

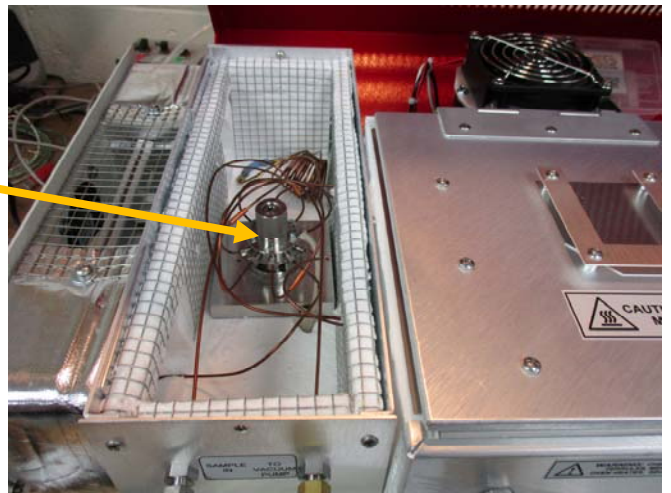
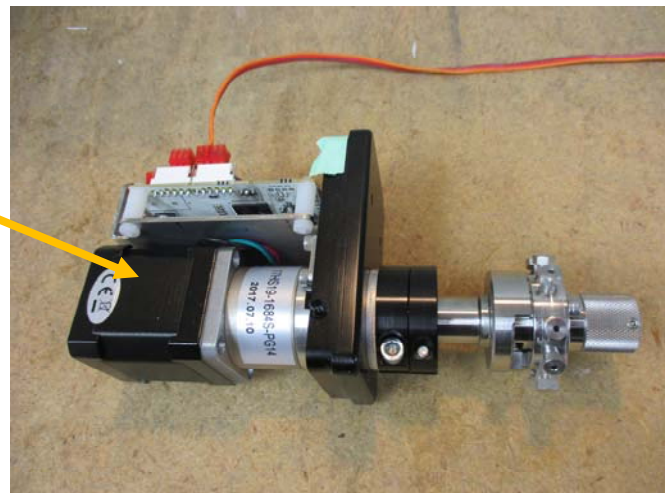
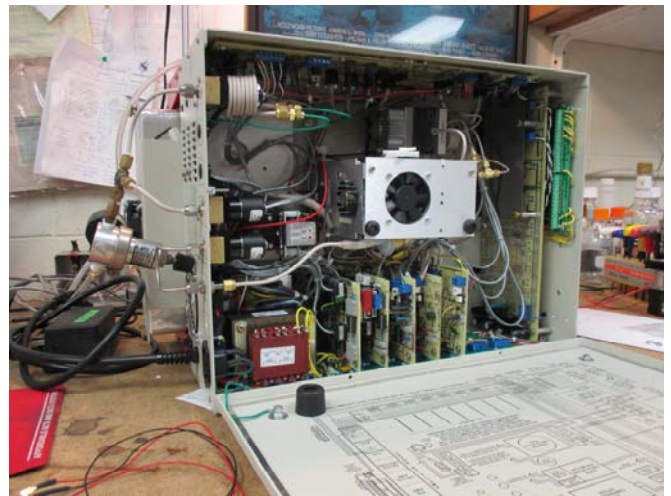
Supplemental 24volt power supply installation

Jan 2019

Many SRI GCs are equipped with gas sampling valves, sometimes up to 4 of them.

They look like this by themselves. There is a motor to turn the valve and the valve itself

This is what a gas sampling valve looks like mounted in the valve oven on a 8610C GC.



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Inside the GC is a 24 volt power supply to power the gas sampling valves. In some cases the valve needs more power than this power supply can deliver. This is especially true if there is more than one valve in the GC.

We have a kit which allows a supplemental external power supply to add extra power. The kit consists of a power jack, some wires and diodes, a label, a 4700ul capacitor, a crimp connector and an external 24volt DC power supply which will plug into a wall socket.

The 24volt power supply is mounted to the inside of the GC chassis along the left side inner wall, close to the valves.

There will already be one or more red and black wires connected. One red, one black for each valve installed.



