top comment is printed on the peak not identified when checking this checkbox. To print the peak top comment on all peaks, both the identification peak and the unidentification peak are checked.
Not Identified Peak	The peak top comment is printed on the peak not identified when checking this checkbox.

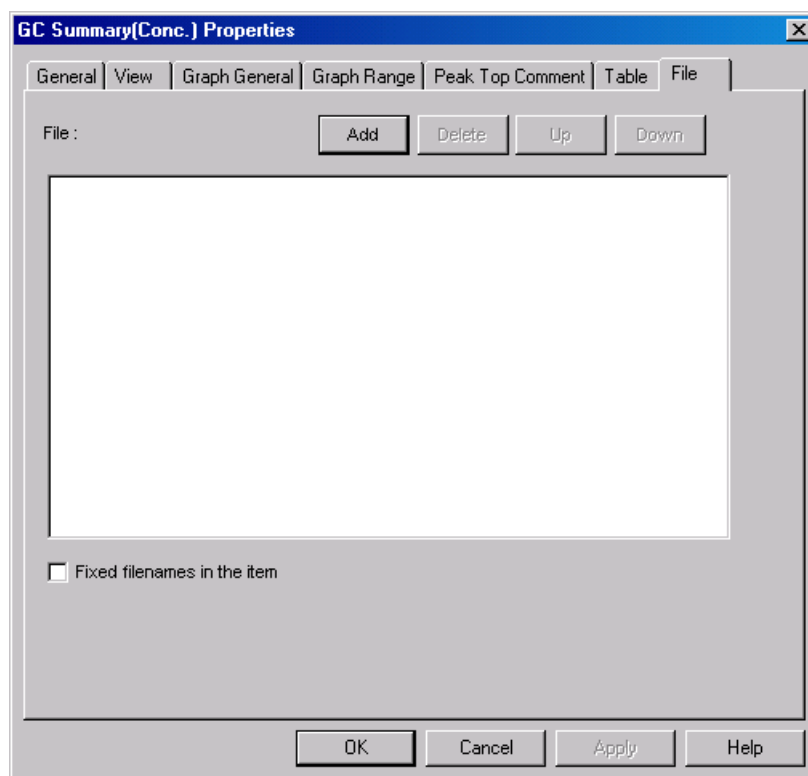


10.18.6 <GC Summary(Conc.) Properties> - [Table] Tab

Parameter	Description
Hide Items	Items listed in [Hide Items] are not currently displayed.
Display Items	Items listed in [Display Items] are currently displayed. Select an item and specify the display format with [Format].
[Add] button	Select an item from [Hide Items] and press [Add] to move the item to [Display Items].
[Delete] button	Select an item from [Display Items] and press [Delete] to move the item to [Hide Items].
[Up] button	The item which has been selected moves up in the [Display Items].
[Down] button	The item which has been selected moves down in the [Display Items].
Column Index	Specify the column name indicated on the column index row.
Position	Select the position of the column index row from the list.
Ref. String	Specify the column width by the number of characters when 0 is entered in [Width].
Width	Specify the column width. Note: When 0 is specified, [Ref. String] determines the column width.
Format	Pressing [format] button displays <Format> Window.
Display Grid	Specify whether to print grids on the table.
Display Column Index	Specify whether to print the column index.
Cell Height	Specify the column height. Note: When 0 is specified, the character size automatically adjusts the column height.
Direction	Specify the direction where table is drawn.



10.18.7 <GC Summary(Conc.) Properties> - [File] Tab



Parameter	Description
[Add] button	Specifies data files to be printed in the item section. The file can be selected from <Open> after clicking the [Add] button.
[Delete] button	The file which has been selected delete in the [File] list.
[Up] button	The file which has been selected moves up in the [File] list.
[Down] button	The file which has been selected moves down in the [File] list.
Fixed a file name in the item	Check to fix the data file name to be printed. The designated data file is always indicated in the item.



10.19 <GC Summary(Compound) Properties> Window

The <GC Summary(Conc.) Properties> window is used to specify the data to be printed within the summary(conc.) item. To display this window, draw a summary(conc.) item or double-click on an existing summary(conc.) item.

10.19.1 <GC Summary(Compound) Properties> - [General] Tab

On the [General] tab page, specify the position, color, etc. of the item (*.Refer to "10.18.1 <GC Summary(Conc.) Properties> - [General] Tab" on page 460*)

The screenshot shows the 'GC Summary(Compound) Properties' dialog box with the 'General' tab selected. The dialog has a title bar with a close button. Below the title bar are tabs: 'General', 'View', 'Graph General', 'Graph Range', 'Peak Top Comment', 'Table', and 'File'. The 'General' tab contains several sections: 'Position' with 'Left' (97.6 mm) and 'Top' (47.9 mm) input fields; 'Size' with 'Width' (44.7 mm) and 'Height' (38.9 mm) input fields; 'Title' with an 'Enable' checkbox, a 'Center' dropdown, a 'Default' button, and a text field containing 'Summary(Compound)'; 'Font' with 'Font' (Times New Roman), 'Size' (8), and 'Style' (empty) fields, plus a 'Set...' button; and 'Color and Line' with a 'Background' dropdown, a 'Color' button, 'Line Type' (Solid line), 'Line Width' (1 pt), and 'Max Chromato Line' (1). At the bottom are 'OK', 'Cancel', 'Apply', and 'Help' buttons.



10.19.2 <GC Summary(Compound) Properties> - [View] Tab

GC Summary(Compound) Properties

General View Graph General Graph Range Peak Top Comment Table File

☒ Display Chromatogram Each Data

☒ Display Table

☐ Display Data Filename with Full Path

Arrangement : 50 %

Block : 1

Block Gap : 5 mm

Item

- ☒ Average
- ☒ %RSD Decimal Fraction Digit : 3
- ☒ Maximum
- ☒ Minimum
- ☒ Standard Deviation

OK Cancel Apply Help

Parameter	Description
Display Chromatogram	Specify whether to display chromatograms.
Display Table	Specify whether to display tables.
Display Data File Name with Full Path	Indicates the data file name displayed on the title column in the full path.
Arrangement	Designate the display ratio between the chromatogram and table.
Block	Specifies how many item frames are horizontally positioned upon printing. Applicable only to chromatograms. Chromatograms are evenly divided and displayed (printed) in the section where the item is pasted. Note: The item width multiplied by the number of blocks must be accommodated within the width of the printing paper.
Block Gap	Specify the gap between blocks.



Parameter	Description
Item	Select items to be printed. Note: Average: $\bar{X} = \frac{\sum x_i}{n}$ %RSD: $RSD = \frac{Sd \times 100}{\bar{X}}$ Standard Deviation: $s_d = \sqrt{\frac{\sum x_i^2 - \frac{(\sum x_i)^2}{n}}{n-1}}$ x: Sample value, i: Sample number, n: Total of sample

10.19.3 <GC Summary(Compound) Properties> - [Graph General] Tab

Parameter	Description
Scale	Specify the type and titles of the axis printed on the graph.
Title	Specify whether to print the title on the graph.
Base line	Select whether to display the baseline.
Peak Detention Mark	Select whether to display the peak detection mark.

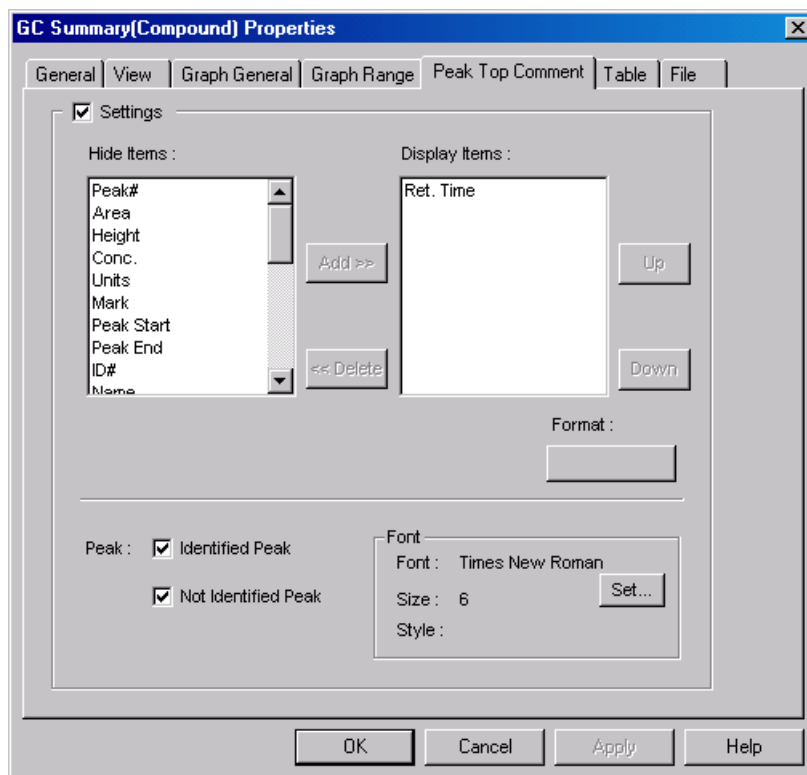


10.19.4 <GC Summary(Compound) Properties> - [Graph Range] Tab

Parameter	Description
Graph Direction	Select the direction of drawing the graph from [Portrait] and [Landscape].
Type	Select the display style. Overlap: Multiple chromatograms are superimposed in a single graph. Separate: The graph is created for each chromatogram
Line Name Index	Select whether to display the names of lines.
X Y	Specify in what % of the entire area one graph is drawn when selecting [Overlap] for [Type]. Note: Note: Valid only when selecting [Overlap].
X Scale (Time)	Select whether the range for the chromatogram's time axis is automatically specified or user-specified. Auto:The time axis is automatically specified according to the analysis time. User Defined:Specify the value to print a specific time range of the chromatogram
Left Y Scale (Inten.)	Select whether the range for the chromatogram's left intensity axis is automatically specified or user-specified. ● User Defined:Specify the intensity range in the field box below to print a specific intensity range of the chromatogram. ● Autoscale to Largest Peak:Specifies the intensity axis according to the maximum peak. ● Autoscale to 2nd Peak:Specifies the intensity axis according to the second peak. ● Autoscale to 3rd Peak:Specifies the intensity axis according to the third peak. ● Autoscale to Intensity:Specifies the intensity axis according to the maximum intensity.



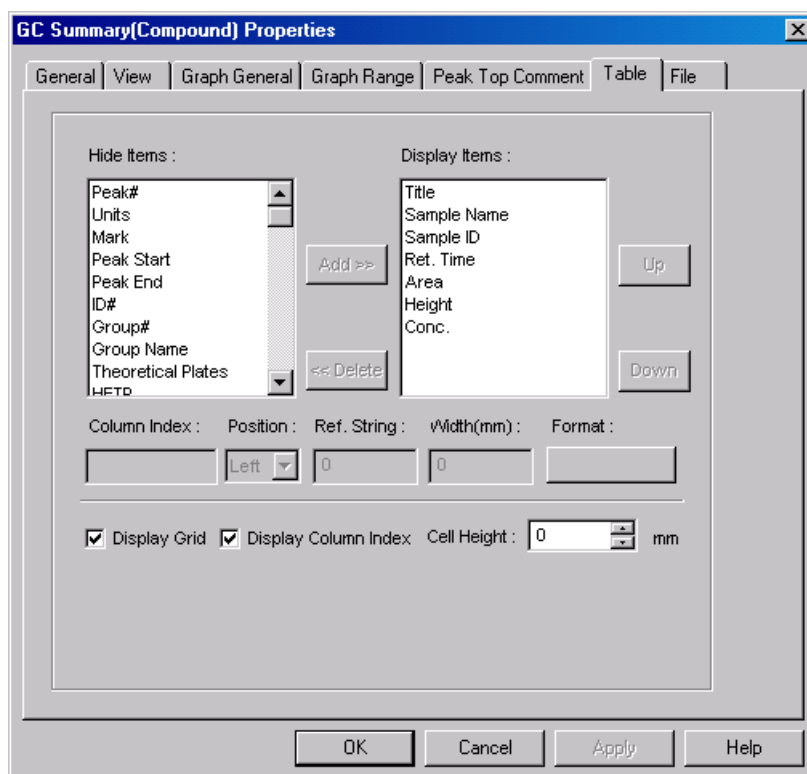
10.19.5 <GC Summary(Compound) Properties> - [Peak Top Comment] Tab



Parameter	Description
Settings	Specify whether to indicate peak top comments
Hide Items	Items listed in [Hide Items] are not currently displayed.
Display Items	Items listed in [Display Items] are currently displayed. Select an item and specify the display format with [Format].
[Add] button	Select an item from [Hide Items] and press [Add] to move the item to [Display Items].
[Delete] button	Select an item from [Display Items] and press [Delete] to move the item to [Hide Items].
Format	Pressing [Format] button displays <Format> Window.
[Up] button	The item which has been selected moves up.
[Down] button	The item which has been selected moves down.
Font	Specify the font of the peak top comment. When the font is changed, window displays by [Set] button.
Identified Peak	The peak top comment is printed on the peak not identified when checking this checkbox. To print the peak top comment on all peaks, both the identification peak and the unidentification peak are checked.
Not Identified Peak	The peak top comment is printed on the peak not identified when checking this checkbox.



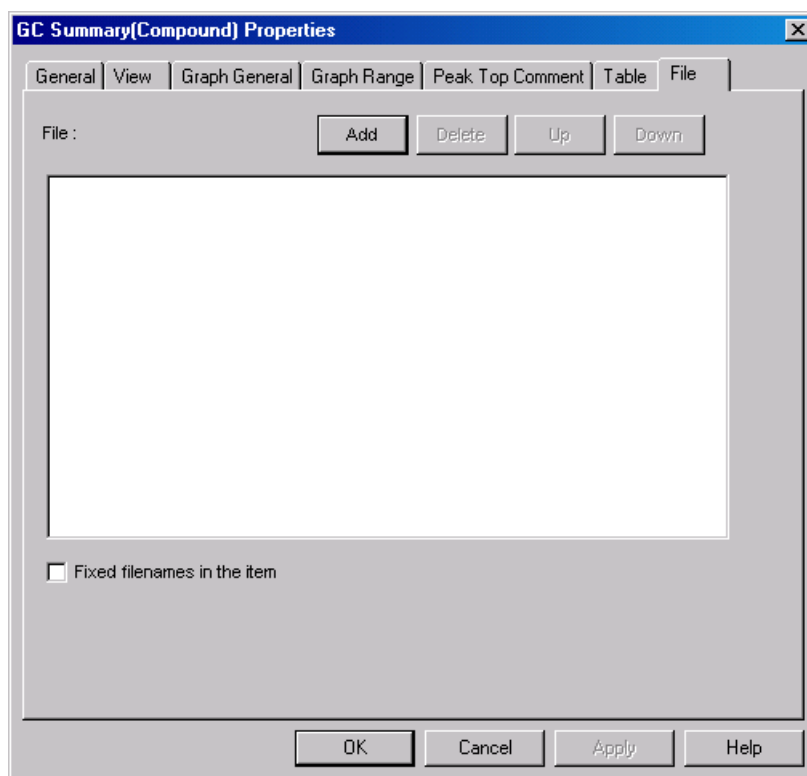
10.19.6 <GC Summary(Compound) Properties> - [Table] Tab



Parameter	Description
Hide Items	Items listed in [Hide Items] are not currently displayed.
Display Items	Items listed in [Display Items] are currently displayed. Select an item and specify the display format with [Format].
[Add] button	Select an item from [Hide Items] and press [Add] to move the item to [Display Items].
[Delete] button	Select an item from [Display Items] and press [Delete] to move the item to [Hide Items].
[Up] button	The item which has been selected moves up in the [Display Items].
[Down] button	The item which has been selected moves down in the [Display Items].
Column Index	Specify the column name indicated on the column index row.
Position	Select the position of the column index row from the list.
Ref. String	Specify the column width by the number of characters when 0 is entered in [Width].
Width	Specify the column width. Note: When 0 is specified, [Ref. String] determines the column width.
Format	Pressing [format] button displays <Format> Window.
Display Grid	Specify whether to print grids on the table.
Display Column Index	Specify whether to print the column index.
Cell Height	Specify the column height. Note: When 0 is specified, the character size automatically adjusts the column height.



10.19.7 <GC Summary(Compound) Properties> - [File] Tab



Parameter	Description
[Add] button	Specifies data files to be printed in the item section. The file can be selected from <Open> after clicking the [Add] button.
[Delete] button	The file which has been selected delete in the [File] list.
[Up] button	The file which has been selected moves up in the [File] list.
[Down] button	The file which has been selected moves down in the [File] list.
Fixed a file name in the item	Check to fix the data file name to be printed. The designated data file is always indicated in the item.



10.20 <Picture Properties> Window

The <Picture Properties> window is used to specify the data to be printed within the picture item.
To display this window, draw a picture item or double-click on an existing picture item.

10.20.1 <Picture Properties> - [General] Tab

Refer to "10.8.1 <System Configuration Properties> - [General] Tab" on page 406

The screenshot shows the 'Picture Properties' dialog box with the 'General' tab selected. The dialog has three tabs: 'General', 'Pictures', and 'Frame'. The 'General' tab contains the following settings:

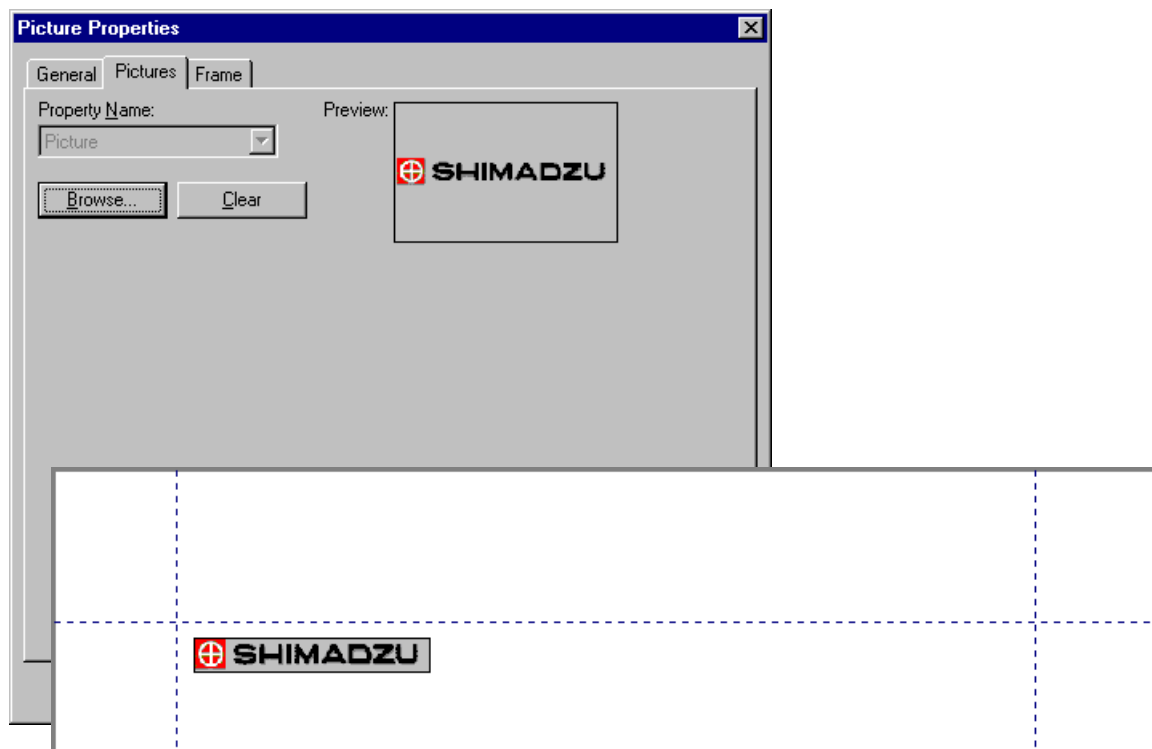
- Position:** Left: 25.7 mm, Top: 31.2 mm
- Title:** ☒ Enable, Center (dropdown), Default (button). The title text field contains 'Picture'.
- Size:** Width: 159.3 mm, Height: 45.5 mm
- Font:** Name: Times New Roman, Size: 8, Style: Normal. There is a 'Set' button.
- Color:** Back Ground (dropdown menu), No (button), Set (button).

At the bottom of the dialog are four buttons: OK, Cancel, Apply, and Help.



10.20.2 <Picture Properties> - [Picture] Tab

Select the picture to be printed within the item.

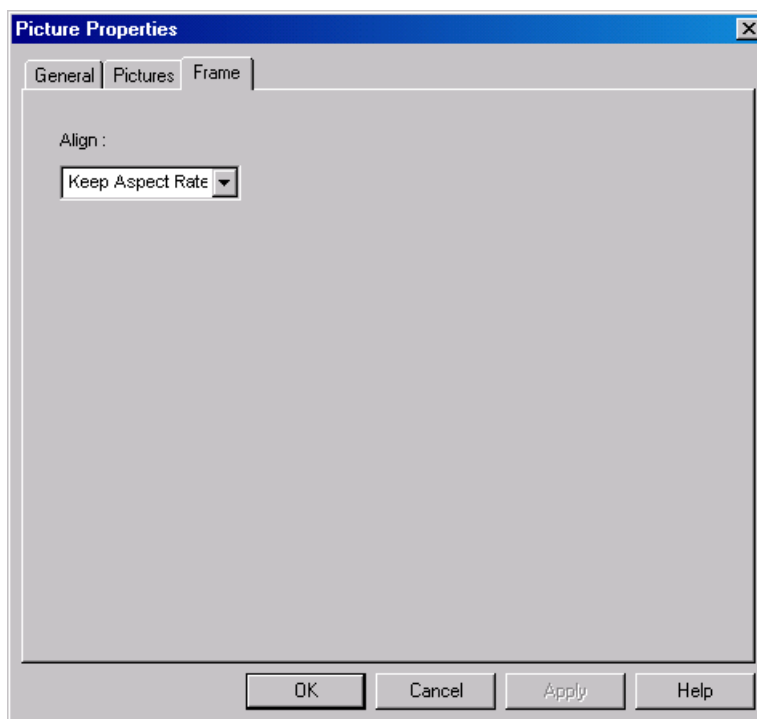


Parameter	Description
Property Name	Select a property name. (This version of the software allows you to select [Picture] only, so this parameter is fixed at [Picture].)
[Set] button	Displays the <Browse Pictures> window, which allows you to select the picture file that contains the picture data to be printed out.
[Clear] button	Returns to the state where no picture is selected.
Preview	Displays the preview of the currently selected picture.



10.20.3 <Picture Properties> - [Frame] Tab

On the [Frame] tab page, specify the mode for displaying the picture within the handle.



Parameter	Description
Align	Select a mode for displaying the picture from the list displayed by clicking on the [▼] button. ● Keep Aspect Rate: Maintains the aspect rate of the selected picture. ● Original Size: Displays the selected picture in the original size. ● Fit: Displays the selected picture to the frame.



10.21 <Text Properties> Window

The <Text Properties> window is used to specify the data to be printed within the text item.

To display this window, draw a text item or double-click on an existing text item.

10.21.1 <Text Properties> - [General] Tab

Refer to "10.8.1 <System Configuration Properties> - [General] Tab" on page 406

The screenshot shows the 'Text Properties' dialog box with the 'General' tab selected. The dialog has three tabs: 'General', 'Text', and 'File'. The 'General' tab contains the following settings:

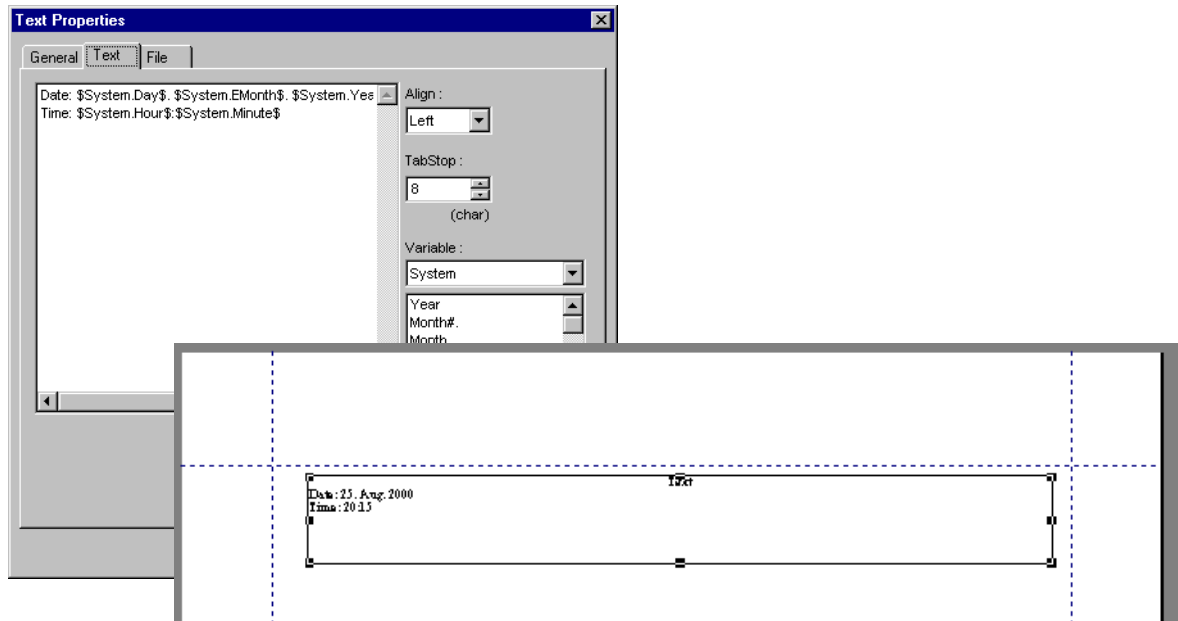
- Position:** Left: 28.2 mm, Top: 43.7 mm
- Size:** Width: 46.2 mm, Height: 16.2 mm
- Title:** ☒ Enable, Center (dropdown), Default (button), Text (input field)
- Font:** Name: Times New Roman, Size: 8, Style: Normal, Set (button)
- Color:** Back Ground (dropdown), No (button), Set (button)

At the bottom of the dialog are four buttons: OK, Cancel, Apply, and Help.



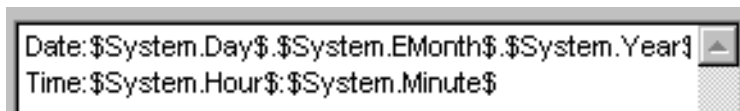
10.21.2 <Text Properties> - [Text] Tab

On the [Text] tab page, set the characters to be printed.

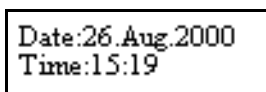


● Example using system variables

If the following text and variables are entered in the [Text Edit] frame on the [Text] tab page of the <Text Properties> window,



the following data will be entered within the text handle.



Parameter	Description
Text Edit	This area allows you to enter or edit the characters to be printed (10,240 characters maximum). A tab can be inserted using [Ctrl + I].
Align	Select the alignment of characters within the handle from the list displayed by clicking on the [▼] button. ● Left ● Center ● Right



Parameter	Description
TabStop	Specify the number of blank spaces for each tab stop. To do so, click on the [▼] or [▲] button to the right of the cell, or directly enter a value.
Variable	Allows you to add a variable to the character information. Select the type of the added variable from the list displayed by clicking on the [▼] button located to the right of the cell. ● System ● File Note: If the variable entered in the text edit box is incorrect, the value will not be displayed within the handle. Do not enter a space or line feed (Return key) within any system variable placed between \$ symbols.
(List of variables) [Insert] button	Displays the list of variables available for the system (see the table below). After selecting a variable, click on the [Insert] button. The variable will be inserted in the text edit box.

●List of system variables

Variable name	System variable	Description
Year	\$System.Year\$	Prints the calendar year at time of printing.
Month#	\$System.NMonth\$	Prints the month at time of printing (by number).
Month	\$System.EMonth\$	Prints the English abbreviation for the month at time of printing.
Day	\$System.Day\$	Prints the calendar day at time of printing.
WeekDay	\$System.WDay\$	Prints the English abbreviation for the day of week at time of printing.
Hour	\$System.Hour\$	Prints the current hour at time of printing.
Minute	\$System.Minute\$	Prints the current minute at time of printing.
Second	\$System.Second\$	Prints the current second at time of printing.

●List of file variables

Variable name	File variable	Description
FileName	\$File.FileName\$	File name
GenUser	\$File.GenUser\$	Person who created the file
ModUser	\$File.ModUser\$	Person who last modified the file
GenDate	\$File.GenDate\$	Shows the date when the file was created, using the format set in Windows.
GenTime	\$File.GenTime\$	Shows the time when the file was created, using the format set in Windows.
ModYear	\$File.ModYear\$	Shows the year when the file was last modified, using the calendar year.
ModNMonth#	\$File.ModNMonth\$	Shows the month when the file was last modified, using the number.
ModNMonth	\$File.ModEMonth\$	Shows the month when the file was last modified, using the English abbreviation.



Variable name	File variable	Description
GenDay	\$File.GenDay\$	Shows the day when the file was created, using the calendar day.
GenWeekDay	\$File.GenWDay\$	Shows the day of week when the file was created, using the English abbreviation.
GenHour	\$File.GenHour\$	Shows the hour when the file was created.
GenMinute	\$File.GenMinute\$	Shows the minute when the file was created.
GenSecond	\$File.GenSecond\$	Shows the second when the file was created.
ModDate	\$File.ModDate\$	Shows the date when the file was last modified, using the format set in Windows.
ModTime	\$File.ModTime\$	Shows the time when the file was last modified, using the format set in Windows.
GenYear	\$File.GenYear\$	Shows the year when the file was created, using the calendar year.
GenNMonth#	\$File.GenNMonth\$	Shows the month when the file was created, using the number.
GenEMonth	\$File.GenEMonth\$	Shows the month when the file was created, using the English abbreviation.
ModDay	\$File.ModDay\$	Shows the day of month when the file was last modified, using the calendar day of month.
ModWeekDay	\$File.ModWDay\$	Shows the day of week when the file was last modified, using the English abbreviation.
ModHour	\$File.ModHour\$	Shows the hour when the file was last modified.
ModMinute	\$File.ModMinute\$	Shows the minute when the file was last modified.
ModSecond	\$File.ModSecond\$	Shows the second when the file was last modified.
Version	\$File.Version\$	Shows the file version number.
Comment	\$File.Comment\$	Shows the file description.

●List of commands

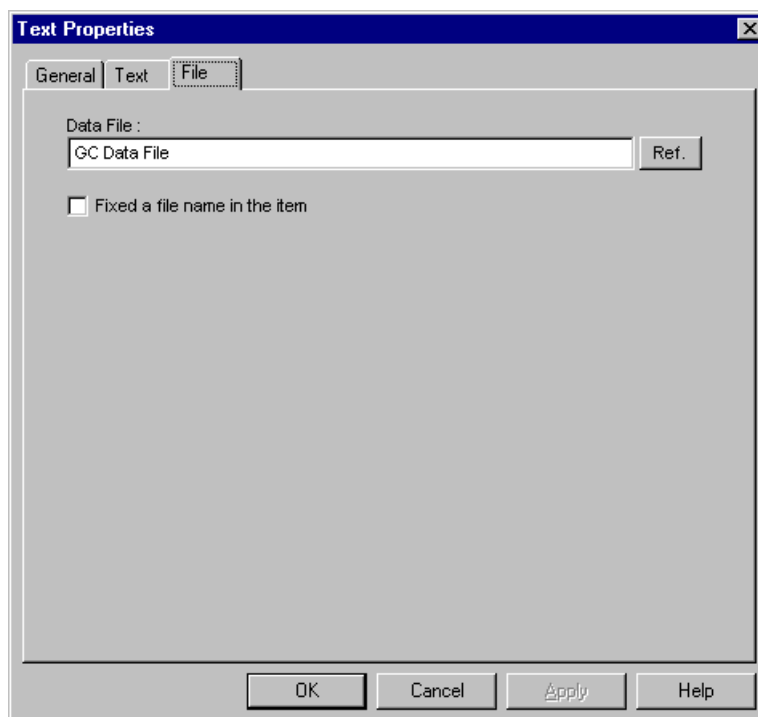
[Reference] To enter text, the following commands may also be used:

Command	Description
\$If\$ (<condition>) <character_string> \$EndIf\$	When <condition> is true, <character_string> is displayed. Note: The character string is compared in the format of <condition>:[<character_string> <variable>] [== !=] [<character_string> <variable>]. Since a null character (space), tab, and line feed are recognized as parts of the character string, do not use any unnecessary delimiters, etc.
<file_name>	Inserts the text file data indicated by the file name. The variables and commands contained in the text file are also interpreted. Note: Take care that this command does not result in an infinite loop.



10.21.3 <Text Properties> - [File] Tab

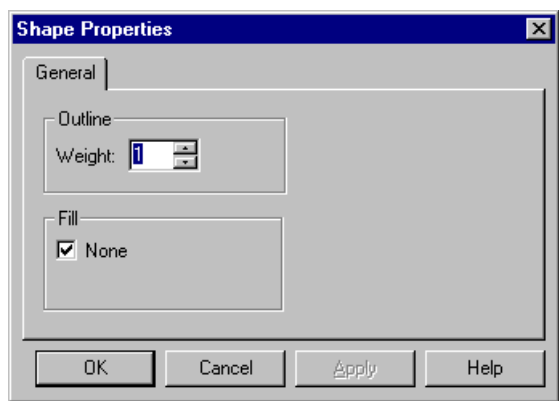
Refer to "10.8.3 <System Configuration Properties> - [File] Tab" on page 409



10.22<Shape Properties> Window

The <Shape Properties> window is used to specify the method for displaying figures.
To display this window, double-click on a figure (line, rectangle, or ellipse).

10.22.1 <Shape Properties> - [General] Tab

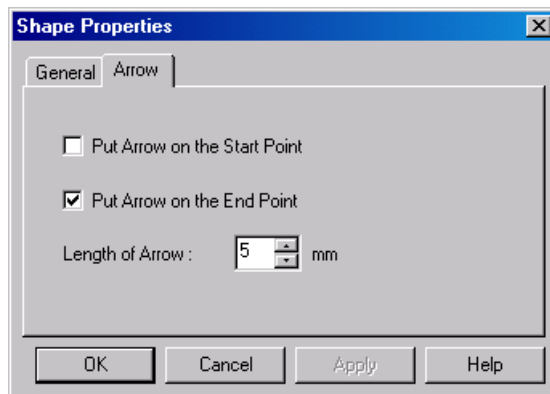


Parameter	Description
Weight	Specify the grid thickness by clicking on the [▼] or [▲] button located to the right of the cell, or by directly entering a value.
Fill	If the check mark is removed, the area within the handle will be filled in gray.



10.22.2 <Shape Properties> - [Arrow] Tab

This window is displayed in case of specifying lines and arrows only.

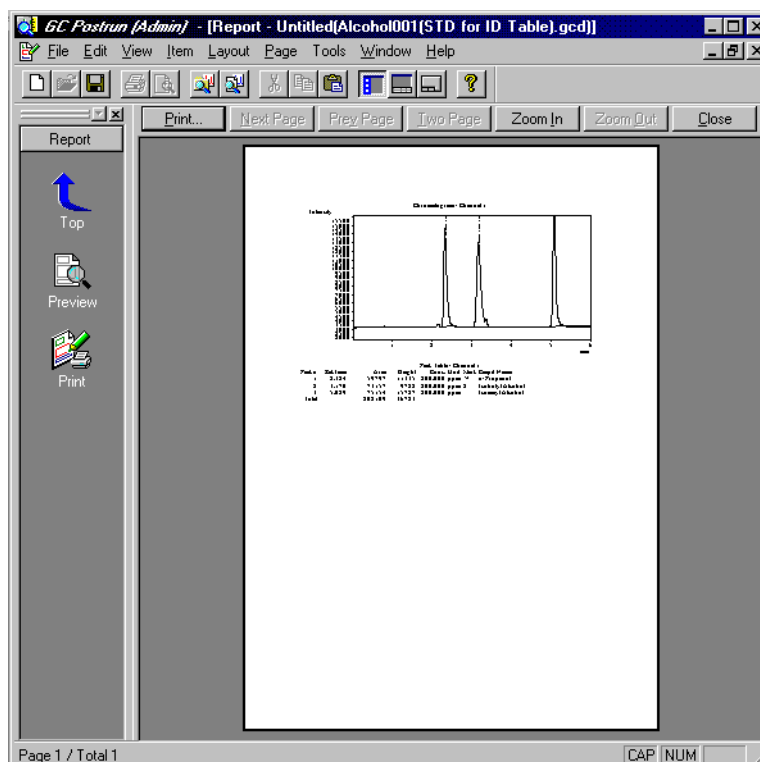


Parameter	Description
Put Arrow on the Start Point/ Put Arrow on the End Point	Select whether to attach arrows at the start/end point of lines.
Length of Arrow	Specify the size of the arrow.

10.23 <Preview> Window

The <Preview> window is used to preview the printed image.

To display this window, click on the [Preview] icon on the [Report] Assistant Bar, or select [File]-[Preview] from the main menu bar. The window can also be displayed by clicking on the [Preview] button located on the Toolbar.



Parameter	Description
[Print] button	Displays the <Print> window starting the print.
[Next Page] button	Displays the next page. If there is no next page, this button is dimmed.
[Previous Page] button	Displays the previous page. If there is no previous page, this button is dimmed.
[Two Page] button	Displays two pages on a single screen.
[Zoom In] button	Displays the zoomed-in page.
[Zoom Out] button	Displays the zoomed-out page.
[Close] button	Closes the <Preview> window and returns to the <Report> window.



10.24 <Format> Window

The <Format> window is used to set the format for the data to be displayed within the table-related item, such as the peak table item.

<Item Display>

The screenshot shows the 'Format' dialog box with the following settings:

- pre-string: (empty text box)
- post-string: (empty text box)
- value section:
 - ☒ set minimum length: 1 char
 - ☒ set decimal fraction digit: 3 digit
- align: left (dropdown menu)
- fill char: space (dropdown menu)

Parameter	Description
pre-string	Enter the characters used to prefix the data.
post-string	Enter the characters, such as a unit, used to postscript the data.
value	Sets the value-related format.
set minimum length	Activates the function for minimizing the number of characters for data, if the check box is marked with a check. Enter the minimum number of characters for the data.
set decimal fraction digit	Activates the function for setting decimal fractions for data. Enter the number of decimal fraction digits.
align	Select the data alignment within the minimum digit range from the list displayed by clicking on the [▼] button located to the right of the cell. ● Left ● Right
fill char	For data that is shorter than the minimum number of digits, select a character string used to fill the blank spaces, from the list displayed by clicking on the [▼] button. ● Blank space ● Filling with zeros

Note: For any item that cannot be set, no data can be entered, depending on the variable type to which the format is applied. For example, when the display format for an integer is being set, the settings related to the decimal fraction digits are dimmed, preventing you from entering any value.

11 <Data Explorer> Window

11.1

Overview of <Data Explorer> Window

The <Data Explorer> window is used for file management in GCsolution. It has functions similar to those of Explorer available in Microsoft Windows. This window allows you to efficiently operate (e.g.; copy or move) the files used in GCsolution.

11.1.1 Functions of <Data Explorer> Window

The <Data Explorer> window allows you to perform the following operations:

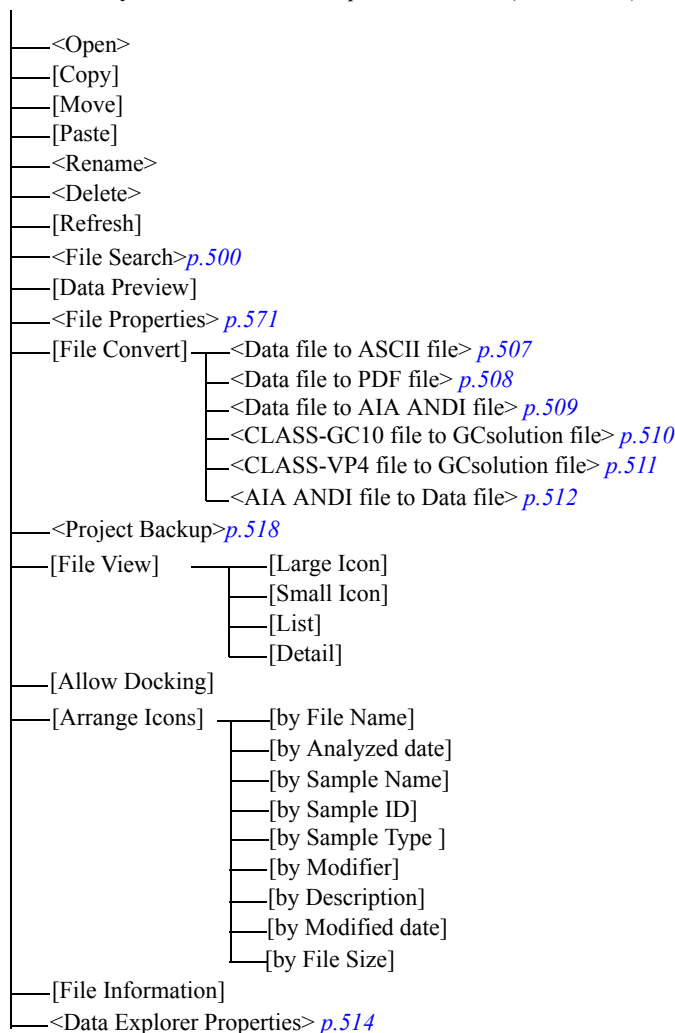
Operation	Main window used
The files used in GCsolution are displayed on a file type basis (tab view basis).	<i>Refer to "11 <Data Explorer> Window" on page 487</i>
The detailed information of the file is displayed, or sorted according to information groups and then displayed. A preview of the selected file is also displayed.	<i>Refer to "11.3.1 <Data Explorer> - Pop-up Menu" on page 494</i>
If a file on a tab page is clicked on, the appropriate window will be displayed according to the file type (e.g.; if a data file is double-clicked on, the <Data Analysis> window will be opened).	<i>Refer to "11.2.4 Double-clicking on a file in the <Data Explorer> Window" on page 491</i>
Any file can be opened arbitrarily by dragging it from the <Data Explorer> window to a different window.	<i>Refer to "11.2.5 Dragging a File Icon in the <Data Explorer> Window" on page 492</i>
CLASS-GC10 method files and data files can be loaded.	<i>Refer to "11.5.4 <Convert CLASS-GC10 file to GCsolution file> Window" on page 510</i>
Data can be output to an ASCII file or loaded to an AIA ANDI file.	<i>Refer to "11.5.1 <Convert Data file to ASCII file> Window" on page 507</i> <i>Refer to "11.5.2 <Convert Data file to PDF file>" on page 508</i> <i>Refer to "11.5.3 <Convert Data file to AIA ANDI file> Window" on page 509</i>
Data files of CLASS-VP Ver. 4 can be loaded.	<i>Refer to "11.5.5 <Convert CLASS-VP4 file to GCsolution file>" on page 511</i>



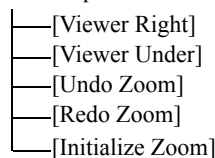
11.1.2 Menu Tree of <Data Explorer> Window

The <Data Explorer> window consists of the following windows that are used to operate files.

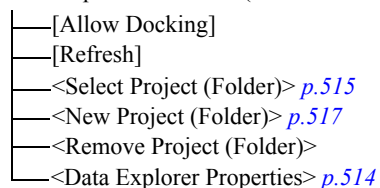
<Data Explorer> window menu opened by clicking the right button with the cursor positioned anywhere in the <Data Explorer> window (on file view)



Menu opened by clicking the right button with the cursor positioned anywhere in the <Data Explorer> window (on preview)



Menu opened by clicking the right button with the cursor positioned anywhere in the <Data Explorer> window (other than the above)





11.2 Using the <Data Explorer> Window

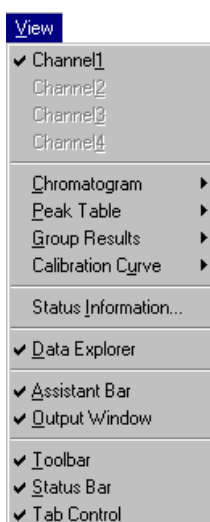
The <Data Explorer> window is used to display a file. This section describes how to display this window and gives the names of window elements.

11.2.1 Displaying the <Data Explorer> Window

Window

To display the <Data Explorer> window, perform either of the following operations:

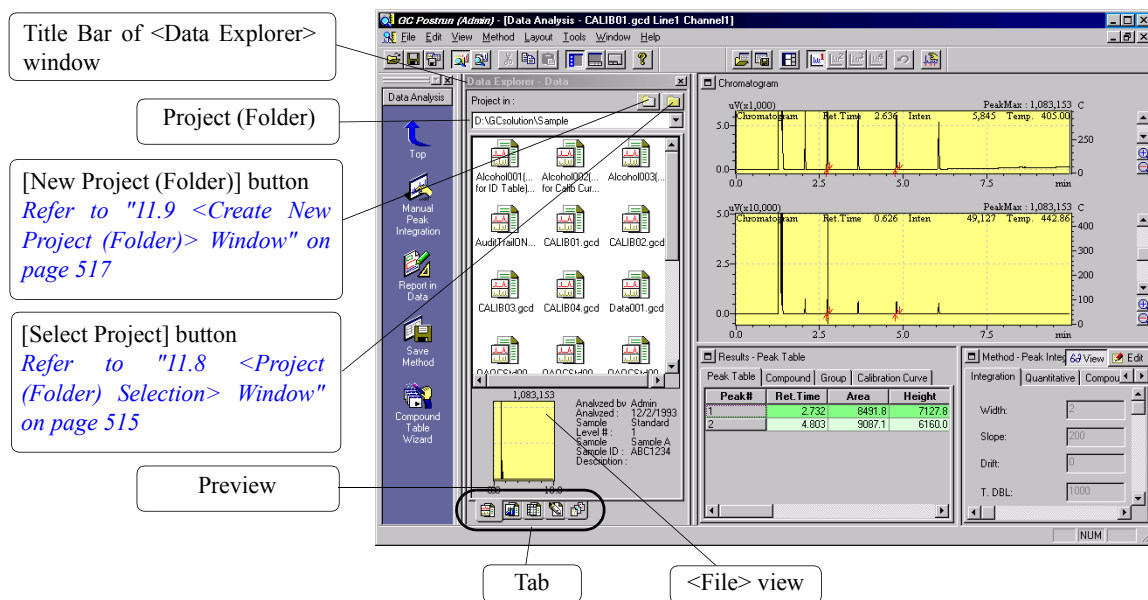
- Select the [View]-[Data Explorer] command on the <GC Real Time Analysis> or <GC Postrun> screen.



- Click on the  button located on the Toolbar on the <GC Real Time Analysis> or <GC Postrun> screen.



11.2.2 Element Names of the <Data Explorer> Window



11.2.3 Tab Types of <Data Explorer> Window

The tab for each file type is displayed at the bottom of the <Data Explorer> window. If you click on the tab, only the files having the extension corresponding to that tab type will be displayed in the <File> view.

