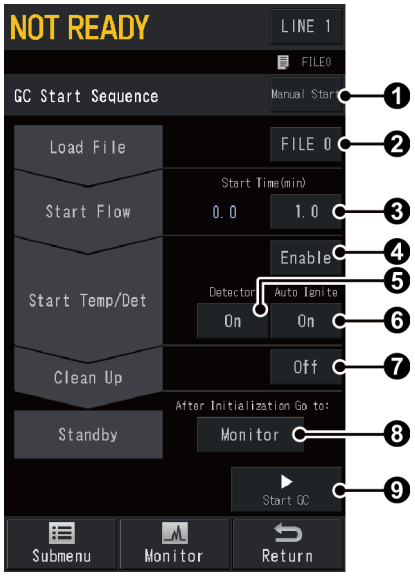
[GC Start Sequence] Screen

Press (HOME) - [GC Start/Stop Sequence] while the GC is turned off to display [GC Start Sequence] screen.

You can set parameters related to the GC startup such as start time and clean up.



No.	Item	Description	
❶	GC Start Sequence	Sets the GC start procedure after the instrument is turned on.	
		Items	• Manual Start The GC does not start after the instrument is turned on. Press ❾ [Start GC] on [GC Start Sequence] screen to start the GC. • Auto Start The GC starts automatically after the power is turned on. • Semi-Auto Control of only carrier gas, detector gas (excluding hydrogen, air, oxygen) and AUX-APC gas starts after the power is turned on. Press ❾ [Start GC] on [GC Start Sequence] screen to start the GC.
		Default	Manual Start
❷	Load File	Sets the file to be used. The GC will be controlled based on the parameters in the specified file.	
		Range	FILE 0 to FILE 9
		Default	FILE 0

<table>
<tr><td>❸</td><td>Start Time</td><td>Sets the period of time after flow control starts until temperature/detector control starts. This can be set when ❹ [Start Temp/Det] is set at [Enable].
Set the start time considering the polarity of the column and dead time (time spent until substances not adsorbed by the stationary phase elute).
Examples for start time setting are shown below.
• In the case of a 30 m neutral column and a 30 cm/sec linear velocity (dead time 100 sec.) : Approximately 5 min
• In the case of a 60 m high-polar column and a 20 cm/sec linear velocity (dead time 300 sec.) : At least 10 min
• If the instrument has been out of use for a time with no column connected : One to several hours
Note
・ When the detector is ECD, set ❸ [Start Time] at a value more than 10 minutes. If the temperature increases when the air in the cell is not replaced with nitrogen, it accelerates degradation of the cell.
・ When the detector is BID, extra caution should be exercised on ❸ [Start Time] setting to avoid degradation of helium purifier. Normally, set it at 10 minutes. After piping installation or cylinder replacement, set it at about 60 minutes.
<table><tr><td>Range</td><td>0.0 to 6000.0 min</td></tr><tr><td>Default</td><td>3.0 min</td></tr></table></td></tr>
<tr><td>❹</td><td>Start Temp/Det</td><td>Select [Enable] to start temperature/detector control after the start time is finished. Select [Disable] to continuously flow the carrier gas and not to start temperature/detector control.
<table><tr><td>Items</td><td>Enable, Disable</td></tr><tr><td>Default</td><td>Enable</td></tr></table></td></tr>
<tr><td>❺</td><td>Detector</td><td>Select [On] to prepare the detector configured in analytical line for analysis while the GC starts.
<table><tr><td>Items</td><td>Off, On</td></tr><tr><td>Default</td><td>On</td></tr></table></td></tr>
</table>