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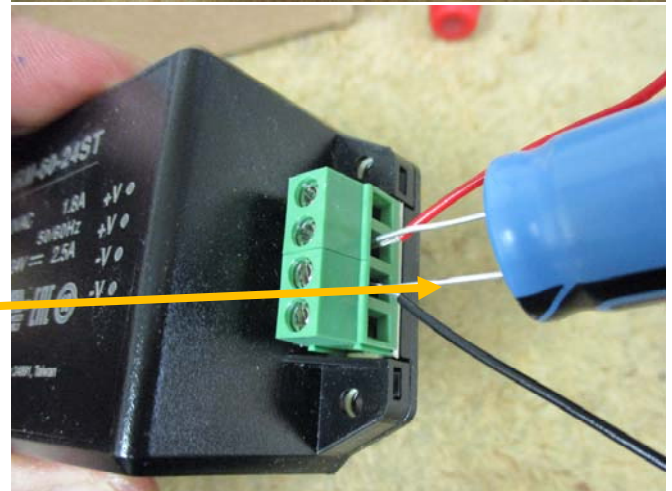
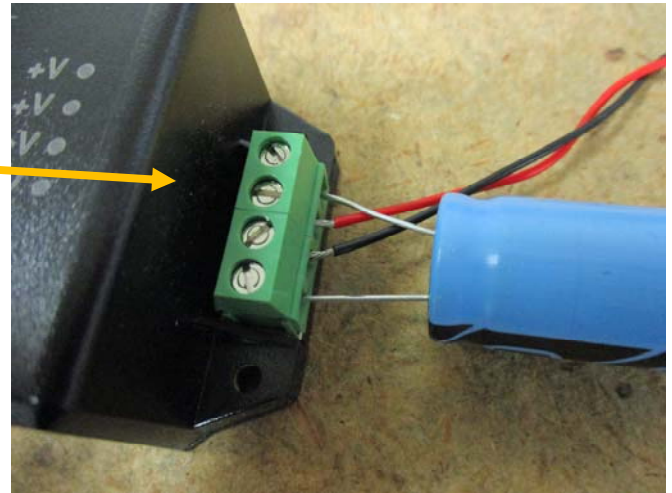
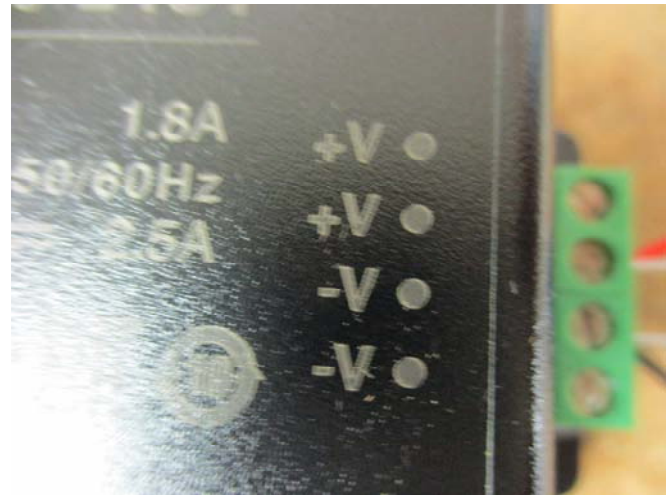
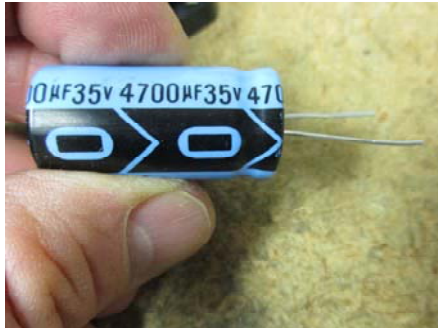
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The outputs of the power supply look like this.

There are two plus outputs (+V) and two minus outputs (-V).

Many times adding a capacitor to the outputs solves the problem with the valve and no further modification is necessary.

The capacitor is marked like this to show which leg of the capacitor is the minus leg. You have to connect the capacitor correctly so the minus leg is connected to the -V (black wire) output of the power supply.



It does not matter which of the two +V and -V screw terminals you connect the capacitor to.

Test the GC again after you attach the capacitor to see if the problem with the valve has been fixed. If so, you may not have to follow the rest of the procedure in this document.



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Find a 5/16" hole on the left side of the GC. If there are no available holes, you will have to drill a 5/16" hole somewhere convenient which will not interfere with anything else.



Tighten the power jack in the hole using the nut.

Locate the 24 volt power supply mounted inside the GC. It is always mounted on the inside of the left hand wall of the chassis. It is directly next to the gas sampling valve. In some cases, where there are more than one valve, it may require that some other components are temporarily moved to get access to the 4 screw terminals on the power supply.



