

P680 HPLC Pump System

Quick Installation Guide



High Pressure Gradient Version

This Quick Installation Guide explains the basic installation steps for a P680A HPG high-pressure gradient pump system. For additional information, please consult the operating instructions for the P680 HPLC Pumps.

1. Preparation

Bring the pump to a moderate temperature for four hours to allow any condensation that might have occurred during transit to evaporate. Do not connect the pump to the mains during this period. If it is obvious that condensation did not evaporate completely, continue to warm-up the pump (which is not connected to the mains) until the condensation is completely gone.

Place the pump on a firm and level surface that is free of vibration. Make sure that the surface is resistant to solvents. Avoid locations with extreme changes in temperature (such as direct sunlight or drafts) and high air humidity.

2. Remove the caution label



You may remove the “caution” label from the pump's enclosure.

⚠ Important: The pump is primed with 2-propanol. During initial operation of the pump, make sure that the solvents used are miscible with 2-propanol. Otherwise, follow the appropriate intermediate steps.

3. Connect the eluent tube to the solvent bottle

The bottle caps have five holes. Four holes are capped by default (white caps), one hole is open for the eluent tube. A retaining guide holds the tubing in place.



Guide the eluent tube through the retaining guide and into one of the five holes in the bottle cap.

Retaining guide



Place the eluent frit on the end of the tube, place the complete assembly into the bottle, and hand-tighten the bottle cap.

i Please note: To exchange the tubes, remove the frit first, then the eluent tube, and then the retaining guide.

! Important: To draw solvents from the solvent bottles, use only eluent tubes with filter frits. This prevents contamination of the HPLC system.

i Please note: Regularly check the frits for permeability. Especially when working with aqueous solvents, algae and other microorganisms can grow on the frits and clog them. Therefore, exchange the solvents at regular intervals. Rinse the bottles thoroughly before using them again. Replace the frits as necessary.

4. Place the SOR-100 Solvent Rack on top of the pump



The SOR-100 Solvent Rack fits on top of the P680.

For safety reasons, place the eluent bottles on the tray on top of the pump.

5. Connect the SOR-100 with the P680

Please note: The pictures below show a 6-channel degasser. For a P680A HPG-2 with two eluent lines, a solvent rack with a 2-channel degasser (part no. 5030.9210) is sufficient. The SOR-100A-2 is shipped with one 1-liter eluent bottle, one 2-liter eluent bottle, appropriate tubing, and bottle caps.

For a P680A HPG-4 with integrated solvent selector valves, the SOR-100A-4 Solvent Rack with 4-channel degasser (part no. 5030.9220) is the appropriate choice. The SOR-100A-4 is shipped with two 1-liter eluent bottles, two 2-liter eluent bottles, appropriate tubing, and bottle caps.



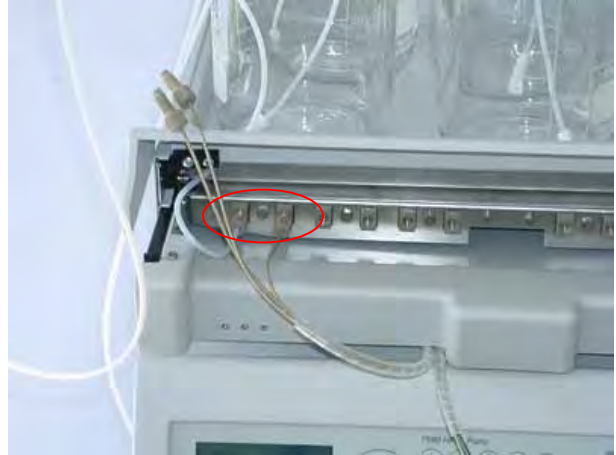
The SOR-100 fits on top of the P680. Open the SOR-100 by tilting the front panel upward.



Pull the tray with the degassing chambers toward you.



First, insert the eluent line from the top of the solvent rack through the respective opening.

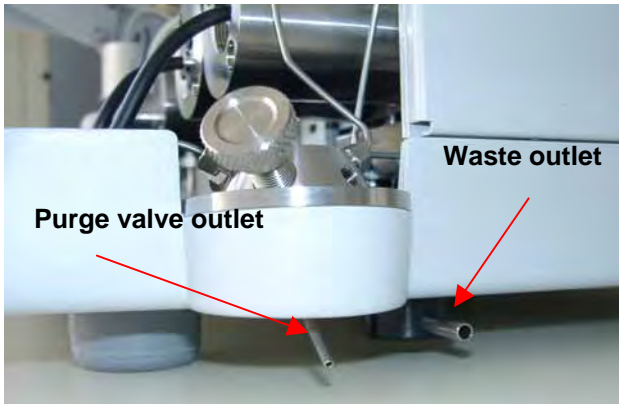


Connect the line from the solvent bottle to the inlet of the left degasser module and hand-tighten. Connect the respective inlet tubing of the P680 to the adjacent outlet of the degasser module.