Tab type	File type on tab view	Information displayed on preview	Extension
Data file	Data file	Chromatogram and sample information	gcd
Method file	Method file	Description	gcm
Batch file	Batch file	Description	gcb
Report file	Report file	Description	gcr
All files	All files	-	*
Extension tab	Files with the specified extension	-	Specified extension

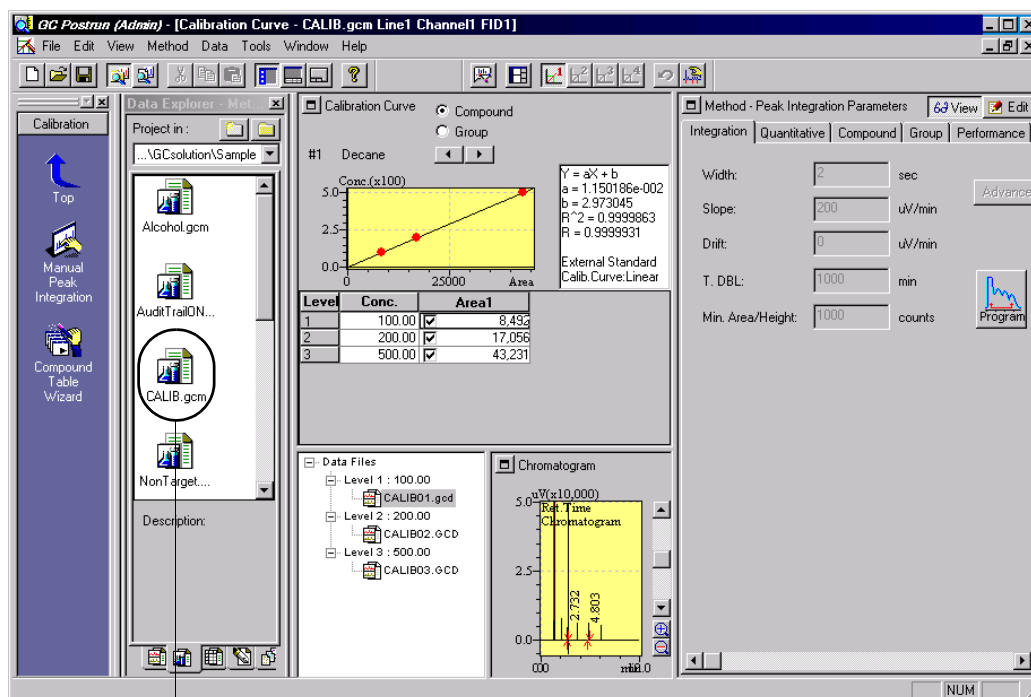
For extension tabs, refer to "11.7 <Data Explorer Properties> Window" on page 514



11.2.4 Double-clicking on a file in the <Data Explorer> Window

If you double-click on a file on a tab page, the corresponding work window will be opened, allowing you to view the contents of that file.

For example, if you click on a method file (test.gcm) in the <Data Explorer> window in the <GC Postrun> mode, the <Calibration Curve> window will be opened, allowing you to view the contents of that method file.



double-click

On the <Data Explorer> window in the <GC Real Time Analysis> screen:

- Double-clicking on a method file will open the <Data Acquisition> window, which allows you to view the contents of that file.
- Double-clicking on a batch file will open the <Batch Table> window, which allows you to view the contents of that file.
- Double-clicking on a report file will open the <Report> window, which allows you to view the contents of that file.

On the <Data Explorer> window in the <GC Postrun> mode:

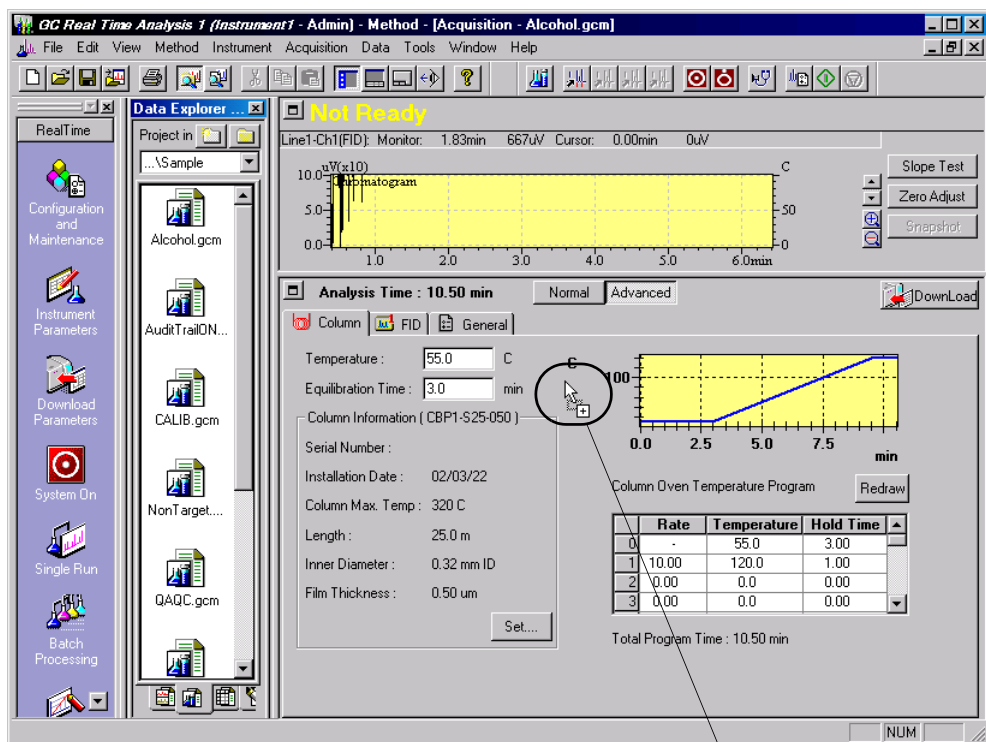
- Double-clicking on a data file will open the <Data Analysis> window, which allows you to view the contents of that file.
- Double-clicking on a method file will open the <Calibration Curve> window, which allows you to view the contents of that file.
- Double-clicking on a batch file will open the <Report> window, which allows you to view the contents of that file.
- Double-clicking on a report file will open the <Report> window, which allows you to view the contents of that file.



11.2.5 Dragging a File Icon in the <Data Explorer> Window

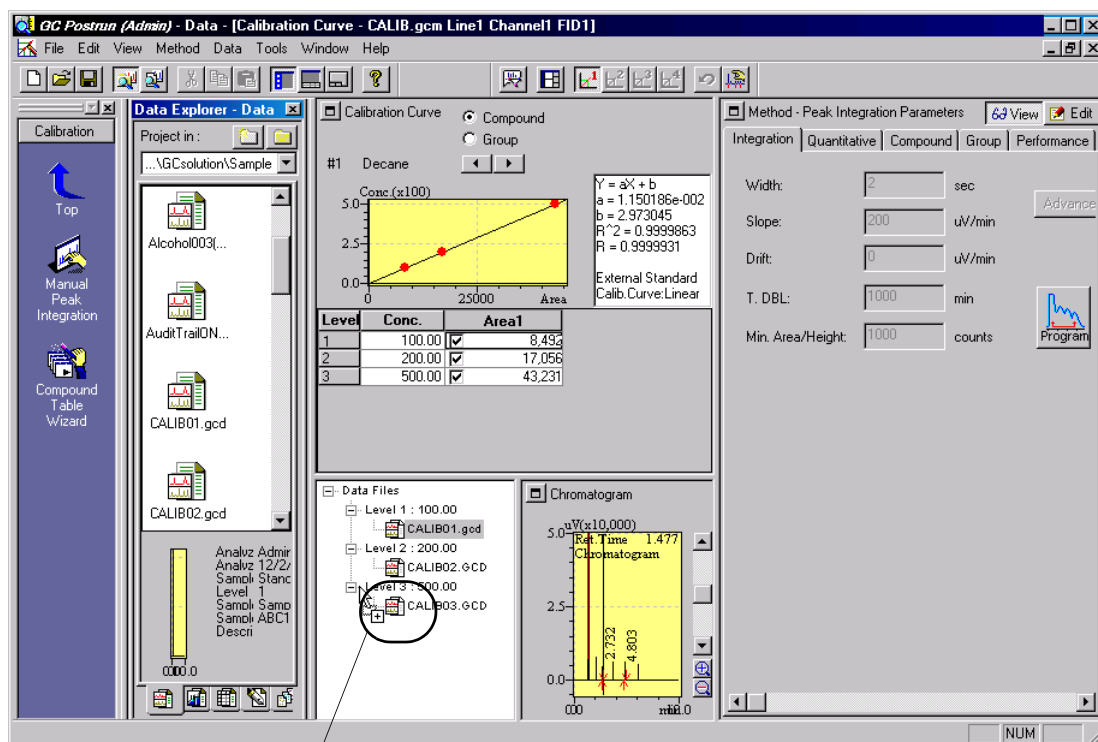
If you drag a file icon from <File> view to a desired work window, that file can be opened.

For example, if you drag a method file icon to the <Data Acquisition> window, that method file will be opened.



- Dragging a method file icon to the <Data Acquisition> window will open that file.
- Dragging a batch file icon to the <Batch Table> window will open that file.
- Dragging a report file icon to the <Report> window will open that file.
- Dragging a data file icon to the <Data Analysis> window will open that file.
- Dragging a method file icon to the <Calibration Curve> window will open that file.
- Dragging a data file icon to the data file tree view in the <Calibration Curve> window will open that file.

Reference: This screen shows an example of dragging a data file icon to the data file tree view in the <Calibration Curve> window.



The [+] mark appears when an object is dragged.



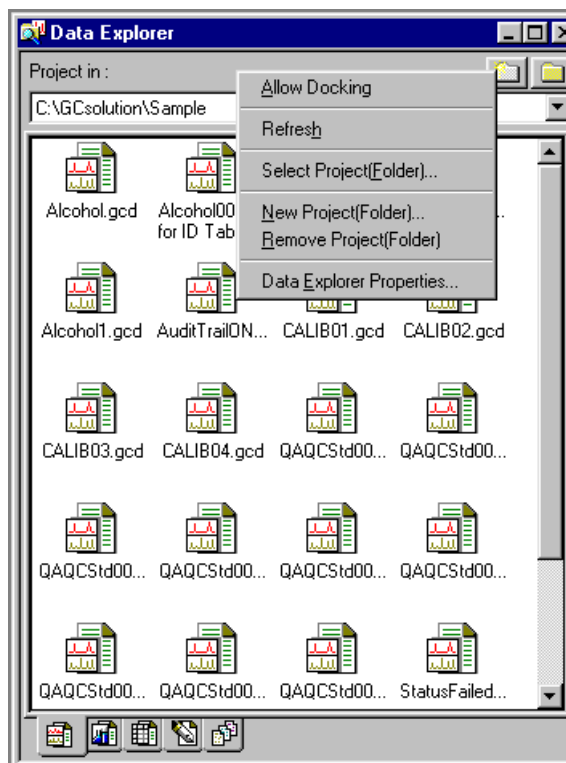
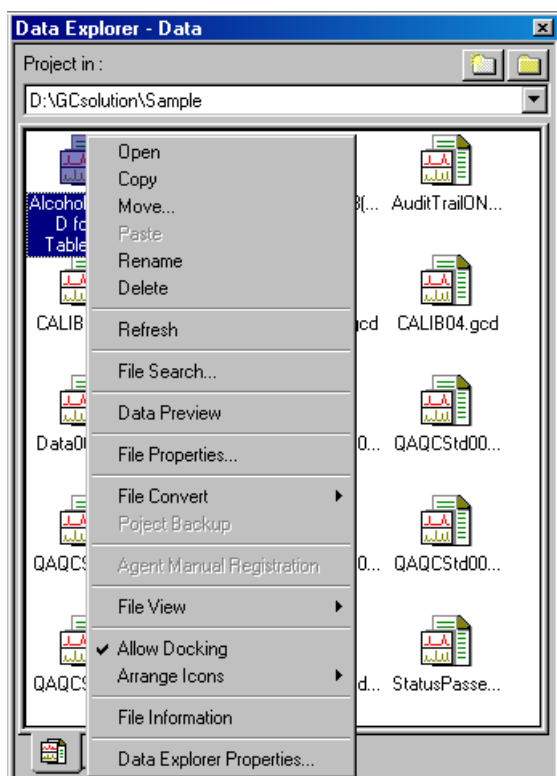
11.3 Menu Bar on <Data Explorer> Window

This section describes the pop-up menu that appears when the right mouse button is clicked with the cursor positioned anywhere on the <Data Explorer>. Different menus are displayed depending on the location clicked with the right mouse button.

11.3.1 <Data Explorer> - Pop-up Menu

The following three different pop-up menus appear depending on where on the <Data Explorer> window you click with the right mouse button:

- If the right mouse button is pressed with the cursor positioned on an icon within the <File> view:
- If the right mouse button is pressed with the cursor positioned outside the <File> view:

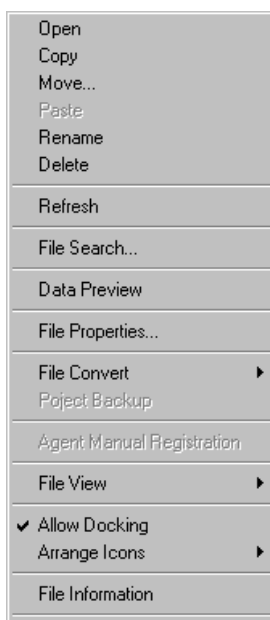


- If the right mouse button is pressed with the cursor positioned within the preview:



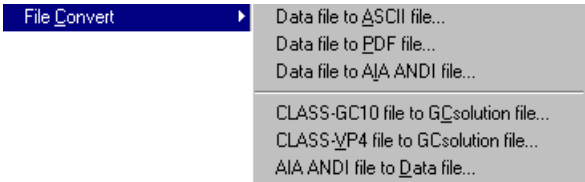
11.3.2 <Data Explorer> window - pop-up menu (1)

If any location within the <File> view is clicked on using the right mouse button, the following menu appears:

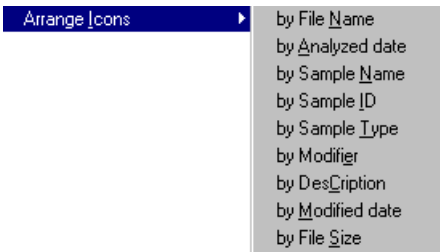


Command	Description
Open	The window corresponding to the type of specified file will appear showing the contents of the file. If the corresponding window is already displayed, a message appears prompting you to specify how to handle the currently opened file. Double-clicking the file on the <Data Explorer> window will perform the same operation.
Copy	Copies the selected file to the clipboard.
Move	Moves the selected file to the selected folder. The <File Move> window is opened. Refer to "11.6 <File Move> Window" on page 513
Paste	Pastes the data on the clipboard to the <Data Explorer> window.
Rename	Allows you to edit the name of the file selected on the <Data Explorer> window. This command is only valid when a single file is elected on the <Data Explore> window.
Delete	Deletes the file selected on the <Data Explorer> window.
Refresh	Updates the displayed data to the latest one.
File Search	Displays the <GC File Search> window. To search for an existing file, select this command. Refer to "11.4 <GC File Search> Window" on page 500
Data Preview	Toggles between displaying and hiding the preview.
File Properties	Displays the <File Properties> window. To check the update history of the opened file or to enter a command, select this command.



Command	Description
File Convert	Displays the following submenu allowing you to select a file conversion method. If the appropriate file format is selected from the submenu, the window for file conversion appears. 
[Data file to ASCII file]	Displays the <Data file to ASCII file> window. Refer to "11.5.1 <Convert Data file to ASCII file> Window" on page 507
[Data file to PDF file...]	Displays the <Data file to PDF file...> window. Refer to "11.5.2 <Convert Data file to PDF file>" on page 508
[Data file to AIA ANDI file...]	Displays the <Data file to AIA ANDI file...> window. Refer to "11.5.3 <Convert Data file to AIA ANDI file> Window" on page 509
[CLASS-GC10 file to GCsolution file...]	Displays the <CLASS-GC10 file to GCsolution file...> window. Refer to "11.5.4 <Convert CLASS-GC10 file to GCsolution file> Window" on page 510
[CLASS-VP4 file to GCsolution file...]	Displays the <CLASS-VP4 file to GCsolution file...> window. Refer to "11.5.5 <Convert CLASS-VP4 file to GCsolution file>" on page 511
[AIA ANDI file to Data file]	Displays the <AIA ANDI file to Data file> window. Refer to "11.5.6 <Convert AIA ANDI file to Data file> Window" on page 512
Project Backup	If a method file or batch file is selected, the use of the menu displayed by selecting this command allows you to copy a set of files including those referenced or specified from that file. Refer to "11.10 <Project Backup> Window" on page 518
Agent Manual Registration	The data file which has been selected is registered in the data base of Agent.
File View	Allows you to select a view type for a file on the <Data Explorer> window. 
Large Icon	Displays files as large icons.
Small Icon	Displays files as small icons.
List	Displays a list of files as small icons.
Detail	Displays a list of files as small icons together with detailed information (file names, dates of updating, dates of creation, file types, and sizes). If the [File Information] menu is checked, further detailed information on files is displayed.
Allow Docking	Toggles between docking and undocking in the <Data Explorer> window. If docking is activated, this command is checked. If docking is selected, the <Data Explorer> window is displayed as another window. If undocking is selected, it is displayed as a view.



Command	Description
Arrange Icons	Arranges the icons in the selected order. If the same submenu is selected again, the arrangement is toggled between the ascending and descending orders. 
by File Name	Arranges the icons in the alphabetical order of file names.
by Analyzed data	Arranges the icons in the order of dates when the analysis was performed.
by Sample Name	Arranges the icons in the alphabetical order of sample names.
by Sample ID	Arranges the icons in the alphabetical order of sample IDs.
by Sample Type	Arranges the icons in the alphabetical order of sample types.
by Modifier	Arranges the icons in the alphabetical order of names of users who last edited them.
by Description	Arranges the icons in the alphabetical order of comments given to the files.
by Modified date	Arranges the icons in the order of dates when the files were updated.
by File Size	Arranges the icons in the order of file sizes.
File Information	When a list of files is displayed by selecting [View] - [Detail], the following information is added to the normal detailed view information: Data file - analysis dates, sample names, sample IDs, sample types, editors, and comments Method file/batch file/report file - editors and comments Note: If an information title cell is clicked on, the information is sorted and then displayed according to its contents. To toggle between the ascending and descending orders, click on the title cell again.
Data Explorer Properties	Displays the <Data Explorer Properties> window. Refer to "11.7 <Data Explorer Properties> Window" on page 514



11.3.3 <Data Explorer> window - pop-up menu (2)

If any location on the preview is clicked on by pressing the right mouse button, the following menu appears:

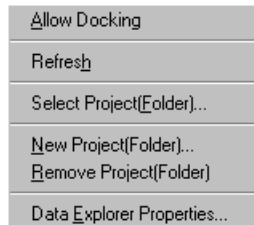


Command	Description
Viewer Right	Positions the preview at the right part of the <File> view.
Viewer Under	Positions the preview at the lower part of the <File> view.
Undo Zoom	Undoes enlarging the currently displayed chromatogram by dragging it with the mouse.
Redo Zoom	Cancels the [Undo Zoom] command. This command becomes valid when the [Undo Zoom] command is used.
Initialize Zoom	Initializes the currently displayed chromatogram that has been enlarged by dragging the mouse to the original state.



11.3.4 <Data Explorer> window - pop-up menu (3)

If you click on any location other than the <File> view and preview on the <Data Explorer> window by pressing the right mouse button, the following menu appears:



Command	Description
Allow Docking	Toggles between docking and undocking in the <Data Explorer> window. When docking is active, this command is checked. If docking is selected, the <Data Explorer> is displayed as another window. If undocking is selected, it is displayed as a view.
Refresh	Updates the displayed data to the latest one.
Select Project (Folder)	To change the project (folder) to be displayed in the <Data Explorer> window, select this command. The <Select Project> window will be displayed. Refer to "11.8 <Project (Folder) Selection> Window" on page 515
New Project (Folder)	To create a new project (folder), select this command. The <Create New Project (Folder)> window will be displayed. Refer to "11.9 <Create New Project (Folder)> Window" on page 517
Remove Project (Folder)	Removes the project (folder) that is currently referenced. When this command is selected, a confirmation window will be opened. Clicking the [OK] button will remove the project (folder). However, if any file exists in the project (folder), the project (folder) cannot be removed.
Data Explorer Properties	Displays the <Data Explorer Properties> window. Refer to "11.7 <Data Explorer Properties> Window" on page 514



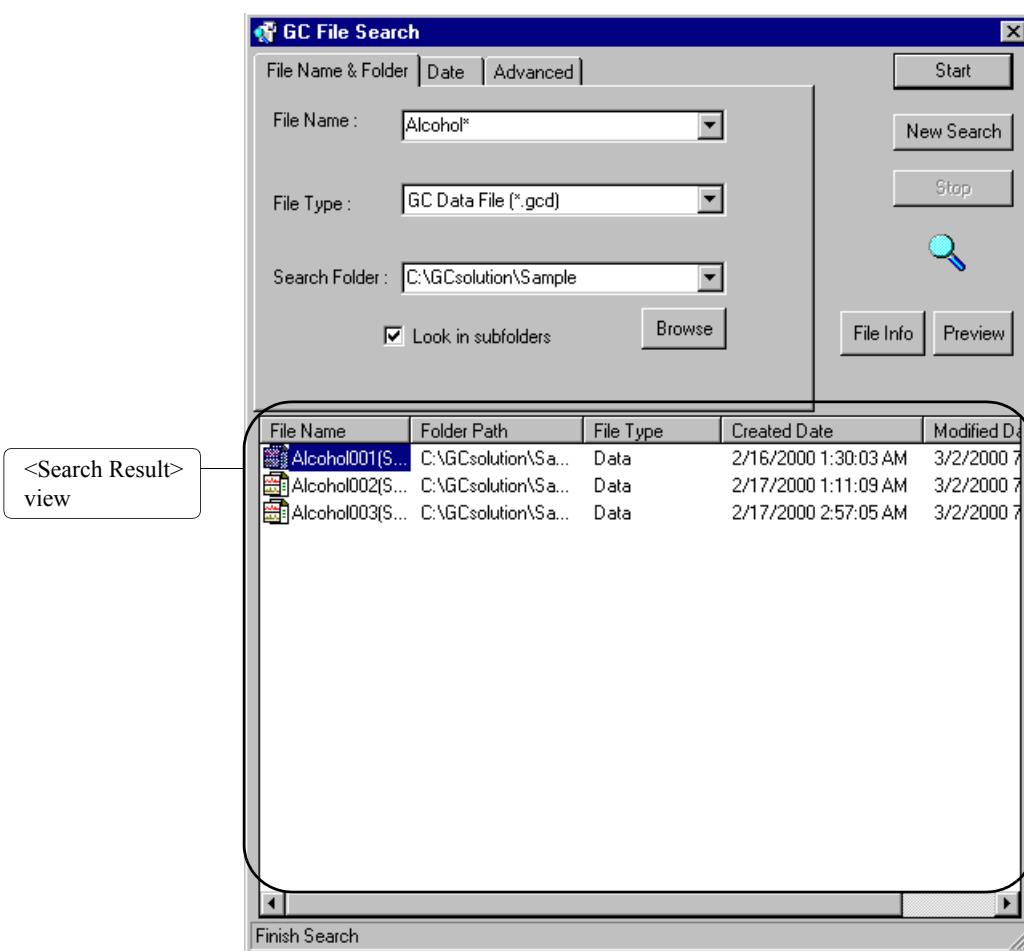
11.4 <GC File Search> Window

The <GC File Search> window allows you to search for a file by specifying various search conditions.

The search conditions can be entered on the [File Name & Folder], [Date], and [Advanced] tab pages.

After the search, the located file will be displayed below the window. If you select that file and click on the [File Info] button, the information pertaining to the file will be displayed in the <Search Result> view. If you select that file and click on the [Preview] button, the preview will be displayed.

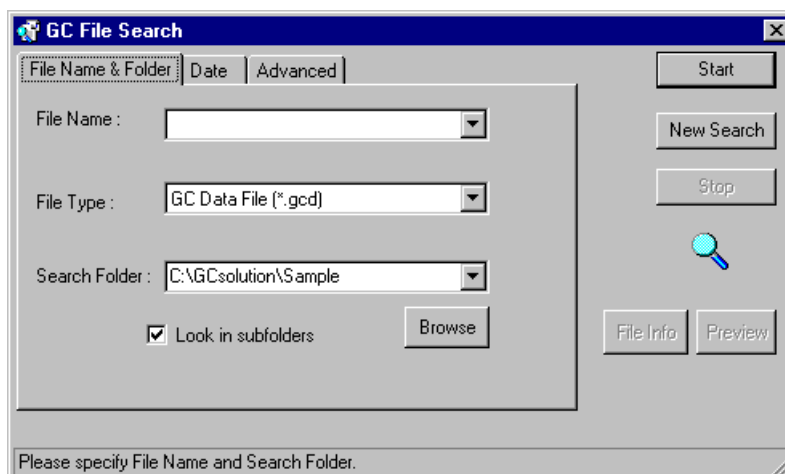
To display the <GC File Search> window, select the [File]-[File Search] command on the program window, or select [File Search] from the pop-up menu in the <Data Explorer> window.





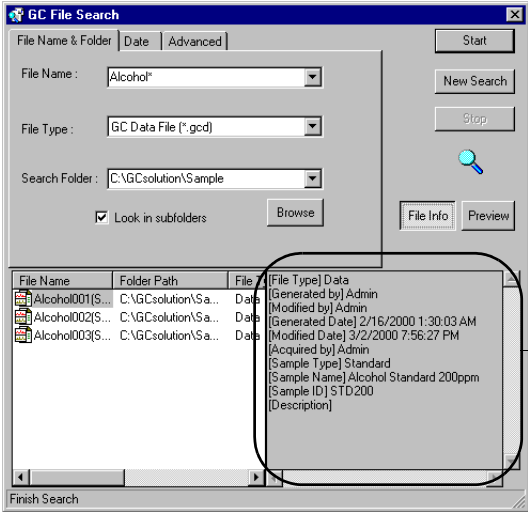
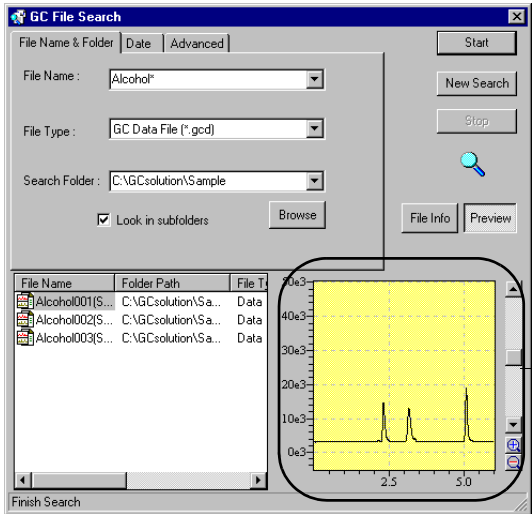
11.4.1 <GC File Search> - [File Name & Folder] Tab

On the [File Name & Folder] tab page, specify the search conditions for the file name and location.



Parameter	Description
File Name	Enter the file name you are searching for. Alternatively, you may select the file name from the history of up to 5 file names, which is displayed by clicking on the [▼] button located to the right of the cell.
File Type	Select the file type you are searching for, from the list displayed by clicking on the [▼] button located to the right of the cell. ● GC Data File (*.gcd) ● GC Method File (*.gcm) ● GC Batch File (*.gcb) ● GC Report File (*.gcr)
Search Folder	Enter the complete path name to the project (folder) you are searching for. Normally, specify the path to the referenced folder (e.g.; C:\ProgramFiles\Data\Project1). Alternatively, you may select it from the history of up to 5 specified project names.
Look in subfolders	If the check box is marked with a check, the subfolders in the folder will also be searched.
[Browse] button	If you click on this button, the <Browse for Folder> window will be displayed, allowing you to specify the folder you want to search for.
[Start] button	If you click on this button, the search will be started under the specified conditions.
[New Search] button	If you click on this button, the specified conditions will be reset to the default values.
[Stop] button	If you click on this button, the search will be stopped.

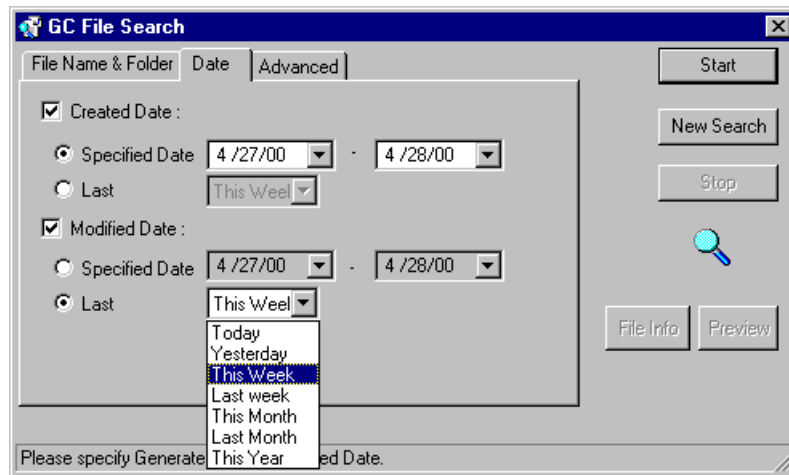


Parameter	Description
[File Info] button	If you click on this button after selecting the appropriate file from the <Search Result> view, the information pertaining to that file will be displayed. 
[Preview] button	If you click on this button after selecting the appropriate data file from the <Search Result> view, the outline of the chromatogram in that file can be viewed. 



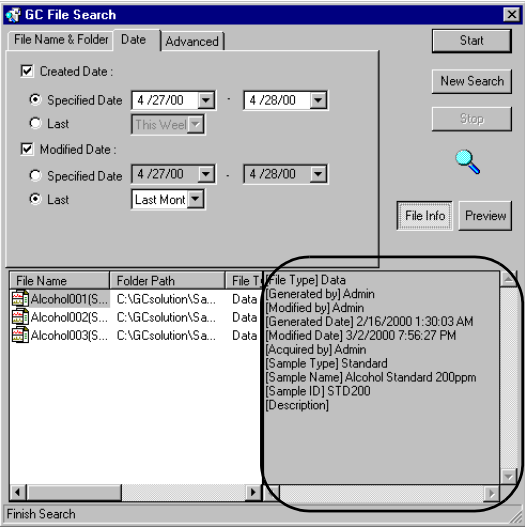
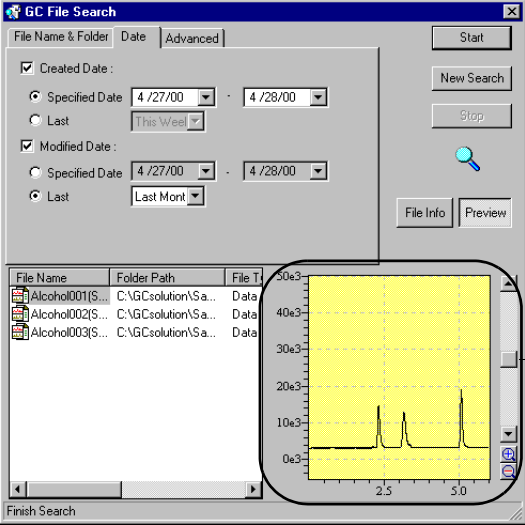
11.4.2 <GC File Search> - [Date] Tab

On the [Date] tab page, specify the search conditions for dates.



Parameter	Description
Created Date	Allows you to specify the search conditions for the date of creation, if the check box is marked with a check.
Specified Date	Allows you to specify the dates for the period you want to search. Alternatively, you may select them from the calendar displayed by clicking on the [▼] button located to the right of the cell. Goes to the 1-year-previous display. Goes to the 1-month-previous display. The currently specified date Goes to the 1-year-later display. Goes to the 1-month-later display.
Last	Select the period you want to search, from the list displayed by clicking on the [▼] button. ● Today ● Yesterday ● This Week ● Last Week ● This Month ● Last Month ● This Year
Modified Date	Allows you to specify the search conditions for the date of updating, if the check box is marked with a check.
Specified Date	Allows you to specify the dates for the period you want to search. Alternatively, you may select them from the calendar displayed by clicking on the [▼] button located to the right of the cell.

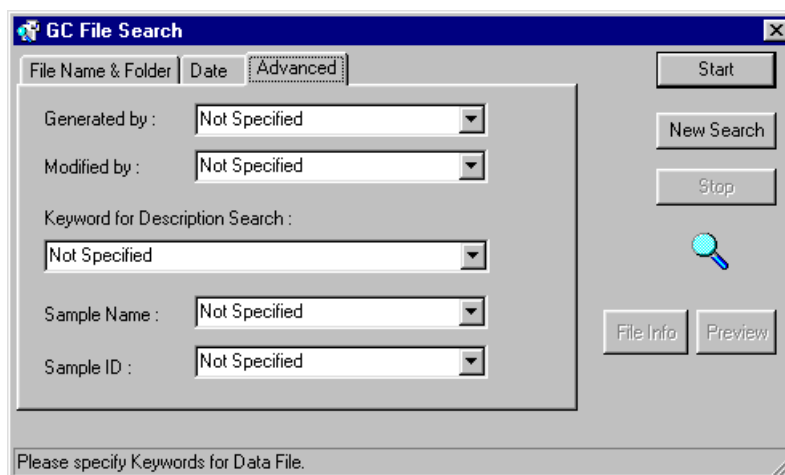


Parameter	Description
Last	Select the period you want to search, from the list displayed, by clicking on the [▼] button. ● Today ● Yesterday ● This Week ● Last Week ● This Month ● Last Month ● This Year
[Start] button	If you click on this button, the search will be started under the specified conditions.
[New Search] button	If you click on this button, the specified conditions will be reset to the default values.
[Stop] button	If you click on this button, the search will be stopped.
[File Info] button	If you click on this button, after selecting the appropriate file from the <Search Result> view, the information pertaining to that file will be displayed. 
[Preview] button	If you click on this button, after selecting the appropriate data file from the <Search Result> view, the outline of the chromatogram in that file can be viewed. 



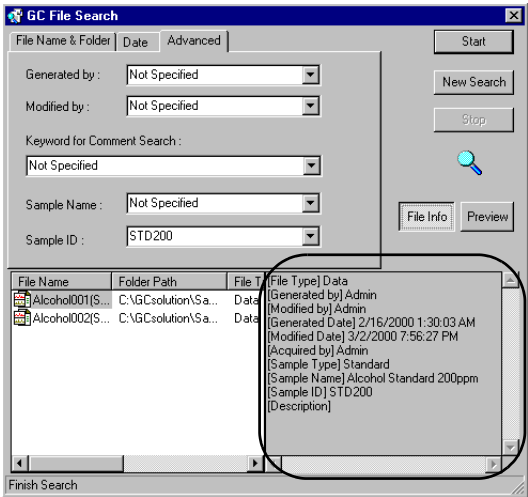
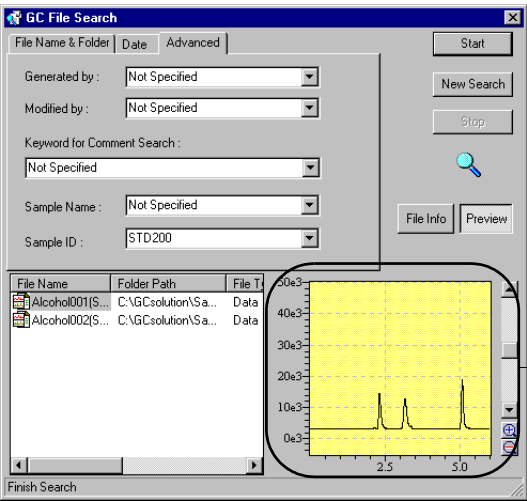
11.4.3 <GC File Search> - [Advanced] Tab

On the <Advanced> tab page, specify the person who created the file, the person who edited the file, the keyword for comment search, the sample name, and the sample ID as the search conditions. Some items may not be displayed, depending on the file type.



Parameter	Description
Generated by	Allows you to specify the person who created the file you are searching for. Alternatively, you may select it from the history of up to 5 specified names, which is displayed by clicking on the [▼] button located to the right of the cell.
Modified by	Allows you to specify the person who updated the file you are searching for. Alternatively, you may select it from the history of up to 5 specified names, which is displayed by clicking on the [▼] button located to the right of the cell.
Keyword for Description Search	Allows you to enter any arbitrary keyword included in the data comment you are searching for. Alternatively, you may select it from the history of up to 5 specified names, which is displayed by clicking on the [▼] button located to the right of the cell.
Sample Name	Allows you to enter the sample name you are searching for. Alternatively, you may select it from the history of up to 5 specified names, which is displayed by clicking on the [▼] button located to the right of the cell. Note: This parameter is only displayed when a data file is being searched for.
Sample ID	Allows you to enter the sample ID you are searching for. Alternatively, you may select it from the history of up to 5 specified names, which is displayed by clicking on the [▼] button located to the right of the cell. Note: This parameter is only displayed when a data file is being searched for.
[Start] button	If you click on this button, the search will be started under the specified conditions.
[New Search] button	If you click on this button, the specified conditions will be reset to the default values.
[Stop] button	If you click on this button, the search will be stopped.



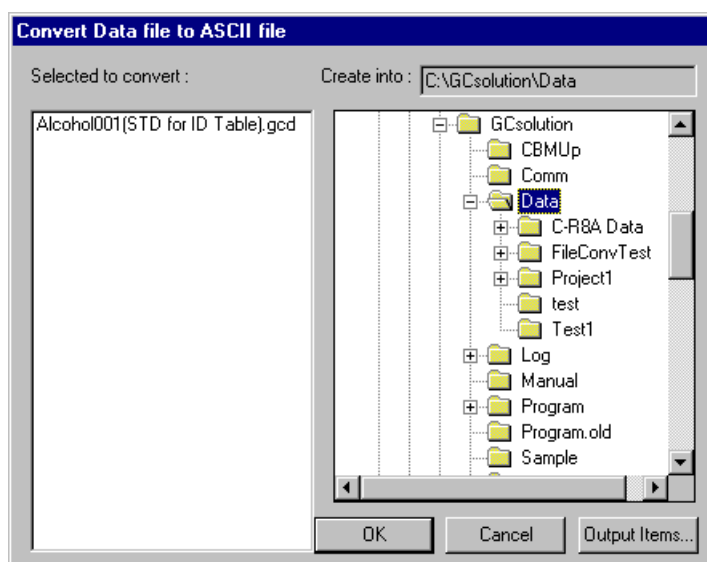
Parameter	Description
[File Info] button	If you click on this button, after selecting the appropriate file from the <Search Result> view, the information pertaining to that file will be displayed.  The screenshot shows the 'GC File Search' window with the 'File Name & Folder' tab selected. The 'File Info' button is highlighted. A callout box labeled 'File information' points to the 'File Info' button. The 'File Info' button is located next to the 'Preview' button. The 'File Info' button is located next to the 'Preview' button.
[Preview] button	If you click on this button, after selecting the appropriate data file from the <Search Result> view, the outline of the chromatogram in that file can be viewed.  The screenshot shows the 'GC File Search' window with the 'File Name & Folder' tab selected. The 'Preview' button is highlighted. A callout box labeled 'Preview' points to the 'Preview' button. The 'Preview' button is located next to the 'File Info' button. The 'Preview' button is located next to the 'File Info' button.

11.5 File Conversion

11.5.1 <Convert Data file to ASCII file> Window

The <Convert Data file to ASCII file> window allows you to convert a data file into the ASCII format.

To display this window, select [File Convert] - [Convert Data File to ASCII File] from the pop-up menu on the <File> view.

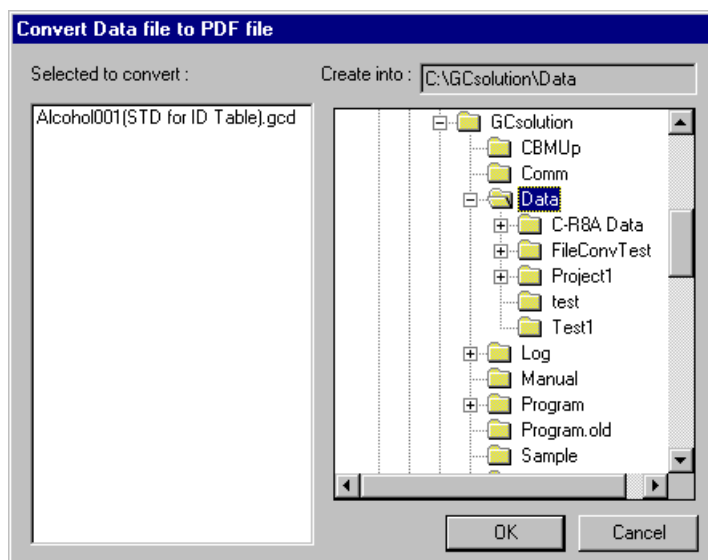


Parameter	Description
Selected to convert	Displays, in the [Selected to convert] area, the file you selected to convert in the <Data Explorer> window.
Create into	Saves the converted file in the file specified in the [Create into] area. Select the project (folder) you want to specify as the destination, from the displayed tree list of folders.
[OK] button	Conversion commences when this button is clicked on.
[Cancel] button	Returns to the previous screen without converting the file, if this button is clicked on.
[Output Items] button	Displays the <Output Items> window, which allows you to specify the converted items and a delimiter.



11.5.2 <Convert Data file to PDF file>

The <Convert Data file to PDF file> dialog box allows you to convert data files into PDF files. To display this dialog box, select [File Convert]-[Data file to PDF file] from the pop-up menu in the <File> view.



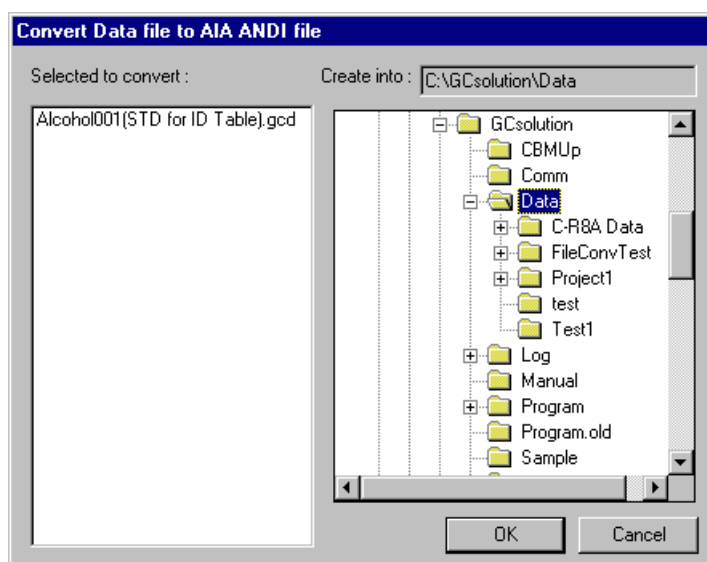
Parameter	Description
Selected to convert	Displays the target files for conversion you selected in the <Data Explorer> window.
Create into	The converted files are saved in the folder specified in the [Create into] area. Select the project (folder) you want to specify as the destination from the displayed tree list of folders.
[OK] button	Conversion commences when this button is clicked on.
[Cancel] button	Returns to the previous screen without converting the files, if this button is clicked on.

Note: Conversion into PDF files requires installation of Adobe(r) Acrobat(r) Distiller or PDFWriter on your PC.



11.5.3 <Convert Data file to AIA ANDI file> Window

The <Convert Data File to AIA ANDI File> window allows you to convert a data file into a file in the AIA format. To display this window, select [File Convert] - [Convert Data File to AIA ANDI File] from the pop-up menu on the <File> view.



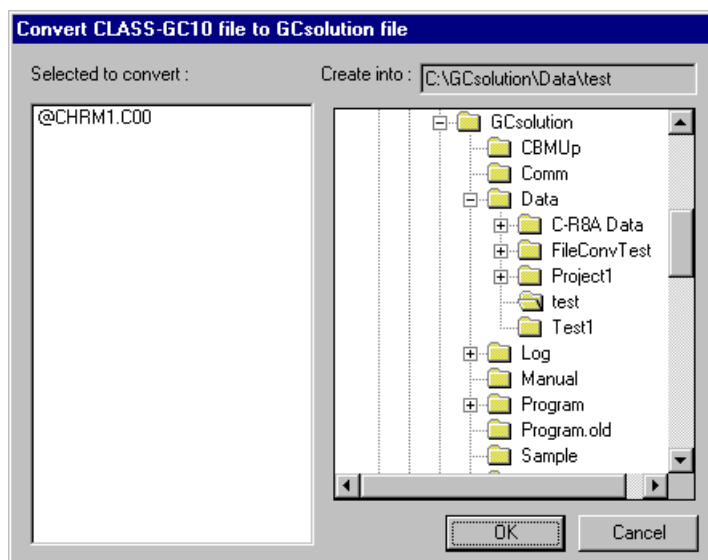
Parameter	Description
Selected to convert	Displays, in the [Selected to convert] area, the file you selected to convert in the <Data Explorer> window.
Create into	Saves the converted file in the file specified in the [Create into] area. Select the project (folder) you want to specify as the destination, from the displayed tree list of folders.
[OK] button	Conversion commences when this button is clicked on.
[Cancel] button	Returns to the previous screen without converting the file, if this button is clicked on.



11.5.4 <Convert CLASS-GC10 file to GCsolution file> Window

The <Convert CLASS-GC10 file to GCsolution file> window allows you to convert a data file created on the CLASS-GC10 to one that can be used in GCsolution.

To display this window, select [File Convert] - [Convert CLASS-GC10 File to GCsolution File] from the pop-up menu on the <File> view.



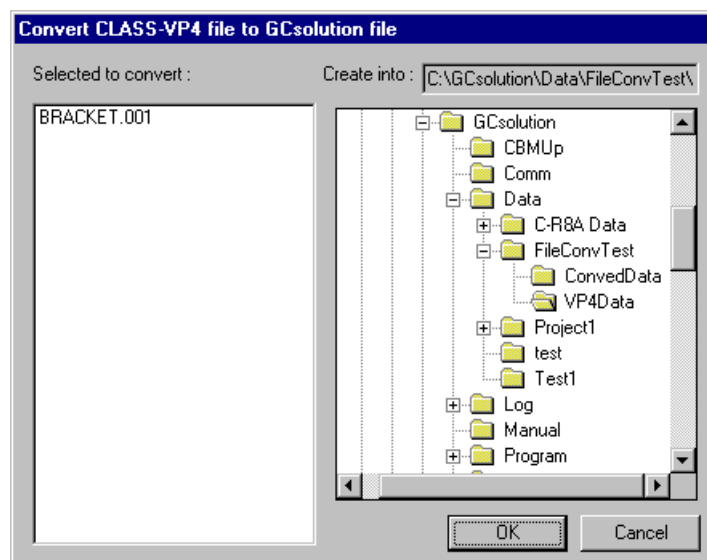
Parameter	Description
Selected to convert	Displays, in the [Create into] area, the file you selected to convert in the <Data Explorer> window.
Create into	Saves the converted file in the file specified in the [Create into] area. Select the project (folder) you want to specify as the destination, from the displayed folder tree list.
[OK] button	Conversion commences when this button is clicked on.
[Cancel] button	Returns to the previous screen without converting the file, if this button is clicked on.

Note: If the data file created on the CLASS-GC10 is dragged and dropped from the <Data Explorer> window to the <GC Postrun> - <Data Analysis> window, it is automatically converted into a data file for the GCsolution, which is then loaded. Similarly, a data file in the CLASS-GC10 format can also be loaded from the [File] - [Open Data File] menu in the <Data Analysis> window on the <GC Postrun> screen.



11.5.5 <Convert CLASS-VP4 file to GCsolution file>

The <Convert CLASS-VP4 file to GCsolution file> dialog box allows you to convert data files created by CLASS-VP Ver. 4 into the GCsolution format. To display this dialog box, select [File Convert]-[CLASS-VP4 file to GCsolution file] from the pop-up menu in the <File> view.



Parameter	Description
Selected to convert	Displays the target files for conversion you selected in the <Data Explorer> window.
Create into	The converted files are saved in the folder specified in the [Create into] area. Select the project (folder) you want to specify as the destination from the displayed tree list of folders.
[OK] button	Conversion commences when this button is clicked on.
[Cancel] button	Returns to the previous screen without converting the file, if this button is clicked on.