<table>
<tr><td>❻</td><td>Auto Ignition</td><td>Select [On] to ignite the FID or FPD automatically while the GC starts.
Hint This setting is linked with the setting of [Auto Ignition] on [Detector] screen.
Reference For manual ignition of FID and FPD, see the following sections.
"FID ignition"
"FPD ignition"
Note
• For BID, plasma will start to be produced while the GC starts regardless of the setting in ❻ [Auto Ignition].
• For TCD, ECD, and FTD, ignition will not start even the item is set at [On].
<table><tr><td>Items</td><td>Off, On</td></tr><tr><td>Default</td><td>On</td></tr></table></td></tr>
<tr><td>❼</td><td>Clean Up</td><td>Select whether to run the clean up program after the GC starts up.
Reference [Clean Up] Screen
<table><tr><td>Items</td><td>• Off
The instrument does not perform clean up.
• On
The instrument performs clean up using the clean up program.</td></tr><tr><td>Default</td><td>Off</td></tr></table></td></tr>
<tr><td>❽</td><td>After Initialization Go to:</td><td>Sets the screen to be displayed after the GC initialization.
Note
If a screen other than [GC Start Sequence] screen is displayed when the GC starts up, the screen set here will not be displayed.
<table><tr><td>Items</td><td>GC Stop Seq., HOME, Monitor</td></tr><tr><td>Default</td><td>Monitor</td></tr></table></td></tr>
<tr><td>❾</td><td>Start GC</td><td>When you press [Start GC], the GC will start according to [GC Start Sequence] screen settings.
If you press [Start GC] while the instrument is starting up immediately after the power button is pressed, GC start is scheduled and [Abort] is displayed. Press [Abort] to cancel the GC start.
During the GC startup, [GC Stop Seq.] is displayed. Press [GC Stop Seq.] to display [GC Stop Sequence] screen.
Reference [GC Stop Sequence] Screen</td></tr>
</table>

Submenu

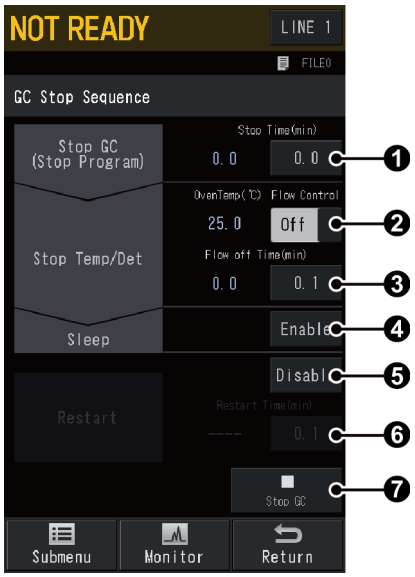
Item	Description	See also
GC Stop Sequence	Displays [GC Stop Sequence] screen.	[GC Stop Sequence] Screen

File	Displays [File Select] screen. You can change the file to be used.	[File Select] Screen
Clean Up	Displays [Clean Up] screen. You can set parameters for clean up during the GC startup.	[Clean Up] Screen

[GC Stop Sequence] Screen

Press (HOME) - [GC Start/Stop Sequence] while the GC is turned on to display [GC Stop Sequence] screen.

You can set parameters related to the GC shutdown such as stop time, flow off time, and sleep time.



No.	Item	Description	
❶	Stop Time	Sets the period of time after ❼ [Stop GC] is pressed until the instrument stops temperature/detector control.	
		Range	0.0 to 6000.0 min
		Default	0.0 min
❷	Flow Control	Displays the current status of flow control. Press [Off] or [On] to switch the control status. Select [On] to continue the carrier gas flow after the GC shutdown. Select [Off] to end it after the GC shutdown. Select [Off] to stop gas flow after the time set in ❸ [Flow Off Time] elapses.	
		Items	Off, On
		Default	On

