

Quick Start Guide

Extorr XT Series RGA

This Guide contains only the basic information needed to install your Extorr RGA. Please refer to the User's Manual on the CD for additional information on installing and operating your RGA.

1. Unpack the XT Shipment

Carefully unpack your XT Unit. The shipment includes these components:

1. Quadrupole Probe Assembly
2. Electronics Command and Control Unit (CCU)
3. Power Supply with AC Power Cord
4. RS232 cable and USB to Serial Converter
5. Vacuum Plus Software, User Manual, and Final Test Data on CD
6. Hardware Kit Containing:
 - Copper Gasket
 - Probe Mounting Bolts
 - Plastic Screw Driver
 - Allen Wrench
 - CCU Mounting Bolts
7. Spare Parts or Optional Accessories such as a Vacuum Nipple, Replacement Filaments or an Ionizer.

2. Mount the Quadrupole Probe on your Vacuum System and Start Pump Down.

ATTENTION!

The Quadrupole Probe is shipped in a custom box with shock absorbing, vacuum formed plastic trays. Leave the Probe in the shipping box until you are ready to install it into your Vacuum System.

Find an unused DN 40 CF (2 ¾ inch) flange on your vacuum system. Choose a location with sufficient clearance for the Quadrupole Probe inside the vacuum system and enough space for the CCU Box on the outside.

The Quadrupole Probe requires a vacuum port with a minimum inside diameter of 1.375 inches (about 35 mm) and clearance inside the chamber to a depth of 7 inches (about 178 mm).

The location of the CCU box must allow you to access to the Resonating Screws (located on the sides of the CCU Box, beneath the Plastic Hole Plugs) and both the RS-232 and Power Cables. If possible, mount Probe so that the CCU Box will be in a vertical position with the RS-232 and Power connections toward the bottom, below the flange position.

For additional mounting information see Sections 4.1 and 4.2 of the User's Manual.

Install the probe using the new Copper Gasket and Flange Mounting Bolts in the Hardware Kit. Take care in tightening the flange bolts so that the gasket is evenly compressed.

Start your pump down procedure.

3. Connect the Command and Control Unit (CCU) to the Quadrupole Probe.

Attach the CCU to the Probe being careful to match up the flange pins to the socket on the CCU. Find the two CCU Mounting Bolts in the Hardware Kit. Insert them into the holes in the CCU Box and hand tighten the mounting bolts.

4. Install the USB to Serial Converter Driver Software on Computers Without Hardware RS-232 COM Ports.

Plug the USB to Serial Converter into an unused USB port on your computer. Windows 7 and above will automatically find the correct driver on the internet and install it. If Windows fails to install the driver, or your computer is not connected to the internet, double click on the "CDM21228_Setup.exe" file in the "USB to Serial Converter Driver Installer" folder on the Extorr CD to manually install the driver.

5. Install the Vacuum Plus Software onto your Computer.

Double click on the "VacuumPlusInstallXX.exe" file on the Extorr CD to install the Vacuum Plus Software onto your computer. The "XX" in the file name is the software version number. Make note of any error messages displayed during installation.

6. Copy the Factory Configuration File from the CD to your Computer.

Find the Factory Configuration File on the supplied CD. This file will be named snXXXX_factory_cal.cfg where XXXX is the Serial Number of your CCU. The CCU Serial Number is written on the CD label and is also printed on the CCU Box.

Make a New Folder on your computer's Desktop named "RGA CONFIG FILES" and then Copy and Paste the snXXXX_factory_cal.cfg File into this folder. Right Click on the File Name and Select "Properties" from the drop down menu. Un-Check the "Read Only" box under "Attributes". Click the "Apply" button and then the "Ok" Button.

Right Click on the File Name again and Select “Rename” from the drop down menu. Change the name of this file to rga_working_cal.cfg and press the enter key.

Paste another copy of the snXXXX_factory_cal.cfg File into this folder. Keep this Read-Only copy of the original Factory Configuration file for future troubleshooting of the RGA System.

7. Connect the RS-232 Cable Between the CCU and your Computer.

Attach the supplied RS-232 cable between the CCU and the USB to Serial Converter or an unused COM port on your computer. The male end of the cable goes to the CCU and the female end to the computer.