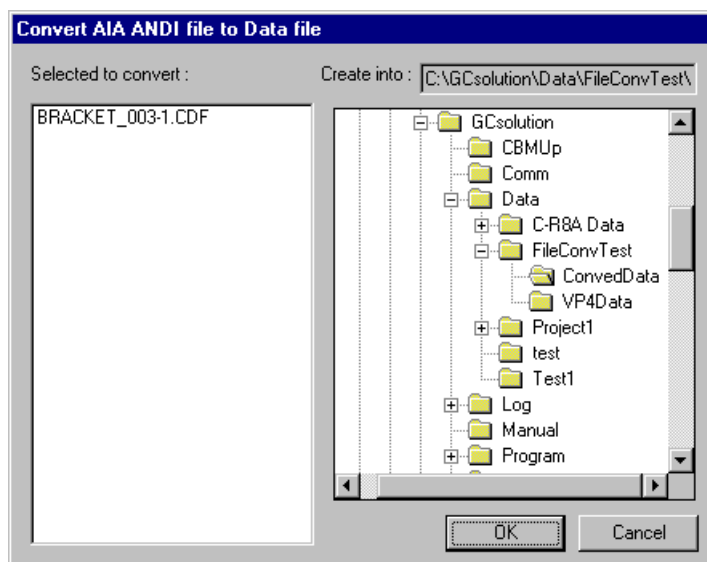
Note: When files created by CLASS-VP Ver. 4 are converted into GCsolution format files, only the following items are converted.

- Data file: chromatogram data and sample information
- Method file: compound table, column oven temperature program, injection port temperature, and detector temperature



11.5.6 <Convert AIA ANDI file to Data file> Window

The <Convert AIA ANDI file to Data file> dialog box allows you to convert data files created by CLASS-VP Ver. 4 into the GCsolution format. To display this dialog box, select [File Convert]-[AIA ANDI file to Data file] from the pop-up menu in the <File> view.

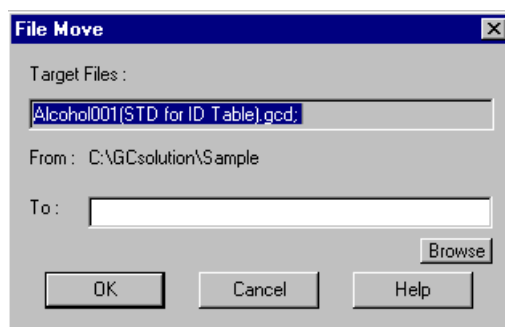


Parameter	Description
Selected to convert	Displays the target files for conversion you selected in the <Data Explorer> window.
Create into	The converted files are saved in the folder specified in the [Create into] area. Select the project (folder) you want to specify as the destination from the displayed tree list of folders.
[OK] button	Conversion commences when this button is clicked on.
[Cancel] button	Returns to the previous screen without converting the file, if this button is clicked on.



11.6 <File Move> Window

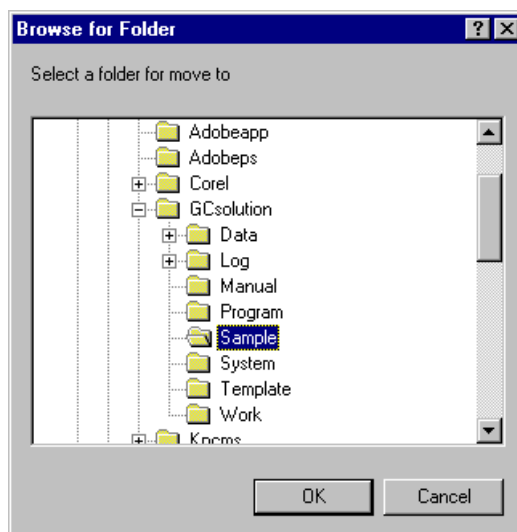
The <File Move> window allows you to move the selected file to a specified folder. Multiple files may be selected for transfer. To display this window, select a file or files on the <Data Explorer> window and then select the [Move] command from the pop-up menu on the <File> view.



Parameter	Description
Target Files	Displays the names(s) of the file(s) to be moved.
From	Displays the project (folder) in which the file(s) are currently stored.
To	Allows you to enter the complete path to the destination project (folder). Alternatively, you may select it from <Browse Folder> by clicking on the [Browse] button.
[Browse] button	Refer to "11.6.1 <Browse for Folder> Window" on page 513

11.6.1 <Browse for Folder> Window

The <Browse for Folder> window allows you to specify a destination or the folder you want to newly browse. Click on the folder to browse. The selected folder will be displayed as the opened icon. After this, click on the [OK] button.



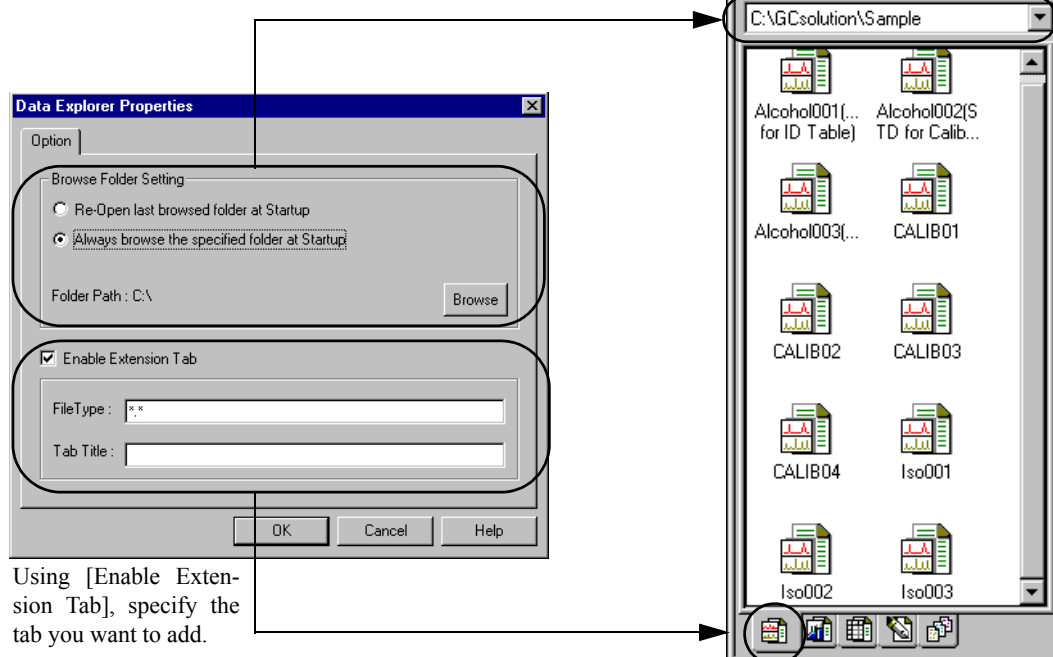


11.7 <Data Explorer Properties> Window

The <Data Explorer Properties> window allows you to specify the project (folder) you want to display in the <Data Explorer> window immediately after starting up the GCsolution software, or to add an arbitrary tab.

To display this window, select the [Data Explorer Properties] command from the pop-up menu.

Using [Browse Folder Setting], specify the project (folder) you want to display in the <Data Explorer> window immediately after starting up GCsolution.



Using [Enable Extension Tab], specify the tab you want to add.

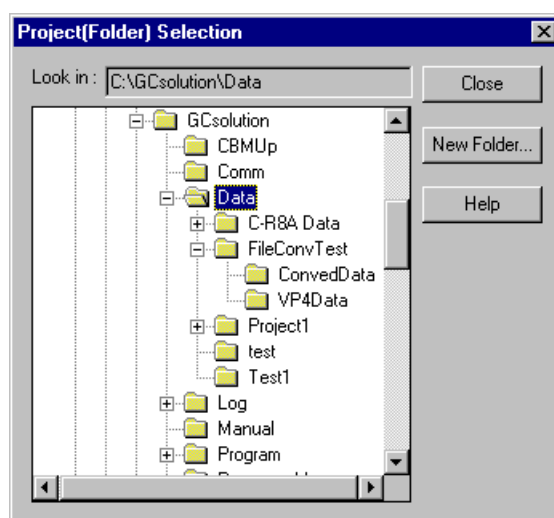
Parameter	Description
Browse Folder Setting	Allows you to specify the project (folder) you want to display in the <Data Explorer> window immediately after starting up GCsolution.
Re-Open last browsed folder at Startup	Opens the last used project (folder) as the one that is displayed in the <Data Explorer> window immediately after GCsolution has been started up.
Always browse the specified folder at Startup	Opens the project (folder) specified in [Folder Path], as the one that is displayed in the <Data Explorer> window immediately after GCsolution has been started up. Enter data in [Folder Path] using the <Browse Folder> window displayed by clicking on the [Browse] button.
Folder Path	Refer to "11.6.1 <Browse for Folder> Window" on page 513
[Browse] button	
Enable Extension Tab	Allows you to add an arbitrary tab to the <Data Explorer> window if the check box is marked with a check. For example, if you enter "*.doc" in [File Type] and "my document" in [Tab Title], then only the document files in the project will be displayed.
File Type	Allows you to specify the file type to be displayed on the created tab, using a file name or extension. Up to 250 characters may be entered as a character string, including periods and semicolons for delimitation. An asterisk (*) may be used as a wildcard character.
Tab Title	Allows you to specify the character string to be displayed for the tab, within 250 characters.



11.8 <Project (Folder) Selection> Window

The <Project (Folder) Selection> window allows you to specify the project (folder) you want to display in the <Data Explorer> window or to create a new project (folder).

To display this window, select the [Select Project (Folder)] command from the pop-up menu or click the  button located at the upper right of the <Data Explorer> window.

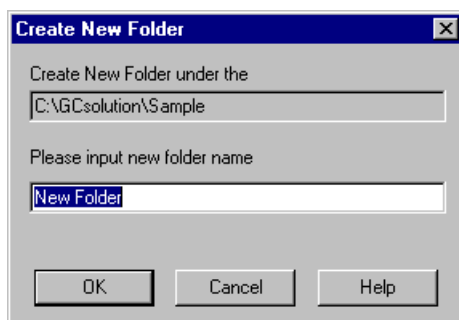


Parameter	Description
Look in	Allows you to specify the project (folder) to be displayed in the <Data Explorer> window. Select it from the currently displayed tree list of folder.
[New Folder] button	Displays the new folder used for the creation of a new project. <i>Refer to "11.8.1 <Create New Folder> Window" on page 516</i>
Apply	Establishes the currently selected data in [Look in] as the path to the project (folder) in the <Data Explorer> window.



11.8.1 <Create New Folder> Window

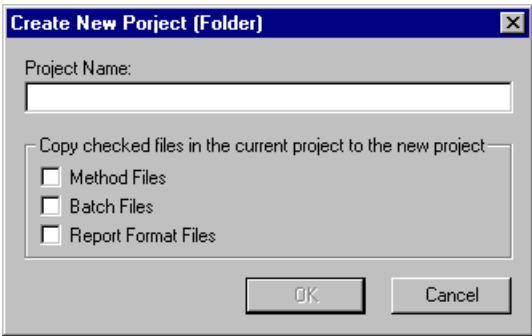
The <Create New Folder> window allows you to create a new folder under the currently browsed project (folder). This window is used, for example, to manage data in any project (folder) other than those for the other data.



11.9 <Create New Project (Folder)> Window

The <Create New Project (Folder)> window allows you to create a new project (folder) that is browsed in the <Data Explorer> window.

To display this window, select the [Create New Project (Folder)] command from the pop-up menu or click the  button located at the upper right of the <Data Explorer> window.



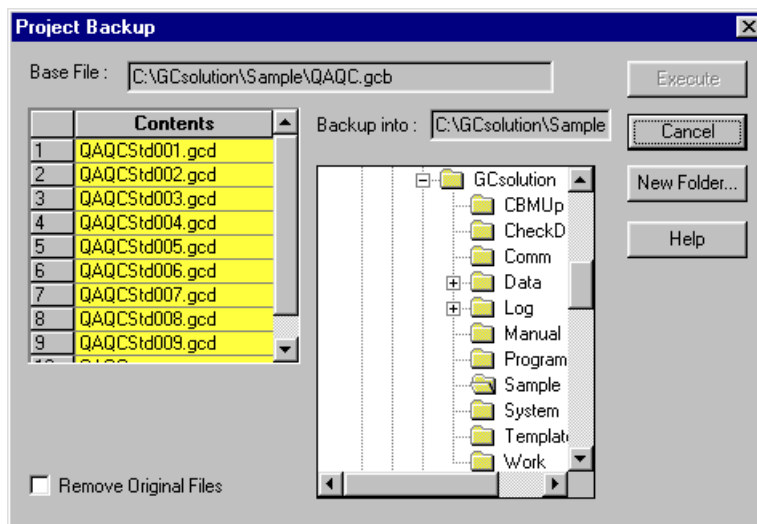
Parameter	Description
Project Name	Allows you to enter a project name (folder name) for the project (folder) you are newly creating.
Copy checked files in the current project to the new project	Copies the files marked with a check in the current project (folder) into the newly created project (folder).
Method File	Copies the method files contained in the current project (folder) into the newly created project (folder).
Batch Files	Copies the batch files contained in the current project (folder) into the newly created project (folder).
Report Format Files	Copies the report format files contained in the current project (folder) into the newly created project (folder).

Note: If there are too many data files in the project, the operation becomes slower. In this case, separate the project, as appropriate, by creating new projects (folders).



11.10 <Project Backup> Window

If you select a method or batch file and then open the <Project Backup> window, a set of data that was used to create the calibration curve (in case of the method file) or a set of the method and report files specified in the batch table (in case of the batch file) can also be selected and copied.



Parameter	Description
Base File	Displays the name of the method file or batch file selected in the <Data Explorer> window.
Contents	Displays a list of files that have been specified or referenced in the base file.
Backup into	Designates the destination where the base file and a set of files included in the contents will be copied.
Remove Original Files	If checked, deletes a set of the copied files after the duplication has been completed.

Note: This copying function is only valid when the files included in the contents exist in the same project (folder) as the base file.



12.1

Overview of Administration Menu

GCsolution provides system administration functions that allow you to register user information and restrict the programs and functions available for each user. These functions are used to protect the programs and data, and to store usage history information data to identify users. The effective use of the system administration functions enables you to comply with the GLP/GMP by certifying, maintaining, and controlling the reliability of the analytical environment and data. This section gives an overview of the system administration functions.

12.1.1 Function of Administration menu

The following operations related to system administration can be performed.

Refer to "1.2.3 <Login> Window" on page 5

Operation	Main window used
General settings for user administration, audit trail, and report, file and log management.	<i>Refer to "12.2 <System Policy> Window" on page 520</i>
Entering/changing passwords, registering, authorizing, changing or deleting users, and registering, authorizing, changing or deleting groups with a right.	<i>Refer to "12.3 <User Administration> Window" on page 524</i>
Specifying the conditions for registering data files, PDF, and other files with CLASS-Agent.	<i>Refer to "12.4 <Agent Registration Settings> Window" on page 532</i>
Verifying event logs on log management, system administration, and analyzers and outputting those logs to files and printers. Also verifying logs on the user authentication tool and outputting them to files and printers if user administration is shared with Shimadzu user authentication tool.	<i>Refer to "12.5 <Log Browser>" on page 540</i>

Note: The number of users who can be registered is not limited for ordinary usage. However, it is recommended that the application rules for user registration and the related documents be prepared to manage the details (additions, changes, and deletions) of user registration.



12.2 <System Policy> Window

The <System Policy> window allows you to complete general settings for system administration and other settings for audit trail, reports, files and logs.

The default values in the <System Policy> window vary depending upon your level setting. For the details of each level setting, see the explanation of level settings on [p.523](#).

Parameter	Description	Setting range (unit)
Setting	Clicking the [Setting...] button will allow you to select any of the available policy settings. When Shimadzu user authentication tool is used, the simplified login setting is unavailable. <i>Refer to "Note: Setting:" on page 523</i>	Level 1 (default values) Level 2 Level 3 21CFR P11
Normal Login	When selected, from the next time on, user name must be typed every time a user logs in or when user authentication is required. When deselected, a user can choose the user name from the list and the user name previously logged in is displayed as default. <i>Refer to "1.2.3 <Login> Window" on page 5</i>	Selected/ deselected



Parameter	Description	Setting range (unit)
Multi User	The system administration functions allow you to select either the single user mode or the multi-user mode for using the GCsolution. ● Single user mode Once you log in a program, you will no longer need to repeat the log-in procedure for starting up the subsequent programs. When you exit the last application program, the log-out procedure will be taken. ● Multi-user mode You need to take the log-in procedure to start up each program. Note: You cannot log out unless you exit the program. If you want to leave your desk while the program remains active, use the screen lock function. Note: If multiple GC units are connected to a single personal computer, a different user for each GC unit may log in at the personal computer. Note: Immediately after this software has been installed, the single user mode is selected.	
Login with Windows Username	This option is available only when the Software is set to the single-user mode. When selected, if the user ID identical with the current login user of Windows has been registered in the GCsolution, the login dialog box will not appear at the time of activation of an application and the login is accepted under the same user name. When no corresponding user ID has been registered, the login dialog box is displayed as usual. Note: When Shimadzu user authentication tool is used, no login setting is possible under the Windows user name.	Selected/ deselected
Minimum Password Length	Specifies the minimum length of password string using the [▲] or [▼] buttons on the right or enter a value directly in the range of 1 to 8 characters (single byte characters). Note: When Shimadzu user authentication tool is used, the setting range is between 6 and 7 so far as the [Password must meet complexity requirements] option is selected.	
Maximum Password Age	Specifies the term of validity for passwords from the time of their creation or alteration using the [▲] or [▼] buttons on the right or enter a value directly in the range of 0 to 3650. When "0" is set, passwords are permanently effective.	0 to 3650 (days)
Passwords must meet complexity requirements	When selected, no password consisting of either alphabetic or numeric characters only can be entered any longer. Use a combination of alphabetic and numeric characters for a password.	Selected/ deselected
Lockout Settings (for PC)	If the login attempt fails exceeding the specified number of times after selecting the lockout, no users can log in through that PC.	
Login Attempt Limit	Specifies the limit of retry times of login attempt using the [▲] or [▼] buttons on the right or enter a value directly. When "0" is set, no limit will be imposed. If login attempts are failed more than the set times, the PC to which login is attempted locks up and accepts no login attempts for the time period set in [Lockout Duration].	
Lockout Duration	Enter the time to lock up the PC when login attempts are failed more than the set times of [Login Attempt Limit]. When "0" is set, the PC will not lock up.	



Parameter	Description	Setting range (unit)
Lockout Settings (for User)	If the login attempt fails exceeding the specified number of times after selecting the lockout, the users on the network will be unable to log in for the specified time period.	
Login Attempt Limit	Specifies the limit of retry times of login attempt using the [▲] or [▼] buttons on the right or enter a value directly. When "0" is set, no limit will be imposed. If login attempts are failed more than the set times, the PC to which login is attempted locks up and accepts no login attempts for the time period set in [Lockout Duration].	
Lockout Duration	Enter the time to lock up the PC when login attempts are failed more than the set times of [Login Attempt Limit]. When "0" is set, the PC will not lock up.	
# of Levels for Duplicate Password Checking	Prohibits duplication with any past password reaching the specified count in the history. Setting this parameter to "0" will cancel checking for duplication.	
All users must use password	When selected, password setting is required for all users. For user accounts to which no password has been specified when this option is selected, however, they will be still without any password until their user properties screen is opened.	Selected/ deselected
Audit Trail	Specifies the audit trail settings.	
Apply audit trail function when creating method file	When selected, the audit trail setting is always enabled when a new method file is created. Even when a method file is created using a template file, the audit trail is enabled for the file regardless of the setting of the template.	Selected/ deselected
Prohibit editing parameters on instrument	When selected, editing of parameters is prohibited on the side of analytical instrument.	Selected/ deselected
Report	Specifies the report items and header settings.	
Enforce the filename on each item	Outputs the file name loaded for each item. When a data file or method file is loaded from properties of each report item, a file name will be output to the header of that item. Viewing such a file name of each item will allow you to find whether the report has been output from a single file or multiple files.	Selected/ deselected
Output report type in header	When selected, the report type is output in the header. Report types: ● Report (Single Run): ● Report (RealTime Batch): ● Report (PostRun Batch) ● Report (Report Editor)	Selected/ deselected
Output data status in header	When selected, data status is output in the header. ● Status:Time prog (Data) ● Status:Temporary	Selected/ deselected
File Management		
Prohibit overwriting of other data files	When selected, overwriting to existing data files is prohibited.	Selected/ deselected
Prohibit overwriting of other method files	When selected, overwriting to existing method files is prohibited.	Selected/ deselected



Parameter	Description	Setting range (unit)
Prohibit overwriting of other report file	When selected, overwriting to existing report format files is prohibited.	Selected/ deselected
Prohibit overwriting of other batch file	When selected, overwriting to existing batch files is prohibited.	Selected/ deselected
Output Logs		
Output audit trail to instrument log	Records the audit trail of data/methods in the instrument log.	Selected/ deselected
Other		
Disable e-mail	Disables the e-mail transmission. Note: To set up the e-mail transmission, choose [Tools] - [E-Mail Settings].	Selected/ deselected

Note: Setting:

Parameters	Level-1	Level-2	Level-3	21CFR P11
Normal Login	X	0	0	0
Multi User	X	X	X	0
Login with Windows Username	-	-	-	N/A
Minimum Password Length	X	X	6	6
Maximum Password Age	X	X	60	60
Passwords must meet complexity requirements	X	X	X	0
Lockout Settings(for PC):Login Attempt Limit	X	6	6	6
Lockout Settings(for PC):Lockout Duration	X	15	15	15
Lockout Settings(for User):Login:Attempt Limit	X	X	X	3
Lockout Settings(for User):Login:Lockout Duration	X	X	X	15
# of Levels for Duplicate Password Checking	X	X	6	6
All users must use password	X	X	0	0
Apply audit trail function when creating method file	X	X	X	0
Prohibit editing parameters on instrument	X	0	0	0
Enforce the filename on each item	X	X	0	0
Output report type in header	X	0	0	0
Output data status in header	X	0	0	0
Prohibit overwriting of other data files	X	X	0	0
Prohibit overwriting of other method files	X	X	X	0
Prohibit overwriting of other report file	X	X	X	0
Prohibit overwriting of other batch file	X	X	X	0
Output audit trail to instrument log	X	X	X	0
Disable e-mail	X	X	X	0



12.3 <User Administration> Window

The <User Administration> window is used to specify or change passwords; to register, authorize, change, or delete users; to register users in a Rights group.

12.3.1 <System Administration> - [Password] Tab

On the [Password] tab page, enter a password for each user.

Note: The information displayed in the window is different depending on whether you have logged in as the administrator or a general user who has system administration right.

- For administrator

User Administration

Password | Users | Groups

User Name: Admin

Old Password:

New Password:

Confirm New Password:

OK Cancel Help

- For general user

User Administration

Password | Users | Groups

User Name: Taro

Old Password:

New Password:

Confirm New Password:

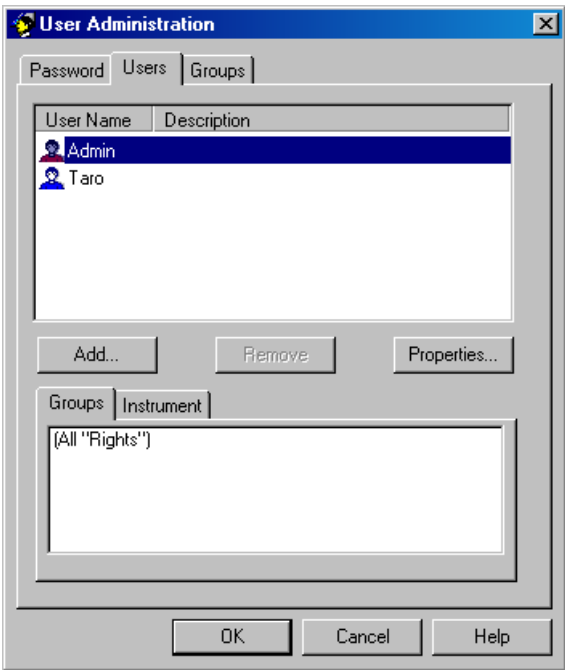
OK Cancel Help

Parameter	Description
User Name	Displays the registered user name of current user.
Old Password	To change the password, first enter the old password. Note: If you selected using no password on the [Users] tab, this parameter is dimmed.
New Password	To change the password, enter a new password. Note: This parameter is dimmed if you selected using no password on the [Users] tab. Note: If the entered password does not meet the requirements specified in the <System Policy> window: [Minimum Password Length], [# of Levels for Duplicate Password Checking], and [Passwords must meet complexity requirements], then an error will occur. Refer to "12.2 <System Policy> Window" on page 520
Confirm New Password	To change the password, enter the new password again to confirm the new password. Note: If you selected using no password on the [Users] tab, this parameter is dimmed.

12.3.2 <User Administration> - [Users] Tab

The [Users] tab page is used to register users or specify their initial passwords. This page is only displayed when the authorized administrator has logged in and the <User Administration> window has been displayed.

Clicking a user name will display the groups that belong to the [Groups] tab. To add or remove a user or to set a user's properties, click the corresponding button.



Parameter	Description								
User List	Lists the registered users. If you select a user and click on the [Properties] button, or if you double-click on a user from the list, the <User Property> window will be displayed. If you right-click the list of users, this pop-up menu will appear. Show Removed User Print Selected User Information... Print Listed User Information... <table> <tr> <th>Command</th><th>Description</th></tr> <tr> <td>Show Removed User</td><td>Displays the users that were removed in the past.</td></tr> <tr> <td>Print Selected User Information</td><td>If you select a user from the list of users and then choose this command, information on the selected user will be printed out.</td></tr> <tr> <td>Print Listed User Information</td><td>Prints out information on all the users displayed.</td></tr> </table> <i>Refer to "12.3.2.1 <Add User>/<User Property> Window" on page 526</i>	Command	Description	Show Removed User	Displays the users that were removed in the past.	Print Selected User Information	If you select a user from the list of users and then choose this command, information on the selected user will be printed out.	Print Listed User Information	Prints out information on all the users displayed.
Command	Description								
Show Removed User	Displays the users that were removed in the past.								
Print Selected User Information	If you select a user from the list of users and then choose this command, information on the selected user will be printed out.								
Print Listed User Information	Prints out information on all the users displayed.								
[Add] button	If this button is clicked on, the <Add User> window will be displayed, allowing you to register new users. <i>Refer to "12.3.2.1 <Add User>/<User Property> Window" on page 526</i>								
[Remove] button	If this button is clicked on when a user account is selected in the user list, that user account is hidden from the list and no longer displayed. Be careful when using this button as that user will no longer be able to use the GCsolution software.								



Parameter	Description
[Properties] button	If you select a user from the user list and click on this button, the <User Property> window will be displayed, allowing you to view or modify the details of user registration. The data in the <User Property> window is the same as in the <Add User> window. <i>Refer to "12.3.2.1 <Add User>/<User Property> Window" on page 526</i>
Groups Tab	Displays the Rights group to which the user selected from the user list is assigned. Note: When the network mode is selected, the PC and instrument that belong to the user are displayed. When the network mode is deselected, only the instrument connected to the currently used PC is displayed. <i>Refer to "15.2 <Instrument Maintenance> Dialog" on page 588</i>
Instruments Tab	Displays the GC units the user is authorized to use.

12.3.2.1 <Add User>/<User Property> Window

The <Add User> window is used to register new users. To display this window, click on the [Add] button located on the [Users] tab page of the <System Administration> window.

The information pertaining to existing users may be modified in this window, as it can be in the <User Property> window.

Parameter	Description
User ID	Enter a user ID within 31 characters. You cannot use the ID that has been already used by another user. Note: Once set, the user ID cannot be changed.
User Name	Enter a user name within 31 characters. You cannot use the name that has been already used by another user. Note: Once set, the user name cannot be changed.
Description	Enter the description of the user. A maximum of 255 characters may be entered.
Use Password	Allows you to specify a password, if the check box is marked with a check. Note: This parameter is dimmed if "All users must use the password" was selected in the <System Policy> window.



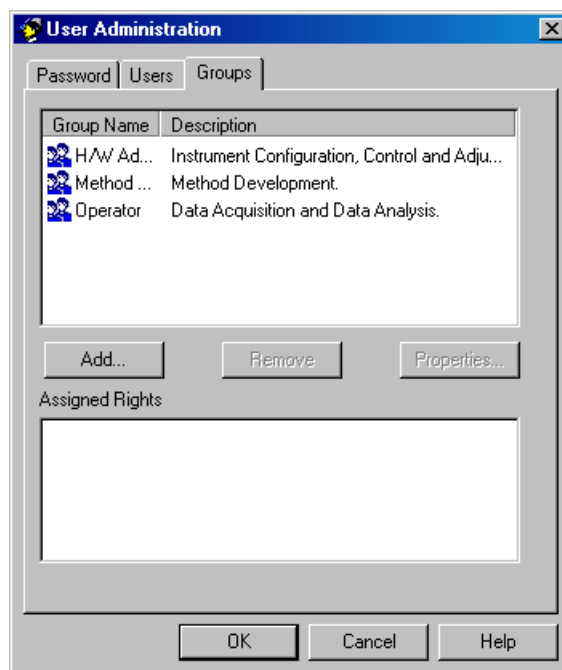
Parameter	Description
Password	Enter a desired password. Note: If the entered password does not meet the requirements specified in the <System Policy> window: [Minimum Password Length], [# of Levels for Duplicate Password Checking], and [Passwords must meet complexity requirements], then an error will occur.
Confirm Password	Confirm the password by entering it again.
Administrator	Authorizes the currently registered user as the system administrator, if the check box is marked with a check. Since the administrator is authorized for all operations, he or she cannot be assigned to any group. With system administration in GCsolution, the users are generally classified as the administrator and general users. The administrator is authorized to perform whatever operations he/she wishes, while arbitrary rights may be given to each general user. The best system administration for your company should be chosen according to your use of the GCsolution software and your analytical environment. When this software is installed, an administrator account named "Admin" is registered. The "Admin" account cannot be hidden as deleted user from the user list.
Group	Assigns the user to a group to give the right to use the system to that user.
Group List	Displays the Rights group names available for the user to belong to.
Selected Groups	Displays the Rights group name to which the user belongs.
[Add] button	If you select a group and click on the [Add] button, or if you double-click on a group from the list, the group will be moved to the [Selected Groups] area, and the user will belong to that group.
[Remove] button	Select a group from [Selected Groups] and click on the [Remove] button, or double-click on a group from the list. The group will be moved to the [Group List] area and that user will no longer have the right given to that group.
Instrument	Specify the instruments the user is allowed to use.
Instrument List	Displays the names of instruments available for authorized use.
Selected Instrument	Displays the names of instruments the user is authorized to use.
[Add] button	If you select an instrument and click on the [Add] button, or if you double-click on an instrument from the list, the instrument will be moved to the [Selected Instrument] area and the user will be allowed to use that instrument.
[Remove] button	Select an instrument from [Selected Instrument] and click on the [Remove] button, or double-click on an instrument from the list. The instrument will be moved to the [Instrument List] area and the user will no longer be authorized to use that instrument.
My Computer	Displays only the instrument for the currently operated PC in the list of instruments or as the selected instrument. Note: That instrument is only displayed when the network mode is active. Refer to "15.2 <Instrument Maintenance> Dialog" on page 588
All Computer	Displays all the instruments for all the registered PCs. Note: Those instruments are only displayed when the network mode is active. Refer to "15.2 <Instrument Maintenance> Dialog" on page 588

Note: When this software is installed, "system administrator" with a user name of "Admin" will be registered. "Admin" cannot be cleared as a removed user from the display.



12.3.3 <User Administration> - [Groups] Tab

The [Groups] tab page is used to register groups or assign rights. This tab page is only displayed when the user authorized as the administrator has logged in and the <User Administration> window has been displayed.



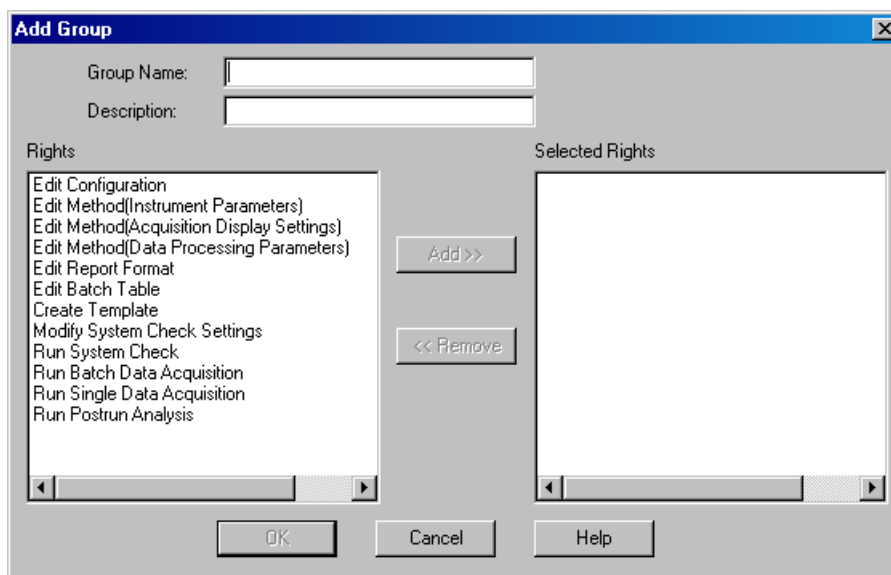
Parameter	Description
Group List	Lists the registered groups. If you select a group and click on the [Properties] button, or if you double-click on a group from the list, the <Group Property> window will be displayed. Refer to "12.3.3.1 <Add Group>/<Group Property> Window" on page 529
[Add] button	If this button is clicked on, the <Add Group> window will be displayed, allowing you to register new users. Refer to "12.3.3.1 <Add Group>/<Group Property> Window" on page 529
[Remove] button	If you select a group from the group list and click on this button, that group's registration will be cancelled. Note: If there are any users belonging to the group, the registration of these users will not be removed. However, since the right given to the group is removed, the user might be unable to use the system starting with the next log-in.
[Properties] button	If you select a group from the group list and click on this button, the <Group Property> window will be displayed, allowing you to view and modify the details of the group. Refer to "12.3.3.1 <Add Group>/<Group Property> Window" on page 529 Note: If there are any users belonging to the group, the changed right of the group will become valid at the next log-in.
Assigned Rights	Displays the right type of the group selected from the group list.



12.3.3.1 <Add Group>/<Group Property> Window

The <Add Group> window is used to register new groups. To display this window, click on the [Add] button located on the [Groups] tab page of the <System Administration> window.

The information on existing groups may be modified in this window, as it can be in the <Group Property> window.



Parameter	Description
Group Name	Enter the group name you wish to register.
Description	Enter the information pertaining to the group to be registered.
Right List	Lists the rights that may be assigned to groups. If you select an right and click on the [Add] button, or if you double-click on an right from the list, the right will be moved to the [Selected Rights] area and the group will have that right.
Selected Rights	Displays the rights of the group. If you select an right and click on the [Remove] button, or if you double-click on an right from the list, the right will be moved to the [Right List] area and the group will lose that right.
[Add] button	Moves the focused right from the [Right List] area to the [Selected Rights] area.
[Remove] button	Moves the focused right from the [Selected Rights] area to the [Right List] area.



12.3.4 Right Types and Rights Groups

GCsolution provides 12 Right types.

In order to simplify the procedure for authorizing users, different groups having meaningful rights may be registered.

Each user should be registered in a group having the rights required by that user. The rights of a group are given to all the users within that group. This means that you do not need to give the rights to each user.

The types of rights to this software are listed below:

Right type	Action restricted when unauthorized
Edit Configuration	Editing the configuration (except for the configuration within a method)
Edit Method (Instrument Parameters)	Editing the method parameters related to instrument control. Selecting column information (editing the data is dependent upon the right to change the configuration).
Edit Method (Acquisition Display Settings)	Editing the display settings at data acquisition (parameters saved in a method among the settings).
Edit Method (Data Processing Parameters)	Editing the method parameters related to data processing. (This edit is possible on the Data Analysis screen if the user has the "Run Postrun Analysis" right.)
Edit Report Format	Editing a report format.
Edit Batch Table	Editing a batch table (including the data in <Settings> for batch).
Create Template	Saving data in a file as a template.
Modify System Check Settings	Resetting the changes in the settings for system checks and the information on consumables.
Run System Check	Making the system checks.
Run Batch Data Acquisition	Performing data acquisition in batch.
Run Single Data Acquisition	Executing a single analysis run.
Run Postrun Analysis	Editing a method/performing data processing within data analysis.

With GCsolution, instrument control, method development, and operator groups are already available.

Right type	Rights group available as standard		
	H/W Administrator	Method developer	Operator
Edit Configuration	O	O	
Edit Method (Instrument Parameters)		O	
Edit Method (Acquisition Display Settings)	O	O	
Edit Method (Data Processing Parameters)		O	
Edit Report Format		O	
Edit Batch Table		O	O
Create Template		O	
Modify System Check Settings	O		



Right type	Rights group available as standard		
	H/W Administrator	Method developer	Operator
Run System Check	O	O	O
Run Batch Data Acquisition		O	O
Run Single Data Acquisition		O	
Run Postrun Analysis		O	O

Note: The administrator has already all the rights; in other words, no individual right can be assigned to the administrator.



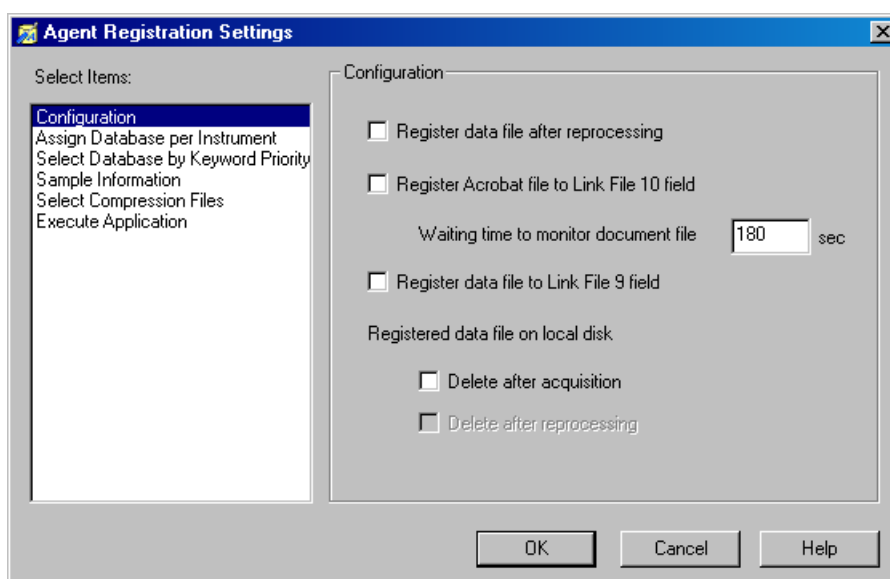
12.4

<Agent Registration Settings> Window

The <Agent Registration Settings> window allows you to set the registration parameters for registering files such as data files and PDFs to CLASS-Agent.

12.4.1 [Configuration]

Select [Configuration] from the Select Items list. The [Configuration] pane will be displayed.



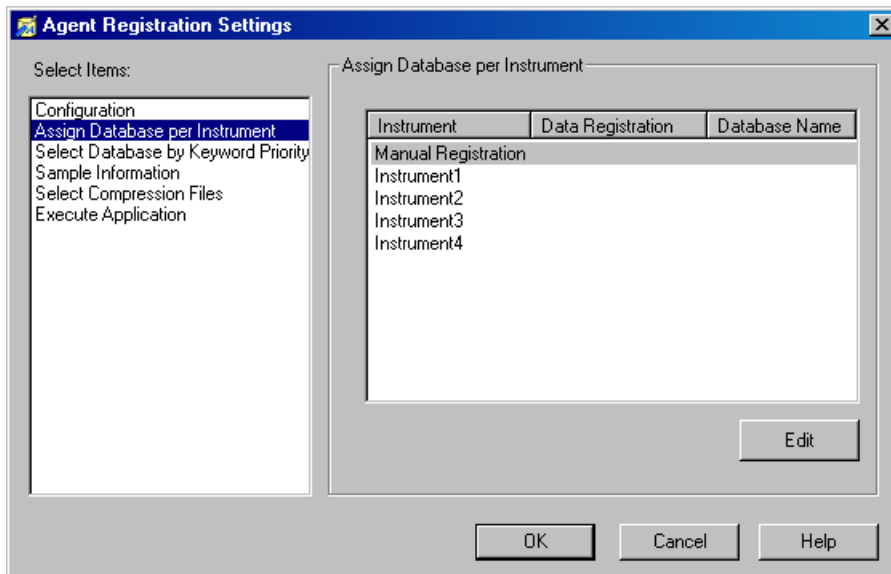
Parameter	Description
Register data file after reprocessing	Automatically registers analyzed data on <LC Postrun Analysis> as well.
Register Acrobat file to Link File 10 field	Registers the document file output by Solution (PDF file) automatically in the area of Link File 10.
Waiting time to monitor document file	Specifies the wait time before a PDF document is output. Setting range (default value): 30 to 3,600 (180)
Register data file to LinkFile9 filed	Registers the solution data file as an object file in the Link File 9 in the sample information table.
Delete after acquisition	Automatically deletes the file after analysis on Solutions side upon registration in the database.
Delete after reprocessing	Automatically deletes the file after post-run analysis on Solutions side upon registration in the database.

12.4.2 [Assign Database per Instrument]

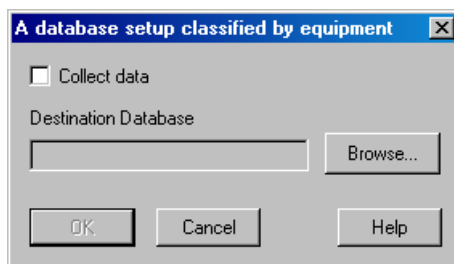
Select [Assign Database per Instrument] from the [Select Items] list. The [Assign Database per Instrument] window will be displayed. This window shows the database for each analyzer, which allows you to specify whether or not to perform data acquisition and to register data.

Note: Modify setting on <A database setup classified by instrument>window displayed by pressing [Edit] button.

Refer to "12.4.2.1 <A database setup classified by instrument>" on page 533



12.4.2.1 <A database setup classified by instrument>



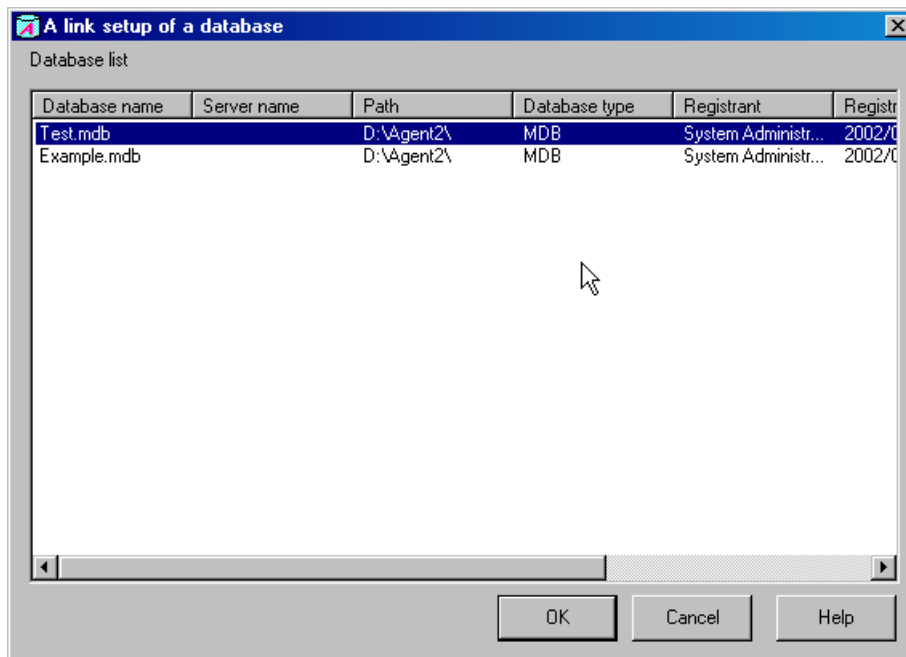
Parameter	Description
Collect data	If this check box is on, the acquired data or re-analyzed data which is generated with the specified instrument is registered to the database. If this check box is off, data is not registered to the database, even if <Select Database by Keyword> setting is done.
Destination Database	In this text box, specify the destination database where data is to be stored. A destination database can be selected from a list in the <select Database> window that is displayed by clicking [Browse] button. This window allows you to only select a database. To add a database, use the <A link setup of a database> window on the CLASS-Agent Manager.



12.4.2.2 <A link setup of a database>

Press the [Browse] button in the <A database setup classified by equipment> or <Select Database by Keyword> window. The <A link setup of a database> window will be displayed.

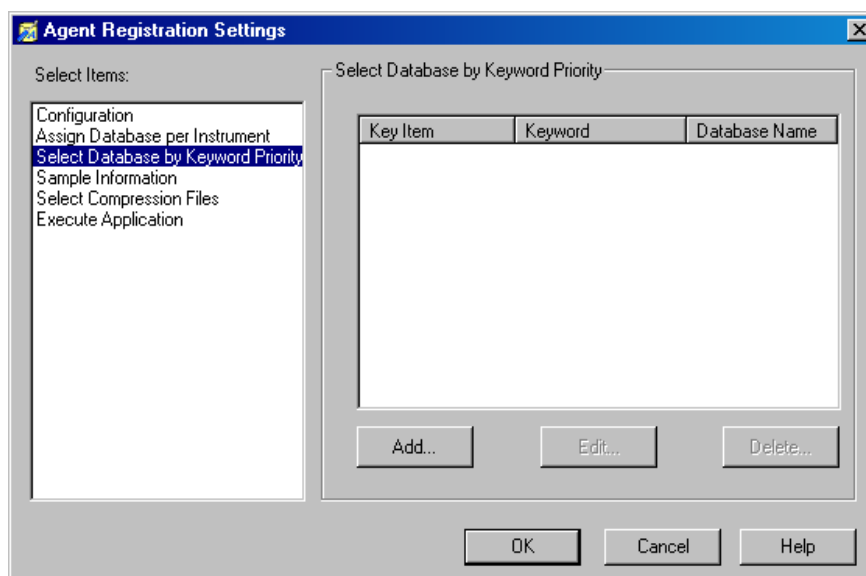
This window lists the databases that were set up in Agent. Select the database in which you want to store data.





12.4.3 [Select Database by Keyword]

Select [Select Database by Keyword] from the [Select Items] list. The [Select Database by Keyword] window will be displayed. The settings for assigning databases by keyword can be displayed or edited.



Parameter	Description
Key Item	Displays the distribution specified on <Database distribution classified by keyword>window (sample name, sample ID, user name, analysis month, data file name, method file name, batch file name, or instrument).
Keyword	Displays specific characters (keyword) specified on <Database distribution classified by keyword>window.
Database Name	Displays the database name specified on <Database distribution classified by keyword>window.
[Add] button	Adds a new setting for database selection in the <Select Database by Keyword> window.
[Edit] button	Edits the selected setting for database selection in the <Select Database by Keyword> window.
[Delete] button	Deletes the selected setting for database selection.

Refer to "12.4.3.1 <Database distribution classified by keyword>" on page 536

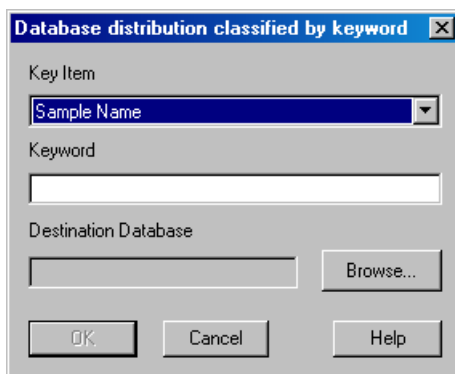
Note: Only data which is(was) generated with instruments specified to "collect data" in "Assign Database per Instrument" setting is registered to database.