<table>
<tr><td>❸</td><td>Flow Off Time</td><td>Sets the period of time between the end of temperature/detector control and the end of gas control.
This can be set when ❷ [Flow Control] is [Off].
Reference Examples for the GC stop
Note
• The system starts to count the flow off time after the temperature reaches the set value in [Makeup Gas Stop Temp] when the detector is TCD or SCD and in [ECD Gas Stop Temp] for ECD.
• When the detector is BID, set ❸ [Flow Off Time] at a value more than 60 minutes because flow control should be stopped after helium purifier is cooled adequately. If flow control stops when helium purifier is hot, it accelerates degradation of helium purifier.
<table><tr><td>Range</td><td>0.0 to 6000.0 min</td></tr><tr><td>Default</td><td>0.0 min</td></tr></table></td></tr>
<tr><td>❹</td><td>Sleep</td><td>When [Enable] is selected, the instrument will go into sleep mode automatically after the time set in ❸ [Flow Off Time] elapses.
This can be set when ❷ [Flow Control] is [Off].
<table><tr><td>Items</td><td>Enable, Disable</td></tr><tr><td>Default</td><td>Disable</td></tr></table></td></tr>
<tr><td>❺</td><td>Restart</td><td>The action when [Disable] or [Enable] is selected are different depending on the settings in ❹ [Sleep].
<table><tr><th>Sleep</th><th>Restart</th><th>Operations after the GC shutdown</th></tr><tr><td>Disable</td><td>Disable</td><td>None</td></tr><tr><td>Enable</td><td>Disable</td><td>The instrument goes into sleep mode.</td></tr><tr><td>Disable</td><td>Enable</td><td>The GC will automatically start after the time set in ❻ [Restart Time] elapses.</td></tr><tr><td>Enable</td><td>Enable</td><td>The instrument will go into sleep mode after the time set in ❸ [Flow Off Time] elapses. After the time set in ❻ [Restart Time] elapses, the instrument will be automatically turned on and the GC will start.</td></tr></table>This can be set when ❷ [Flow Control] is [Off].
<table><tr><td>Items</td><td>Enable, Disable</td></tr><tr><td>Default</td><td>Disable</td></tr></table></td></tr>
</table>

❻	Restart Time	Sets the time until the instrument will be automatically turned on. Count starts after control of temperature and the detector is stopped. Count starts at the same timing as flow off time. This can be set when ❺ [Restart] is set at [Enable]. When the time is set at a value lower than ❸ [Flow Off Time], the instrument restarts instead of going into sleep mode even if ❹ [Sleep] is set at [Enable].	
		Range	0.1 to 6000.0 min
		Default	0.1 min
❼	Stop GC	When you press [Stop GC], the GC will stop according to [GC Stop Sequence] screen settings. If you press [Stop GC] while the instrument is performing analysis, GC stop is scheduled and [Abort] is displayed. Press [Abort] to cancel the GC stop. During the GC Shutdown, [GC Start Sequence] is displayed. Press [GC Start Sequence] to display [GC Start Sequence] screen. Reference [GC Start Sequence] Screen	

Submenu

Item	Description	See also
GC Start Sequence	Displays [GC Start Sequence] screen.	[GC Start Sequence] Screen
File	Displays [File Select] screen. You can change the file to be used.	[File Select] Screen
Clean Up	Displays [Clean Up] screen. You can set parameters for clean up during the GC startup.	[Clean Up] Screen
Inj Maintenance	Displays [Inj Maintenance] screen. Use this for the maintenance of the injection port.	[Inj Maintenance] Screen

Examples for the GC stop

The flow off time should be changed depending on the column oven temperature.

The following examples show various GC stop sequence adapted to the conditions of the instrument.

Note

To protect columns, set the time so that the carrier gas flow stops after each parts is cooled during the GC shutdown.

- Turn off heater switch immediately and stop the carrier gas after 20 minutes.

  Stop Time : 0 min

  Flow Control : Off

Flow Off Time : 20 min

Note
If the carrier gas stops while the column oven temperature is high, the liquid phase of the column may be degraded. The flow off time should be set at a value where the column oven temperature drops adequately.

- A column is conditioned (aging), and then the column oven is cooled. Carrier gas flow is then shut down.

  Stop Time : Column conditioning time
  Flow Control : Off
  Flow Off Time : Approximately 20 min

- Turn off heater switch 10 minutes after [Stop GC] is pressed, keep the carrier gas flow, and restart the instrument after 20 hours (1200 minutes).

  Stop Time : 10 min
  Flow Control : Off
  Flow Off Time : 1200 min (20 hours)
  Sleep : Disable
  Restart : Enable
  Restart Time : 1200 min (20 hours)

Note
When the GC is turned off, the oven fan automatically stops based on settings in [Fan Off Temp].

Reference [Other Configurations] Screen