8. Connect the Power Supply to the CCU.

Connect the DC Power Supply to the CCU and then plug the supply into an AC wall outlet.

9. Start the Vacuum Plus Software, Open Configuration File, and Setup Communications.

The first time that Vacuum Plus is started, the Configuration file must be opened and the Serial Communications will need to be setup. Start the Extorr Vacuum Plus Software by double clicking on the Desktop Icon. In some cases, it may be necessary to click on the “Settings” button in the upper left corner of the Mass Sweep Graph to display the setup/parameters tabs. If the “No Config” message is shown, click on the “OK” button to dismiss it. The Configuration tab is displayed with the “Load of Configuration File Failed” error message. Click on the “Open” button in the Configuration File section on the Configuration Tab. Navigate to the “RGA CONFIG FILES” Folder on your Desktop that was created in a previous step and find the “rga_working_cal.cfg” file. Click on the file name to select it and then click the “Open” button. The Load Configuration File window will close. The “No Serial Port Selected” message is displayed if your computer does not have a COM Port numbered COM1. Click on the “OK” button to dismiss the “No Serial Port” message. The Communication Tab is displayed with the “No communication port selected” error message. Click on the “Port” drop down list to see the COM Ports that are available on your computer. The number of the COM Port connected to the RGA must be COM1 to COM9 to work with the Vacuum Plus Software. If the COM numbers shown are greater than 9 or you are not sure which COM Port to select, see Appendix G COM Port Troubleshooting in the User’s Manual. If you know the COM Port number that is connected to your RGA (and it is between COM1 and COM9), select it from the list and then click on the “Restart/Retry Communications Channel” button. The Download “Progress” bar will be displayed as the configuration parameters are loaded into the CCU. The progress bar should reach 100% if your computer is communicating with the RGA CCU. If the Download Progress bar does not reach 100% or an Error message is displayed on the Communication Tab, your computer is not communicating with the RGA CCU, probably because the correct COM Port has not been selected. See Appendix G COM Port Troubleshooting in the User’s Manual. The Factory Configuration File on the supplied CD has the “Port” set to COM1 but this may have to be changed to the correct port number for your computer.

After the download is completed the RGA will start scanning in the Mass Sweep Mode from 1 amu to the highest rated mass of the system. The Pirani Pressure reading is updated during the mass sweep. If the chamber pressure is below 3×10^{-2} torr, the ion gauge will turn on. When the chamber Total Pressure (Ion Gauge) reading is below 3×10^{-3} torr, the quadrupole will start to operate.

A Mass Spectrum should be displayed in the Mass Sweep Graph after several complete scans.

Vacuum Plus will initially keep the filaments on for up to 120 seconds (2 minutes) so that the Ion Gauge can measure the vacuum chamber pressure. If the measured Total Pressure is greater than the “Target Pressure” setting on Operating parameters tab, Vacuum Plus will turn the filaments off (put them to Sleep) to preserve the life of the Filaments and Ionizer. The Filaments will immediately go to sleep if the vacuum chamber pressure is above about 5×10^{-3} torr. Click once in the “Time Until Sleep” value box to set the timer to 10 minutes for leak checking or testing, click once in the box again to re-start the 120 second count down.

If a Mass Spectrum is not shown, the most likely cause is that the Vacuum pressure is not low enough for the RGA to operate. This may be the result of an Air Leak or the system may just need additional time to pump down.

Check that the Pirani Pressure reading is below 3×10^{-2} torr and Total Pressure (Ion Gauge) reading is below 5×10^{-3} torr. If the pressure readings are correct, check that the Filament Activation Switch (next to the Pirani Pressure display) is set to “On”. Electrical shorts on the Quadrupole Probe may also keep you from getting a Mass Spectrum. Refer to the User’s Manual for additional information.

Once you have obtained your first Mass Spectrum, save your working Configuration File by clicking on the Configuration Tab and then on the “Save” button. The Vacuum Plus Software will load the newly saved Configuration File whenever the software is started.

For additional information on Operating your RGA see Sections 5 and 6 of the User’s Manual.