12.4.3.1 <Database distribution classified by keyword>

Edits the settings for distribution into the storing database according to the keyword included in the sample information of the data.

The database to be registered can be automatically changed according to specific characters (keyword) in either the sample name, sample ID, user name, or acquired month included in the sample information of the data file



Parameter	Description
Key Item	Select one of the following items by which you want to distribute data to a database: ● Sample Name ● Sample ID ● User Name ● Acquired Month ● Data File ● Method File ● Batch File ● Instrument Name
Keyword	Specifies a keyword for search in the data specified for [Key Item].
Destination Database	Specify the database where the data is to be stored if it contains the keyword. A destination database must be selected from list in the <Select Database> window that is displayed by clicking the [Browse] button. This window only allows you to select a database. To add a database, use the <A link setup of a database> window on CLASS-Agent Manager.



12.4.4 [Sample Information]

Select [Sample Information] from the [Select Items] list. The [Sample Information] window will be displayed.

In the Sample Information pane, specify the items to be included in the sample information field by selecting them in filed 1 through 10.

The screenshot shows the 'Agent Registration Settings' dialog box with the 'Sample Information' tab selected. On the left, the 'Select Items:' list contains: Configuration, Assign Database per Instrument, Select Database by Keyword Priority, **Sample Information** (highlighted), Select Compression Files, and Execute Application. The main area is titled 'Sample Information' and contains the instruction 'Set items to be included in sample information fields.' Below this is a section labeled 'Sample Info.' with ten numbered dropdown menus arranged in two columns. The selections are as follows:

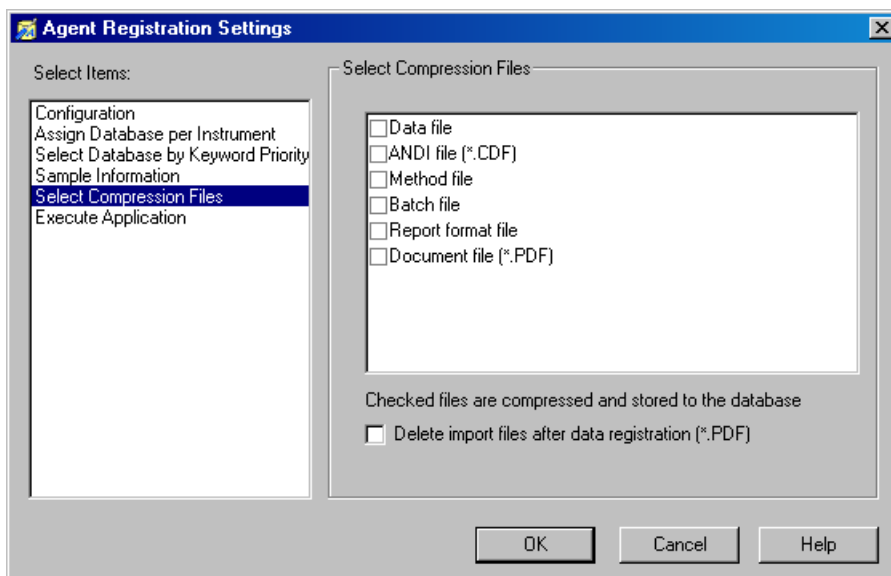
Field	Selection
1:	Sample Amount
2:	Is Amount
3:	Dilution Factor
4:	Option 1
5:	Option 2
6:	Option 3
7:	Option 4
8:	Option 5
9:	Not assigned
10:	Not assigned

At the bottom of the dialog are three buttons: OK, Cancel, and Help.



12.4.5 [Select Compression Files]

Select [Select Compression Files] from the [Select Items] list. The [Select Compression Files] window will be displayed.
When data is registered to a database, the data file can be compressed and saved to the database.



Parameters	Description
Data file ANDI file Method File Batch file Report format file Document file	When selected, compresses the file into a data file to save it.
Delete import files after data registration(*.PDF)	Automatically deletes the import file that has been registered in a database after data acquisition.

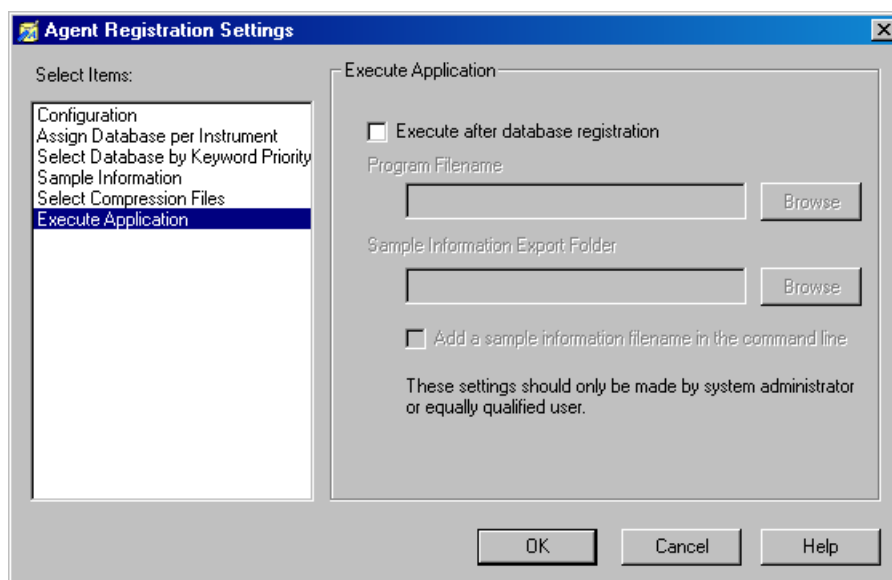


12.4.6 [Execute Application]

Select [Execute Application] from the [Select Items] list. The [Execute Application] window will be displayed.

Settings may be made to run a specified application and save a sample information file in text format when data is registered to a database. The following settings are useful especially when using a custom application to perform certain operations.

Note: Care should be taken to make settings since information file is output each time measurement is performed. If this setting is not made correctly, Windows operations may be hindered.



Parameter	Description
Execute after database registration	If checked, the selected application runs, and a sample information file is output when data is registered to a database. For routine operations, turn off this check box.
Program File Name	Specify the application. If you type an application name directly in the text box, the application name must be enclosed with double quotation marks (""). Up to 10 command lines can be used. Each command must be separated by a space.
Sample Information Export Folder	Specify the name of the destination folder to output a text-formatted sample information file. An output file is named "LCsol****.TXT". The asterisks (****) represent a number between 0 and 9999. The number is reset to 0 when it exceeds 9999.
Add a sample information file name in the command line	Add a sample information filename to a command line for the application to be executed. This requires the application to be able to process a command line.



12.5 <Log Browser>

The <Log Browser> window displays the event logs of log administration, system administration, and instrument. If the user administration is shared with Shimadzu user authentication tool, the log of user authentication tool is also displayed.

Type	Message	Sub Message	Date	Time	Code	User Name	Applical
I	Create Log Database	\GCsolution\Log\LogManag	6/22/2004	2:34:26 PM	0x0000	Admin	System
I	Create Log Database	\GCsolution\Log\LogSystem	6/22/2004	2:34:27 PM	0x0000	Admin	System
I	Create Log Database	\GCsolution\Log\LogEvent1	6/22/2004	2:34:39 PM	0x0000	Admin	System

Parameter	Description												
Type	The types of logs are listed below:<table><tr><th>Log type</th><th>Description</th></tr><tr><td>Log for Log Administration</td><td>A log administration history in which mainly the logs removed from the other event logs are stored. The log administration log cannot be deleted.</td></tr><tr><td>Log for System administration</td><td>A change history of system administration tool, in which user administration information, system policy changes, program check results, and results of raw data corruption checks are stored.</td></tr><tr><td>User Authentication Tool Log</td><td>Displayed when the user authentication tool is used. The log of user administration on the user authentication tool side is stored.</td></tr><tr><td>All Instrument Log</td><td>A history of events that occurred in all the instruments.</td></tr><tr><td>Each Instrument Log</td><td>A history of events that occurred in each instrument. Login/logout, system check, operation logs in files, and audit trail information are stored. When a post-run analysis is made, the instrument name will be "PC_name_none."</td></tr></table>	Log type	Description	Log for Log Administration	A log administration history in which mainly the logs removed from the other event logs are stored. The log administration log cannot be deleted.	Log for System administration	A change history of system administration tool, in which user administration information, system policy changes, program check results, and results of raw data corruption checks are stored.	User Authentication Tool Log	Displayed when the user authentication tool is used. The log of user administration on the user authentication tool side is stored.	All Instrument Log	A history of events that occurred in all the instruments.	Each Instrument Log	A history of events that occurred in each instrument. Login/logout, system check, operation logs in files, and audit trail information are stored. When a post-run analysis is made, the instrument name will be "PC_name_none."
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Log for System administration	A change history of system administration tool, in which user administration information, system policy changes, program check results, and results of raw data corruption checks are stored.												
User Authentication Tool Log	Displayed when the user authentication tool is used. The log of user administration on the user authentication tool side is stored.												
All Instrument Log	A history of events that occurred in all the instruments.												
Each Instrument Log	A history of events that occurred in each instrument. Login/logout, system check, operation logs in files, and audit trail information are stored. When a post-run analysis is made, the instrument name will be "PC_name_none."												
[Search] button	Performs search in accordance with search conditions.												
[Clear] button	Clears all the search conditions.												



Parameter	Description																																								
Search Parameters	After entering the search conditions, press the [Search] button. Search will be started.																																								
	<table><tr><th>Search conditions</th><th>Description</th></tr><tr><td>Sort</td><td>Select whether the search results are listed in the chronologically ascending or descending order in logs.</td></tr><tr><td>Type</td><td>Select a specific item into which you want to classify the search results.</td></tr><tr><td>User Name</td><td>Select a user name from the list when searching with that user name.</td></tr><tr><td>Application Name</td><td>Select an application name from the list when searching with that application name.</td></tr><tr><td>Message</td><td>Specify a word you want to directly search for when searching with event data. You need to first enter "=" for matching search or "<" for mismatching search. An asterisk (*) may be used as a wildcard for a characters string to be searched for. For example, when searching for non-message data starting with "log," enter "<log*" in the "Message" field. For the user authentication tool log, comply with the search equation rules for the user authentication tool.</td></tr><tr><td>Sub Message</td><td>Specify a word you want to directly search for when searching with a file path or the like for an event. You need to first enter "=" for matching search or "<" for mismatching search. An asterisk (*) may be used as a wildcard for a characters string to be searched for. For the user authentication tool log, comply with the search equation rules for the user authentication tool.</td></tr><tr><td>Specified Date Time (Start) Specified Date Time (End)</td><td>Specify a date when searching with the date when an event occurred. To search by specifying a period, select the Start and End options and then specify the respective dates. To search with no earlier than a specific date, select only the Start option and then specify the date. To search with no later than a specific date, select only the End option and then specify the date.</td></tr></table>	Search conditions	Description	Sort	Select whether the search results are listed in the chronologically ascending or descending order in logs.	Type	Select a specific item into which you want to classify the search results.	User Name	Select a user name from the list when searching with that user name.	Application Name	Select an application name from the list when searching with that application name.	Message	Specify a word you want to directly search for when searching with event data. You need to first enter "=" for matching search or "<" for mismatching search. An asterisk (*) may be used as a wildcard for a characters string to be searched for. For example, when searching for non-message data starting with "log," enter "<log*" in the "Message" field. For the user authentication tool log, comply with the search equation rules for the user authentication tool.	Sub Message	Specify a word you want to directly search for when searching with a file path or the like for an event. You need to first enter "=" for matching search or "<" for mismatching search. An asterisk (*) may be used as a wildcard for a characters string to be searched for. For the user authentication tool log, comply with the search equation rules for the user authentication tool.	Specified Date Time (Start) Specified Date Time (End)	Specify a date when searching with the date when an event occurred. To search by specifying a period, select the Start and End options and then specify the respective dates. To search with no earlier than a specific date, select only the Start option and then specify the date. To search with no later than a specific date, select only the End option and then specify the date.																								
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Logs	The following items will be displayed in the log:																																								
	<table><tr><th>Log items</th><th>Description</th></tr><tr><td>Type</td><td>The logs are classified into the following groups according to their message types:<table><tr><th>Symbol</th><th>Classification</th><th>Description</th></tr><tr><td>E</td><td>Error</td><td>This log is written when a problem has occurred, which prevents the processing from being continued unless any action is taken.</td></tr><tr><td>W</td><td>Warning</td><td>This log is written when the processing can be continued, but a state requiring caution has occurred.</td></tr><tr><td>L</td><td>Login/logout</td><td>This log is written when a login or logout has occurred</td></tr><tr><td>A</td><td>Audit trail</td><td>This is an audit trail log.</td></tr><tr><td>I</td><td>Information</td><td>This log is written for information other than the above.</td></tr></table></td></tr><tr><td>Message</td><td>Shows the details of the event.</td></tr><tr><td>Sub Message</td><td>Shows a file path or the like for the event.</td></tr><tr><td>Date</td><td>Shows the date when the event occurred.</td></tr><tr><td>Time</td><td>Shows the time when the event occurred.</td></tr><tr><td>Code</td><td>Shows a code corresponding to the message.</td></tr><tr><td>User Name</td><td>Shows the name of the user who logged in when the event occurred.</td></tr><tr><td>Application</td><td>Shows the application name in which the even occurred.</td></tr><tr><td>Device Name</td><td>Shows the name of the instrument in which the event occurred. "None" is displayed for post-run analysis.</td></tr><tr><td>PC Name</td><td>Shows the name of the PC in which the event occurred.</td></tr></table>	Log items	Description	Type	The logs are classified into the following groups according to their message types: <table><tr><th>Symbol</th><th>Classification</th><th>Description</th></tr><tr><td>E</td><td>Error</td><td>This log is written when a problem has occurred, which prevents the processing from being continued unless any action is taken.</td></tr><tr><td>W</td><td>Warning</td><td>This log is written when the processing can be continued, but a state requiring caution has occurred.</td></tr><tr><td>L</td><td>Login/logout</td><td>This log is written when a login or logout has occurred</td></tr><tr><td>A</td><td>Audit trail</td><td>This is an audit trail log.</td></tr><tr><td>I</td><td>Information</td><td>This log is written for information other than the above.</td></tr></table>	Symbol	Classification	Description	E	Error	This log is written when a problem has occurred, which prevents the processing from being continued unless any action is taken.	W	Warning	This log is written when the processing can be continued, but a state requiring caution has occurred.	L	Login/logout	This log is written when a login or logout has occurred	A	Audit trail	This is an audit trail log.	I	Information	This log is written for information other than the above.	Message	Shows the details of the event.	Sub Message	Shows a file path or the like for the event.	Date	Shows the date when the event occurred.	Time	Shows the time when the event occurred.	Code	Shows a code corresponding to the message.	User Name	Shows the name of the user who logged in when the event occurred.	Application	Shows the application name in which the even occurred.	Device Name	Shows the name of the instrument in which the event occurred. "None" is displayed for post-run analysis.	PC Name	Shows the name of the PC in which the event occurred.
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PC Name	Shows the name of the PC in which the event occurred.																																								
[Save As] button	Saves the log as a CSV format file, Formatted text or tab-separated text file. Click the button to open the window for selecting the file and click [Save] button.																																								
[Print] button	Prints out the displayed log. Note: As the printing format is fixed, it cannot be changed.																																								
[Delete Log] button	Deletes the displayed log. Note: The logs of log administration and user authentication tool cannot be removed.																																								

**For verifying audit trail logs with instrument logs**

Note: To manage audit trail logs with instrument logs, check [Output Audit Trail to Instrument Log] on <System Policy> window beforehand. After the checking, audit trail logs are managed with instrument logs.

- 1.** Codes are specified for audit trail log messages.
- 2.** To verify the changes, double-click the message and display <Audit Trail Log> window.

Viewing the details of an error/warning message

- 1.** The message code for the error/warning message is included in the code column of the log for all instruments/each instrument.
- 2.** Right-click the appropriate row of the log. A pop-up menu will appear. Click the Help menu. The message help will be displayed, allowing you to view the cause for that error/warning and remedial action.



13.1

Overview of <QA/QC> Window

QA/QC means quality assurance and quality control. The QA/QC equations available in GCsolution allow you to check the conformity of GCsolution (including the GC unit) and the analytical conditions. The parameters used to evaluate QA/QC are set for both method files and batch files. The instruction for performing QA/QC evaluation is set in the [Action] cell of the batch table. The results of the QA/QC evaluation can be output as a text file. Based on these results, batch processing can be controlled.

13.1.1 Functions of <QA/QC> Window

In the <QA/QC> window, perform the following operations.

Operation	Main window used
Specify the QA/QC details for each sample type. Establish the evaluation criteria for each compound, if necessary.	Refer to "13.2 <QA/QC> - [General] Tab" on page 545
Establish the evaluation criteria.	Refer to "13.3 <QA/QC> - [Criteria] Tab" on page 553
Specify the method for calculating the S/N ratio.	Refer to "13.2.2.1 <S/N Detail> Window" on page 550
Specify the method for calculating the detection limit.	Refer to "13.2.2.2 <Detection Limit Detail> Window" on page 550
Specify the character string used to show the result.	Refer to "13.3.5.1 <Judgement> Window" on page 559

The QA/QC evaluation is performed along with realtime batch and postrun batch. For this reason, perform the following operations in the <Batch Table> window in addition to the <QA/QC> window as follows.

Operation	Main window used
Specify how to stop or pause the batch processing and how to execute the user's program, depending on whether the QA/QC evaluation criteria are met.	Refer to "9.10.6 <Schedule Action> Window" on page 371
Specify how to output the QA/QC evaluation results as a text file.	Refer to "9.11.7 <Settings> - [QAQC] Tab" on page 380

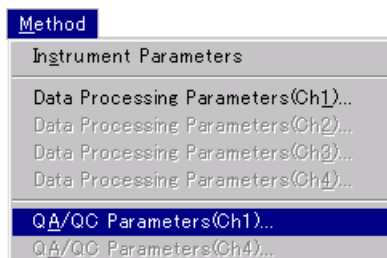
Note: In calculating the standard deviation (SD)/relative standard deviation (%), obtain the average. Since this operation reduces the degree of freedom by 1, the denominator uses [the number of data minus 1] rather than the number of data.

Note: An undefinable value may result from the calculation of the standard deviation. In addition, the values (area, height, etc.) that should have been calculated from the peaks, if detected, are also undefinable. All of these undefinable values are indicated with "-".

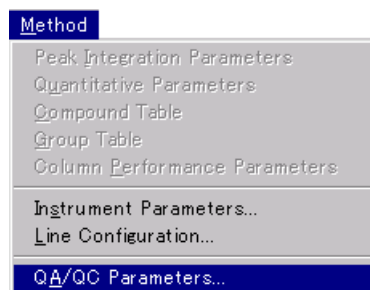


13.1.2 Opening <QA/QC> Window

- Select [Method]-[QA/QC Parameters] from the menu bar in the <Calibration Curve> window on the <GC Postrun> screen.



- Select [Method]-[QA/QC Parameters] from the menu bar in the <Data Analysis> window on the <GC Postrun> screen.



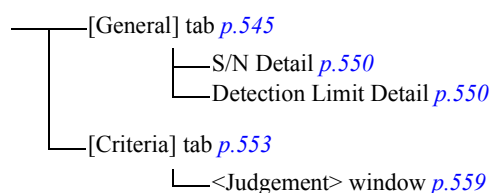
13.1.3 Menu Tree of <QA/QC> Window

In the <QA/QC> window, use the following windows to operate data.

- When setting the QA/QC parameters:

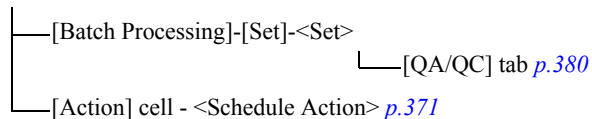
<Data Acquisition><GC Real Time Analysis>, <Data Analysis><GC Postrun>, <Calibration Curve><GC Postrun>

Method-QA/QC Parameters-QA/QC (ch#)



- When specifying how to perform the QA/QC evaluation:

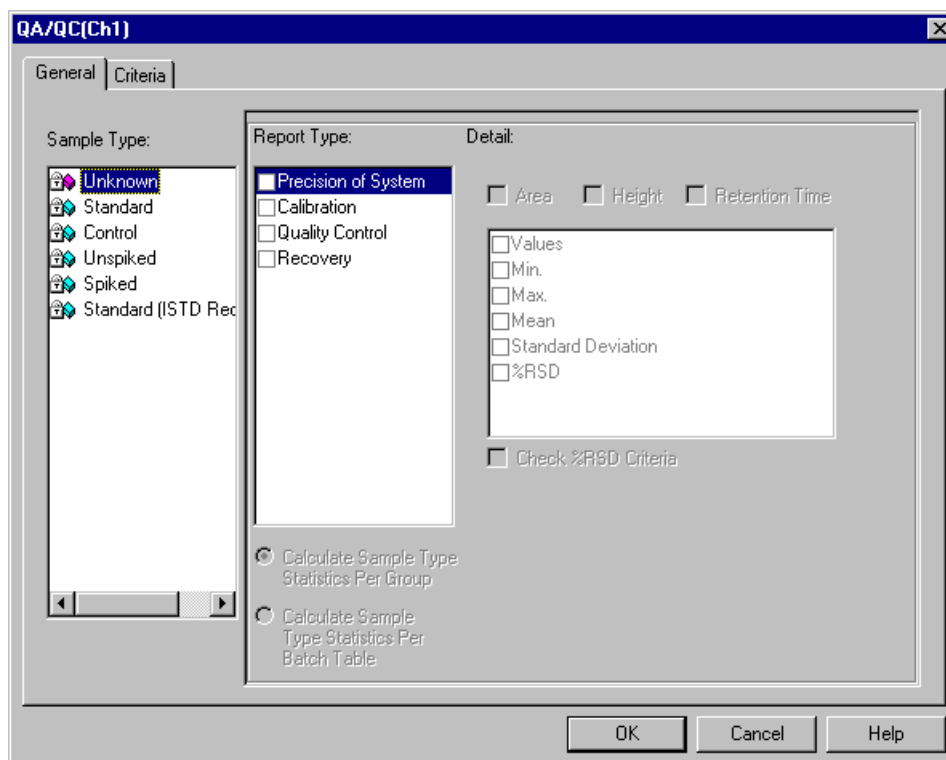
<Batch Table> (GC Analysis/Postrun)



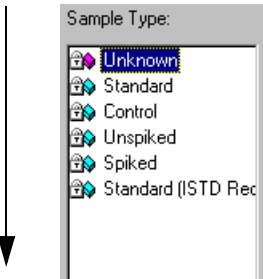
13.2

<QA/QC> - [General] Tab

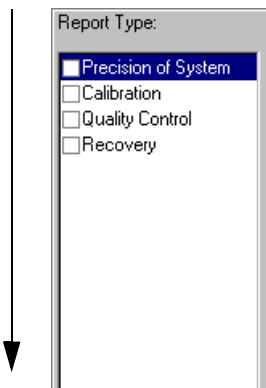
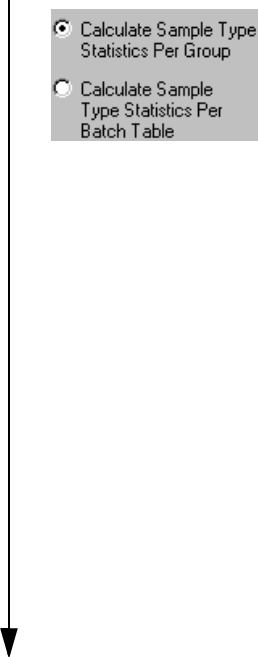
Set the necessary parameters in the <QA/QC> window and statistically process multiple sets of data according to those settings. Some report types require a single set of data for calculation, while others require more than one set of data.



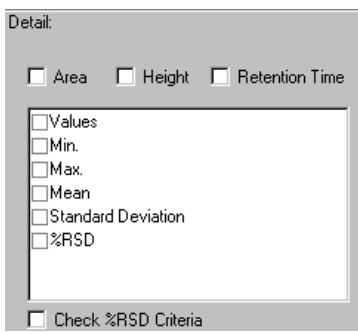
● Setting sequence (for each sample type)

Setting sequence	Description										
Sample type 	Select the sample type you want to specify. <table><tr><th>Sample Type</th><th>Description</th></tr><tr><td>Unknown</td><td rowspan="5">No special handling is applied for QA/QC.</td></tr><tr><td>Standard</td></tr><tr><td>Control</td></tr><tr><td>Unspiked</td></tr><tr><td>Spiked</td></tr><tr><td>Standard (ISTD Recovery)</td><td>Standard sample used to obtain recovery ratio</td></tr></table>	Sample Type	Description	Unknown	No special handling is applied for QA/QC.	Standard	Control	Unspiked	Spiked	Standard (ISTD Recovery)	Standard sample used to obtain recovery ratio
Sample Type	Description										
Unknown	No special handling is applied for QA/QC.										
Standard											
Control											
Unspiked											
Spiked											
Standard (ISTD Recovery)	Standard sample used to obtain recovery ratio										



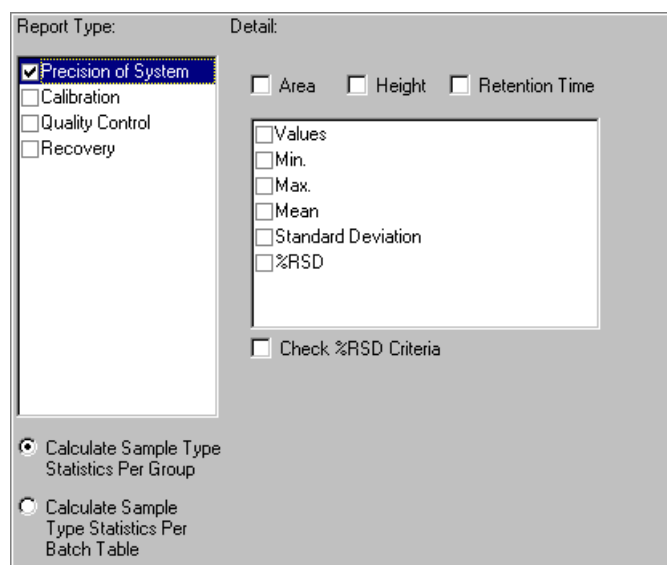
Setting sequence	Description																
Report Type 	After selecting a sample type, check the desired report type for that sample type. For the checked report type, you may specify further details in the Detail area. <table><tr><th>Report Type</th><th>Description</th></tr><tr><td>Precision of System</td><td>The reproducibility of repeated analysis is checked in terms of area, height, and retention time to obtain the repeated accuracy of the analyzer itself.</td></tr><tr><td>Calibration</td><td>The data forming the calibration curve is checked to calculate the correlation coefficient, S/N ratio, and detection limit for the calibration curve.</td></tr><tr><td>Quality Control</td><td>The dispersion of concentrations obtained when the sample of the same concentration was applied is checked to calculate the accuracy and method detection limit.</td></tr><tr><td>Recovery</td><td>The recovery ratio is obtained.</td></tr></table>	Report Type	Description	Precision of System	The reproducibility of repeated analysis is checked in terms of area, height, and retention time to obtain the repeated accuracy of the analyzer itself.	Calibration	The data forming the calibration curve is checked to calculate the correlation coefficient, S/N ratio, and detection limit for the calibration curve.	Quality Control	The dispersion of concentrations obtained when the sample of the same concentration was applied is checked to calculate the accuracy and method detection limit.	Recovery	The recovery ratio is obtained.						
Report Type	Description																
Precision of System	The reproducibility of repeated analysis is checked in terms of area, height, and retention time to obtain the repeated accuracy of the analyzer itself.																
Calibration	The data forming the calibration curve is checked to calculate the correlation coefficient, S/N ratio, and detection limit for the calibration curve.																
Quality Control	The dispersion of concentrations obtained when the sample of the same concentration was applied is checked to calculate the accuracy and method detection limit.																
Recovery	The recovery ratio is obtained.																
Setting for calculation method 	Select either of the following calculation method: ● Calculate Sample Type Statistics Per Group ● Calculate Sample Type Statistics Per Batch Table Set this parameter when you want to perform the QA/QC evaluation along with the batch analysis and batch postrun. You do not need to set the parameter if you perform the QA/QC evaluation in the <Data Postrun> mode. A group means a batch of samples of the same type that are consecutively indicated in the batch table. For example, the report type is described here assuming that "Calculate Sample Type Statistics Per Group" is selected for an unknown sample and that "Calculate Sample Type Statistics Per Batch Table" is selected for a control Note: The timing of QA/QC judgment performed using the judgment function of <Batch Action> follows the same rule. No judgment is made on the row precluded from reporting even though that row has been set to perform some judgment.. <table><tr><th>Batch table sample type</th><th>Report output</th></tr><tr><td>Unknown</td><td>No report is created here.</td></tr><tr><td>Unknown</td><td>Since the series of the unknown sample is finished, the report is created using the data for the two samples.</td></tr><tr><td>Control</td><td>No report is created here.</td></tr><tr><td>Control</td><td>No report is created here.</td></tr><tr><td>Unknown</td><td>No report is created here.</td></tr><tr><td>Unknown</td><td>Since the series of the unknown sample is finished, the report is created using the data for the two samples.</td></tr><tr><td>Control</td><td>Since the batch is finished, the report is output using the data for three controls.</td></tr></table>	Batch table sample type	Report output	Unknown	No report is created here.	Unknown	Since the series of the unknown sample is finished, the report is created using the data for the two samples.	Control	No report is created here.	Control	No report is created here.	Unknown	No report is created here.	Unknown	Since the series of the unknown sample is finished, the report is created using the data for the two samples.	Control	Since the batch is finished, the report is output using the data for three controls.
Batch table sample type	Report output																
Unknown	No report is created here.																
Unknown	Since the series of the unknown sample is finished, the report is created using the data for the two samples.																
Control	No report is created here.																
Control	No report is created here.																
Unknown	No report is created here.																
Unknown	Since the series of the unknown sample is finished, the report is created using the data for the two samples.																
Control	Since the batch is finished, the report is output using the data for three controls.																



Setting sequence	Description
Detail area 	Set the parameters for each report type. The setting items are different depending on the report types. <i>Refer to "13.2.1 <QA/QC> - [General] Tab - [Precision of System]" on page 547</i> <i>Refer to "13.2.2 <QA/QC> - [General] Tab - [Calibration Curve]" on page 548</i> <i>Refer to "13.2.3 <QA/QC> - [General] Tab - [Quality Control]" on page 551</i> <i>Refer to "13.2.4 <QA/QC> - [General] Tab - [Recovery]" on page 552</i>

13.2.1 <QA/QC> - [General] Tab - [Precision of System]

If [Precision of System] is selected, the reproducibility of the repeated analysis will be checked in terms of area, height, and retention time to obtain the repeated accuracy of the analyzer itself.



Parameter	Description
Area	If check-marked, outputs the report for area.
Height	If check-marked, outputs the report for height.
Retention time	If check-marked, outputs the report for retention time.
Values	If check-marked, outputs the data for area, height, and retention time.
Min.	If check-marked, outputs the minimum data value.



Parameter	Description
Max.	If check-marked, outputs the maximum data value.
Mean	If check-marked, outputs the mean value of data.
Standard Deviation	If check-marked, outputs the standard deviation of data.
%RSD	If check-marked, outputs the %RSD of data.
Check %RSD Criteria	If check-marked, judges pass or fail according to the upper limit of %RSD.

For the calculation types regarding mean, standard deviation, and %RSD, refer to "16.8 <QA/QC> Calculation Methods" on page 638

Note: The calculation is performed along with the batch analysis and batch postrun. Therefore, you must previously check-mark [Execute QA/QC] on the <Set> - [QA/QC] tab page in the <Batch Table> window. [Refer to "9.11.7 <Settings> - \[QA/QC\] Tab" on page 380](#)

Note: To specify the standard value for pass/fail determination, use [Precision of System] on the [Criteria] tab page. [Refer to "13.3.1 <QA/QC> - \[Criteria\] Tab - \[Precision of System\]" on page 555](#)

13.2.2 <QA/QC> - [General] Tab - [Calibration Curve]

Report Type: ☒ Precision of System ☒ Calibration ☐ Quality Control ☐ Recovery

Detail:

- ☐ Area/Height
- ☐ Correlation Coefficient
- ☐ Slope of regression line
- ☐ Y intercepts of regression line
- ☐ Sum of the squares of the residuals
- ☐ Residual SD of regression line
- ☐ Residual standard deviation of Y inter.
- ☐ Response Factor (RF)
- ☐ Mean RF
- ☐ RF Standard deviation
- ☐ RF %RSD
- ☐ S/N
- ☐ Detection Limit (DL)

☒ Calculate Sample Type Statistics Per Group ☐ Calculate Sample Type Statistics Per Batch Table

☐ Check Correlation Coefficient Criteria ☐ Check Response Factor Criteria ☐ Check RF %RSD Criteria

SN Detail... DL Detail...

Parameter	Description
Area/Height	If check-marked, outputs area/height. Note: The output type, area or height is determined by which one was used to create the calibration curve. If the internal standard method is used, the area ratio or height ratio will be displayed, respectively.
Correlation Coefficient	If check-marked, outputs the correlation coefficient.
Slope of regression line	If check-marked, outputs the slope of regression line.



Parameter	Description
Y intercepts of regression line	If check-marked, outputs the Y intercepts of regression line.
Sum of the squares of the residuals	If check-marked, outputs the squares of the residuals.
Residual SD of regression line	If check-marked, outputs the residual standard deviation.
Residual standard deviation of Y inter.	If check-marked, outputs the residual standard deviation of Y Intercept.
Response Factor (RF)	If check-marked, outputs the response factor.
Mean RF	If check-marked, outputs the mean RF.
RF Standard deviation	If check-marked, outputs the RF standard deviation.
RF %RSD	If check-marked, outputs the RF relative standard deviation.
S/N	If check-marked, outputs the S/N ration.
Detection Limit (DL)	If check-marked, outputs the detection limit.
[SN Detail] button	Displays the <S/N Detail> window, which allows you to specify the calculation method for the S/N. <i>Refer to "13.2.2.1 <S/N Detail> Window" on page 550</i>
[DL Limit] button	Displays the <DL Detail> window, which allows you to specify the calculation method for the detection limit. <i>Refer to "13.2.2.2 <Detection Limit Detail> Window" on page 550</i>
Check Correlation Coefficient Criteria	Uses the lower limit of the correlation coefficient to evaluate the result.
Check Response Factor Criteria	If check-marked, uses the lower limit of the response factor to evaluate the result.
Check RF%RSD Criteria	If check-marked, uses the relative standard deviation of the response factor to evaluate the result.

Note: The calculation is performed along with the batch analysis and batch postrun. Therefore, you must previously check-mark [Execute QA/QC] on the <Set> - [QA/QC] tab page of the <Batch Table> window. *Refer to "9.11.7 <Settings> - [QA/QC] Tab" on page 380*

Note: In this calculation, up to 10 values are calculated at each level for each sample type. Any subsequent value will be ignored with the corresponding message displayed on the output window.

Note: To specify the criteria for pass/fail check, use [Calibration Curve] on the [Criteria] tab page. *Refer to "13.3.2 <QA/QC> - [Criteria] Tab - [Calibration]" on page 556*

Note: When the detection limit is calculated based on the noise, results can be found only when the quantitative parameter "Calc. by" is set to "Height" and "X Axis of Calib. Curve" to "Conc." And when the detection limit is calculated based on the y-intercept, results can be found only when the quantitative parameter "X Axis of Calib. Curve" to "Conc."



13.2.2.1 <S/N Detail> Window

Specify the noise measurement duration based on retention time.

S/N Detail

Set Absolute time

from(min.) 3 to(min.) 10 step(min.) 1

OK Cancel

Note: Normally, specify a baseline segment without any peak.

Parameter	Description
from (min.)	Enter the time at which the noise calculation starts.
to (min.)	Enter the time at which the noise calculation ends.
step (min.)	If you divide the noise calculation, specify the time for each part between 0.5 and 1.0 minute.

13.2.2.2 <Detection Limit Detail> Window

The <Detection Limit Detail> window is used to specify the calculation method for the detection limit.

Detection Limit Detail

☒ Derived from the residual standard deviation of regression line (Sy/x). Coefficient: 3

☐ Derived from the residual standard deviation of y-intercepts of regression lines (Sy). Coefficient: 3

☐ Derived from S/N. S/N= 3

OK Cancel

Parameter	Description
Derived from the residual standard deviation of regression line (Sy/x).	If you mark this parameter with a check, the detection limit will be calculated from the concentration corresponding to the analysis signal, which has been obtained by multiplying the value for the residual standard deviation of the calibration curve by a coefficient. Enter the coefficient here.
Derived from the residual standard deviation of y-intercepts of regression lines (Sy).	If mark this parameter with a check, the detection limit will be calculated from the concentration corresponding to the analysis signal, which has been obtained by multiplying the residual standard deviation value for the Y intercepts of the calibration curve by a coefficient. Enter the coefficient here.
Derived from S/N	If mark this parameter with a check, the detection limit will be calculated from the concentration corresponding to the analysis signal for the S/N ratio. Enter the S/N ratio here.



13.2.3 <QA/QC> - [General] Tab - [Quality Control]

Report Type: ☒ Precision of System
☒ Calibration
☒ **Quality Control**
☐ Recovery

Detail:

☐ True Conc.
☐ Concentration
☐ Min Conc.
☐ Max Conc.
☐ Mean Conc.
☐ Conc. Standard Deviation
☐ Conc. %RSD
☐ Mean Accuracy
☐ Method Detection Limit (MDL)

MDL Confidence Level: %

☒ Calculate Sample Type Statistics Per Group
☐ Calculate Sample Type Statistics Per Batch Table

☐ Check Conc. Criteria
☐ Check Conc. %RSD Criteria
☐ Check Mean Accuracy Criteria

Parameter	Description
True Conc.	If check-marked, outputs the concentration specified in the compound table.
Concentration	If check-marked, outputs the concentration obtained by the quantitative calculation.
Min Conc.	If check-marked, outputs the minimum concentration among the data.
Max Conc.	If check-marked, outputs the maximum concentration among the data.
Mean Conc.	If check-marked, outputs the mean value for concentration.
Conc. Standard Deviation	If check-marked, outputs the standard deviation of concentration.
Conc. %RSD	If check-marked, outputs the relative standard deviation of concentration.
Mean Accuracy	If check-marked, outputs the mean accuracy of concentration.
Method Detection Limit (MDL)	If check-marked, outputs the detection limit of method.
MDL Confidence Level	If check-marked, specifies the reliability level.
Check Conc. Criteria	If check-marked, evaluates the result according to the upper and lower limits of concentration.
Check Conc. %RSD Criteria	If check-marked, evaluates the result according to the upper limit of the relative standard deviation of concentration.
Check Mean Accuracy Criteria	If check-marked, evaluates the result according to the upper and lower limits of mean accuracy.

Note: The calculation is performed along with the batch analysis and batch postrun. Therefore, you must previously check-mark [Execute QA/QC] on the <Set> - [QA/QC] tab page of the <Batch Table> window. [Refer to "9.11.7 <Settings> - \[QA/QC\] Tab" on page 380](#)

Note: To specify the criteria for pass/fail check, use [Quality Control] on the [Criteria] tab page. [Refer to "13.3.3 <QA/QC> - \[Criteria\] Tab - \[Quality Control\]" on page 557](#)



13.2.4 <QA/QC> - [General] Tab - [Recovery]

Report Type:

☐ Precision of System
☐ Calibration
☐ Quality Control
☒ Recovery

Detail:

☒ Calculated by Spiked Amount.
☐ Calculated by Recovery Standard

☐ Spiked Amount
☐ Concentration
☐ Area of Standard (ISTD Recovery)
☐ Area
☐ Recovery
☐ Mean Recovery
☐ Recovery %RSD

☐ Check Mean Recovery Criteria

☒ Calculate Sample Type Statistics Per Group
☐ Calculate Sample Type Statistics Per Batch Table

Parameter	Description
Calculated by Spiked Amount	If check-marked, calculates the recovery ratio from the spiked amount.
Calculated by Recovery Standard	If check-marked, calculates the recovery ratio using the standard substance (ISTD recovery ratio).
Spiked Amount	If check-marked, outputs the spiked amount specified in the compound table. Note: This setting is only valid when [Calculated by Spiked Amount] is selected.
Concentration	If check-marked, outputs the concentration obtained by quantitative calculation. Note: This setting is only valid when [Calculated by Spiked Amount] is selected.
Area of Standard (ISTD Recovery)	If check-marked, outputs the mean value for area of standard sample (ISTD recovery ratio). Note: This setting is only valid when [Calculated by Recovery Standard] is selected.
Area	If check-marked, outputs the area obtained as the result of integration. Note: This setting is only valid when [Calculated by Recovery Standard] is selected.
Recovery	If check-marked, outputs the recovery ratio.
Mean Recovery	If check-marked, outputs the mean recovery ratio.
Recovery %RSD	If check-marked, outputs the relative standard deviation of recovery ratio.
Check Mean Recovery Criteria	If check-marked, evaluates the mean recovery ratio.

Note: The calculation is performed along with the batch analysis and batch postrun. Therefore, you must previously check [Execute QA/QC] on the <Set> - [QA/QC] tab page of the <Batch Table> window. [Refer to "9.11.7 <Settings> - \[QA/QC\] Tab" on page 380](#)

Note: To specify the criteria for pass/fail check, use [Recovery] on the [Criteria] tab page. [Refer to "13.3.4 <QA/QC> - \[Criteria\] Tab - \[Recovery\]" on page 558](#)

13.3

<QA/QC> - [Criteria] Tab

The <QA/QC> window is used to set the criteria for evaluating QA/QC. If [Check %RSD Criteria] is check-marked on the [General] tab page, QA/QC will be checked to see whether it meets the criteria set on this screen, and then the result will be reported.

Note: QA/QC is evaluated along with the batch analysis and batch postrun. Batch processing can be controlled by previously specifying the processing method using the evaluation result in the [Action] cell of the batch table. [Refer to "9.10.6 <Schedule Action> Window" on page 371](#)

Set the criteria for each compound. To do so, select each item (cell) and then use the <Judgement> window, which is displayed by selecting [Judgement] from the pop-up menu.

QA/QC[Ch1]

General Criteria

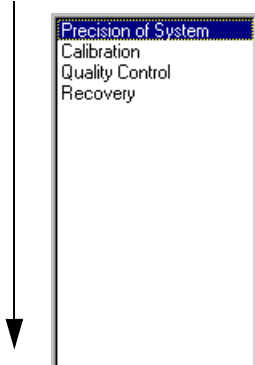
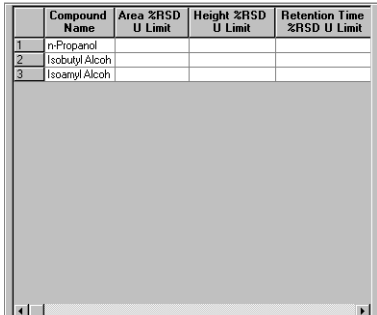
Precision of System
Calibration
Quality Control
Recovery

	Compound Name	Area %RSD U Limit	Height %RSD U Limit	Retention Time %RSD U Limit
1	n-Propanol			
2	Isobutyl Alcoh			
3	Isoamyl Alcoh			

OK Cancel Help



● Setting sequence (set the parameters for each report type)

Setting sequence	Description										
Report type 	Set and save the parameters for each report type. To set the parameters, first select a report type. <table><tr><th>Report type</th><th>Description</th></tr><tr><td>Precision of System</td><td>Maximum of relative standard deviation for each of area, height, and retention time.</td></tr><tr><td>Calibration</td><td>Upper limit of RF. Upper limit of relative standard deviation for RF. Lower limit of relative coefficient.</td></tr><tr><td>Quality Control</td><td>Upper limit of relative standard deviation. Upper and lower limits of mean accuracy. Upper and lower limits of concentration.</td></tr><tr><td>Recovery</td><td>Upper and lower limits of mean recovery ratio.</td></tr></table>	Report type	Description	Precision of System	Maximum of relative standard deviation for each of area, height, and retention time.	Calibration	Upper limit of RF. Upper limit of relative standard deviation for RF. Lower limit of relative coefficient.	Quality Control	Upper limit of relative standard deviation. Upper and lower limits of mean accuracy. Upper and lower limits of concentration.	Recovery	Upper and lower limits of mean recovery ratio.
Report type	Description										
Precision of System	Maximum of relative standard deviation for each of area, height, and retention time.										
Calibration	Upper limit of RF. Upper limit of relative standard deviation for RF. Lower limit of relative coefficient.										
Quality Control	Upper limit of relative standard deviation. Upper and lower limits of mean accuracy. Upper and lower limits of concentration.										
Recovery	Upper and lower limits of mean recovery ratio.										
Detail area 	When a report type is selected, the right area will change according to the selected report type. Now set each criterion. Refer to "13.3.1 <QA/QC> - [Criteria] Tab - [Precision of System]" on page 555 Refer to "13.3.2 <QA/QC> - [Criteria] Tab - [Calibration]" on page 556 Refer to "13.3.3 <QA/QC> - [Criteria] Tab - [Quality Control]" on page 557 Refer to "13.3.4 <QA/QC> - [Criteria] Tab - [Recovery]" on page 558										



13.3.1 <QA/QC> - [Criteria] Tab - [Precision of System]

To set the criteria for the precision of system, set the parameters in the following window.

Note: If [Check %RSD Criteria] is not check-marked on the [General] tab page of the <QA/QC> window, this precision check will not be performed, even when the parameters are set.

Refer to "13.2.1 <QA/QC> - [General] Tab - [Precision of System]" on page 547

	Compound Name	Area %RSD U Limit	Height %RSD U Limit	Retention Time %RSD U Limit
1	n-Propanol			
2	Isobutyl Alcoh			
3	Isoamyl Alcoh			

Parameter	Description
Area %RSD U Limit	Set the upper limit of relative standard deviation for area in each set of data. A compound which has exceeded this limit will be reported as "Exceeding Criteria" in the pass/fail determination.
Height %RSD U Limit	Set the upper limit of relative standard deviation for height in each set of data. A compound which has exceeded this limit will be reported as "Exceeding Criteria" in the pass/fail determination.
Retention Time %RSD U Limit	Set the upper limit of relative standard deviation for retention time in each set of data. A compound which has exceeded this limit will be reported as "Exceeding Criteria" in the pass/fail determination.

Note: The pass/fail character string reported after the evaluation may be changed. *Refer to "13.3.5.1 <Judgement> Window" on page 559*



13.3.2 <QA/QC> - [Criteria] Tab - [Calibration]

To set the criteria for the calibration, set the parameters in the following window.

Note: If [Check %RSD Criteria] is not check-marked on the [General] tab page of the <QA/QC> window, this precision check will not be performed, even when the parameters are set.

Refer to "13.2.2 <QA/QC> - [General] Tab - [Calibration Curve]" on page 548

	Compound Name	RF L Limit	RF %RSD U Limit	Correlation Coef L Limit
1	Nonane			
2	Decane			
3	Undecane			
4	Dodecane			
5	Tridecane			

Parameter	Description
RF L Limit	Set the lower limit of response factor in each set of data. A compound which has not reached this value will be reported as "Not Matching Criteria."
RF %RSD U Limit	Set the upper limit of relative standard deviation for response factor in each set of data. A compound which exceeds this value will be reported as "Exceeding Criteria."
Correlation Coef L Limit	Set the lower limit of relative coefficient in each set of data. A compound which has not reached this value will be reported as "Not Matching Criteria."

Note: The pass/fail character string reported after the evaluation may be changed. *Refer to "13.3.5.1 <Judgement> Window" on page 559*



13.3.3 <QA/QC> - [Criteria] Tab - [Quality Control]

To set the criteria for quality control, set the parameters in the following window.

Note: If [Check %RSD Criteria] is not check-marked on the [General] tab page of the <QA/QC> window, this precision check will not be performed, even when the parameters are set.

