

*This following description is only valid for basic GC-MS or GC-MS/MS instruments and does not mention all possible additions and modifications. If you own a more specialized instrument or if you are unsure, we strongly recommend contacting your local Shimadzu representative before taking any actions. Our specialists can give customized directions free of charge via telephone or e-mail and thereby prevent possible damages to your system.*

## Turning on your Shimadzu Gas Chromatograph - Mass Spectrometer (GC-MS) or GC-MS/MS (after Extended Storage)

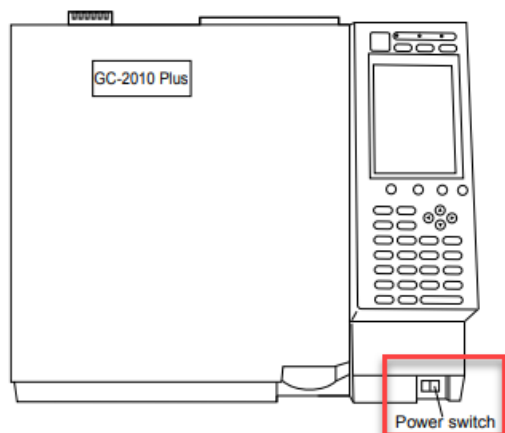
### Step 1: Turn on gas supplies.

Make sure that all the gases are connected, the regulators are set correctly, and the cut-off valves are open. Consult the GC Pre-Installation Requirements document for necessary gas purity and supply pressure.

### Step 2: Power on GC system and the computer.

Plug in the power cable of the GC unit and switch on the power. The power for AOC-20i and AOC-20s are supplied by the GC main unit, so there is no need to turn on the power to those separately. The system will go through initialization steps. Please allow initialization to go to completion before proceeding. The light on the autosamplers (AOC 20s) should turn green, the display of the autoinjector (AOC 20i) should show "000". The indicating lights on GC unit should be yellow or not lit up.