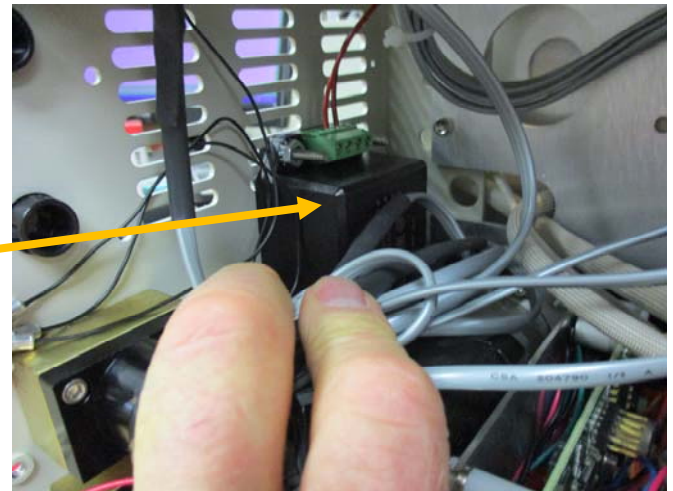
The power supply will look like this if there is one valve installed. If there are two valves, there will be two red wires and two black wires.

Note the markings on the power supply.

+V is where the red wires connect.

-V is where the black wires connect.

You can connect both red wires to the same terminal or one to each +V terminal.



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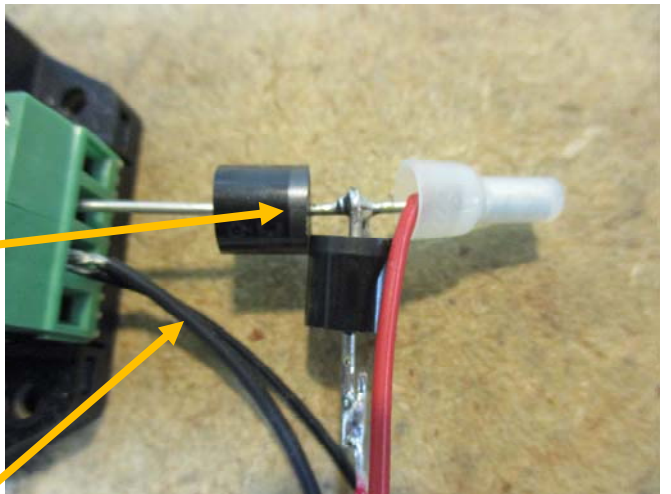
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Remove the red wire from the inside power supply and bend as shown alongside the diode.



Then crimp (using a pliers or crimping tool) the red wire (or red wires if there are two or more valves) to the diode using the white crimp connector supplied. Tug on the wires after you crimp to make sure you got a secure connection.



Then connect the diode to either +V screw of the inside power supply. Pay attention to the direction of the diodes. The silver band on the diode has to be oriented as shown in the photo.



Connect the black wire from the power jack to either -V screw on the inside power supply as shown.

Label the power jack as shown.



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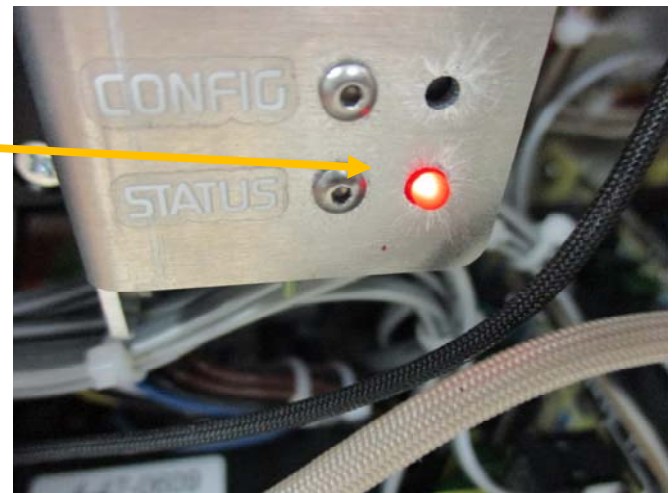
Connect the external 24 volt power supply to the jack on the GC. Any 24 volt power supply with a 2.1mm connecting plug is OK. Typically we will include a 24volt 60 watt power supply, but you may purchase a power supply locally as well. The power supply should be 24 volts DC between 50 and 120 watts and have a 2.1mm plug.



The red status light LED on the valve should be a steady red even if the GC itself is not turned on.

The status light on the valve should also be red if the external power supply is disconnected and the valve is receiving power from the internal power supply only.

When both the internal and external power supplies are connected the valve is getting power from both power supplies which should resolve most issues.



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