Refer to "13.2.3 <QA/QC> - [General] Tab - [Quality Control]" on page 551

	Compound Name	%RSD U Limit	mean accuracy L Limit	mean accuracy U Limit	Min. conc.	Max. conc.
1	n-Propanol					
2	Isobutyl Alcoh					
3	Isoamyl Alcoh					

Parameter	Description
%RSD U Limit	Set the upper limit of relative standard deviation for concentration in each set of data. A compound which has exceeded this value will be reported as "Exceeding Criteria" in the pass/fail determination.
mean accuracy L Limit	Set the lower limit of mean accuracy. A compound which has not reached this value will be reported as "Not Matching Criteria" in the pass/fail determination.
mean accuracy U Limit	Set the upper limit of mean accuracy. A compound which has exceeded this value will be reported as "Exceeding Criteria" in the pass/fail determination.
Min. conc.	Set the lower limit of concentration. A compound which has not reached this value will be reported as "Not Matching Criteria" in the pass/fail determination.
Max. conc.	Set the upper limit of concentration. A compound which has exceeded this value will be reported as "Exceeding Criteria" in the pass/fail determination.

Note: The pass/fail character string reported after the evaluation may be changed. *Refer to "13.3.5.1 <Judgement> Window" on page 559*



13.3.4 <QA/QC> - [Criteria] Tab - [Recovery]

To set the criteria for quality control, set the parameters in the following window.

Note: If [Check %RSD Criteria] is not check-marked on the [General] tab page of the <QA/QC> window, this precision check will not be performed, even when the parameters are set.

Refer to "13.2.4 <QA/QC> - [General] Tab - [Recovery]" on page 552

	Compound Name	Recovery Standard	mean Recovery L Limit	mean Recovery R Limit
1	n-Propanol	☐		
2	Isobutyl Alcoh	☐		
3	Isoamyl Alcoh	☐		

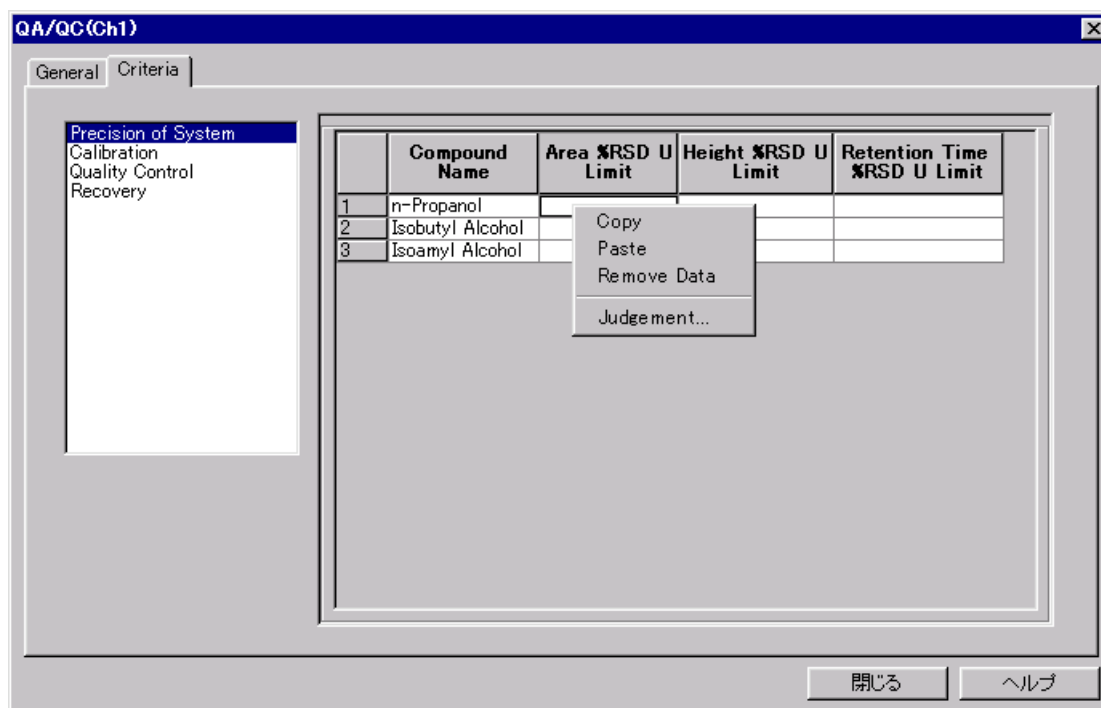
Parameter	Description
Recovery Standard	Specify the standard sample when [Calculated by Recovery Standard] is selected.
mean Recovery L Limit	Set the lower limit of the mean recovery ratio. A compound which has not reach this value will be reported as "Not Matching Criteria" in the pass/fail determination.
mean Recovery R Limit	Set the upper limit of the mean recovery ratio. A compound which has exceeded this value will be reported as "Exceeding Criteria" in the pass/fail determination.

Note: The pass/fail character string reported after the evaluation may be changed. *Refer to "13.3.5.1 <Judgement> Window" on page 559*



13.3.5 <QA/QC> - Pop-up Menu on [Criteria] Tab Page

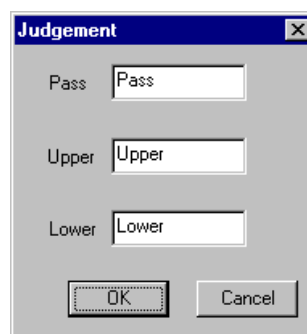
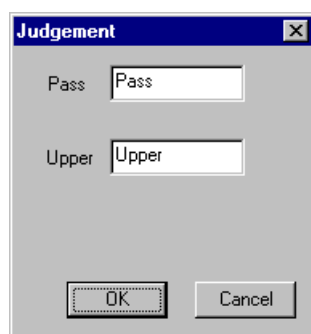
If you click on the criteria table with the right mouse button, the following pop-up menu will appear.



13.3.5.1 <Judgement> Window

The <Judgement> window is used to specify the character string used to show the result of the item for which the evaluation result is displayed after the QA/QC calculation has been performed.

To display this window, select [Judgement] from the pop-up menu displayed by clicking with the right mouse button when the cursor is positioned on the criteria input cell on the [Criteria] tab page of the <QA/QC> window.



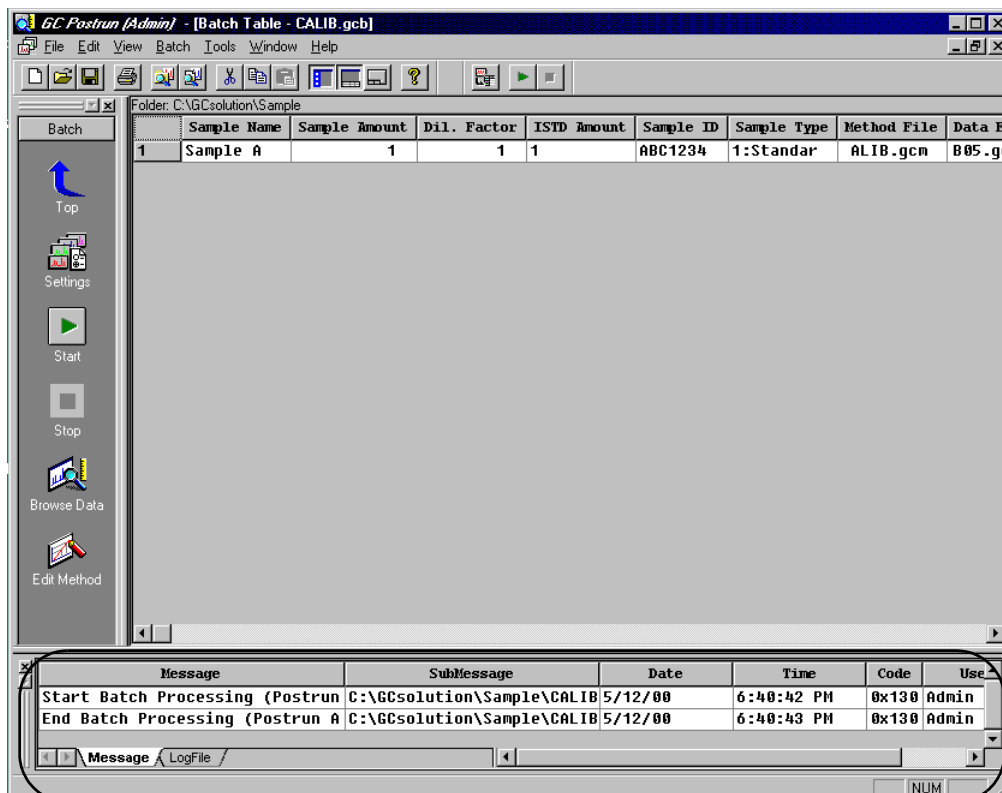


13 <QA/QC> Window

13.3 <QA/QC> - [Criteria] Tab

14.1 <Output Window> Window

The <Output Window> window consists of the [Message] tab page, which displays the information from the GC unit and the operation history of the GCsolution software, and the [Log] tab page, which displays the log-in information. To display this window, select [View]-[Output Window] from the menu bar on the <GC Real Time Analysis> or <GC postrun> screens, or select the [Output Window] on the toolbar.



The <Output Window> window displays the following information.

Tab name	Information displayed																																				
[Message] tab	Displays the messages, including error messages. <table><thead><tr><th>Message</th><th>SubMessage</th><th>Date</th><th>Time</th><th>Code</th><th>User Name</th></tr></thead><tbody><tr><td>Start Batch Processing (Data Ac</td><td>C:\GCsolution\Sample\CALIB</td><td>4/28/00</td><td>1:39:41 PM</td><td>0x130</td><td>Admin</td></tr><tr><td>End Batch Processing (Data Acqu</td><td>C:\GCsolution\Sample\CALIB</td><td>4/28/00</td><td>1:47:00 PM</td><td>0x130</td><td>Admin</td></tr></tbody></table> Message LogFile	Message	SubMessage	Date	Time	Code	User Name	Start Batch Processing (Data Ac	C:\GCsolution\Sample\CALIB	4/28/00	1:39:41 PM	0x130	Admin	End Batch Processing (Data Acqu	C:\GCsolution\Sample\CALIB	4/28/00	1:47:00 PM	0x130	Admin																		
Message	SubMessage	Date	Time	Code	User Name																																
Start Batch Processing (Data Ac	C:\GCsolution\Sample\CALIB	4/28/00	1:39:41 PM	0x130	Admin																																
End Batch Processing (Data Acqu	C:\GCsolution\Sample\CALIB	4/28/00	1:47:00 PM	0x130	Admin																																
[Log] tab	Displays the operation log and error log. <table><thead><tr><th>Message</th><th>SubMessage</th><th>Date</th><th>Time</th><th>Code</th><th>User Name</th></tr></thead><tbody><tr><td>Login.</td><td></td><td>4/24/00</td><td>11:17:14 AM</td><td>0x405</td><td>Admin</td></tr><tr><td>Logout.</td><td></td><td>4/24/00</td><td>11:21:00 AM</td><td>0x405</td><td>Admin</td></tr><tr><td>Login.</td><td></td><td>4/24/00</td><td>11:21:46 AM</td><td>0x405</td><td>Admin</td></tr><tr><td>Logout.</td><td></td><td>4/24/00</td><td>11:24:41 AM</td><td>0x405</td><td>Admin</td></tr><tr><td>Login.</td><td></td><td>4/24/00</td><td>11:24:41 AM</td><td>0x405</td><td>Admin</td></tr></tbody></table> Message LogFile	Message	SubMessage	Date	Time	Code	User Name	Login.		4/24/00	11:17:14 AM	0x405	Admin	Logout.		4/24/00	11:21:00 AM	0x405	Admin	Login.		4/24/00	11:21:46 AM	0x405	Admin	Logout.		4/24/00	11:24:41 AM	0x405	Admin	Login.		4/24/00	11:24:41 AM	0x405	Admin
Message	SubMessage	Date	Time	Code	User Name																																
Login.		4/24/00	11:17:14 AM	0x405	Admin																																
Logout.		4/24/00	11:21:00 AM	0x405	Admin																																
Login.		4/24/00	11:21:46 AM	0x405	Admin																																
Logout.		4/24/00	11:24:41 AM	0x405	Admin																																
Login.		4/24/00	11:24:41 AM	0x405	Admin																																

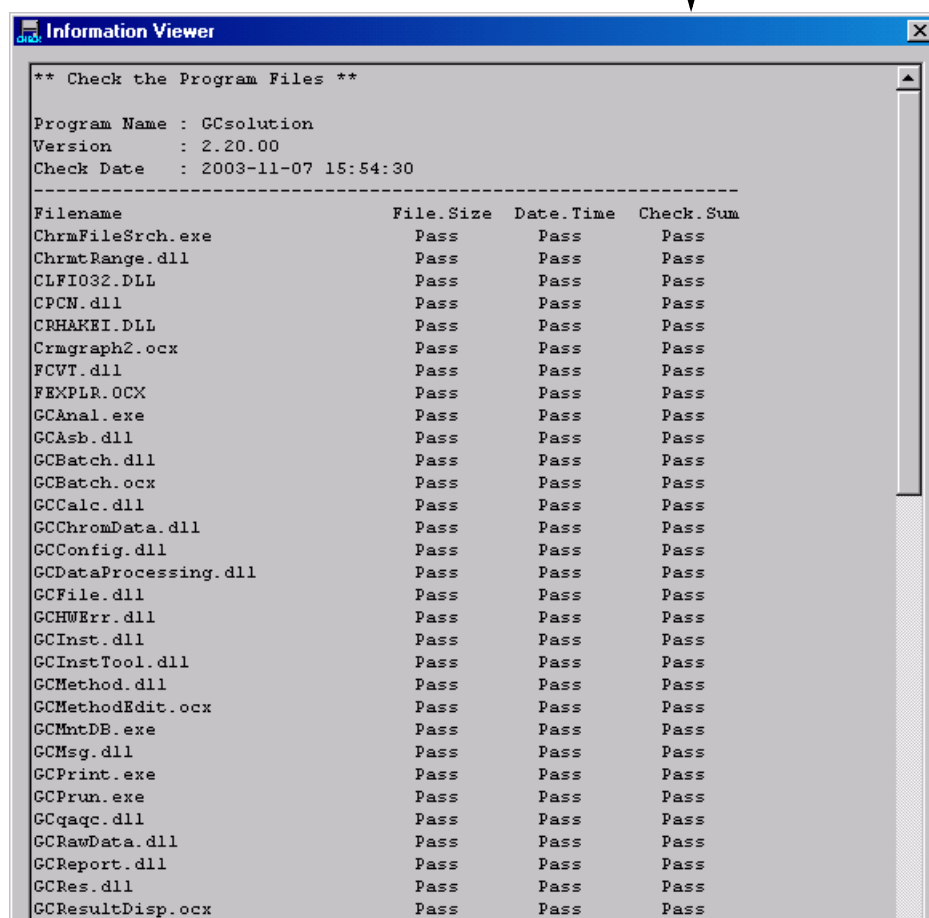
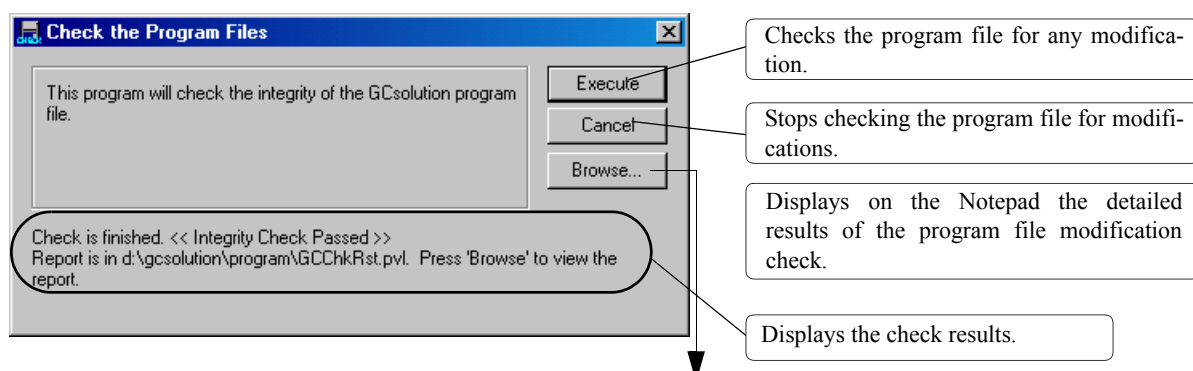


14.2 <Check the Program Files> Window

The <Check the Program Files> window allows you to check the integrity of the GCsolution program files. To display this window, select the [Tool]-[Check Program] command in each program window.

Mark the following items with a check. The program file will be checked with the original information created at installation, and the integrity of that file will be judged. If any information is modified, a confirming message will be displayed.

- Date, size, and check results of a file having the extension of EXE
- Date, size, and check results of a file having the extension of OCX

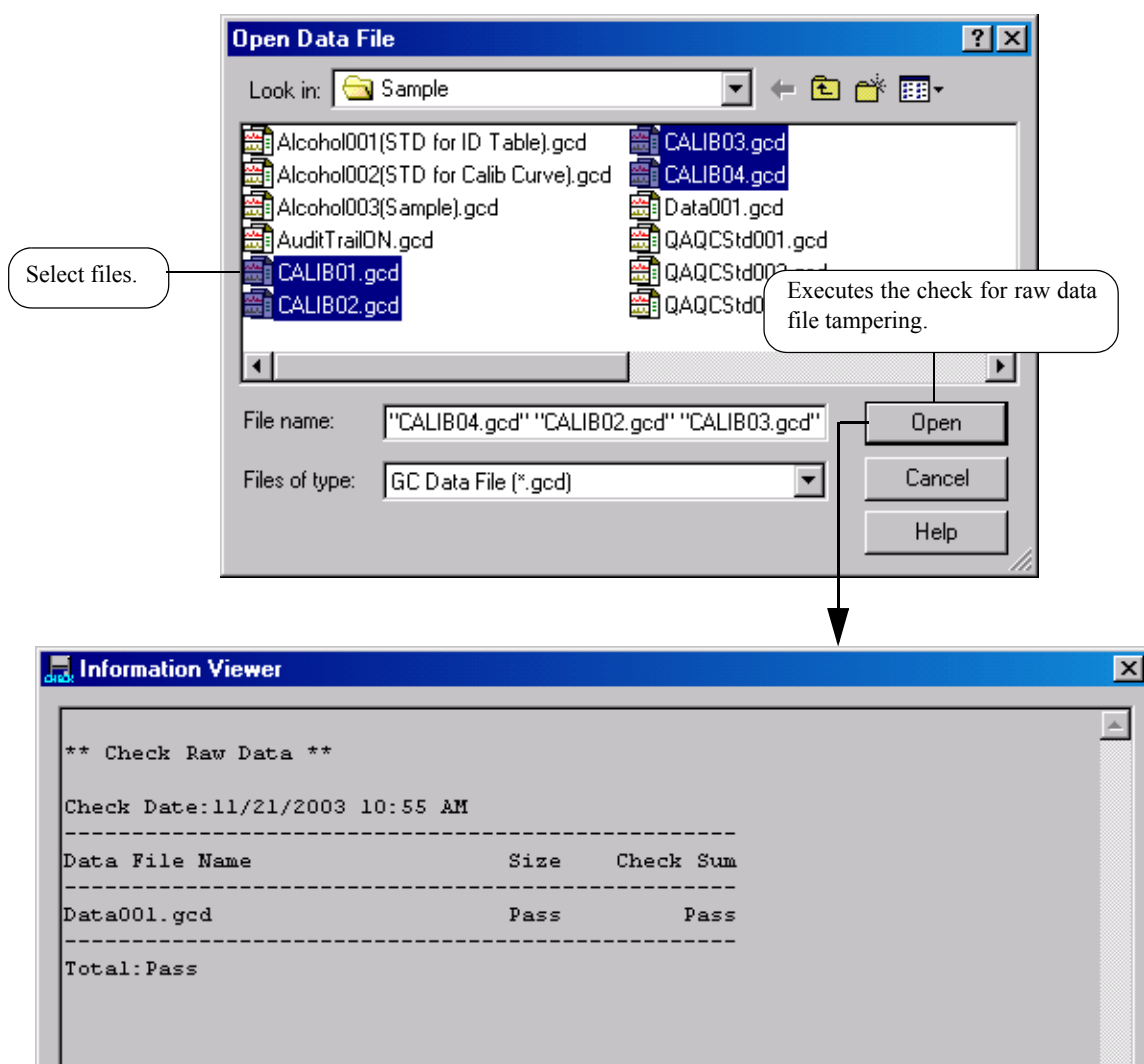


14.3 <Check Raw Data> Window

By selecting [Tools]-[Check Raw Data] in any application window, you can check to see whether the raw data files are tampered or not.

The information on size and checksum of the raw data is compared to the records retained in the data and go/no-go judgment is made. If any changes are found, no-go judgment is given.

- Date, size, and checksum of raw data file





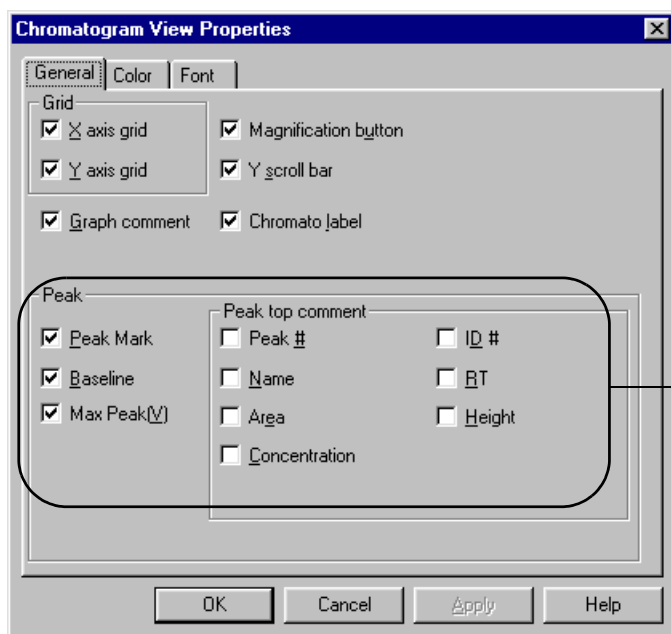
14.4

<Chromatogram View Properties> Window

The <Chromatogram View Properties> window allows you to set up the <Chromatogram> view. To display this window from the <Data Acquisition> window, select [View] - [Chromatogram View Properties] command. To display this window from the <Data Analysis> or <Data Comparison> window, select [View] - [Chromatogram] - [View Properties] command.

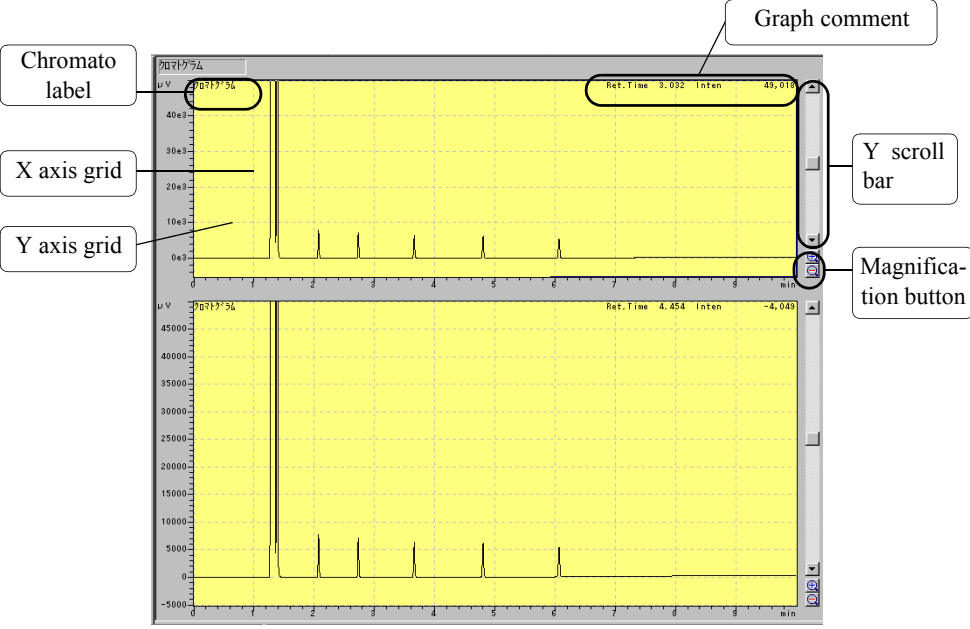
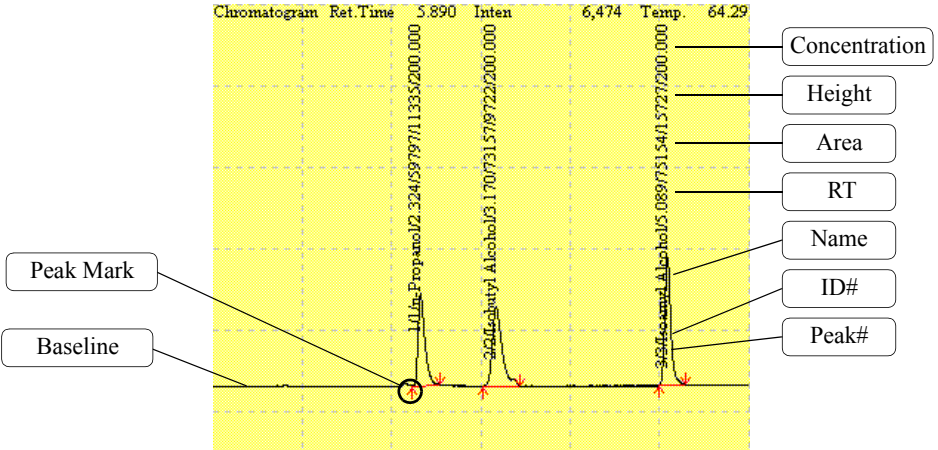
14.4.1 <Chromatogram View Properties> - [General] Tab

The [General] tab page of the <Chromatogram View Properties> window is used to set up the graph on the <Chromatogram> view.



These items are only displayed in the <Data Analysis> window.

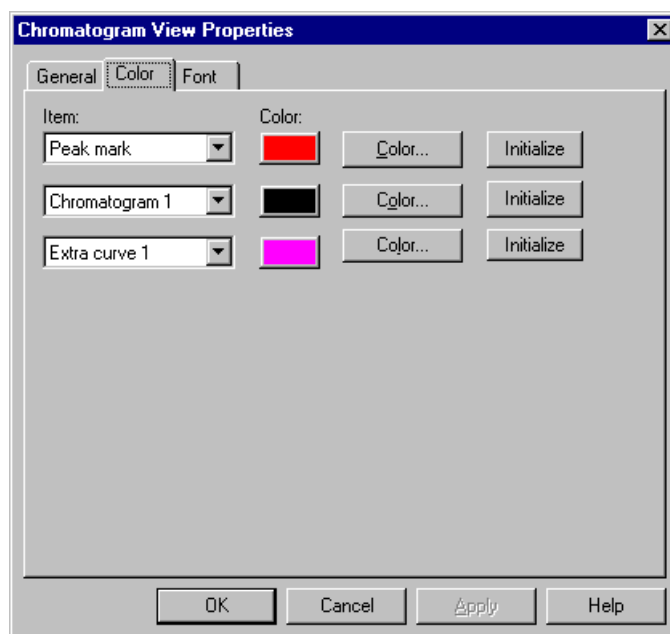


Parameter	Description
Grid	If check-marked, displays each item on the <Chromatogram> view in the <Data Acquisition>, <Data Analysis>, or <Data Comparison> window. 
X axis grid	
Y axis grid	
Magnification button	
Y scroll bar	
Graph comment	
Chromato label	
Peak	If check-marked, displays each item on the graph on the <Chromatogram> view in the <Data Analysis> window. 
Peak Mark	
Baseline	
Peak top comment	
Peak#	
ID#	
Name	
RT	
Area	
Height	
Concentration	
[Apply] button	If you click on this button, the settings will be applied to all the chromatograms with the <Chromatogram View Properties> window opened.

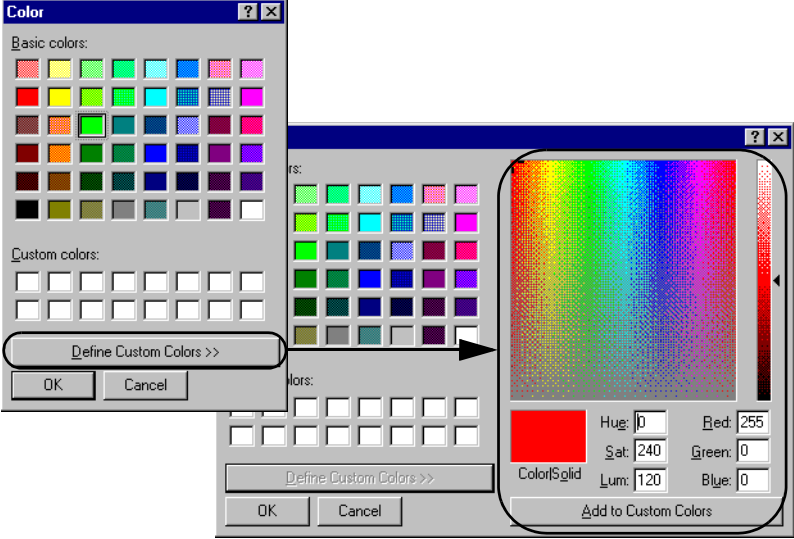


14.4.2 <Chromatogram View Properties> - [Color] Tab

The [Color] tab page of the <Chromatogram View Properties> window is used to specify the displayed colors for the <Chromatogram> view.



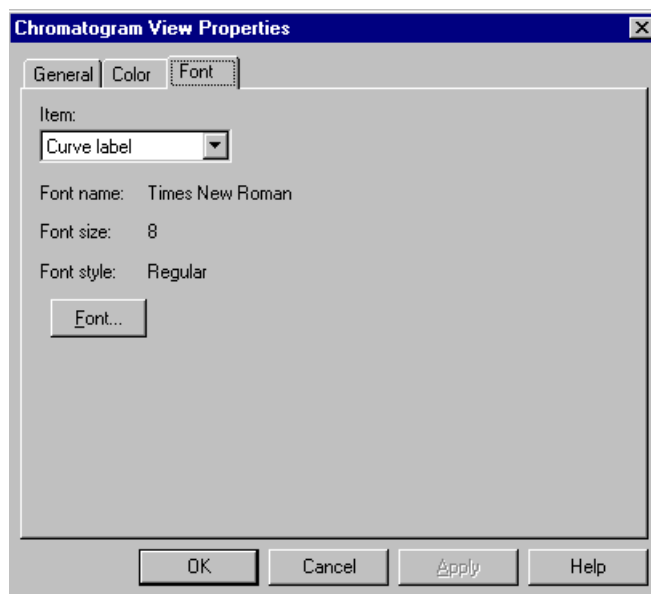
Parameter	Description																		
Item	Select an item for which you want to specify a color. The following items are available for your selection. <table><tr><td>● Peak mark*</td><td>● Graph frame</td><td>● X scale label</td></tr><tr><td>● Baseline*</td><td>● Graph comment</td><td>● Y scale label</td></tr><tr><td>● Peak comment*</td><td>● X axis grid</td><td>● X scale ticks</td></tr><tr><td>● Saturated chromatogram</td><td>● Y axis grid</td><td>● Y scale ticks</td></tr><tr><td>● Graph background</td><td>● X scale figure</td><td>● X scale unit</td></tr><tr><td></td><td>● Y scale figure</td><td>● Y scale unit</td></tr></table> (The items marked with an asterisk (*) are only displayed in the <Data Analysis> window.) ● Chromatogram# (#: <Data Acquisition> = 2, <Data Analysis> = 1, <Data Comparison> = 8) ● Extra curve # (#: <Data Acquisition> = 8, <Data Analysis> = 6, no item available for <Data Comparison>)	● Peak mark*	● Graph frame	● X scale label	● Baseline*	● Graph comment	● Y scale label	● Peak comment*	● X axis grid	● X scale ticks	● Saturated chromatogram	● Y axis grid	● Y scale ticks	● Graph background	● X scale figure	● X scale unit		● Y scale figure	● Y scale unit
● Peak mark*	● Graph frame	● X scale label																	
● Baseline*	● Graph comment	● Y scale label																	
● Peak comment*	● X axis grid	● X scale ticks																	
● Saturated chromatogram	● Y axis grid	● Y scale ticks																	
● Graph background	● X scale figure	● X scale unit																	
	● Y scale figure	● Y scale unit																	

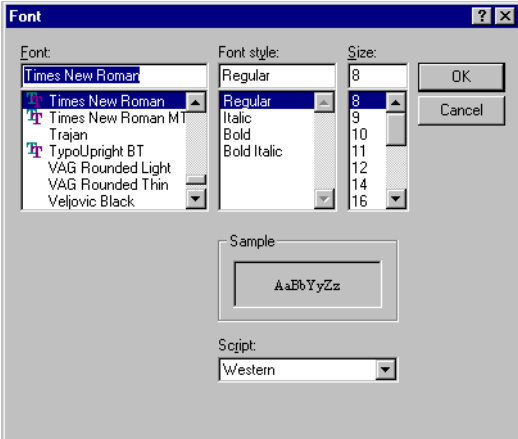
Parameter	Description
[Color] button	If you click on this button, the <Color> window will be displayed allowing you to specify a color. Select a desired color from [Basic Colors]. If the desired color cannot be found, you may want to add it by clicking on the [Define Custom Colors] button. 
[Initialize] button	If you click on this button, the color setting is initialized.
[Apply] button	If you click on this button, the settings will be applied to all the chromatograms with the <Chromatogram View Properties> window opened.



14.4.3 <Chromatogram View Properties> - [Font] Tab

The [Font] tab page of the <Chromatogram View Properties> window is used to specify a font for the characters displayed on the <Chromatogram> view.



Parameter	Description												
Item	Select an item for which you want to specify a font. The following items are available for your selection: <table><tr><td>● Curve label</td><td>● X scale figure</td><td>● X scale unit</td></tr><tr><td>● Peak top comment*</td><td>● Y scale figure</td><td>● Y scale unit</td></tr><tr><td>● Graph comment</td><td>● X scale label</td><td></td></tr><tr><td></td><td>● Y scale label</td><td></td></tr></table> (The item marked with an asterisk (*) is only displayed in the <Data Analysis> window.)	● Curve label	● X scale figure	● X scale unit	● Peak top comment*	● Y scale figure	● Y scale unit	● Graph comment	● X scale label			● Y scale label	
● Curve label	● X scale figure	● X scale unit											
● Peak top comment*	● Y scale figure	● Y scale unit											
● Graph comment	● X scale label												
	● Y scale label												
[Font] button	If you click on this button, the window will be displayed. Once a font is selected, the font information will change. 												
[Apply] button	If you click on this button, the settings will be applied to all the chromatograms with the <Chromatogram View Properties> window opened.												



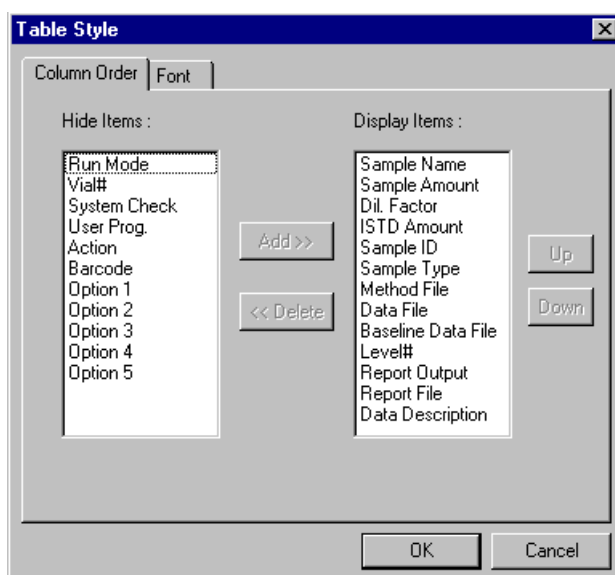
14.5

<Table Style> Window

The <Table Style> window allows you to specify the items to be displayed in the table so that the necessary data and settings for analysis can be grasped efficiently. To display this window, select the [View]-[Table Style] command in each window having tables that can have their style changed, or select the [Table Style] command from the pop-up menu, which is displayed by clicking with the right mouse button when the cursor is positioned on the table.

14.5.1 <Table Style> - [Column Order] Tab

On the [Column Order] tab page, specify column types to be displayed in the table and their order.

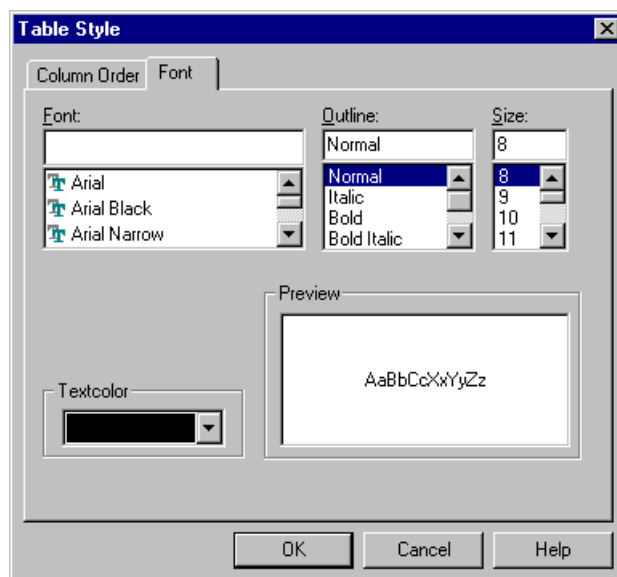


Parameter	Description
Hide Items	Lists the names of the hidden columns among the columns available in the table.
Display Items	Lists the names of the columns displayed in the table.
[Add] button	If you click on this button, the item selected in [Hide Items] will be moved to the bottom of the [Display Items] list. Alternatively, the same result can also be obtained by double-clicking on that item in [Hide Items].
[Delete] button	If you click on this button, the item selected in [Display Items] will be moved to a specific position in the [Hide Items] list. Alternatively, the same result can also be obtained by double-clicking on that item in [Display Items].
[Up] button	If you click on this button, the item selected in [Display Items] will be moved to the directly previous position. This means that the column will shift toward the left part of the table.
[Down] button	If you click on this button, the item selected in [Display Items] will be moved to the next successive position. This means that the column will shift toward the right part of the table.



14.5.2 <Table Style> - [Font] Tab

The [Font] tab page is used to specify a font and its size for the characters displayed in the table.



Parameter	Description
Font	Selects a font.
Outline	Selects a special effect; e.g., Bold or Italic.
Size	Selects a font size.
Textcolor	Selects a text color.
Preview	Displays sample text under the currently selected conditions.



14.6

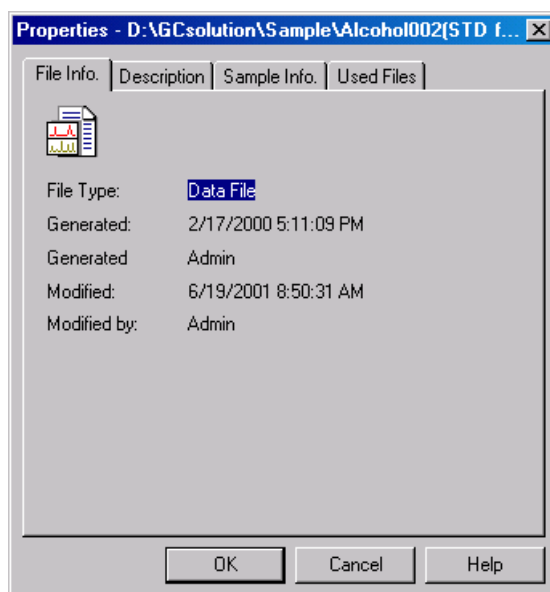
<Properties> Window

The <Properties> window displays the information pertaining to files.
To display this window, select [File]-[Properties] from the menu bar.

The tabs of the <Properties> windows vary depending on the file type.

File Type	File Info.	Description	Sample Info.	Used Files	Audit Trail
Data file	O	O	O	O	
Method file	O	O			O
Batch file	O	O			
Report file	O	O			

14.6.1 <Properties> - [File Info.] Tab

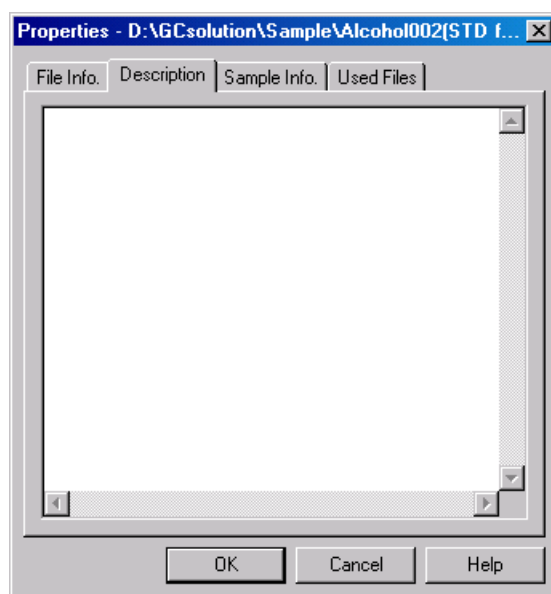


Parameter	Description
File Type	Displays a file type.
Generated	Displays the date when the file was created.
Generated by	Displays the name of the user who created the file.
Modified	Displays the date when the file was modified.
Modified by:	Displays the name of the user who modified the file.



14.6.2 <Properties> - [Description] Tab

The [Description] tab page allows you to enter a comment concerning the contents of the file, etc. You may subsequently want to search for the file by searching for some keyword included in that comment.



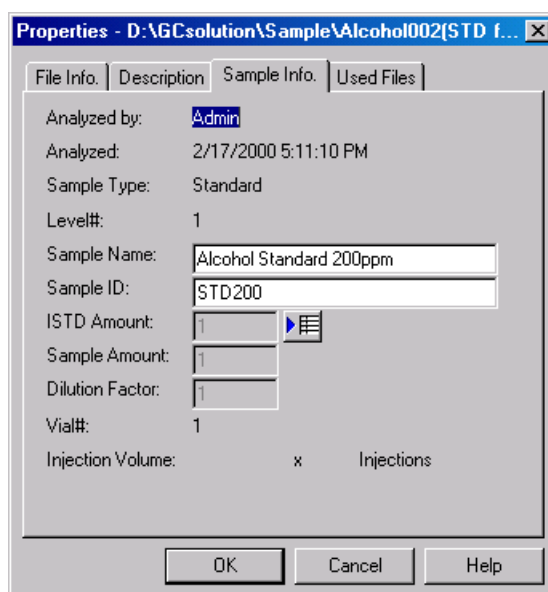


14.6.3 <Properties> - [Sample Info.] Tab

The [Sample Info.] tab page allows you to check and modify the information entered in the <Single Run> or <Batch Table> window for data acquisition.

Note: The [Sample Info.] tab is only displayed in the <Properties> window for a data file.

Note: The dialog box is also displayed by clicking on the [Sample Info] button on the [Quantitative] tab page of the <Data Analysis> window - <Method> view in the Edit mode.



Parameter	Description
Data Acquired by	Displays the name of the user who logged in on the <GC Real Time Analysis> screen when data was acquired.
Acquisition Date	Displays the date of analysis when data was acquired.
Sample Type	Displays the analyzed sample type (unknown or standard).
Level#	Displays the level number for creating the calibration curve.
Sample Name	Displays the sample name. You can enter a different one.
Sample ID	Displays the sample ID. You can enter a different one.
ISTD Amount	Displays the internal standard amount (equivalent to ISTD group 1). You can edit this parameter when this dialog box is called up by clicking on the [Sample Info] button on the [Quantitative] tab page of the <Data Analysis> window - <Method> view in the Edit mode. If you click on the button next to this parameter, the <ISTD Amount> window will be displayed, allowing you to specify multiple internal standard samples.
Sample Amount	Displays the sample amount. You can edit this parameter when this dialog box is called up by clicking on the [Sample Info] button on the [Quantitative] tab page of the <Data Analysis> window - <Method> view in the Edit mode.



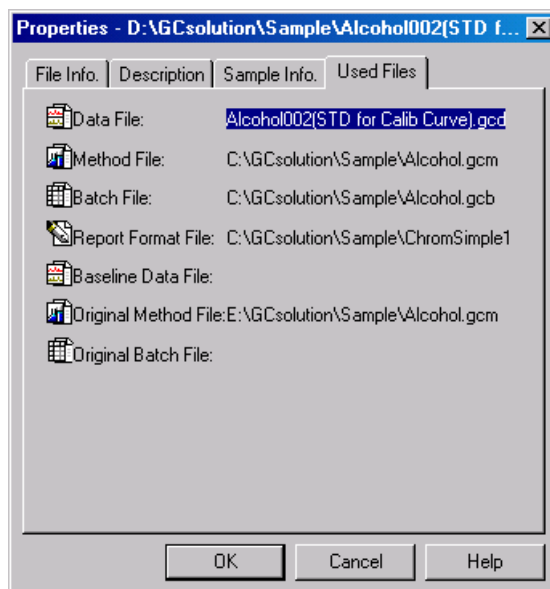
Parameter	Description
Dilution Factor	Displays the dilution factor. You can edit this parameter when this dialog box is called up by clicking on the [Sample Info] button on the [Quantitative] tab page of the <Data Analysis> window - <Method> view in the Edit mode. Note: If use of dilution factor has been disabled at the time of installation, this parameter is not displayed. <i>Refer to 16.3.6 <-omitted->.</i>
Vial#	Displays the vial number.
Injection Volume	Displays the injection volume.



14.6.4 <Properties> - [Used Files] Tab

The [Used Files] tab page displays the names of files that were used when a data file was created.

Note: The [Sample Info.] tab is only displayed in the <Properties> window for a data file.



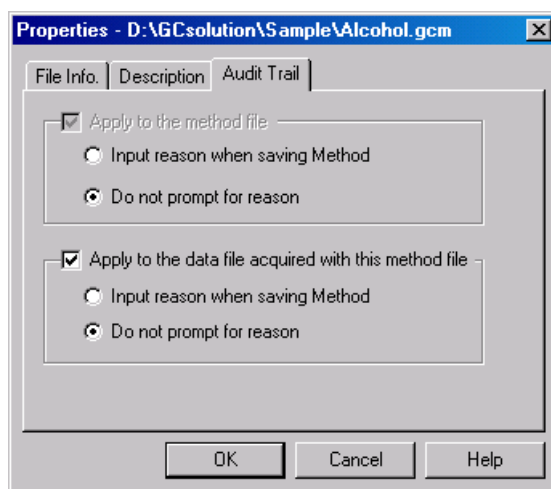
Parameter	Description
Data File	Displays the name of a data file.
Method File	Displays the name of the method file that was used when data was acquired. If a new method file is used for data analysis (e.g., in batch postrun), the method file name will be renewed accordingly.
Batch File	Displays the name of the batch file that was used when data was acquired. If a new batch file is used for data analysis (e.g., in batch postrun), the batch file name will be renewed accordingly.
Report Format File	Displays the name of the report file that was used when data was acquired. If a new report file is used to print out the data, the report file name will be renewed accordingly.
Baseline Data File	Displays the data file name for the baseline chromatogram for the differential chromatogram.
Original Method	Displays the name of the method file that was used when data was acquired.
Original Batch File	Displays the name of the batch file that was used when data was acquired.