Power button for GC-2010 series – in front



Power button for the GC-2030 – on right side



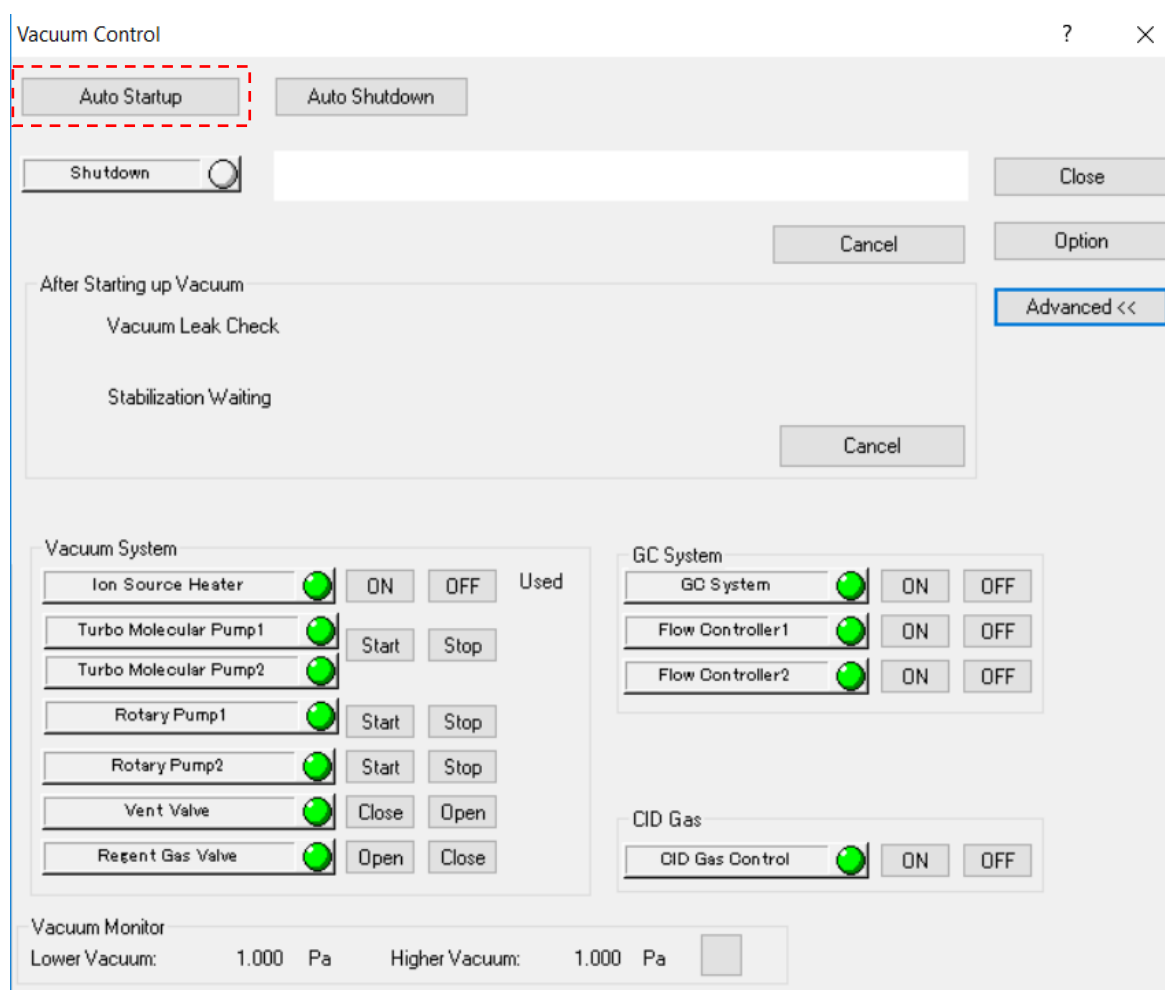
Power button for all Mass Spectrometers – on the lower left corner on the backside



Next, power up the computer and start GCMSSolution (or other GC-MS control software you are using). You should hear a long beep from the GC and a beep from the GC to indicate successful connection.

### Step 3: Restore Vacuum to the system

- Make sure all columns are connected, the Mass Spectrometers door is closed and secured and there are no other leaks present.
- Go to the GCMSSolution Real Time Analysis software and enter the Vacuum Control window located on the left-hand side of the screen in the assistant bar. Vacuum control can also be located across the top menu screen (Instrument Vacuum Control).
- Perform Auto Startup in the vacuum control window.



- d) After the auto startup is completed, depending on your instrument hard- and software the instrument may automatically run a vacuum leak check. Upon passing the vacuum leak check, the system will perform stabilization waiting. In this two-hour default period the Mass Spectrometer will continue to pump down. An auto tune will be run at the end of the two hours. Upon passing of the autotune, scheduled analysis can commence.

If these steps are not performed automatically your GCMSsolution software might be outdated. In this case please contact your local Shimadzu representative and ask if you are entitled to a free software upgrade. Please have serial number as well as instrument model readily available. Please be aware that while the software update itself might be free of charge, you will be charged if a separate visit of a service technician is needed to install the software.

If no automatic leak check, stabilisation waiting and auto tuning are done make sure to perform these steps manually using the GCMSsolution software. If you are unsure how to perform these steps please contact your local Shimadzu representative or refer to the manuals.

#### **Step 4: Troubleshooting**

If leak check fails:

- Check all column connections.
- Make sure inlet consumables have been replaced or tightened appropriately.
- Ensure gases are connected and flowing.
- If above won't help contact your Shimadzu representative.

If auto tuning fails:

- Allow instrument to pump down for longer period of time and repeat the auto tuning.
- Increase temperatures of column oven, injection port, transfer line, and ion source to the temperatures used during analysis (or, if different, during tuning). All temperatures should at least be above 100°C to remove moisture.
- If above won't help contact your Shimadzu representative.



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