14.6.5 <Properties> - [Audit Trail] Tab

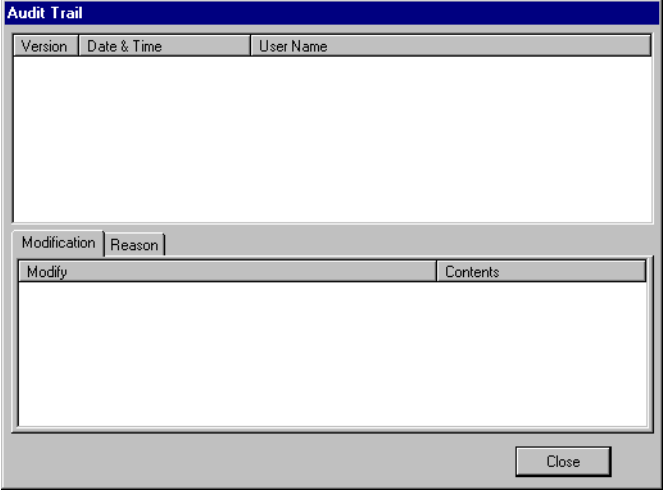
The [Audit Trail] tab page is used to specify whether the audit trail function is used in the properties of the method file. This setting will be saved in the method file.

Note: The [Audit Trail] tab is only displayed in the <Properties> window for the method file.

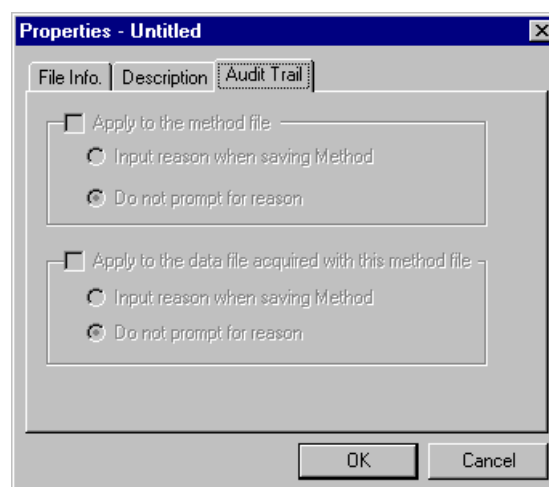


Parameter	Description
Apply to the method file	Records the modified details of the method file in that method file itself. To view the modified details, use the <Audit Trail> window. Note: If this parameter is marked with a check, the following message will appear. Note that once the audit trail function is set, it can no longer be reset. <i>Refer to "14.8 <Audit Trail> Window" on page 579</i>



Parameter	Description
Apply to the data file acquired with this method file	If you mark this parameter with a check, the data file that has been created by acquiring data with this method file will be set to the mode in which any change is left as a record. To view the detailed modifications, use the <Audit Trail> window in the <Data Analysis> window. <i>Refer to "14.8 <Audit Trail> Window" on page 579</i>
Input reason when saving Method	If you mark this parameter with a check, the <Audit Trail - Comment> window will be displayed, allowing you to enter the reason for modification whenever the file is saved. Note: If mark this parameter with a check, the file will not be saved unless you enter the modification reason whenever you try to save any change. Although you need to enter the reason, the modification reasons can be managed properly this way. 
Do not prompt for reason	Prevents you from entering the reason for the change.

Note: In the <Properties> screen for an untitled new method file, the audit trail settings are grayed out and cannot be set. To set up the audit trail, save the method file with a filename first and set it up, or predefine the audit trail setting for newly created files in the <System Policy> window.

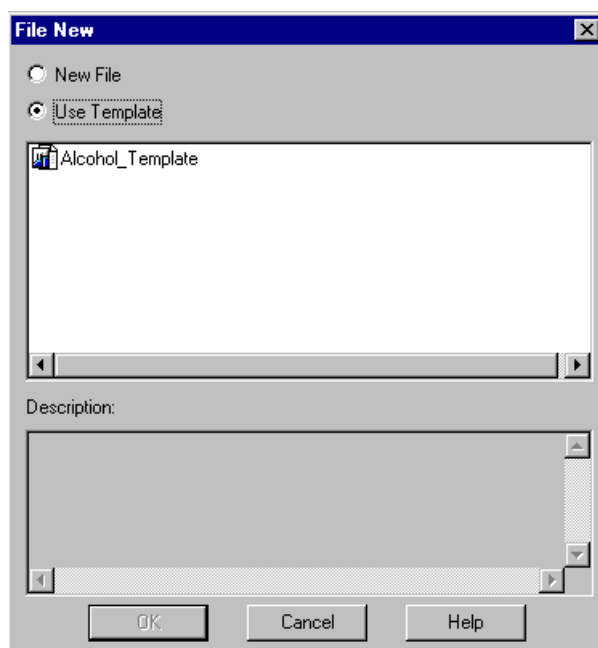




14.7 <File New> Window

The <File New> window is used to specify the method for creating a new file.
To display this window, select the [File]-[File New] command in each window.

Note: If the <File New> window is not displayed by selecting the [File]-[File New] command, set [Prompt on File New] in the <Options> window. [Refer to "14.9 <Setting Options> Window" on page 580](#)



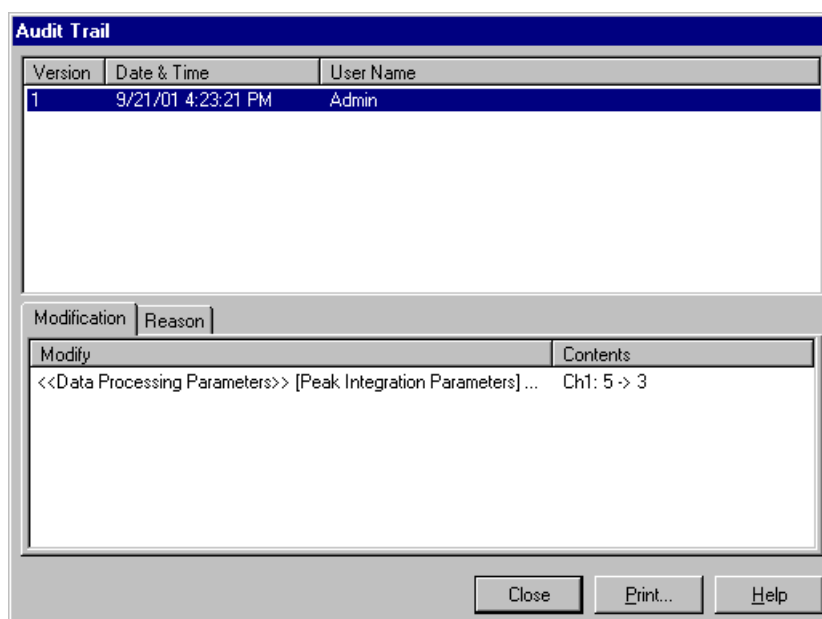
Parameter	Description
New File	Allows you to create a completely new file.
Use Template	Allows you to create a file using an available template. Select a desired template from the available templates in the lower area. Note: The files in the folder specified in [Template] in the <Options> window can be listed by selecting [Use Template]. Refer to "14.9 <Setting Options> Window" on page 580 Note: To specify a file as a template, use the [File]-[Save As Template] command on the menu bar.
Description	The comment of template is displayed.



14.8

<Audit Trail> Window

The <Audit Trail> window displays the history of changes in the method files and the method information of data files. To display this window, select [File]-[Audit Trail] command in each window.



Parameter	Description
Version	Displays the version of the changed file.
Data & Time	Displays the date and time when the file was changed.
User Name	Displays the name of the user who changed the file.
Modification	Displays the modified part of the data file.
Reason	Displays the modification reason that was entered when the file was saved.
[Print] button	Opens the dialog box for setting the print parameters for the audit trail.

Note: To display the history of changes in the <Audit Trail> window, previously specify this on the [Audit Trail] tab page of the <Method File Properties> window. [Refer to "14.6.5 <Properties> - \[Audit Trail\] Tab" on page 576](#)



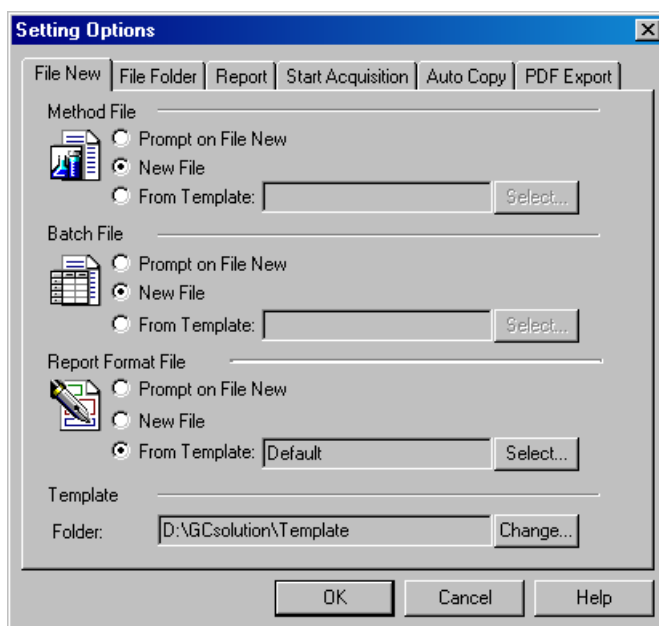
14.9

<Setting Options> Window

To display this window, select the [Tools]-[Options] command in each window.

14.9.1 [File New] Tab

The <File New> tab is used to specify the method for creating a new file.

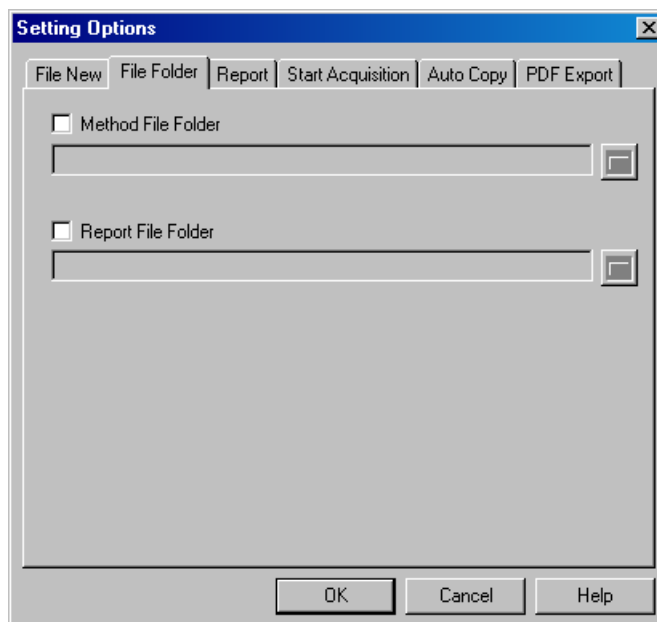


Parameter	Description
Prompt on File New	Displays a window prompting you to specify a method when you are creating a new file.
New File	Always creates a new file from scratch.
From Template	Creates a new file from the template selected by clicking on the [Select] button.
[Select] button	If you click on this button, the <Select File> window will be displayed, allowing you to select a template file.
Template	Displays the folder, allowing you to select a template file.
[Change] button	If you click on this button, the <Browse Folder> window will be displayed, allowing you to change the folder in which the template file will be saved.



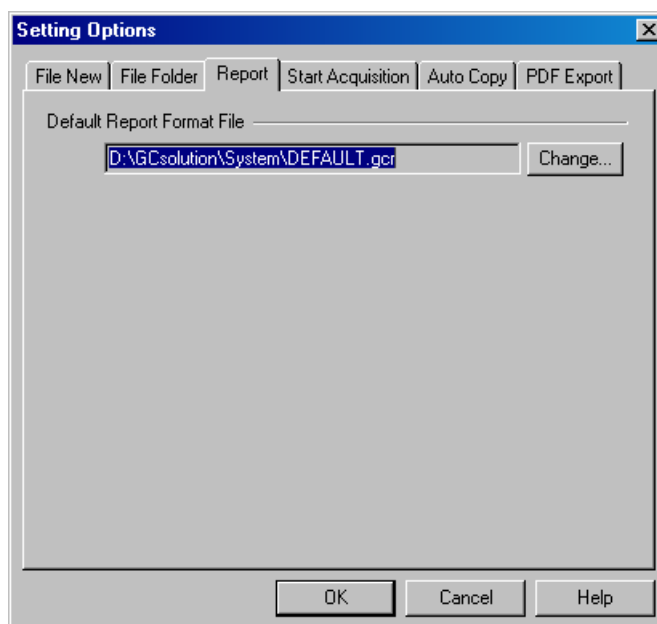
14.9.2 [File Folder] tab

Sets the folders dedicated for method files and report format files respectively and make them the default folder for the respective files. These folders become the default folders to be opened when you open or save method files or report files from the menu or toolbar.



14.9.3 [Report] tab

Allows you to specify the default report file specific to each system. The file specified here will be used for report printing when the report file field for sample registration in <Data Acquisition> or batch analysis has been left blank.

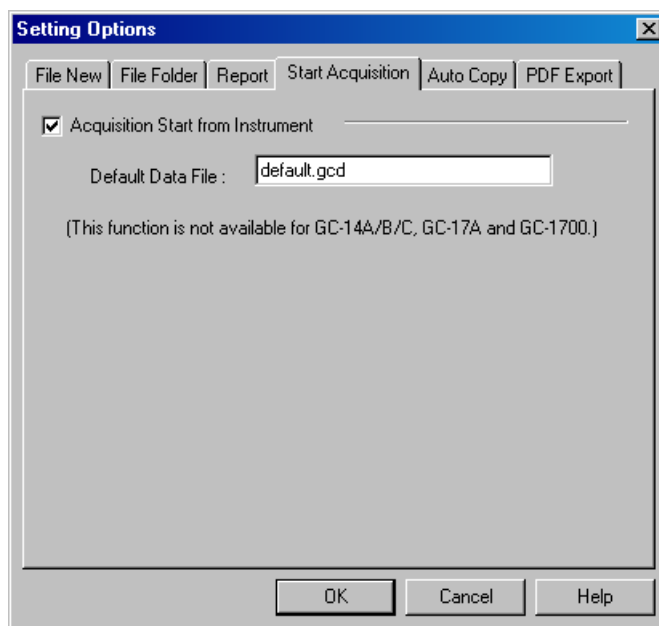




14.9.4 [Start Acquisition] Tab

This tab allows you to complete the settings for starting an analysis from the analyzer {GC-2010, GC-2014, or other (CBM-102)}.

Note: In the <GC Postrun> mode, this tab is not displayed.

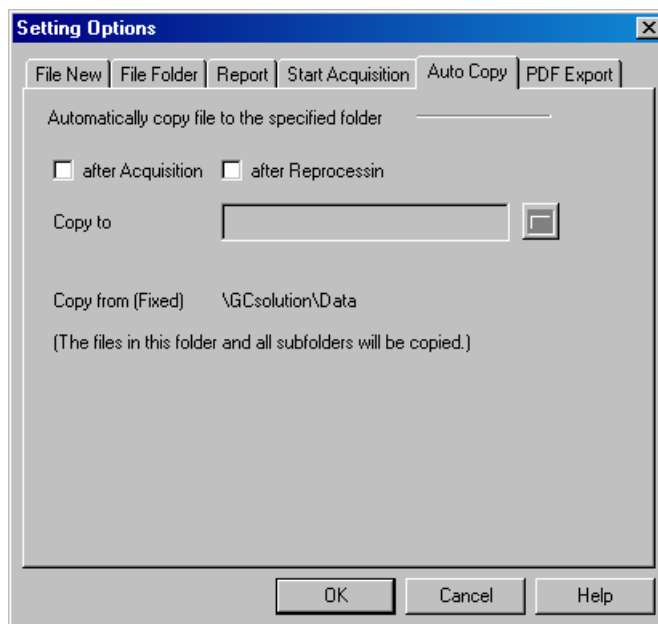


Parameters	Description
Acquisition Start from Instrument	Specifies whether an analysis is started from the analyzer.
Default Data File	Specifies a data file name when starting an analysis from the analyzer. Enter a file name only. The folder will be the current path for the data explorer. Note: When the [Acquisition Start from Instrument] is selected, this parameter becomes effective.



14.9.5 [Auto Copy] Tab

This tab page is used to set the auto copy function for data files.

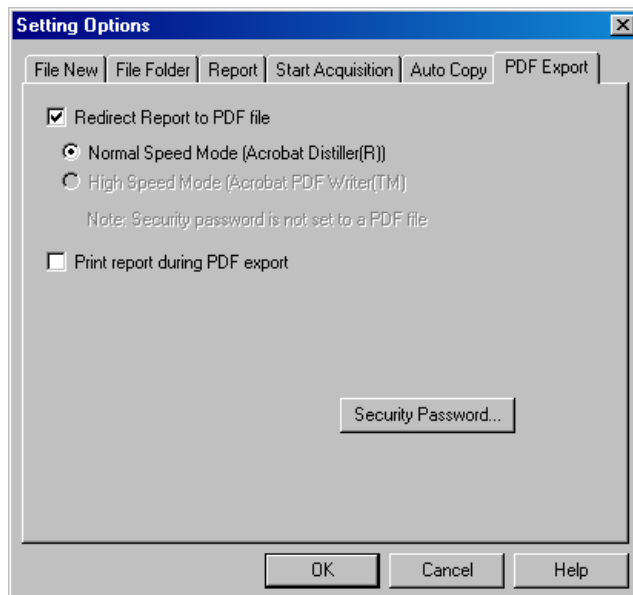


Parameter	Description
Automatically Copy the Data Files to the Folder	Specifies the timing for saving data files.
on Acquisition	Copies data file when a single-run acquisition is finished or acquisition for each row in a batch table is finished.
on Modification	Copies data file when a post-run batch processing is performed or the file is saved in the <Data Analysis> window.
Copy to	Data files under the directory "\\GCsolution\\Data" are copied to the path specified here creating a new folder. Data files in folders not located under the directory "\\GCsolution\\Data" will not be copied. When a file with the same name with the copied file exists in the destination folder, a number is affixed to the name of the copied file and saved.
[Browse] button 	If this button is clicked on, the <Browse for Folder> dialog box is displayed to allow you to change the folder to which data files are saved.
Copy from (Fixed)	The folder displayed here is determined by the folder in which you installed GCsolution. When GCsolution was installed in the default folder, it is \\GCsolution\\Data. When data is automatically copied, it is copied not only to the files in this folder, but also to the subfolders under this folder. Note: When automatically copying data, create a file within this folder.



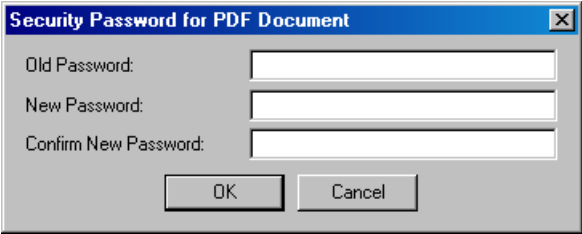
14.9.6 [PDF Output] Tab

This tab is used to specify the PDF output settings.



Parameter	Description
Redirect Report to PDF file	When selected, the output format of reports is changed to PDF. Note: The following document information is included in the output file: Title: Filename of the original file Subject: Name of the application program from which the PDF file is output (Data Acquisition, Batch Analysis, Batch Postrun, or Report Generator) Author: Name of the user who has been logged in when the PDF file is output Keywords: Status of data (postrun processing without file saving or presence/absence of time program for integration in data) Creator: Product name (GCsolution) and version number Other information such as sample information is also included though they are not displayed.
Normal Speed Mode (Acrobat Distiller(R))	When selected, Acrobat(r) Distiller(r) is used for outputting PDF files. Note: When a password has been assigned to the Admin account, the "Changing the Document" security setting of the PDF file is set to "Not Allowed" by the Acrobat standard security feature using that password as the master password. Other security settings are applied in accordance with the settings specified in the Acrobat(r) Distiller(r).
High Speed Mode (Acrobat PDF Writer(TM))	When selected, Acrobat(r) PDFWriter(tm) is used for outputting PDF files. Note: No security settings are applied to PDF files unlike the Normal Speed Mode.
Report to Printer during PDF Report output	When selected, a report is output to the printer at the time of PDF output, if the report output format is set to PDF file.
Enable PDF output at data file saving from <Data Analysis>	If selected, a PDF file is output when data file is saved in the <Data Analysis> window. Note: This setting is effective only when the saved data file contains a report format and the Agent program is set to automatically collect data files.



Parameter	Description
[Security Password]button	Applicable when the distiller is used. The standard security will be applied to the output PDF file. Do not set this parameter when using a digital signature on Agent. If you otherwise set the parameter, the information on the digital signature will not be reflected in the PDF. 

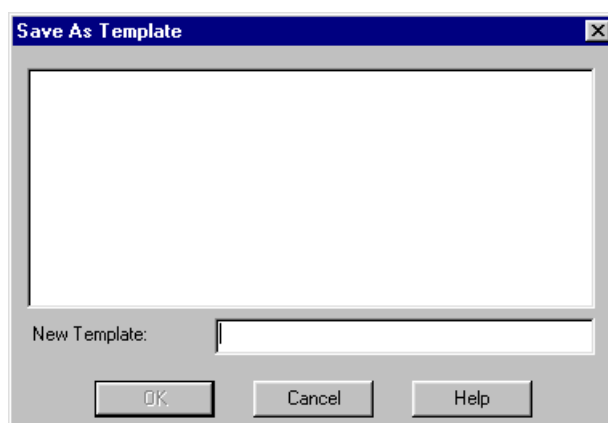
Note: This setting is effective only when the saved data file contains a report format and the Agent program is set to automatically collect data files.



14.10 <Save As Template> Window

The <Save As Template> window is used to save the settings of method files, batch files, and report files frequently used as templates to make them reusable.

To display this window, select the [File]-[Save *** As Template] command in the <Data Analysis>, <Batch Table>, <Calculation Table> or <Report> window.



Parameter	Description
File list	Shows filenames saved as a template.
New Template	Enter a desired name of the template to be saved.

Note: Files saved as a template are stored in the Template folder, which is located under the folder for the GCsolution software (such as C:\GCsolution) by default. You can change the destination folder to which templates are stored using the <Setting Options> window. (*Refer to "14.9 <Setting Options> Window" on page 580.*)

Note: To use a template, select the [File] - [New *** File] command, click on the [Use Template] from the <File New> window, and select the template you wish to use from the file list displayed in the bottom of the window. (*Refer to "14.7 <File New> Window" on page 578.*)

Note: For batch and method files, when you select the [File] - [New *** File] command, the GCsolution creates a new file without opening the <File New> window, as [New File] has been selected in the <Setting Options> window by default.

When you wish to create a batch or method file from a template, set the each file in the <Setting Options> window to [Prompt on File New] or [From Template] in advance. (*Refer to "14.9 <Setting Options> Window" on page 580.*)



15.1

<Database Maintenance> Dialog

The <Database Maintenance> dialog box is used to perform database maintenance such as making database compact, recovering database, and changing database file.

15.1.1 Opening <Database Maintenance>

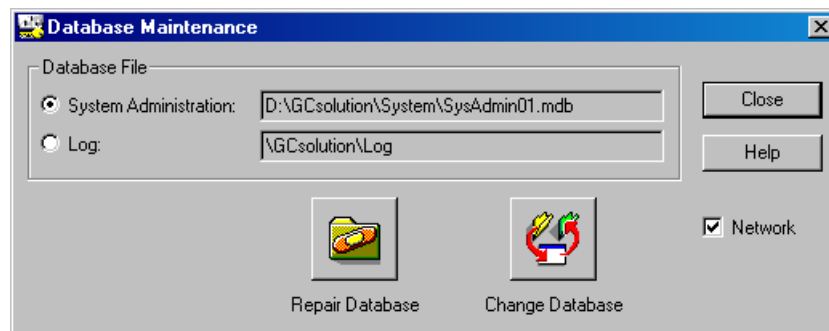
1. Exit all the GCsolution application programs.
2. Double-click on the GCMntDB.exe program located in "C:\GCsolution\Program."



3. The <Maintenance Password> dialog box appears. Input your maintenance password.

Refer to "1.2.3 <Login> Window" on page 5

15.1.2 Construct of <Database Maintenance>



Parameter	Description
Database File	Select whether maintenance is performed for the [System Administration] database or the [Log] database. To change the folder path, click the Change Database button.
Repair Database	If this button is clicked on, a confirmation message will appear. Clicking [Yes] will back up the database and then attempt to downsize the database and restore it from the error.
Change Database	● If you select [System Administration] for maintenance, the file selection dialog box will be opened. Select a desired file and then click the [OK] button. The <Login> dialog box will be opened again to verify that you are the system administrator for that new file. Log in by using the user ID and password of the system administrator for the new file. ● If you select [Log] for maintenance, the folder selection dialog box will be opened. Select a desired folder and then click the [OK] button.
Network	When selected, the system enters into the Network mode.



15.2 <Instrument Maintenance> Dialog

The <Instrument Maintenance> dialog box is used for performing maintenance of the network used in the Network mode, which is effective in <System Administration>.

15.2.1 Opening <Instrument Maintenance>

- When no PC has been added/specified

Note: Previously select the network mode by ticking the Network checkbox in the <Database Maintenance> dialog box.

Refer to "15.1 <Database Maintenance> Dialog" on page 587

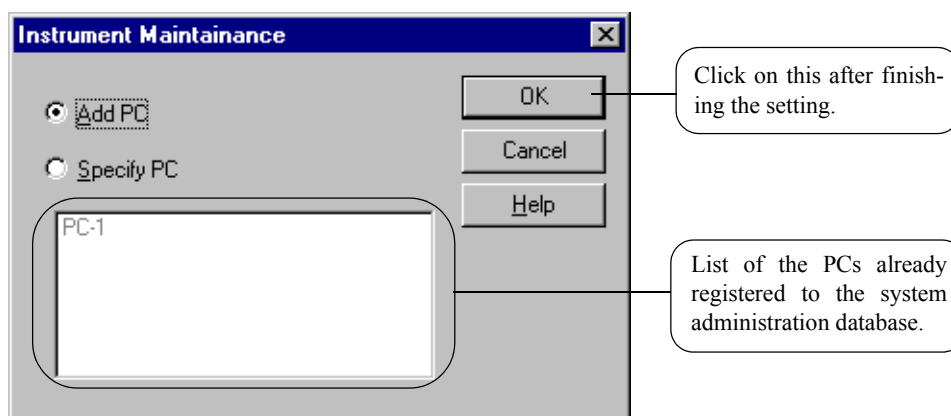
1. Exit all the GCsolution application programs.
2. Double-click on the GCMntPC.exe program located in "C:\GCsolution\Program."



3. The Login dialog box will be opened. Log in by using the user ID of a system administrator.

Refer to "1.2.3 <Login> Window" on page 5

4. The <Instrument Maintenance> dialog box for adding or specifying PCs appears. Add or specify PCs.



Parameter	Description
Add PC	When selected, the PC is added to the list as the second or later PC to be managed by the system administration database.
Specify PC	Specifies a PC already registered to the system administration database with selection on List.

Note: If the <Instrument Maintenance> dialog box is displayed, it indicates that the network setting for system administration is complete.



- When any PC has been added and specified

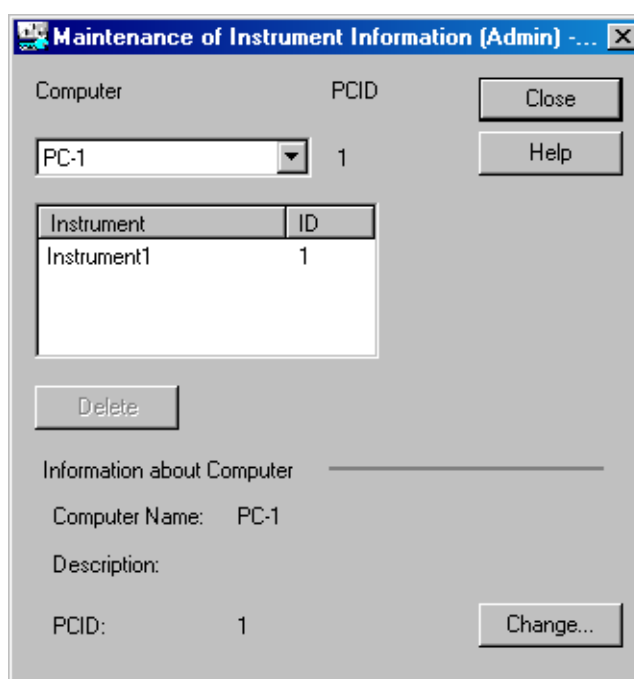
1. Exit all the GCsolution application programs.
2. Double-click on the GCMntPC.exe program located in "C:\GCsolution\Program."



3. The normal login dialog box is displayed. Perform the login procedure.

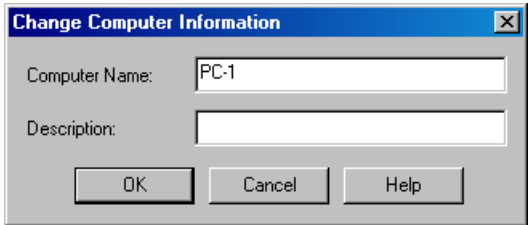
Refer to "1.2.3 <Login> Window" on page 5

15.2.2 Construct of <Instrument Maintenance>



Parameter	Description
Computer	The PC added or specified is displayed.
Instrument	The list of analytical Instruments connected to the PC that has been added or specified is displayed.
[Delete] button	If this button is clicked on after an instrument in the [Instrument] list is selected, the registration for the instrument will be deleted. Clicking this button without entering the instrument to be removed will display a confirming dialog box and delete the registration of the computer selected from the pull-down list of computers.
Information about Computer	The information on the computer selected from the pull-down list of computers is displayed.



Parameter	Description
[Change] button	Clicking this button will allow you to change the information on the computer selected from the pull-down list of computer.  The dialog box is titled "Change Computer Information" and contains two text input fields. The first field is labeled "Computer Name:" and contains the text "PC-1". The second field is labeled "Description:" and is empty. At the bottom of the dialog box are three buttons: "OK", "Cancel", and "Help".

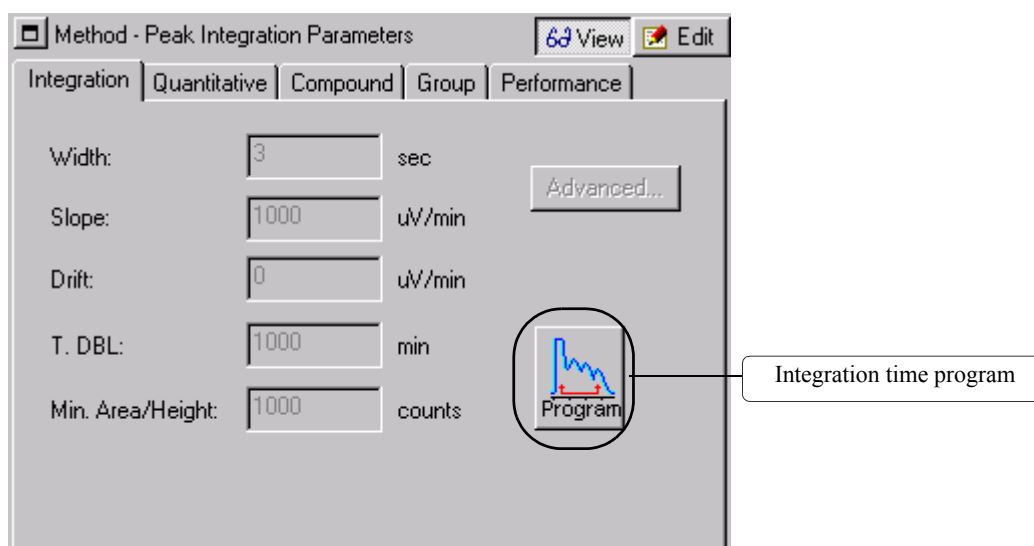


16.1

Peak Integration Parameters and Peak Integration

Peak integration such as peak detection, separation of incompletely resolved peaks and peak area measurement is carried out based upon the peak integration parameters set in the GCsolution software.

This section describes peak integration parameters and various types of peak integration using these parameters.

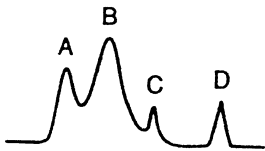
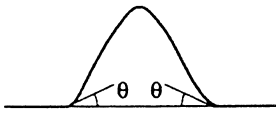
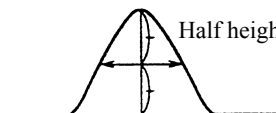
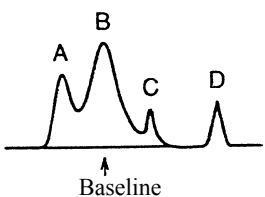
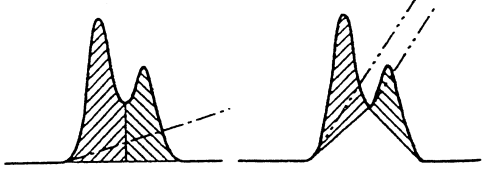
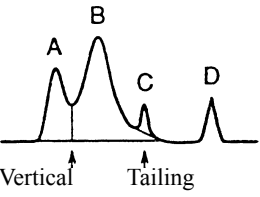
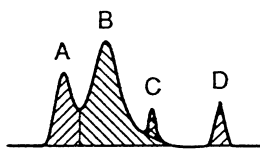


16.1.1 Peak Integration Parameters

Table 16-1 shows the peak integration parameters and the peak integration order. A value in < > is the default value for each parameter. A value in [] denotes the programmable range.

Many chromatograms can be processed correctly using the default peak integration parameter values. If integration cannot be executed correctly, the parameters may need to be changed by referring to [Refer to "16.5 Problems with Incorrect Peak Integration" on page 627](#).


Table 15-1 Peak Integration Parameters and Peak Integration Order

Peak integration order	Parameter	Function <>: default []: range	Remarks
Peak detection 	Slope	Peak detection sensitivity <1000> (Unit: $\mu\text{V}/\text{min.}$) [0 to 4×10^{11}]	Sensitivity for peak detection.  Automatically set using Slope Test
	Width	Minimum peak width <3> (Unit: seconds) [0.04 to 200]	Set to the half-height width of the sharpest peak of interest.  Half height width
Baseline processing  ↑ Baseline	Drift	Degree of baseline drift <0> = Automatic (Unit: $\mu\text{V}/\text{min.}$) [-10^7 to 10^7]	Evaluation level for peak and baseline drift  When 0 is set, evaluation is automatically conducted regardless of the above levels. Negative values can be set.
Separation of incompletely resolved peaks  Vertical separation Tailing Peak area measurement 	None	Automatic	If co-elution is detected, peaks are processed by dropping a vertical to the baseline or are automatically considered to be tailing peaks depending upon conditions.



Peak integration order	Parameter	Function <>: default []: range	Remarks
Minimum peak area/height	Min. Area/ Height	Minimum peak area or height to be detected <1000> (Unit: count) [0 to 10 ⁷]	Peaks smaller than the set value will not be detected. Whether area or height is used for the setting value is determined according to the setting of [Calculated by] radio buttons.
Other	T.DBL	Parameter change time <1000> (Unit: minutes) [0 to 1000]	At the set time, peak detection sensitivity (Slope) decreases by 1/2 and peak width (Width) is doubled. When 0 is set, evaluation is automatically conducted.

Note: When to change peak integration parameters

Most analyses can be successfully conducted using the default parameters. However, by changing these parameters, a variety of other analysis applications can also be performed.

If integration was not performed correctly, change the default values by referring to "[16.5 Problems with Incorrect Peak Integration](#)".

16.1.2 Width

The Width parameter is the most significant of all the peak integration parameters. GCsolution uses the Width value to detect a peak, and perform peak integration under conditions best suited to the peak. Set the Width value to the width at half-height (or slightly less) of the sharpest peak in the chromatogram. Width values are in units of seconds. (Peaks as narrow as 1/4 of the width value will be detected.)

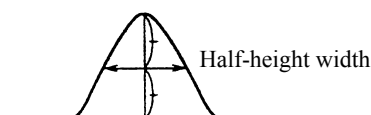


Fig.16-1 Peak width at 1/2 height

Note: Width and removal of undesirable peaks

Noise is generally smaller in width than peaks. If Width is set correctly, undesirable peaks or noise will not be integrated.

16.1.3 Slope

As shown in Fig. 16-2, the slope of the peak (slope of tangent) is used to detect peaks. The start of a peak is detected when the slope of the peak exceeds the predetermined value θ , and it is considered to end when the slope of the peak falls below this value.

Even if peak detection occurs after the peak actually starts, an accurate peak area can still be obtained because the solution seeks the lowest value toward the bottom of the peak for a time equal to one half of the Width value, and assumes the starting and ending point of the peak.

The setting parameter for the slope of the peak is called peak detection sensitivity (Slope), and Slope values are expressed in units of ÉpV/min . As the value for Slope increases, peak detection sensitivity decreases; as the Slope value decreases, peak detection sensitivity increases and broader peaks will be detected.

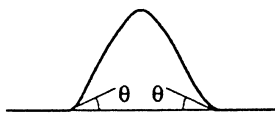
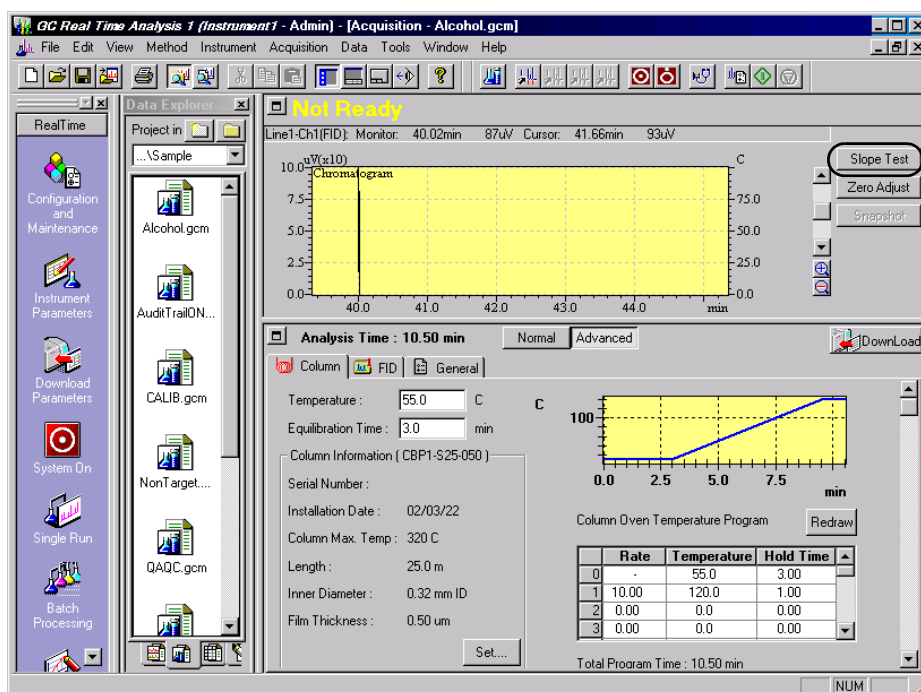


Fig.16-2. Peak detection and Slope

Note: How to determine Slope (Slope Test)

The value for Slope (peak detection sensitivity) can be automatically determined from the baseline noise and drift. This process is called a Slope Test.

The Slope value determined by the Slope Test provides a good starting point for finding the best Slope value; however, you are free to enter and use any Slope value you wish.



Note: The Slope value obtained by the Slope Test is determined by evaluating the baseline before analysis and does not take into account any baseline drifting which can occur during an actual analysis. Therefore, please note the following points when determining the value for Slope with Slope Test.

- For analyses such as temperature-programmed gas chromatography which can have significant baseline drift, do not use the automatic Slope Test setting. Set the Slope manually to a value larger than the baseline drift value, so that the baseline is not detected as a peak.
- If small peaks cannot be detected, set Slope to approx. 1/2 of the value obtained by the Slope Test.
- For dividing a peak into multiple peaks, set Slope to a value double that obtained by the Slope Test.

Refer to "6.6.1.19 <Slope Test>" on page 269

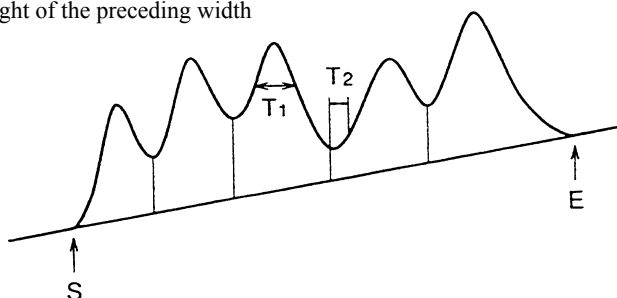


16.1.4 Drift

16.1.4.1 Correction of baseline drift in automatic processing mode (Drift=0)

When Drift is set to 0, the baseline is corrected automatically. When a valley width (T_2) is smaller than the estimated half-height of the preceding peak (T_1), as shown in Fig. 16-3, peaks are considered to overlap each other. In such a case, the area is calculated by dividing the peaks at the bottom point of the valley by a vertical line. On the other hand, if the valley width (T_2) is larger, it is processed as the baseline.

When the valley width is smaller than the half-height of the preceding width



When the valley width is larger than the half-height of the preceding width

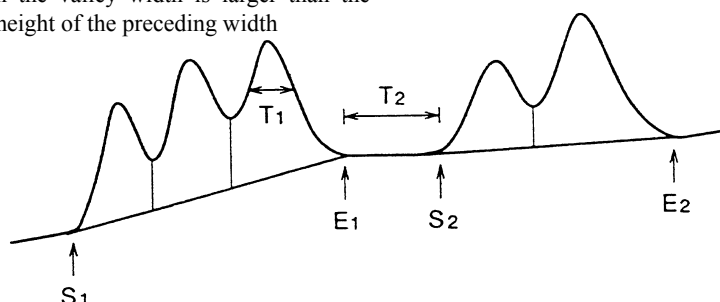


Fig.16-3 Correction of baseline drift in automatic processing mode (Drift=0)

16.1.4.2 Manual correction of baseline drift

For manual baseline correction (without using automatic correction), set a value other than 0 for Drift.

When this is done, those places with a small valley width (T_2) will be processed as the baseline.

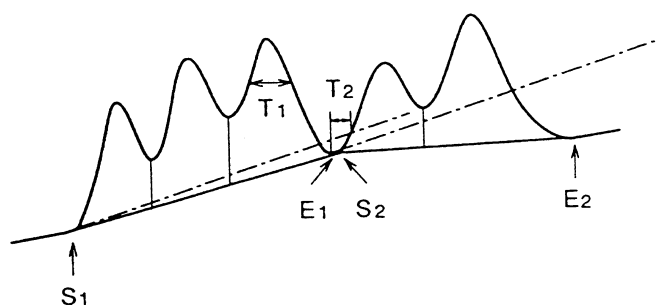


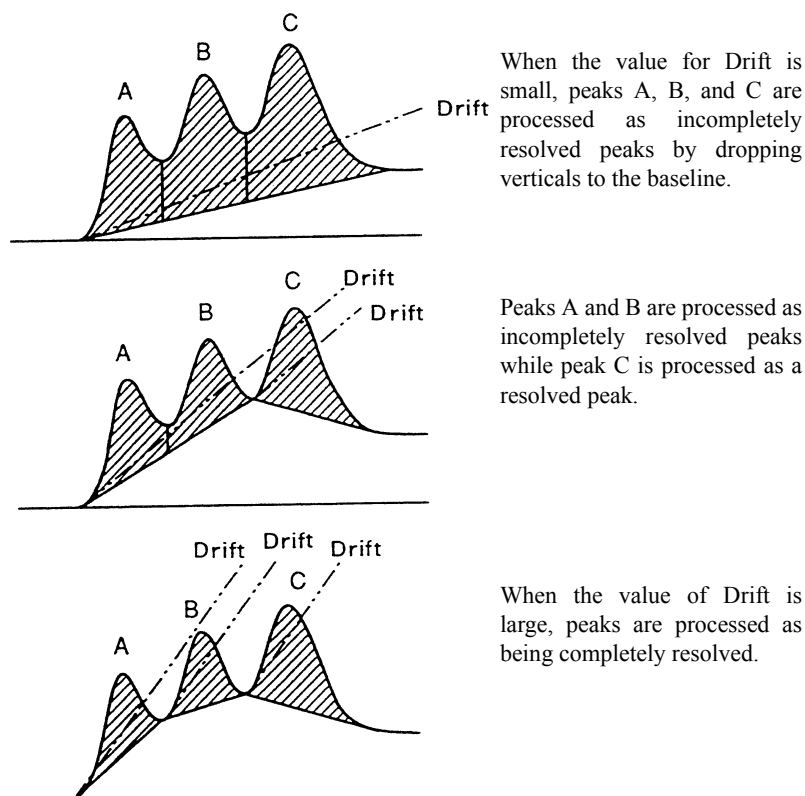
Fig.16-4 Correction of baseline drift when Drift is set to a value other than 0



Setting Drift to a value other than 0 cancels the automatic baseline correction mode. As shown in Fig. 16-4, a slope line determined by the Drift value is drawn from the starting point (S) of a peak (dotted line in the figure).

The baseline is corrected (solid line) only if the peak ending point (E) is positioned below the slope line of Drift.

Note: Note: For the same chromatogram, the baseline varies depending upon the Drift value, as shown in the figure below.



Note: When the value for Drift is not 0, it should be greater than the baseline drift during analysis. If the value is too small, the ending points of the peaks may not be below the drift level and, as a result, all the peaks may be processed as unresolved peaks.

16.1.5 Unresolved Peak Integration

When two or more peaks are not completely resolved, they are processed as unresolved peaks if they were detected using Width and Slope and their baselines were corrected using Drift.

In this case, it is necessary to judge whether to simply divide the peaks vertically as two or more overlapped peaks or to process them as a tailing peak and small peak(s) occurring on the tail.

GCsolution automatically judges and processes these incompletely resolved peaks.



● Vertical division

Normally, unresolved peaks are divided vertically.

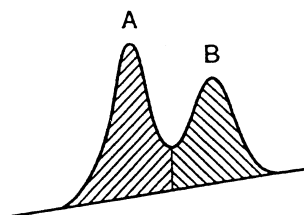


Fig.16-5 Vertical division

● Tailing

Occasionally, the peaks are considered to be occurring on the tail of a larger peak. GCsolution distinguishes between the two cases by evaluating the ratio of the two peak heights (H_1/H_2), valley and height (H_3/H_2), degree of separation (W_1/W_2), etc. If certain conditions are satisfied, it processes the two peaks as a tailing peak and a peak on the tail.

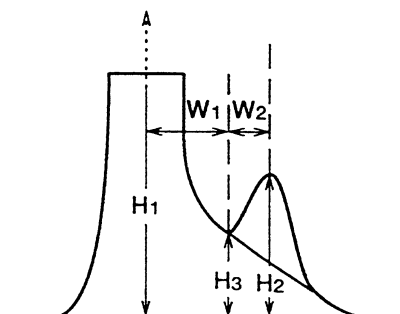


Fig.16-6 Tailing conditions

● Example of unresolved peak integration

Fig. 16-7 shows the automatic processing of unresolved peaks. Peak A is processed as a tailing peak, and peaks B, C, and D are processed as peaks on the main peak A.

An unresolved peak on a tail, such as peak C, is divided vertically.

Similarly, unresolved peaks E, F, and G are also divided vertically.

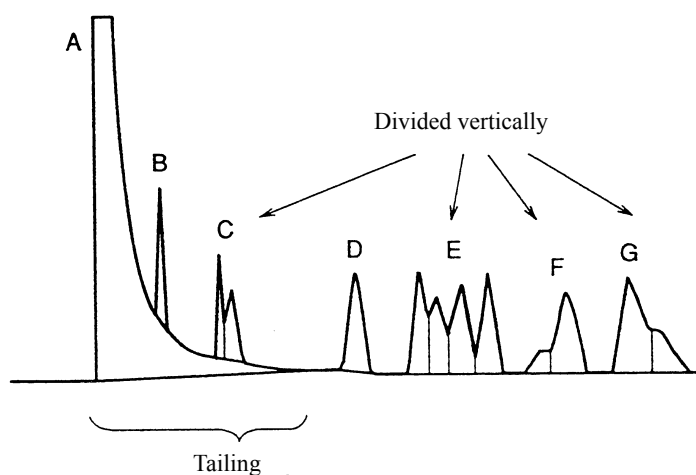


Fig.16-7 Unresolved peak integration



16.1.6 T.DBL

16.1.6.1 Automatic change of Width and Slope by T.DBL (T.DBL=0)

When T.DBL is set at 0, the Slope and Width parameter values are automatically changed according to peak width. In isothermal GC analysis, analysis peak widths increase with time. Since early-eluting peaks are sharp, peak detection sensitivity (Slope) does not need to be high. Later-eluting peaks are wider; therefore, peak detection sensitivity is automatically increased accordingly (by decreasing the Slope value). In the same way, the Width value is also low at the beginning but is automatically increased as the peak width increases with elution time.



Fig.16-8 Slope and Width are automatically changed with T.DBL=0

Analysis with automatic T.DBL (set to 0) is not appropriate if peak widths do not increase with time, as in temperature-programmed GC analysis or LC gradient analysis.

It is also inadequate if a sharp peak is followed after a long period of time by a broad peak, as shown in Fig. 16-9, or if peaks become narrow again after becoming wide. In such a case, use a value other than 0 for T.DBL.



Fig.16-9 Chromatogram incompatible with automatic T.DBL setting

16.1.6.2 Automatic change of Width and Slope at specified time of T.DBL

When the parameter change time T.DBL (unit: minutes) is set to a value other than 0, at the specified time, the Slope parameter is decreased by one half (which doubles the peak detection sensitivity), while the Width (minimum half-height width) parameter is doubled, as shown in Fig. 16-10.

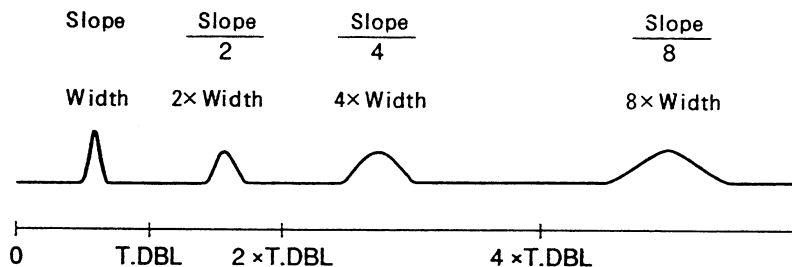


Fig.16-10 Changing Slope and Width with T.DBL

Note: Note:Up to 15 Width changes are allowed per analysis, including Width and T.DBL changes in an integration time program. For integration time program, refer to ["16.1.7 Peak Integration by Time Program"](#).



The T.DBL value must be set to the time when peak widths are double that of the first peak. If this time cannot be determined from the chromatogram, obtain it using the following calculation.

Example:

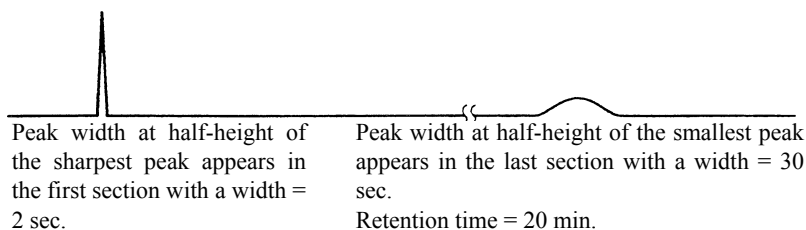


Fig.16-11 Influence of STOP during peak elution

1. Set Width to the half-height width of the sharpest peak generated in the first section. (Normal setting.) Assume, for example, 2 sec.
2. Measure the retention time and half-height width of a small peak appearing late in the chromatogram. (Assume retention time is 20 min. and the half-height width is 30 sec.)
3. Since the peak width has increased by 15 times in 20 minutes, the time required for doubling the peak width is obtained as follows:

$$\text{Time required to double the peak width} = \frac{20}{15 \text{ times}} \times 2 \approx 2.7 \text{ min.}$$

General Formula:

$$\text{T.DBL} = \frac{\text{Width setting}}{(\text{Half-height width of later peak})} \times \left(\frac{(\text{Retention time of later peak})}{\text{Retention time of first peak}} \right) \times 2$$

16.1.6.3 Preventing the Width and Slope values from changing automatically

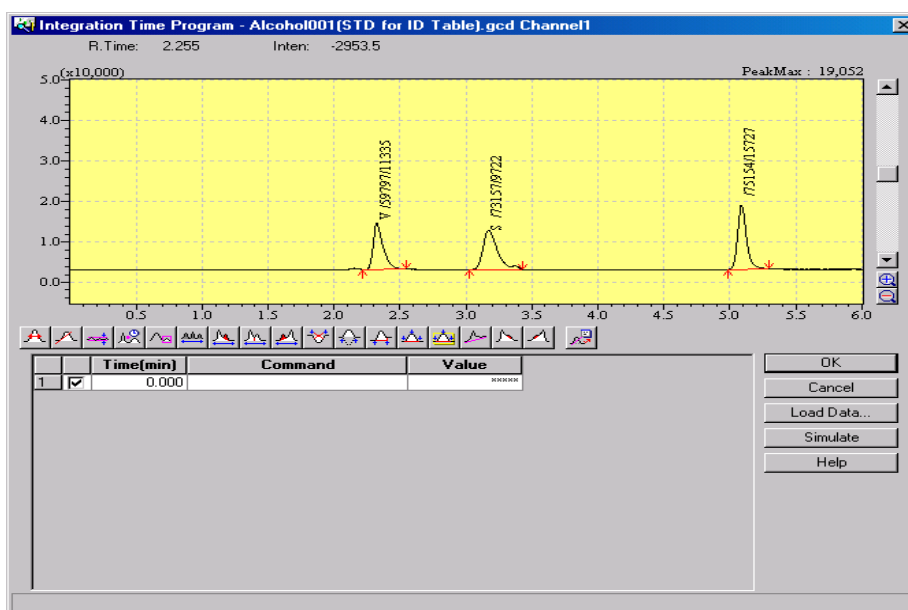
During temperature programmed GC analysis or LC gradient analysis, peak widths do not usually increase with time. To prevent automatic parameter changes, set T.DBL to a value larger than STOP.TM (Analysis end time).



16.1.7 Peak Integration by Time Program

In addition to the peak integration parameters described in this section, timed events can be used to remove unnecessary peaks, measure the areas (heights) of negative peaks, and set a forced tailing processing interval. For example, drift at sample injection, air peaks, and irrelevant peaks (like solvent peaks and negative peaks) can be removed by creating an integration time program, as shown in Fig. 16-12. Peaks not processed with tailing processing under normal peak integration can also be correctly processed using an integration time program.

An integration time program is stored in method file or method area in data file.



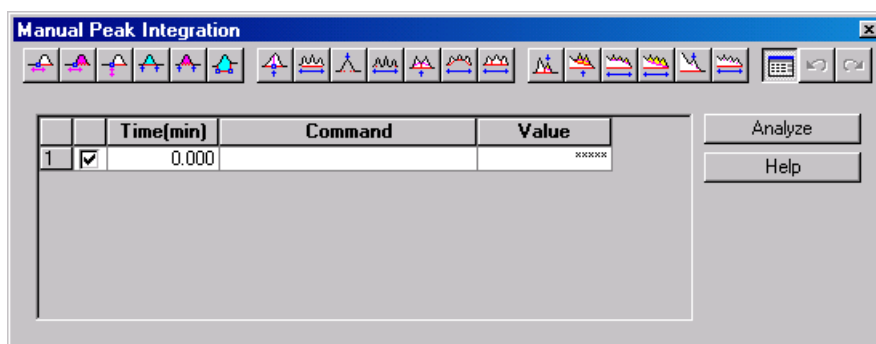
Refer to "6.6.1.1 <Integration Time Program> Window" on page 251

16.1.8 Manual Peak Integration

Manual integration allows you to move the baseline of a peak or remove unwanted peaks by manipulating chromatograms shown on the screen.

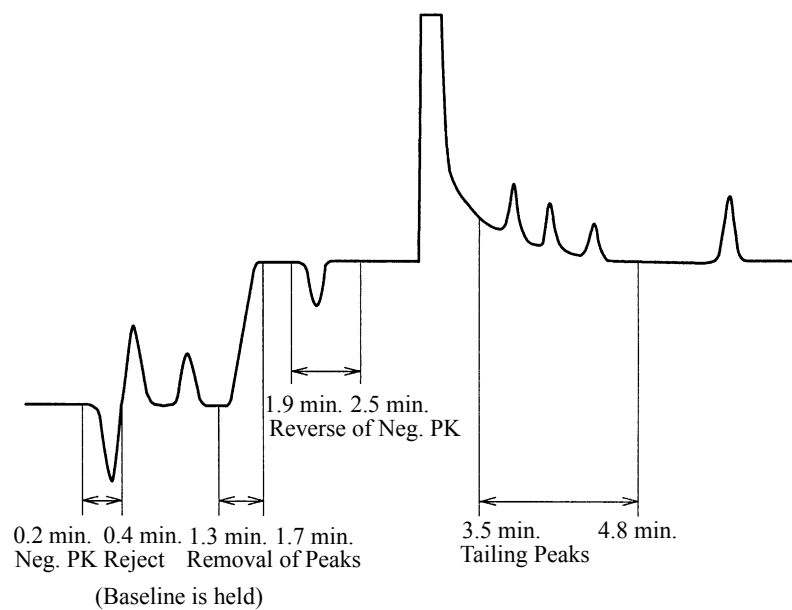
The result of manual integration is stored in the data-only area of data file as a table consisting of "time, command, and value" in the same way with integration time programs. Method files will not be affected by this.

Refer to "6.4.4 <Manual Peak Integration>" on page 216





● Example of integration time program



	Time(min)	Command	Value
1	0.200	NEG Peak Reject On	xxxxxx
2	0.400	NEG Peak Reject Off	xxxxxx
3	1.300	Integration Off	xxxxxx
4	1.700	Integration On	xxxxxx
5	1.900	NEG Peak Invert On	xxxxxx
6	2.500	NEG Peak Invert Off	xxxxxx
7	3.500	Tailing On	xxxxxx
8	4.800	Tailing Auto	xxxxxx
9	0.000		xxxxxx

Fig.16-12 Peak integration by time program



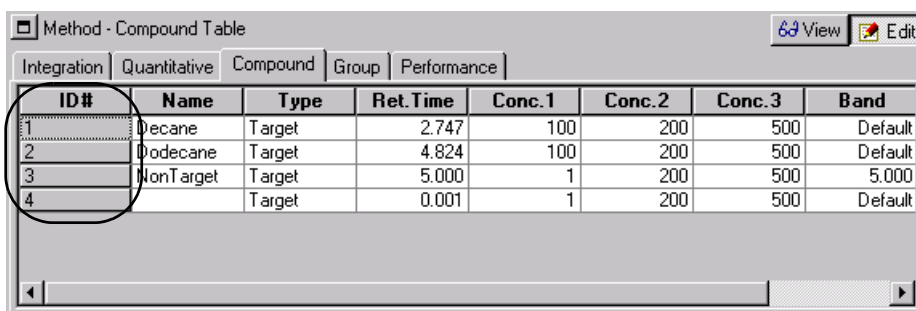
16.2

Peak Identification

16.2.1 ID

Peak identification is performed with the retention times and time allowance values derived from a standard. Quantitative calculations require response factors.

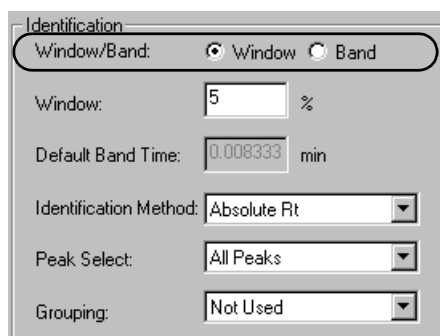
These qualitative and quantitative parameters are grouped by component and numbered by ID #. The ID #s do not have to be entered in peak elution order (retention time order); however, if they are, analysis setup will be easier and more convenient.



ID#	Name	Type	Ret.Time	Conc.1	Conc.2	Conc.3	Band
1	Decane	Target	2.747	100	200	500	Default
2	Dodecane	Target	4.824	100	200	500	Default
3	NonTarget	Target	5.000	1	200	500	5.000
4		Target	0.001	1	200	500	Default

16.2.2 Window/Band Methods

The time allowance can be set with either the Window (TIME WINDOW) method, where the allowance is uniformly set as a percentage of retention time for all peaks, or with the Band (TIME BAND) method, where the allowance is set individually for each peak.



Identification

Window/Band: ☒ Window ☐ Band

Window: 5 %

Default Band Time: 0.008333 min

Identification Method: Absolute Rt

Peak Select: All Peaks

Grouping: Not Used

● Window (TIME WINDOW) method

In the Window (TIME WINDOW) method, the time allowance for each peak increases proportionally with retention time, as shown below. This method is simple (you do not need to set parameters for each peak) and normally sufficient, but it can result in incorrect identification due to peak co-elution.



The Window (TIME WINDOW) method is best for GC isothermal and LC isocratic analyses, where peak windows increase with later peaks.

$$\text{Time allowance (min)} = \frac{\text{Standard retention time (min)} * \text{Window (\%)}}{100} + 0.02 \text{ (min)}$$

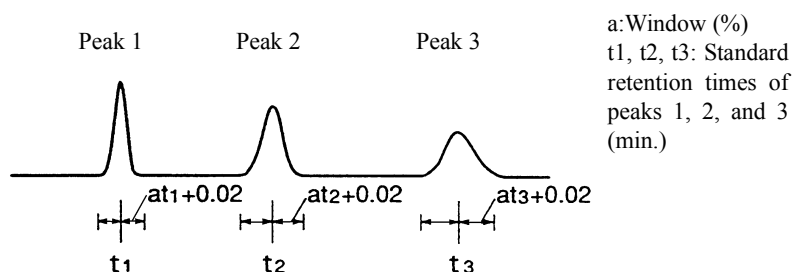


Fig.16-13 Window (TIME WINDOW) method

● Band (TIME BAND) method

The Band (TIME BAND) method sets the individual time allowance for each peak. It can be an advantage to be able to set the optimal allowance individually for the peaks, but this requires a tedious setup procedure. This method is most useful for GC temperature program and LC gradient analyses, where peak bands remain comparatively unchanged.

$$\text{Time allowance (min)} = \text{Band (min)}$$

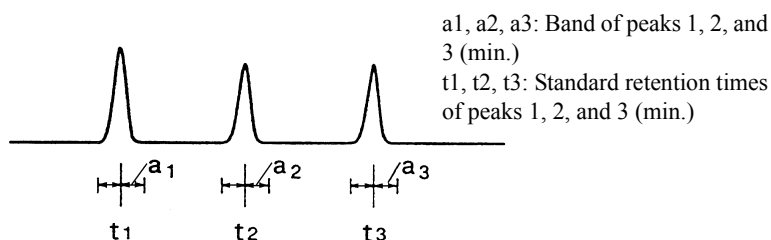
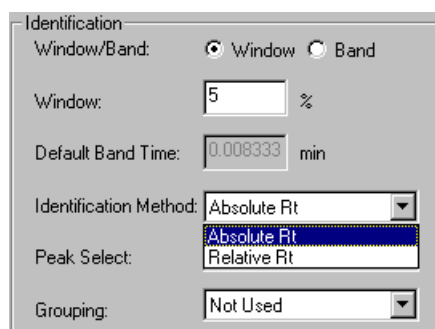


Fig.16-14 Band (TIME BAND) method

16.2.3 Identification Method

GCsolution provides the following two identification methods.





● Absolute Rt (Absolute Retention Time) method

The absolute retention time method identifies target compound peaks based on the specified retention time and time allowance (Window or Band). This widely-used method does not require reference peaks.

$$\left| \left(\begin{array}{c} \text{Standard retention} \\ \text{time of peak to be} \\ \text{identified} \end{array} \right) - \left(\begin{array}{c} \text{Measured retention} \\ \text{time of peak to be} \\ \text{identified} \end{array} \right) \right| < \left(\begin{array}{c} \text{Tolerance of retention} \\ \text{time of peak to be} \\ \text{identified} \end{array} \right)$$

● Relative Rt (Relative Retention Time) method

The relative retention time method compensates for retention time shifts caused by changes in analysis conditions to identify target peaks. A specific reference peak is first identified by the absolute retention time method, then other peaks are identified based on the reference peak retention time, using the formula below. This method is useful when a Flame Ionization Detector (FID) or Electron Capture Detector (ECD) is used for the analysis of organic solvents with the GC capillary column or when the retention index needs to be calculated.

$$\left| \left(\begin{array}{c} \text{Standard retention} \\ \text{time of peak to be} \\ \text{identified} \end{array} \right) - \left(\frac{\begin{array}{c} \text{Standard retention time} \\ \text{of reference peak} \end{array}}{\begin{array}{c} \text{Measured retention} \\ \text{time of reference peak} \end{array}} \times \left(\begin{array}{c} \text{Measured retention} \\ \text{time of peak to be} \\ \text{identified} \end{array} \right) \right| < \left(\begin{array}{c} \text{Tolerance of retention} \\ \text{time of peak to be} \\ \text{identified} \end{array} \right)$$

When a number of peaks are present, identification by the relative retention time method is also possible by dividing the retention time into more than one zones and specifying a reference peak for each zone. In that case, the corrected retention time of the target peak is calculated in the zone between two reference peaks from the relative retention time with reference peaks at both sides as reference, as shown below.

$$\text{Corrected retention time of the target peak} = \frac{t-t_1}{t_2-t_1} \times (T_2-T_1) + T_1$$

t	: Measured retention time of the target peak
t1	: Measured retention time of reference peak 1
t2	: Measured retention time of reference peak 2
T1	: Standard retention time of reference peak 1
T2	: Standard retention time of reference peak 2

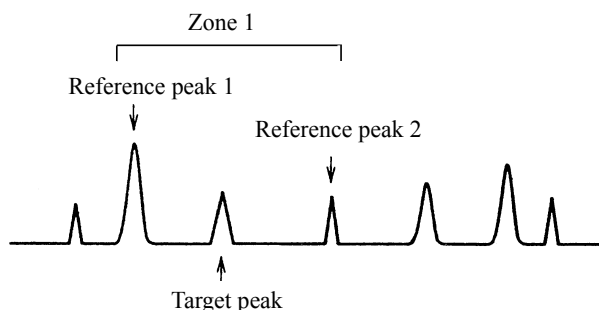


Fig.16-15 Relative retention time method



16.2.4 Identification by Adjacent Peaks

16.2.4.1 More than one peak within the time allowance

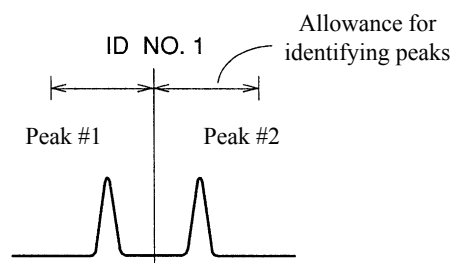
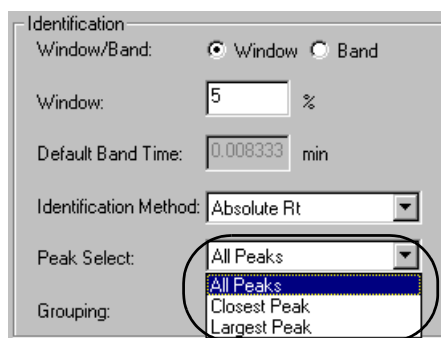


Fig.16-16 More than one peak within the same time allowance

The identification method for a specific peak can be selected from the following three types provided for peak selection identification.



All Peaks	When more than one peak is present within the same time allowance, all the peaks are identified whether the time allowance is set by either the Window (TIME WINDOW) method or the Band (TIME BAND) method.
Closest Peak	When more than one peak is present within the same time allowance, a peak closest to the retention time set in the compound table is selected and identified whether the time allowance is set by either the Window (TIME WINDOW) method or the Band (TIME BAND) method.
Largest Peak	When more than one peak is present within the same time allowance, a peak whose peak area/height is the highest is selected and identified whether the time allowance is set by either the Window (TIME WINDOW) method or the Band (TIME BAND) method.



16.2.4.2 One peak falls within two or more Peak # time allowances

If two or more Peak # time allowance overlap, and a peak falls within both Peak # time allowance, different procedures are used for identification depending on whether the Window (TIME WINDOW) or Band (TIME BAND) method was chosen.

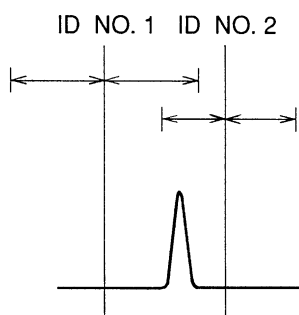


Fig.16-17 When a peak falls within two Peak

- Window (TIME WINDOW) method

In the Window (TIME WINDOW) method, the Peak # with the retention time closest to the peak is used for peak identification. In Fig. 16-18, the peak occurs within the Peak # 1 and Peak # 2 windows. Since the peak retention time is closest to that of Peak # 2, it is identified as Peak # 2.

- Band (TIME BAND) method

In the Band (TIME BAND) method, the lowest Peak # is used for peak identification.

In Fig. 16-18, the peak occurs within the Peak # 1 and Peak # 2 bands, and is identified as Peak # 1.

This priority function is very useful for grouping.

16.2.4.3 Identifying two adjacent peaks separately

If adjacent peaks occur too closely, and the time allowance cannot be set for each peak, use the Window (TIME WINDOW) method to identify them separately. Specify the same retention time value for each Peak #. This will identify the peaks in elution order.

However, note that the detection of noise or other irrelevant peaks may change the order of peak elution, resulting in incorrect identification.

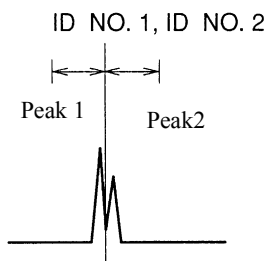


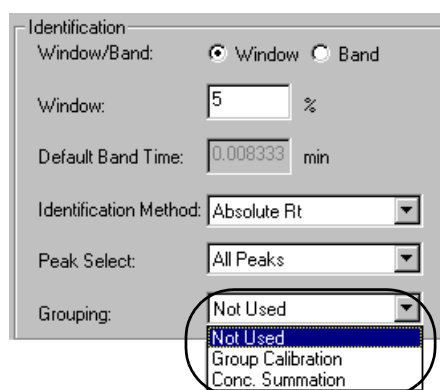
Fig.16-18 Adjacent peaks



16.2.5 Grouping

Grouping is the process of grouping the peaks by types, such as homologue and isomer, and obtaining the content ratio per group.

GCsolution provides the following two types of grouping.



16.2.5.1 Group Calibration

In grouping by Group Calibration, the addition of the peak area and peak height of the grouped compound, the preparation of calibration curves for each group, and their identification is performed by groups.

The area/height per group is as follows:

- Area/Height per group = Total area/height of each component against the group
- Area/Height per component = Total amount of area/height identified for each component

For example, in the <GC Real Time Analysis> screen, a calibration curve is prepared using a standard sample, and the calibration curve is identified using samples other than the standard sample. Concentration of the grouping results will be obtained at this time.

16.2.5.2 Conc. Summation

In the grouping by Conc. Summation, a calibration curve is drawn for each compound.

After quantitation is performed for each compound, the summation of the concentration of the grouped compound is regarded as the group's concentration.

For example, in the <GC Real Time Analysis> screen, a calibration curve is prepared using a standard sample, and the calibration curve is identified using samples other than the standard sample. Concentration of the compound table will be obtained at this time.

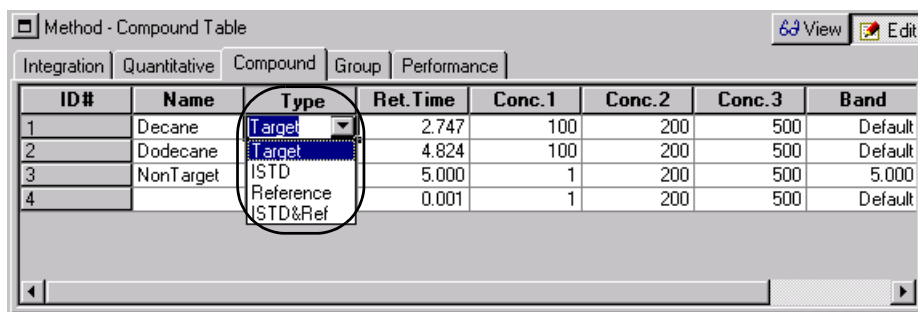
The area/height per component is obtained by "Area/Height per component = Total amount of area/height of the peak identified to each component."

Also, the concentration of each group of the group table is obtained by "Concentration of each group = Total amount of the concentration of each component against the group."



16.2.6 Identifying Reference Peaks

You need to set up reference peaks with identification by the relative retention time or multiple reference relative retention time methods, or ISTD peaks for quantitation by the internal standard or multiple internal standard methods.



ID#	Name	Type	Ret.Time	Conc. 1	Conc. 2	Conc. 3	Band
1	Decane	Target	2.747	100	200	500	Default
2	Dodecane	Target	4.824	100	200	500	Default
3	NonTarget	ISTD	5.000	1	200	500	5.000
4		Reference	0.001	1	200	500	Default

Unlike general peak identification, a reference or ISTD peak is identified as the peak with the largest area (or height) in the peak's time allowance (for both the Window or Band methods).

Note that, if there is another peak with an area (or height) greater than that of the reference or ISTD peak within the time allowance, that peak may be identified as the reference or ISTD peak, causing other peaks to be identified and quantitated using the incorrect peak.

Ensure that the reference or ISTD peak is the component with the greatest area (or height) compared to other peaks, or that the retention time window or band is small enough so that only the reference or ISTD peak is identified.

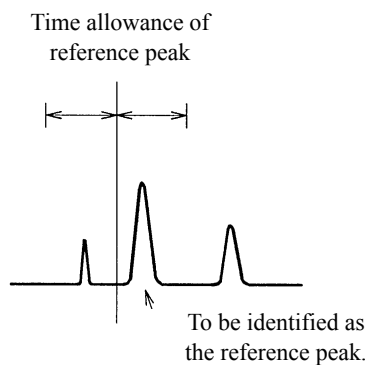
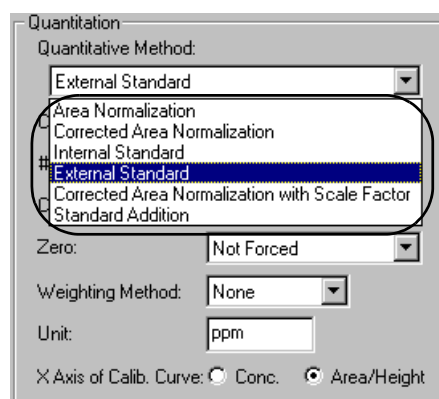


Fig.16-19 Identification of reference peak

16.3 Quantitation Method

16.3.1 Quantitation Method



Quantitation method	Contents
Area Normalization	The detected peak areas (height) are totaled, and the ratio of each peak area (height) against the total value is obtained in percentage.
Corrected Area Normalization	The quantitation value of each component is obtained by the absolute calibration method first and added. Then the ratio of the quantitation value of each component against the total value is obtained in percentage.
Internal Standard	An internal standard substance is added to the sample, and then analyzed. First, a calibration curve of the relative sensitivity and amount ratio of the target peak against the internal standard peak with the standard sample. Quantitation of the target component is obtained by applying area ratio (height ratio) of the peak to an unknown sample.
External standard (Absolute Calibration Curve)	A calibration curve that indicates the relationship between the absolute amount of component (concentration) in the sample and its peak area (height) is obtained beforehand, and an unknown sample is analyzed under the same condition. Quantitation value is obtained by applying its peak area (height) to the calibration curve. In this quantitation method, it is necessary to keep the analysis conditions of the standard sample and the unknown sample strictly fixed. In particular, the amount of injection must be fixed as much as possible because the accuracy of the quantitation depends wholly on the sample injection amount.
Corrected Area Normalization with Scale Factor	The content of each component is obtained with the scale factor value used for the total of the area (height) instead of applying a value of 100.
Standard Addition	A known amount of component to be measured is added to an unknown sample and analyzed, and an unknown sample with nothing added is also measured. Quantitation is performed using the difference of the peak area thus obtained. (Peak height may also be used.) This quantitation method is often used for the analysis (such as head space GC) where relative sensitivity of the component to be measured differs depending on the solvent composition and/or concomitant components.



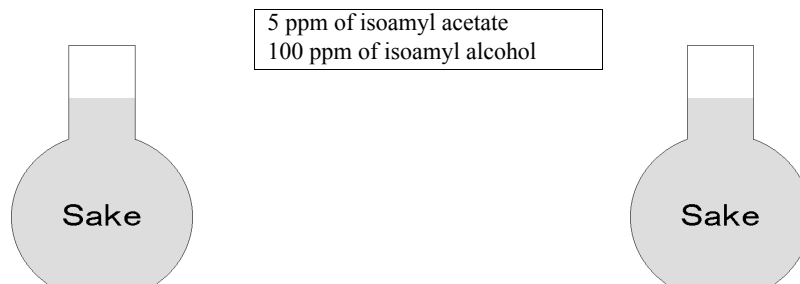
Reference data: Analysis method and quantitation calculation method of the standard addition method.

An example of the practical analysis method is described here.

Example) Quantitation of isoamyl acetate and isoamyl alcohol in sake (rice wine).

(1) Sample preparation

Add the components to be measured with known concentration (equivalent to 5 ppm of isoamyl acetate and 100 ppm of isoamyl alcohol) to the unknown sample (sake).

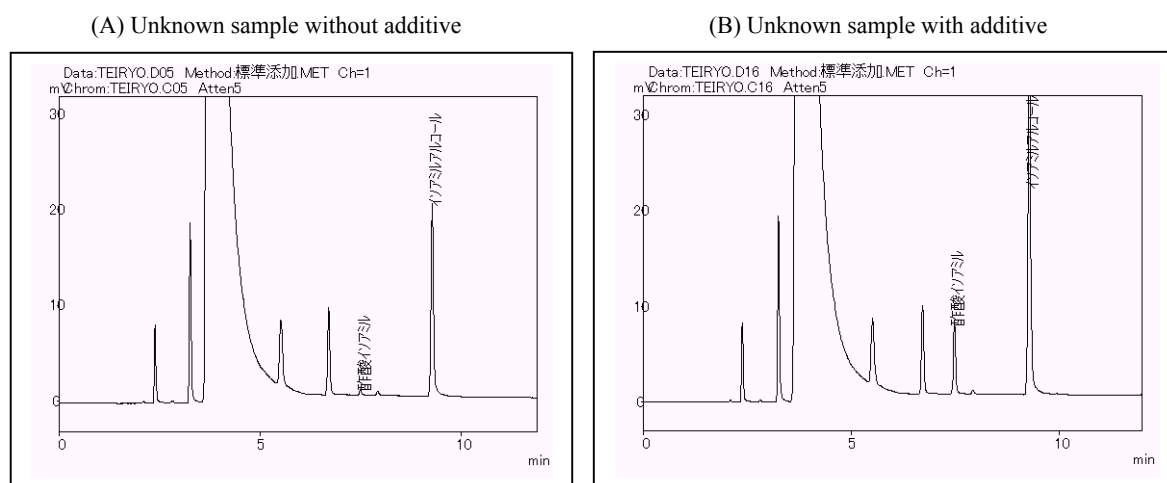


(A) Unknown sample without additive

(B) Unknown sample with the components to be measured added

(2) Analyzing these samples under the same conditions

These samples are analyzed by head space GC under the same conditions and the following chromatograms are obtained.



Data with different peak area can be obtained only for the added components (isoamyl acetate and isoamyl alcohol) in the peak report.

(A) Unknown sample without additive

TEIRYO.D05				
<PEAK INFORMATION>				
PKNO	R.TIME	AREA	MK NAME	
1	2.386	8126		
2	3.258	18764		
3	3.7	1218054	S E	
4	5.515	6775	T	
5	6.702	9165		
6	7.494	2065	Isoamyl acetate	
7	7.919	405		
8	9.278	20180	Isoamyl alcohol	

(B) Unknown sample with additive

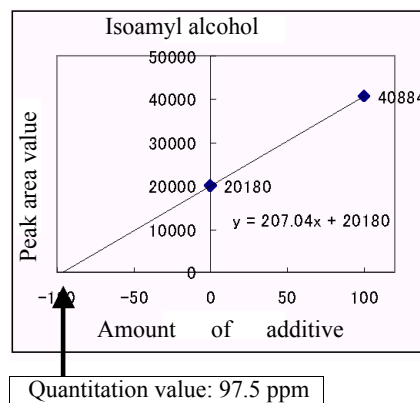
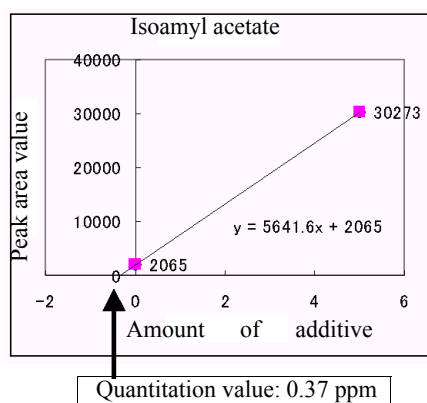
TEIRYO.D16				
<PEAK INFORMATION>				
PKNO	R.TIME	AREA	MK NAME	
1	2.378	8296		
2	3.247	19416		
3	3.691	1218018	S E	
4	5.507	6838	T	
5	6.709	9233		
6	7.479	30273	Isoamyl acetate	
7	7.92	432	V	
8	9.277	40884	S Isoamyl alcohol	



(3) Drawing graphs

Draw the following graphs for each component to be measured. (X axis: peak area, Y axis: added amount)

When extrapolated, the absolute amount of the point where it intersects the X axis indicates the value of quantitation (concentration of the component to be measured in the unknown sample).



The quantitation values of isoamyl acetate in this sake are 0.37 ppm and 97.5 ppm respectively.

Supplement(Assuming the above case)

The following method is provided to perform quantitation using the standard addition method using the GCsolution.

- (1) Set "Quantitative Method to Standard Addition" and "Curve Fit Type" to Line.
- (2) Set the points of maximum level to two.
- (3) Input the concentration of additive in the CONC column in the compound table.(Input "0" to CONC 1.)
- (4) Perform analysis with the sample containing additive as "Standard sample of level 1" and the sample without additive as "Standard sample of level 2."
- (5) The absolute value of the calibration curve's segment x indicates the quantitation value of standard-addition method.

The above description is for the case when "the added sample is one kind." When analysis is performed with the added sample of two or more stages and data is taken at three or more points, draw an approximate linear line using the least squares method, and extrapolate to obtain the quantitation value.

Set the number of calibration points to 3 or more (number of added samples + 1), and calculate the values using the least squares method.

No quantitative value is displayed on the peak table just by creating a calibration curve, however. Re-analyze the standard sample with [Sample Type] set to Unknown. Quantitative values will be displayed in the peak table.



16.3.2 Quantitative Calculation Methods and Equations (Without Dilution Factor: Japanese version)

● When X-axis is area/height

Quantitative calculation method	One point	Two points	Content
Area Normalization method			$\text{Content (\%)} = \frac{A_i}{\sum A_i} \times 100$
Corrected Area Normalization method	$F1 = \frac{C_1}{A_1}$	$F1 = \frac{C_1 - C_2}{A_1 - A_2}$ $F2 = C_2 - F1 \times A_2$	$\text{Content (\%)} = \frac{F1_i A_i + F2_i}{\sum (F1_i A_i + F2_i)} \times 100$
Internal standard method	$F1 = \frac{C_1}{C_{isn_1}} \cdot \frac{A_1}{A_{isn_1}}$	$F1 = \left(\frac{C_1}{C_{isn_1}} - \frac{C_2}{C_{isn_2}} \right) / \left(\frac{A_1}{A_{isn_1}} - \frac{A_2}{A_{isn_2}} \right)$ $F2 = \frac{C_2}{C_{isn_2}} - F1 \times \frac{A_2}{A_{isn_2}}$	$\text{Content} = \left(\frac{F1_i A_i}{A_{isn}} + F2_i \right) \times \frac{W_{isn}}{W_{spl}} \times 100$
External Standard method (Absolute calibration curve method)	$F1 = \frac{W_{spl} \times C_1}{100 \times A_1}$	$F1 = \frac{C_1 \times W_{spl_1} - C_2 \times W_{spl_2}}{100(A_1 - A_2)}$ $F2 = \frac{C_2 \times W_{spl_2}}{100} - F1 \times A_2$	$\text{Content} = \frac{F1_i A_i + F2_i}{W_{spl}} \times 100$
Corrected Area Normalization with Scale Factor method	$F1 = \frac{C_1}{A_1}$	$F1 = \frac{C_1 - C_2}{A_1 - A_2}$ $F2 = C_2 - F1 \times A_2$	$\text{Content (\%)} = \frac{F1_i A_i + F2_i}{\sum (F1_i A_i + F2_i)} \times W_{spl}$
Standard Addition method		$F1 = \frac{C_1 \times W_{spl_1} - C_2 \times W_{spl_2}}{100(A_1 - A_2)}$ $F2 = \frac{C_2 \times W_{spl_2}}{100} - F1 \times A_2$	$\text{Content} = \frac{F2_i}{W_{spl}} \times 100$



● When X-axis is concentration

Quantitative calculation method	One point	Two points	Content
Area Normalization method			$\text{Content (\%)} = \frac{A_i}{\sum A_i} \times 100$
Corrected Area Normalization method	$F1 = \frac{A_1}{C_1}$	$F1 = \frac{A_1 - A_2}{C_1 - C_2}$ $F2 = A_2 - F1 \times C_2$	$\text{Content (\%)} = \frac{(A_i - F2_i)/F1_i}{\sum (A_i - F2_i)/F1_i} \times 100$
Internal standard method	$F1 = \frac{A_1/A_{isn1}}{C_1/C_{isn1}}$	$F1 = \left(\frac{A_1}{A_{isn1}} - \frac{A_2}{A_{isn2}} \right) / \left(\frac{C_1}{C_{isn1}} - \frac{C_2}{C_{isn2}} \right)$ $F2 = \frac{A_2}{A_{isn2}} - F1 \times \frac{C_2}{C_{isn2}}$	$\text{Content} = \frac{(A_i/A_{isn} - F2_i)}{F1_i} \times \frac{W_{is}}{W_{spl}} \times 100$
External Standard method (Absolute calibration curve method)	$F1 = \frac{A_1 \times 100}{C_1 \times W_{spl}}$	$F1 = \frac{A_1 - A_2}{C_1 - C_2}$ $F2 = A_2 - F1 \times C_2 \times W_{spl}/100$	$\text{Content} = \frac{A_i - F2_i}{F1_i} \times \frac{100}{W_{spl}}$
Corrected Area Normalization with Scale Factor method	$F1 = \frac{A_1}{C_1}$	$F1 = \frac{A_1 - A_2}{C_1 - C_2}$ $F2 = A_2 - F1 \times C_2$	$\text{Content (\%)} = \frac{(A_i - F2)/F1_i}{\sum (A_i - F2_i)/F1_i} \times W_{spl}$
Standard Addition method		$F1 = \frac{A_1 - A_2}{C_1 - C_2}$ $F2 = A_2 - F1 \times C_2 \times W_{spl}/100$	$\text{Content} = \frac{F2_i}{F1_i} \times \frac{100}{W_{spl}}$



16.3.3 Quantitative Calculation Methods and Equations (With Dilution Factor:English version)

● When X-axis is area/height

Quantitative calculation method	One point	Two points	Content
Internal Standard method	$F1 = \frac{C_1}{C_{isn_1}} \times \frac{A_1}{A_{isn_1}}$	$F1 = \left(\frac{C_1}{C_{isn_1}} - \frac{C_2}{C_{isn_2}} \right) / \left(\frac{A_1}{A_{isn_1}} - \frac{A_2}{A_{isn_2}} \right)$ $F2 = \frac{C_2}{C_{isn_2}} - F1 \times \frac{A_2}{A_{isn_2}}$	$\text{Content} = \left(\frac{F1_i A_i}{A_{isn}} + F2_i \right) \times \frac{W_{isn}}{W_{spl}} \times DFACT$
External Standard method (Absolute calibration curve method)	$F1 = \frac{C_1}{A_1}$	$F1 = \frac{C_1 - C_2}{A_1 - A_2}$ $F2 = C_2 - F1 \times A_2$	$\text{Content} = \frac{F1_i A_i + F2_i}{W_{spl}} \times DFACT$
Corrected Area Normalization with Scale Factor method	$F1 = \frac{C_1}{A_1}$	$F1 = \frac{C_1 - C_2}{A_1 - A_2}$ $F2 = C_2 - F1 \times A_2$	$\text{Content (\%)} = \frac{F1_i A_i + F2_i}{\sum (F1_i A_i + F2_i)} \times DFACT$
Standard Addition method		$F1 = \frac{C_1 - C_2}{A_1 - A_2}$ $F2 = C_2 - F1 \times A_2$	$\text{Content} = -\frac{F2_i}{W_{spl}} \times DFACT$

● When X-axis is concentration

Quantitative calculation method	One point	Two points	Content
Internal Standard method	$F1 = \frac{A_1/A_{isn_1}}{C_1/C_{isn_1}}$	$F1 = \left(\frac{A_1}{A_{isn_1}} - \frac{A_2}{A_{isn_2}} \right) / \left(\frac{C_1}{C_{isn_1}} - \frac{C_2}{C_{isn_2}} \right)$ $F2 = \frac{A_2}{A_{isn_2}} - F1 \times \frac{C_2}{C_{isn_2}}$	$\text{Content} = \frac{(A_i/A_{isn} - F2_i)}{F1_i} \times \frac{W_{is}}{W_{spl}} \times DFACT$
External Standard method (Absolute calibration curve method)	$F1 = \frac{A_1}{C_1}$	$F1 = \frac{A_1 - A_2}{C_1 - C_2}$ $F2 = A_2 - F1 \times C_2$	$\text{Content} = \frac{A_i - F2_i}{F1_i} \times \frac{DFACT}{W_{spl}}$
Corrected Area Normalization with Scale Factor method	$F1 = \frac{A_1}{C_1}$	$F1 = \frac{A_1 - A_2}{C_1 - C_2}$ $F2 = A_2 - F1 \times C_2$	$\text{Content (\%)} = \frac{(A_i - F2_i)/F1_i}{\sum (A_i - F2_i)/F1_i} \times DFACT$
Standard Addition method		$F1 = \frac{A_1 - A_2}{C_1 - C_2}$ $F2 = A_2 - F1 \times C_2$	$\text{Content} = \frac{F2_i}{F1_i} \times \frac{DFACT}{W_{spl}}$





Where:	A_1	:	Peak area (height) of standard 1
	A_2	:	Peak area (height) of standard 2
	C_1	:	Concentration (component amount) of standard 1
	C_2	:	Concentration (component amount) of standard 2
	A_{isn_1}	:	Internal standard peak area (height) in standard 1 in Zone n.
	A_{isn_2}	:	Internal standard peak area (height) in standard 2 in Zone n.
	C_{isn_1}	:	Concentration (component amount) of internal standard peak in standard 1 in Zone n.
	C_{isn_2}	:	Concentration (component amount) of internal standard peak in standard 2 in Zone n.
	W_{spl_1}	:	Standard amount 1
	W_{spl_2}	:	Standard amount 2
	$F1_i$	:	Response factor for slope
	$F2_i$	:	Response factor for constant term
	A_i	:	Peak area (height) data
	A_{isn}	:	Internal standard peak area (height) data of standard in Zone n.
	W_{spl}	:	Sample amount
	W_{isn}	:	Amount of internal standard component in Zone n, in which i-th Peak # peak belongs.



16.3.4 Least Squares Method

The following equations are used in the least squares method.

$$F1 = \frac{N \times \sum XY - \sum X \times \sum Y}{N \times \sum X^2 - \sum X \times \sum X}$$

$$F2 = \frac{\sum X^2 \times \sum Y - \sum XY \times \sum X}{N \times \sum X^2 - \sum X \times \sum X}$$

Contribution
ratio:

$$r^2 = \frac{\left(\sum xy - \frac{1}{N} \times \sum x \times \sum y\right)^2}{\left\{\sum x^2 - \frac{(\sum x)^2}{N}\right\} \left\{\sum y^2 - \frac{(\sum y)^2}{N}\right\}}$$

Correlation
coefficient:

$$r = \frac{\left(\sum xy - \frac{1}{N} \times \sum x \times \sum y\right)}{\sqrt{\left\{\sum x^2 - \frac{(\sum x)^2}{N}\right\} \left\{\sum y^2 - \frac{(\sum y)^2}{N}\right\}}}$$

Values x and y vary depending on quantitative calculation method, as follows:

- When X-axis is area/height

Without dilution factor

Quantitative calculation Method	x	y
Corrected Area Normalization with Scale Factor method	A_i	C_i
Internal Standard method	A_i/A_{is_i}	C_i/C_{is_i}
External Standard method (Absolute calibration curve method) Standard Addition method	A_i	$C_i \times W_{sp1_i}/100$

With dilution factor

Quantitative calculation Method	x	y
Corrected Area Normalization with Scale Factor method	A_i	C_i
Internal Standard method	A_i/A_{is_i}	C_i/C_{is_i}
External Standard method (Absolute calibration curve method) Standard Addition method	A_i	C_i



● When X-axis is concentration

Without dilution factor

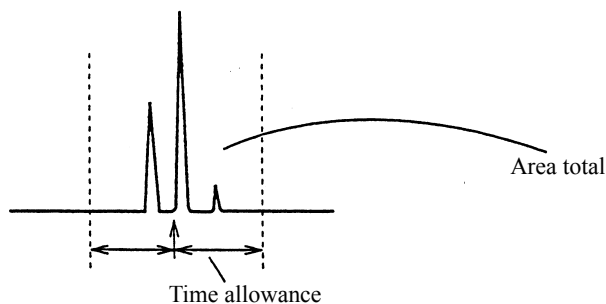
Quantitative calculation Method	x	y
Corrected Area Normalization with Scale Factor method	C_i	A_i
Internal Standard method	C_i/C_{is_i}	A_i/A_{is_i}
External Standard method (Absolute calibration curve method) Standard Addition method	$C_i \times W_{spl_i}/100$	A_i

With dilution factor

Quantitative calculation Method	x	y
Corrected Area Normalization with Scale Factor method	C_i	A_i
Internal Standard method	C_i/C_{is_i}	A_i/A_{is_i}
External Standard method (Absolute calibration curve method) Standard Addition method	C_i	A_i

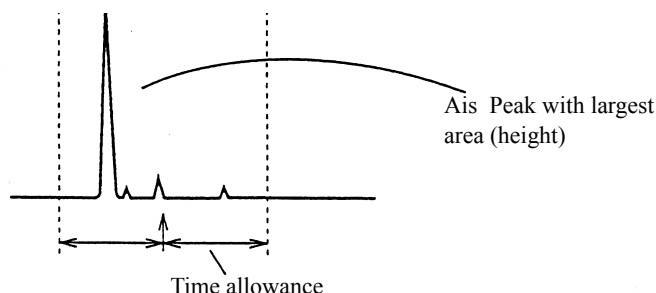
Where: N Number of calibration level
A_i Peak area (height)
C_i Peak concentration (component amount)
A_{is_i} Internal standard component's peak area (height)
C_{is_i} Internal standard peak concentration (component amount)
W_{spl_i} Sample amount
(Subscript i indicates the ith standard.)

Reference: A_i : When multiple peaks are identified within a time allowance, their peak area (or height) total amount is used for the calculation.





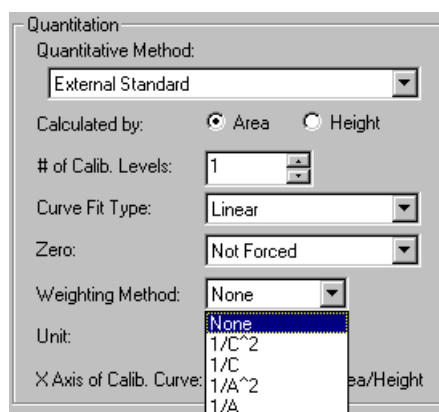
Ais_i : However, if they are internal standard peaks, the peak value whose area (or height) is the largest is used.



16.3.5 Weighted Least Squares Method

In the general least squares method, the error is considered to be of the same degree for each calibration level. The calibration curve is obtained where the sum of the squares of deviation at each level becomes smallest.

This method, however, can create relatively large errors for the levels with the lowest concentrations, which do not reflect actual conditions. This problem can be overcome by calculating so that the sum of the squares of deviation of the ratio between each level and its concentration becomes the smallest, making the relative error at each level's concentration even. This is called weighting.



The weighted least squares method uses the following equations:

$$F1 = \left(\sum w_{xy} - \frac{\sum w_x \times \sum w_y}{\sum w} \right) / \left(\sum w_x^2 - \frac{(\sum w_x)^2}{\sum w} \right)$$

$$F2 = \frac{\sum w_y}{\sum w} - F1 \times \frac{\sum w_x}{\sum w}$$

Contribution ratio:

$$r^2 = \frac{\left(\sum w_{xy} - \frac{\sum w_x \times \sum w_y}{\sum w} \right)^2}{\left\{ \sum w_x^2 - \frac{(\sum w_x)^2}{\sum w} \right\} \left\{ \sum w_y^2 - \frac{(\sum w_y)^2}{\sum w} \right\}}$$



Correlation coefficient:

$$r = \frac{\left(\sum w_{xy} - \frac{\sum w_x \times \sum w_y}{\sum w} \right)}{\sqrt{\left\{ \sum w_x^2 - \frac{(\sum w_x)^2}{\sum w} \right\} \left\{ \sum w_y^2 - \frac{(\sum w_y)^2}{\sum w} \right\}}}$$

Here, "w" stands for the weight. GCsolution provides four kinds of weighting.

"C" stands for concentration and "A" stands for either area or height depending on the setting of the data to be used.

- 1/C
- 1/C²
- 1/A
- 1/A²

Among these, 1/C² and 1/A² are equivalent to the setting when the weight is proportioned to the concentration. Accordingly, 1/C and 1/A are less influenced by the weight.

In general, when the Y axis indicates concentration, 1/C or 1/C² is used for weight, and when the Y axis indicates area/height, 1/A or 1/A² is used.

Values x and y vary depending on quantitative calculation method, as follows:

- When X-axis is area/height

Without dilution factor

Quantitative calculation Method	x	y
Corrected Area Normalization with Scale Factor method	A _i	C _i
Internal Standard method	A _i /A _{is_i}	C _i /C _{is_i}
External Standard method (Absolute calibration curve method) Standard Addition method	A _i	C _i × W _{sp_i} /100

With dilution factor

Quantitative calculation Method	x	y
Corrected Area Normalization with Scale Factor method	A _i	C _i
Internal Standard method	A _i /A _{is_i}	C _i /C _{is_i}
External Standard method (Absolute calibration curve method) Standard Addition method	A _i	C _i



● When X-axis is concentration

Without dilution factor

Quantitative calculation Method	x	y
Corrected Area Normalization with Scale Factor method	C_i	A_i
Internal Standard method	C_i/C_{is_i}	A_i/A_{is_i}
External Standard method (Absolute calibration curve method) Standard Addition method	$C_i \times W_{spl_i}/100$	A_i

With dilution factor

Quantitative calculation Method	x	y
Corrected Area Normalization with Scale Factor method	C_i	A_i
Internal Standard method	C_i/C_{is_i}	A_i/A_{is_i}
External Standard method (Absolute calibration curve method) Standard Addition method	C_i	A_i

Where:

A_i Peak area (height)
 C_i Peak concentration (component amount)
 A_{is_i} Internal standard component's peak area (height)
 C_{is_i} Internal standard peak concentration (component amount)
 W_{spl_i} Sample amount
 (Subscript i indicates the ith standard.)



16.3.6 Quantitative Calculation Methods using Dilution Factor

At installation, GCsolution prompts you to choose whether you will use a dilution factor in your calculation method or not. The results obtained by both the calculation method with dilution factor and the one without dilution factor are the same. However, by introducing the dilution factor, the sample amount and concentration (the reciprocal of the dilution ratio) concepts are clearly separated, providing the following advantages.

- The calibration expression is simplified, and the relationship between response factors for the calibration curve and components contained can be understood more easily.
- The set value for sample amount no longer requires recalculation to convert the units before analyzing a sample.

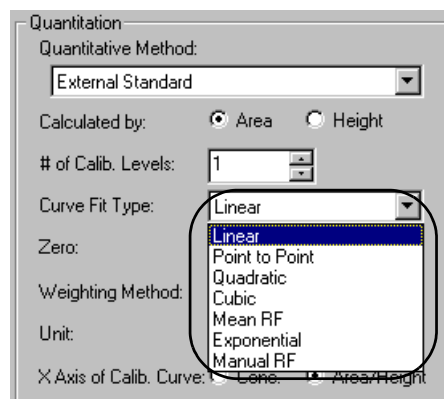
Note: To change the setting to enable/disable dilution factor, you must reinstall GCsolution.

Note: When using a dilution factor, normally you should set the sample amount to 1.

Note: English version is installed only as using the dilution factor.

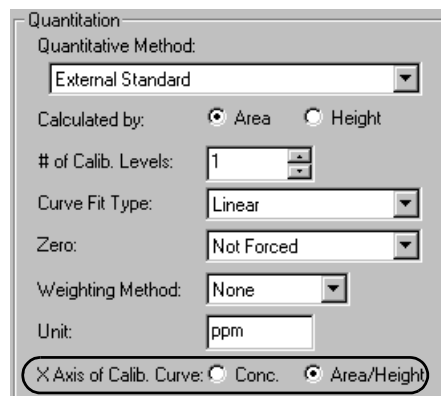
16.4 Calibration Curve

Calibration curves used for quantitation calculations are prepared by analyzing a standard sample of known amount. GCsolution provides the following seven types of calibration curves.



Furthermore, the following matters can be specified concerning the calibration curve.

- Whether to indicate concentration or area/height on the X axis in the calibration display.
- Whether to force the calibration curve to pass through the origin. (This cannot be specified with Mean RF.)





16.4.1 Linear

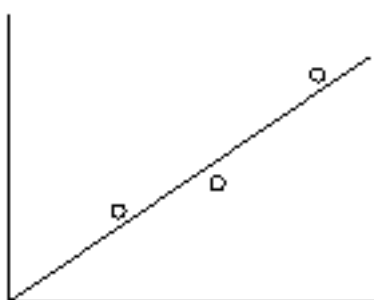
Up to 16 kinds of standard samples with different concentrations are analyzed individually, and a linear calibration curve is obtained using the least squares method.

When one kind of standard sample is used, the calibration curve is a simple linear line that goes through the point and the origin.

When two kinds of standard samples are used and the calibration curve does not go through the origin, it becomes a simple linear line that goes through those two points.

In other cases, the calibration curve is a general linear line obtained using the least squares method.

Each point can be independently obtained by averaging up to ten measurements.



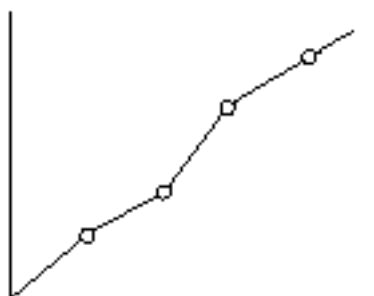
16.4.2 Point to Point

Up to 16 kinds of standard samples with different concentrations are analyzed individually, and a point-to-point calibration curve is obtained by connecting the points of each sample.

When one kind of standard sample is used, the calibration curve is a simple linear line that goes through the point and the origin.

When more than one kind of standard sample is used, the calibration curve is a point-to-point graph, and the first linear line goes through the origin without fail.

Each point can be independently obtained by averaging up to ten measurements.





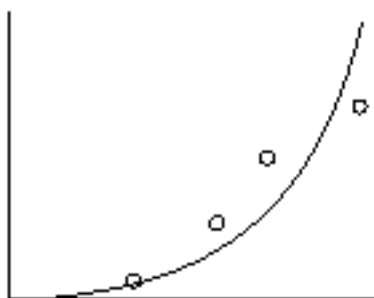
16.4.3 Quadratic, Cubic

Up to 16 kinds of standard samples with different concentrations are analyzed individually, and a quadratic or cubic calibration curve is obtained using the least squares method.

In the case of quadratic calibration curves, three or more calibration points are required.

In the case of cubic calibration curves, four or more calibration points are required.

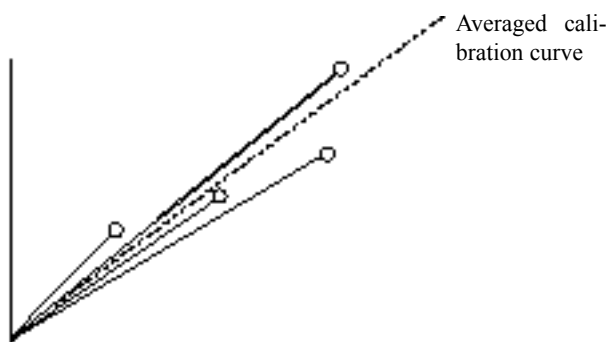
Each point can be independently obtained by averaging up to ten measurements.



16.4.4 Mean RF

Up to 16 kinds of standard samples with different concentrations are analyzed individually, and calibration curves that go through each point and the origin are obtained. Next, the slope factors of these calibration curves are simply averaged.

When one kind of standard sample is used, the calibration curve is a simple linear line that goes through the point and the origin.





16.4.5 Exponential

Up to 16 kinds of standard samples with different concentrations are analyzed individually, and linear calibration curves are obtained in a graph in which both axes are natural logarithmic axes.

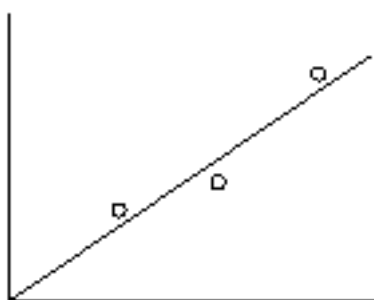
When two kinds of standard samples are used, it becomes a simple linear line that goes through those two points.

In other cases, the calibration curve is a general linear line obtained using the least squares method.

Each point can be independently obtained by averaging up to ten measurements.

Note: Use two kinds and more of standard samples in the case of the exponential.

Note: Cannot set Forced through Zero.



16.4.6 Manual RF(Linear, Exponential)

Quantitation can be performed with the calibration curve of an arbitrary linear line by manually inputting the correction factor of the calibration curve directly into the compound table. The correction factor (RF, Y(0)) of the calibration curve can be set for each component.

Method - Compound Table						
ID#	Name	Type	Ret.Time	Band	RF	Y(0)
1	Decane	Target	2.747	Default	0.0	0.0
2	Dodecane	Target	4.824	Default	0.0	0.0
3	NonTarget	Target	5.000	5.000	0.0	0.0
4		Target	0.001	Default	0.0	0.0

Note: When you input the factors manually, the calibration curve graph is not displayed.

Note: When coefficients are entered manually (exponential calculation), calculation is made using the X- and Y-axes of the calibration curve as axes of natural logarithm.

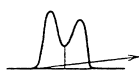
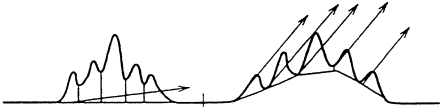
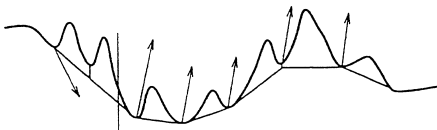


16.5

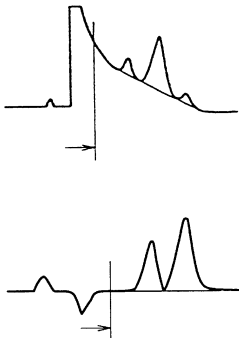
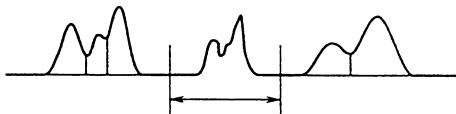
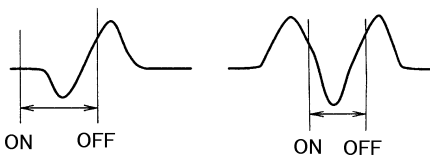
Problems with Incorrect Peak Integration

	Problem	Related Parameter	Possible Solution
1	Narrow peaks are not detected.	Width Slope	Set Width accurately to the half-height width of the narrowest peak. (When the Width value has changed, reset the Slope value by executing Slope Test.) Reduce the Slope setting by 1/2 to increase the peak detection sensitivity.
2	Two or more peaks are detected as one.	Width Slope	Set Width accurately to the half-height width of the narrowest peak. (When the Width value has changed, reset the Slope value by executing Slope Test.) Double the Slope value to decrease the peak detection sensitivity.
3	Baseline drifting occurs, preventing peaks from being detected.	T.DBL	Set T.DBL accurately to the time at which peak width actually doubles. <i>Refer to "16.1.6.3 Preventing the Width and Slope values from changing automatically" on page 599</i> When performing temperature-programmed gas chromatography or gradient-programmed liquid chromatography, use a large value for T.DBL (near the end of the analysis) so that automatic T.DBL processing is disabled.
4	Later-eluting broad peaks are not detected, or integration operation stops during peak elution.	Slope T.DBL	Reduce the Slope value obtained by the Slope Test by 1/2 to increase the peak detection sensitivity. Set T.DBL to a value other than 0; i.e., to the time at which peak width doubles. <i>Refer to "16.1.6.3 Preventing the Width and Slope values from changing automatically" on page 599</i>
5	A small peak following a large peak is not detected.	T.DBL	Set T.DBL to a value other than 0; i.e., to the time where peak width doubles, using the small peak as a reference. <i>Refer to "16.1.6.3 Preventing the Width and Slope values from changing automatically" on page 599</i>
6	Long-term baseline fluctuations are detected as peaks.	Slope	Increase the Slope value by a factor of 2 or 4, reducing the detection sensitivity until the fluctuations are no longer detected. Another alternative is to determine the Slope value directly from the chromatogram as shown below. <i>Refer to "16.1.6.2 Automatic change of Width and Slope at specified time of T.DBL" on page 598</i> 
7	Baseline processing varies between chromatograms. (V appears sometimes, but not at other times, as a mark.)	Drift	1 If the baseline is not processed in a reproducible way for the same peaks in several chromatograms, then automatic drift processing must be disabled. Please refer to item 8. 2 Also, refer to item 8 if the baseline is not processed in a reproducible way due to variations in peak slope between samples.

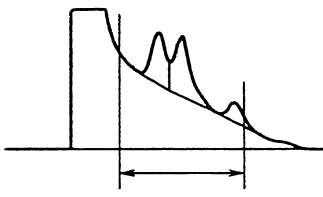
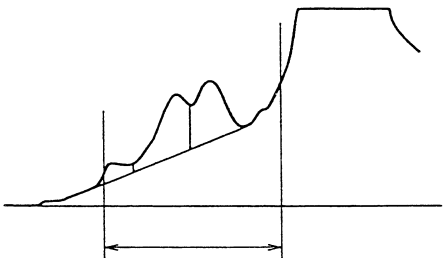


	Problem	Related Parameter	Possible Solution
8	Baseline processing is not occurring as desired (as verified from the mark on the report).	Drift	1 Adjust the Drift value as shown below. <i>Refer to "16.1.6.2 Automatic change of Width and Slope at specified time of T.DBL" on page 598</i>  For vertical division- Low drift value For complete separation High drift value 2 Use an integration time program where vertical division and/or complete (valley-to-valley) separation is selected as required on a peak-by-peak basis. <i>Refer to "6.6.1.1 <Integration Time Program> Window" on page 251</i>  Change the Drift using the time program at this point.  Change the Drift using the time program at this point.



	Problem	Related Parameter	Possible Solution
9	Irrelevant peaks are integrated, or negative peaks are affecting proper integration.	Integration	1 To remove irrelevant peaks from integration at the start of the chromatogram, set LOCK from 0.01 minutes after analysis starts to a time just past the peak apex using an integration time program.  Remove negative peaks generated at the start of analysis in the same manner. 2 Irrelevant peaks generated during analysis are removed by using an integration time program. Refer to "6.6.1.1 <Integration Time Program> Window" on page 251  Integration off Integration on Set the Lock command to include the apexes of irrelevant peaks in an integration time program.
10	A negative peak adjacent to a positive peak causes improper integration	NEG PK REJCT	Use the NEG PK REJCT command in an integration time program. Refer to "6.6.1.1 <Integration Time Program> Window" on page 251  ON OFF ON OFF Set NEG PK REJCT so that the entire negative portion of the negative peak elutes while NEG PK REJCT ON is in effect.



	Problem	Related Parameter	Possible Solution
11	Tailing peaks are incorrectly processed (tailing cannot be resolved in automatic mode, or tailing is resolved sometimes, but not always.)	TAILING	Use an integration time program with the TAILING command. <i>Refer to "6.6.1.1 <Integration Time Program> Window" on page 251</i> Set the TAILING to occur from the preceding valley through the peak apexes on the tail.  TAILING ON TAILING OFF Note: Since the main peak is needed in the tailing process, do not remove it using LOCK.
12	Peaks are being inadvertently processed as tailing in automatic mode.	TAILING	From an integration time program, specify the use of TAILING ON, TAILING OFF or TAILING AUTO.
13	Leading peaks are being incorrectly processed.	LEADING	Use an integration time program with the LEADING command. <i>Refer to "6.6.1.1 <Integration Time Program> Window" on page 251</i>  LEADING PK ON LEADING PK OFF Specify LEADING ON and LEADING OFF times to include the peak apexes and the valleys after the leading peaks.



16.6

Problems with Incorrect Peak Identification

	Problem	Related Parameter	Possible Solution										
1	Peaks are not identified, or irrelevant peaks are identified.	Window/Band	Change compound table TIME setting for proper peak identification. Check for proper Window; Normally 3-5% Check for proper Band; Normally half-height width of a peak										
2	Irrelevant peaks are identified.	Min. Area/Height Integration time program Window/Band	Increase Min. Area/Height to eliminate small peaks. Use the Integration OFF/ON command in an integration time program to eliminate irrelevant peaks. Decrease the Window. Decrease the Band.										
3	Retention time fluctuates with each analysis and does not allow proper identification.	Window/Band	Increase the Window. Increase the Band.										
4	Retention time fluctuation extends over more than one peak and incorrect peaks are identified.	Peak Identification Method	Identify peaks by the relative retention time method (Relative Rt). At this time, select a large, late-eluting peak that does not co-elute with others as a reference peak, and designate it in the compound table. <i>Refer to "16.2 Peak Identification" on page 602</i>										
5	For some time bands, retention times are so close to each other that any fluctuation in retention time causes the peaks to be misidentified.		Identify peaks based on the peak elution sequence method. Set Window/Band to the Window method. 5 分 10 分 15 分 5 min. 10 min. 15 min. Peak # A B C D 1 2 3 4 Using the diagram as an example, set the Peak # of peaks A and D as usual. However, enter the Peak # of B first, then enter that of C. Set the retention time of B and C to the same value (the retention time equidistant from the B and C apexes). <table><tr><th>Peak #</th><th>Retention time</th></tr><tr><td>1</td><td>5</td></tr><tr><td>2</td><td>10</td></tr><tr><td>3</td><td>10</td></tr><tr><td>4</td><td>15</td></tr></table> Set Window so that both peaks B and C are included. Identification of all peaks with identical retention times will occur based on Peak # order, even when identifying more than two peaks. The Peak #s need not be consecutive; peaks can be identified in any area of the chromatogram with the peak elution sequence method.	Peak #	Retention time	1	5	2	10	3	10	4	15
Peak #	Retention time												
1	5												
2	10												
3	10												
4	15												



16.7 Column Performance Parameters

16.7.1 USP (United States Pharmacopeia)

Item	Equation	
Theoretical Plates	$N = 16 \times \left(\frac{t_R}{W} \right)^2$	N : Theoretical Plates t_R : Retention time W : Peak width. The peak width is the time width between two points at the intersections between straight lines through the points of inflection to the left and right of a peak and the baseline.
HETP	$H = \frac{L \times 1000}{N} (\mu\text{m})$	H : HETP L : Column length (mm) N : Theoretical Plates
Tailing Factor	$Tf = \frac{W_{0.05}}{2 \times a_{0.05}}$	Tf : Tailing Factor $W_{0.05}$: Peak width at 5% height of peak $a_{0.05}$: Width of the front half of a peak (from start point to apex) at 5% height of peak
Resolution	$R = 2 \times \frac{t_R - t_{Rp}}{W + W_p}$	R : Resolution t_R : Retention time t_{Rp} : Retention time for previous peak W : Peak width. The peak width is the time width between two points at the intersections between straight lines through the points of inflection to the left and right of a peak and the baseline. W_p : Peak width for previous peak
k'	$k' = \frac{t}{t_0} - 1$	t : Retention time t_0 : Dead time
Relative Retention	$a = \frac{k'_2}{k'_1} = \frac{t_2 - t_0}{t_1 - t_0}$	a : Relative Retention k'_1 : k' of Peak 1 k'_2 : k' of Peak 2' t_1 : Retention time of previous peak (Peak 1) t_2 : Retention time of test peak (Peak 2) t_0 : Dead time



16.7.2 JP, EP, BP, DAB

Note: These equations are also used in the JP (Japanese Pharmacopoeia), EP (European Pharmacopoeia), BP (British Pharmacopoeia), and DAB (German Pharmacopoeia).

Item	Equation	
Theoretical Plates	$N = 5.54 \times \left(\frac{t_R}{W_{0.5}} \right)^2$	N : Theoretical Plates t_R : Retention time $W_{0.5}$: Peak width at 50% peak height
HETP	$H = \frac{L \times 1000}{N} (\mu\text{m})$	H : HETP L : Column length (mm) N : Theoretical Plates
Tailing Factor	$Tf = \frac{W_{0.05}}{2 \times a_{0.05}}$	Tf : Tailing Factor $W_{0.05}$: Peak width at 5% height of peak $a_{0.05}$: Width of the front half of a peak (from start point to apex) at 5% height of peak
Resolution	$R = 1.18 \times \frac{t_R - t_{Rp}}{W_{0.5} + W_{p0.5}}$	R : Resolution t_R : Retention time t_{Rp} : Retention time for previous peak $W_{0.5}$: Peak width at 50% peak height $W_{p0.5}$: Peak width at 50% peak height of previous peak
k'	$k' = \frac{t}{t_0} - 1$	t : Retention time t_0 : Dead time
Relative Retention	$a = \frac{k'_2}{k'_1} = \frac{t_2 - t_0}{t_1 - t_0}$	a : Relative Retention k'_1 : k' of Peak 1 k'_2 : k' of Peak 2 t_1 : Retention time of previous peak (Peak 1) t_2 : Retention time of test peak (Peak 2) t_0 : Dead time



16.7.3 JP2

This coefficient is 5.55 in the latest JP (Jpanes Pharmacopoeia).

Item	Equation	
Theoretical Plates	$N = 5.55 \times \left(\frac{t_R}{W_{0.5}} \right)^2$	N : Theoretical Plates t_R : Retention time $W_{0.5}$: Peak width at 50% peak height
HETP	$H = \frac{L \times 1000}{N} (\mu\text{m})$	H : HETP L : Column length (mm) N : Theoretical Plates
Tailing Factor	$Tf = \frac{W_{0.05}}{2 \times a_{0.05}}$	Tf : Tailing Factor $W_{0.05}$: Peak width at 5% height of peak $a_{0.05}$: Width of the front half of a peak (from start point to apex) at 5% height of peak
Resolution	$R = 1.18 \times \frac{t_R - t_{Rp}}{W_{0.5} + W_{p0.5}}$	R : Resolution t_R : Retention time t_{Rp} : Retention time for previous peak $W_{0.5}$: Peak width at 50% peak height $W_{p0.5}$: Peak width at 50% peak height of previous peak
k'	$k' = \frac{t}{t_0} - 1$	t : Retention time t_0 : Dead time
Relative Retention	$a = \frac{k'_2}{k'_1} = \frac{t_2 - t_0}{t_1 - t_0}$	a : Relative Retention k'_1 : k' of Peak 1 k'_2 : k' of Peak 2 t_1 : Retention time of previous peak (Peak 1) t_2 : Retention time of test peak (Peak 2) t_0 : Dead time



16.7.4 EMG (Exponential Modified Gaussian)

Item	Equation	
Theoretical Plates	$N = 41.7 \times \frac{\left(\frac{t_R}{W_{0.1}}\right)^2}{\frac{b_{0.1}}{a_{0.1}} + 1.25}$	N : Theoretical Plates t_R : Retention time $W_{0.1}$: Peak width at 10% peak height $a_{0.1}$: Width of the front half of a peak (from start point to apex) at 10% height of peak $b_{0.1}$: Width of the back half of a peak (from apex to end point) at 10% height of peak
HETP	$H = \frac{L \times 1000}{N} (\mu\text{m})$	H : HETP L : Column length (mm) N : Theoretical Plates
Tailing Factor	$Tf = \frac{W_{0.05}}{2 \times a_{0.05}}$	Tf : Tailing Factor $a_{0.05}$: Width of the front half of a peak (from start point to apex) at 5% height of peak $W_{0.05}$: Peak width at 5% height of peak
Resolution	$R = 2.15 \times \frac{t_R - t_{Rp}}{W_{0.1} + W_{p0.1}}$	R : Resolution t_R : Retention time t_{Rp} : Retention time for previous peak $W_{0.1}$: Peak width at 10% peak height $W_{p0.1}$: Peak width at 10% peak height of previous peak
k'	$k' = \frac{t}{t_0} - 1$	t : Retention time t_0 : Dead time
Relative Retention	$a = \frac{k'_2}{k'_1} = \frac{t_2 - t_0}{t_1 - t_0}$	a : Relative Retention k'_1 : k' of Peak 1 k'_2 : k' of Peak 2 t_1 : Retention time of previous peak (Peak 1) t_2 : Retention time of test peak (Peak 2) t_0 : Dead time



16.7.5 EMG (50%)

Item	Equation	
Theoretical Plates	$N = 41.7 \times \frac{\left(\frac{t_R}{W_{0.1}}\right)^2}{\frac{b_{0.1}}{a_{0.1}} + 1.25}$	N : Theoretical Plates t_R : Retention time $W_{0.1}$: Peak width at 10% peak height $a_{0.1}$: Width of the front half of a peak (from start point to apex) at 10% height of peak $b_{0.1}$: Width of the back half of a peak (from apex to end point) at 10% height of peak
HETP	$H = \frac{L \times 1000}{N} (\mu\text{m})$	H : HETP L : Column length (mm) N : Theoretical Plates
Tailing Factor	$Tf = \frac{W_{0.05}}{2 \times a_{0.05}}$	Tf : Tailing Factor $a_{0.05}$: Width of the front half of a peak (from start point to apex) at 5% height of peak $W_{0.05}$: Peak width at 5% height of peak
Resolution	$R = 1.18 \times \frac{t_R - t_{Rp}}{W_{0.5} + W_{p0.5}}$	R : Resolution t_R : Retention time t_{Rp} : Retention time for previous peak $W_{0.5}$: Peak width at 50% peak height $W_{p0.5}$: Peak width at 50% peak height of previous peak
k'	$k' = \frac{t}{t_0} - 1$	t : Retention time t_0 : Dead time
Relative Retention	$a = \frac{k'_2}{k'_1} = \frac{t_2 - t_0}{t_1 - t_0}$	a : Relative Retention k'_1 : k' of Peak 1 k'_2 : k' of Peak 2 t_1 : Retention time of previous peak (Peak 1) t_2 : Retention time of test peak (Peak 2) t_0 : Dead time



16.7.6 Area/Height

Item	Equation	
Theoretical Plates	$N = 16 \times \left(\frac{t_R}{W} \right)^2$	N : Theoretical Plates t_R : Retention time W : Peak width, where. $W = 4 \times \sigma$ $\sigma = \frac{1}{\sqrt{2\pi}} \times \left(\frac{A}{Ht} \right)$ $= 0.399 \times \left(\frac{A}{Ht} \right)$ A : peak area Ht : peak height
HETP	$H = \frac{L \times 1000}{N} (\mu\text{m})$	H : HETP L : Column length (mm) N : Theoretical Plates
Tailing Factor	$Tf = \frac{W_{0.05}}{2 \times a_{0.05}}$	Tf : Tailing Factor $W_{0.05}$: Peak width at 5% height of peak $a_{0.05}$: Width of the front half of a peak (from start point to apex) at 5% height of peak
Resolution	$R = 2 \times \frac{t_R - t_{Rp}}{W + W_p}$	R : Resolution t_R : Retention time t_{Rp} : Retention time for previous peak W : Peak width, where. $W = 4 \times \sigma$ $\sigma = \frac{1}{\sqrt{2\pi}} \times \left(\frac{A}{Ht} \right)$ $= 0.399 \times \left(\frac{A}{Ht} \right)$ A : peak area Ht : peak height W_p : Peak width for previous peak
k'	$k' = \frac{t}{t_0} - 1$	t : Retention time t_0 : Dead time
Relative Retention	$a = \frac{k'_2}{k'_1} = \frac{t_2 - t_0}{t_1 - t_0}$	a : Relative Retention k'_1 : k' of Peak 1 k'_2 : k' of Peak 2 t_1 : Retention time of previous peak (Peak 1) t_2 : Retention time of test peak (Peak 2) t_0 : Dead time



16.8 <QA/QC> Calculation Methods

The calculation methods used in QQ/QC analysis are compiled in the table below.

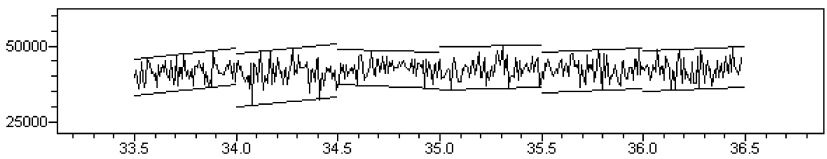
16.8.1 Common

Item	Equation	
Averaging	$\bar{x} = \frac{\sum_{i=1}^N x_i}{N}$	$\bar{x}$: Mean x_i : Data N : Number of the data
Standard Deviation	$s = \sqrt{\frac{\sum_{i=1}^N (x_i - \bar{x})^2}{N - 1}}$	s : Standard deviation x_i : Data $\bar{x}$: Mean data N : Number of the data
Relative Standard Deviation	$RSD = \frac{s \times 100}{\bar{x}}$	s : Standard deviation $\bar{x}$: Mean data

16.8.2 Calibration

Item	Equation	
Correlation Factor	$r = \frac{\sum_{i=1}^N \{(x_i - \bar{x})(y_i - \bar{y})\}}{\sqrt{\left\{ \sum_{i=1}^N (x_i - \bar{x})^2 \right\} \left\{ \sum_{i=1}^N (y_i - \bar{y})^2 \right\}}}$	r : Correlation coefficient x_i : Data on x axis in the calibration curve $\bar{x}$: Mean x_i y_i : Data on y axis in the calibration curve $\bar{y}$: Mean y_i N : Number of the data
Sum of Residual Squares	Sum of the squares of the residuals = $\sum_{i=1}^N (y_i - \hat{y})^2$	y_i : Data on y axis in the calibration curve $\hat{y}$: y data calculated on the calibration curve N : Number of the data
Residual Standard Deviation	$S_{y/x} = \sqrt{\frac{\sum_{i=1}^N (y_i - \hat{y})^2}{N - 2}}$	$S_{y/x}$: Standard deviation of the residuals y_i : Data on y axis in the calibration curve $\hat{y}$: y data calculated on the calibration curve N : Number of the data



Item	Equation	
Residual Standard Deviation of Y Edge	$S_y = S_{y/x} \sqrt{\frac{\sum_{i=1}^N x_i^2}{N \sum_{i=1}^N (x_i - \bar{x})^2}}$	S_y : Residual standard deviation of y intercept $S_{y/x}$: Sum of the squares of the residuals Squares x_i : Data on x axis in the calibration curve $\bar{x}$: Mean x_i N : Number of the data
Response Factor	$RF = \frac{S}{Conc}$ Except when the internal standard method is used, where: $RF = \frac{S \times Conc_{ISTD}}{Conc \times S_{ISTD}}$	RF : Response factor S : Signal $Conc$: Concentration RF : Response factor S : Signal $Conc$: Concentration S_{ISTD} : Signal of internal standard $Conc_{ISTD}$: Concentration of internal standard
S/N	The S/N ratio is the ratio of the signal to the noise level, but the noise level cannot be directly found by a numeric equation. The answer is sought by repeatedly calculating two parallel line that fulfill the following conditions.  The above figure is an image of the circumstances when finding the noise level from 33.5 minutes to 36.5 minutes in 0.5-minute steps. First, the range is divided into 0.5-minute intervals and parallel lines are found in each section that fulfill the following conditions. The line in the upper position shall be above all points of the chromatogram. The line in the lowest position shall be below all of the points of the chromatogram. The distance between the two lines in the intensity direction shall be minimized. The average distance between the various parallel lines in the noise level.	
Detection Limit	The detection limit is found by the following equation. $DL = f(S_0 + S_B \times \alpha)$	DL : Detection limit $f(S)$: Concentration function based on signal S_0 : Signal for zero concentration S_B : Standard deviation of signal for zero concentration α : Coefficient (normally 3.3) The standard deviation of the signal value when the concentration is zero is manually selected from the residual standard deviation, the residual standard deviation of the Y edge, and the S/N. When an internal standard is used, values are calculated for the signal ratio and the concentration ratio and the calculation result is used as the concentration ratio. When the detection limit is calculated based on the noise, results can be found only when the quantitative parameter "Calc. by" is set to "Height" and "X Axis of Calib. Curve" to "Conc." And when the detection limit is calculated based on the y-intercept, results can be found only when the quantitative parameter "X Axis of Calib. Curve" to "Conc."



16.8.3 QC

Item	Equation	
Averaging Accuracy	$\text{Accuracy}_{\text{Mean}} = \frac{\text{Conc}_{\text{Mean}}}{\text{Conc}_{\text{True}}}$	$\text{Accuracy}_{\text{Mean}}$: Mean Accuracy $\text{Conc}_{\text{Mean}}$: Mean concentration $\text{Conc}_{\text{True}}$: True concentration
Method Detection Boundary	$\text{MDL} = s \times t(n-1, \alpha)$	MDL : Method detection limit s : Standard deviation of the concentration $t(n-1, \alpha)$: t data in t-distribution (degree of freedom $n-1$, $\alpha \times 100\%$ confidence interval)

16.8.4 Recovery

Item	Equation	
Recovery	When found from the Spike Amount	$R = \frac{\text{Conc} - \text{Blank}}{\text{SpikeAmount}}$ R : Recovery Blank : Blank SpikeAmount : Spiked amount
	When an ISTD is used	$R_i = \frac{A_i/A_{i0}}{\bar{A}_i/\bar{A}_{i0}}$ R_i : Recovery of compound i A_i : Area of compound i $\bar{A}_i$: Mean area of compound i in sample specified as [Standard (ISTD) Recovery] sample type $i0$: Area of recovery standard



16.9

Formats of File Conversion

This section introduces the formats that are used when a data file is converted into ASCII and AIA ANDI files. To convert a file, click on the data file you want to convert on <Data Explorer> with the right mouse button. A pop-up menu will appear. Select [Convert File] - [Convert Data File to ASCII File] (or [Convert Data File to AIA ANDI File]) from this menu, and then specify a destination.

Refer to "11.5.1 <Convert Data file to ASCII file> Window" on page 507

Refer to "11.5.4 <Convert CLASS-GC10 file to GCsolution file> Window" on page 510

16.9.1 Format for conversion into ASCII file

When a data file is converted into an ASCII file, a text file with a data file name will be created in the conversion destination file. If this text file is opened, the data in the data file will be displayed in the following format in accordance with the settings in <Output Items>. In the character strings in parentheses, the actual data in the data file will be displayed.

● Header

[Header]

Data File Name

Output Date

Output Time

• Sample Information

[File Information]

Type

Data File

Generated

Generated by

Modified

Modified by

[Sample Information]

Operator Name

Acquisition Date

Type

Level

Sample Name

Sample ID

IS Amount 1

:

IS Amount 16

Sample Amount

Dilution Factor

Vial#

Injection Volume

Injection Count

Bar Code

[Option Information]

*1



(Option 1 Title)

(Option 2 Title)

(Option 3 Title)

(Option 4 Title)

(Option 5 Title)

[Original Files]

Data File

Method File

Batch File

Report Format File

[File Comment]

Option Information is only displayed when the Option title is specified.

●Peak Table

[Peak Table (Ch#)]

of Peaks (Total of peaks)

Peak# R.Time I.Time ...

(# of peaks) (Retention time) (Start time) ...

Table items

Item	Data
Peak#	# of peaks
R.Time	Retention time
I.Time	Start tim
F.Time	End time
Area	Area
Height	Height
A/H	Area/Height
Conc.	Concentration
Mark	Mark
ID#	# of ID
Name	Compound name
k'	k' factor
Plate #	Plate #
Plate Ht.	Plate Ht.
Taling	Taling
Resolution	Resolution
Sep.Factor	Sep.Factor



● Compound Results

[Compound Results (Ch#)]

# of IDs	(Total of ID numbers)		
ID#	Name	R.Time	...
(ID No.)	(Compound name)	(Retention time)	...

Table items

Item	Data
ID#	ID No.
Name	Compound name
R.Time	Retention time
Area	Area
Height	Height
Conc.	Concentration
Curve	Calibration curve type
3rd	3rd-order coefficient for calibration curve
2nd	2nd-order coefficient for calibration curve
1st	1st-order coefficient for calibration curve
Constant	Intercept of calibration curve

● Group Results

[Group Results (Ch#)]

# of Groups	Total of group numbers		
Group#	Name	Area	...
(Group No.)	(Compound group name)	(Area)	...

Table items

Item	Data
Group#	Group number
Name	Compound name
Area	Area
Height	Height
Conc.	Concentration
Curve	Calibration curve type
3rd	3rd-order coefficient for calibration curve
2nd	2nd-order coefficient for calibration curve
1st	1st-order coefficient for calibration curve
Constant	Intercept of calibration curve

● Chromatogram

[Chromatogram (Ch#)]

Interval(msec)

of Points

Start Time(min)

End Time(min)

R.Time	Intensity
(Retention time)	(Intensity value)



16.9.1.1 Example of conversion into ASCII file

- Header that is always converted at conversion into ASCII file

```
[Header]
Data File Name  C:\GCsolution\Sample\CALIB01.gcd
Output Date     6/21/00
Output Time     5:27:51 PM
```

- Portion that is converted when [Sample Info.] is check-marked on <Output Items>

```
[Sample Information]
Operator Name   Your Name
Acquisition Date 12/1/93 7:34:30 PM
Type           Unknown
Level          0
Sample Name      Sample D
Sample ID        ABC1237
ISTD Amount1     1
ISTD Amount2     0
ISTD Amount3     0
ISTD Amount4     0
ISTD Amount5     0
ISTD Amount6     0
ISTD Amount7     0
ISTD Amount8     0
ISTD Amount9     0
ISTD Amount10    0
ISTD Amount11    0
ISTD Amount12    0
ISTD Amount13    0
ISTD Amount14    0
ISTD Amount15    0
ISTD Amount16    0
Sample Amount    1
Dilution Factor 1
Vial#           3
Injection Volume 1
Injection Count  1
Bar Code

[Original Files]
Data File        C:\GCsolution\Sample\CALIB01.gcd
Method File      C:\GCsolution\Sample\CALIB.gcm
Batch File       C:\GCsolution\Sample\CALIB.gcb
Report Format File C:\GCsolution\Sample\ChromSimple1.gcr

[File Comment]
```




- Portion that is converted when [Peak Table] is check-marked on <Output Items>.

[Peak Table (Ch1)]									
# of Peaks		7							
Peak#	R.Time	I.Time	F.Time	Area	Height	A/H	Conc.	Mark	ID#
1	1.302	1.240	1.363	3007156	1083150	0.03	0.000	UE	
2	1.383	1.363	1.593	119332	102360	0.01	0.000	SU	
3	2.072	2.040	2.130	8309	7805	0.01	17.293		1
4	2.732	2.697	2.800	8492	7128	0.01	17.315		2
5	3.659	3.617	3.727	8462	6345	0.01	17.323		3
6	4.803	4.753	4.900	9087	6160	0.01	17.366		4
7	6.065	6.017	6.157	8560	5261	0.02	17.404		5

Name	k'	Plate #	Plate Ht.	Tailing	Resolution	Sep.Factor
	0.000	7075.192	0.000	1.211	0.000	0.000
	0.062	23359.553	0.000	1.050	1.649	0.000
Nonane	0.592	61908.609	0.000	1.107	19.852	9.529
Decane	1.099	87520.921	0.000	1.084	18.766	1.855
Undecane	1.811	127665.790	0.000	1.039	23.820	1.649
Dodecane	2.690	182642.299	0.000	1.022	26.611	1.485
Tridecane	3.659	247459.665	0.000	1.011	26.938	1.361

- Portion that is converted when [Identification Results] is check-marked on <Output Items>.

[Compound Results (Ch1)]										
# of IDs		5								
ID#	Name	R.Time	Area	Height	Conc.	Curve	3rd	2nd	1st	Constant
1	Nonane	2.072	8309	7805	17.293	Linear	0.00000	0.00000	0.00208	0.00000
2	Decane	2.732	8492	7128	17.315	Linear	0.00000	0.00000	0.00204	0.00000
3	Undecane	3.659	8462	6345	17.323	Linear	0.00000	0.00000	0.00205	0.00000
4	Dodecane	4.803	9087	6160	17.366	Linear	0.00000	0.00000	0.00191	0.00000
5	Tridecane	6.065	8560	5261	17.404	Linear	0.00000	0.00000	0.00203	0.00000

- Portion that is converted when [Group Results] is check-marked on <Output Items>.

[Group Results (Ch1)]								
# of Groups		2						
Group#	Name	Area	Height	Conc.	3rd	2nd	1st	Constant
1	Group A	17396	13965	34.662	0.00000	0.00000	0.00199	0.00000
2	Group B	17051	12389	33.851	0.00000	0.00000	0.00199	0.00000

- Portion that is converted when [Chromatogram] is check-marked on <Output Items>.

[Chromatogram (Ch1)]	
Interval(msec)	200
# of Points	3000
Start Time(min)	0.000
End Time(min)	10.000
R.Time	Intensity
0.000	-11
0.003	-11
0.007	-10
0.010	-10
0.013	-11
0.017	-10
0.020	-10



16.9.2 Format for conversion into AIA ANDI file

The American AIA (Analytical Instrument Association) specifies the common format (AIA format) for interoperation of chromatography data in different formats between manufacturers. The AIA format is based on the communication standard for chromatography data, and defines various items. It may also be referred to as the ANDI (Analytical Data Interchange) format. The AIA format is intended for the semi-permanent storage of data files including chromatograms, in addition to the interoperation between different manufacturers. Imagine that data obtained on a manufacturer's software cannot be re-analyzed because that software is no longer available in the future. In this case, if the data is stored in the AIA format, it can be re-analyzed using different software.

The AIA format is classified into categories C1 through C5. At present, the C1 and C2 levels are formally adopted. This version of GCsolution conforms to C1 and C2.

Shown below are the data of GCsolution that correspond to the information classes and items of the AIA Chromatography Data Standard Specification V1.0.

GCsolution converts the items marked with an asterisk (*) bilaterally and those marked with double asterisks (**) into the AIA format. For the items marked with triple asterisks (***), the GCsolution substitutes values for those in the AIA format.

ADMINISTRATIVE-DATA Information Class GCsolution

-Category 1 & 2 Data Elements

1.	dataset-completeness ***	C1+C2 (Default)
2.	aia-template-revision ***	1.0.1 (Default)
3.	netcdf-revision ***	2.3.2 (Default)
4.	languages ***	English (Default)
5.	administrative-comments	
6.	dataset-origin***	Shimadzu Corporation (Default)
7.	dataset-owner	
8.	dataset-date-time-stamp *	Data of Analysis
9.	injection-date-time-stamp *	Data of Analysis
10.	experiment-title	
11.	operator-name *	Operator Name
12.	separation-experiment-type	
13.	company-method-name **	Method File Name
14.	company-method-id	
15.	pre-experiment-program-name	
16.	post-experiment-program-name	
17.	source-file-reference *	Data File Name
18.	error-log	



SAMPLE-DESCRIPTION Information Class

-Category 1 & 2 Data Elements

1.	sample-id-comments *	Data Description
2.	sample-id *	Sample ID
3.	sample-name *	Sample Name
4.	sample-type *	Sample Type
5.	sample-injection-volume *	Injection Volume
6.	sample-amount *	Sample Amount

DETECTION-METHOD Information Class

-Category 1 & 2 Data Elements

1.	detection-method-table-name *	Method File Name
2.	detection-method-comments *	Method Description
3.	detection-method-name	
4.	detection-name *	Detector Name
5.	detector-maximum-value ***	1.0 (Default)
6.	detector-minimum-value ***	-0.005 (Default)
7.	detector-unit *	Volts (Default)

RAW-DATA Information Class

-Category 1 & 2 Data Elements

1.	point-number *	Number of chromatogram data points
2.	raw-data-table-name **	Data File Name
3.	retention-unit *	Seconds (Default)
4.	actual-run-time-length **	Acquisition Time (unit: Seconds)
5.	actual-sampling interval *	Sampling Rate (unit: Seconds)
6.	actual-delay-time *	Delay Time(unit: Seconds)
7.	ordinate-values *	Intensity of each point (unit: Volts)
8.	uniform-sampling-flag *	Y('N' not supported)
9.	autosampler-position *	Vial #
10.	raw-data-retention	(Not support)



PEAK-PROCESSING-RESULTS Information Class

-Category 1 & 2 Data Elements

1. peak-number *	Number of peaks
2. peak-processing-results-table-name	
3. peak-processing-results-comments *	Data Description
4. peak-processing-method-name **	Method File Name
5. peak-processing-date-time-stamp	
6. peak-retention-time *	Peak Retention Time (Unit : Seconds)
7. peak-name *	Peak Name
8. peak-amount *	Peak Amount
9. peak-amount-unit *	Peak Concentration
10. peak-start-time *	Peak Start Time (Unit : Seconds)
11. peak-end-time *	Peak End Time (Unit : Seconds)
12. peak-width **	Peak Width
13. peak-area *	Peak Area
14. peak-area-percent *	% Peak Area
15. peak-height *	Peak Height
16. peak-height-percent *	% Peak Height
17. baseline-start-time **	Peak Start Time (Unit : Seconds)
18. baseline-start-value *	Peak Start Intensity (Unit : Volts)
19. baseline-stop-time **	Peak Stop Time (Unit : Seconds)
20. baseline-stop-value *	Peak Stop Intensity (Unit : Volts)
21. peak-start-detection-code **	Peak Start Code
22. peak-stop-detection-code **	Peak Start Code
23. retention-index	
24. migration-time	
25. peak-asymmetry *	Tailing Factor
26. peak-efficiency	
27. mass-on-column	
28. manually-reintegrated-peaks	

Note: If GCsolution data is converted into the AIA format, the data accuracy may deteriorate because the information types are different from each other. If data from another manufacturer's software is converted and then re-analyzed using GCsolution, the result will not be completely identical. If GCsolution data is converted into the AIA format and again into GCsolution format, the result may not be completely identical because the data accuracy deteriorates and the peak integration method is different.

Note: For detailed information on the AIA Communication Standard of Chromatography Data, contact:

The Analytical Instrument Association
225 Reinekers Lane, Suite 625
Alexandria, Virginia 22314