Push the tray back into the SOR-100 and tilt the front panel downward.

6. Connect drainage tubing

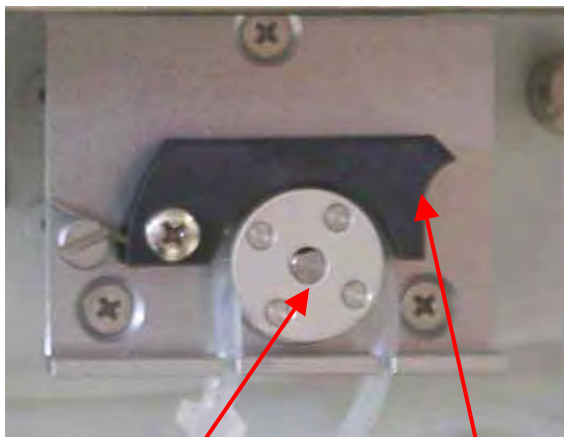


i Please note:

Drainage tubing can be connected to the bottom right of the pump to direct any liquid leaks to the waste. To prevent damage to the pump, make sure that no part of the tubing is placed higher than the connecting port.

7. Install the Active Rear-Seal Wash System

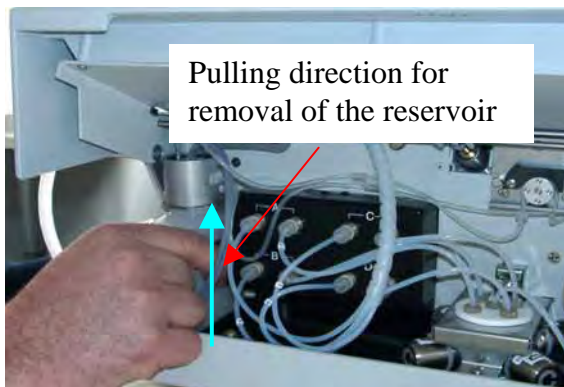
The pictures below show the rear-seal wash system of a low-pressure gradient version of the P680. It is identical in the high-pressure gradient version of the pump.



Rotor

Lever

The pump is shipped with the active rear-seal wash tubing bypassing the peristaltic pump because the tubing under the peristaltic pump lever remains compressed and does not relax, thus blocking the wash solution. This can happen if the pump is not running for a longer period, e.g., during shipment. Engage the peristaltic tubing in the peristaltic pump before you turn on the pump for the first time. To do so, slightly press the lever upward, remove the tubing, and release the lever.



Pulling direction for removal of the reservoir

To take out the rear-seal wash solution reservoir, pull it upward and out of the pump.

The active rear-seal wash system consists of a peristaltic pump (tubing pump) and a wash solution reservoir with integrated sensors. Rear-seal washing is activated periodically once per hour and runs for five minutes.



While holding the cap with one hand, unscrew the reservoir from the cap.



Fill the reservoir with a wash solution (e.g., a water/methanol mixture).

Make sure the wash solution is compatible with the eluents used during analysis.

Please fill the reservoir only half full! This is to leave room for small amounts of eluent, which may leak through the piston seals when the seals start aging!



Rear-seal wash solution reservoir from the rear side.



Engaging mechanism of the rear-seal wash solution reservoir.



Re-insert the rear-seal wash solution reservoir.

i Please note: Fill the wash solution reservoir with approximately 50 mL of wash solution before turning on the pump for the first time. Please avoid to use the pump without rear-seal washing.

⚠ Important: If you use solvents with a high salt content, do not operate the pump for more than 5 minutes without activating the rear-seal washing. This may damage the seals and pistons.

⚠ Important: Do not forget to empty the wash solution reservoir before shipping the pump.

ℹ Please note: To avoid a high salt concentration in the wash solution when using eluents with a high salt content, replace the wash solution approximately once per week.

For further information about the active rear-seal wash system, please refer to the appropriate section in the P680 Operating Instructions.

8. Verify correct voltage setting



Dionex instruments are factory-set for operation at the local voltage requirements in the destination country. However, please verify that the voltage setting is appropriate for your local requirements before connecting the pump to the mains. If the setting is inappropriate, follow the steps in the pictures below to reset the voltage at the selector on the pump's rear panel (next to the main supply connector).

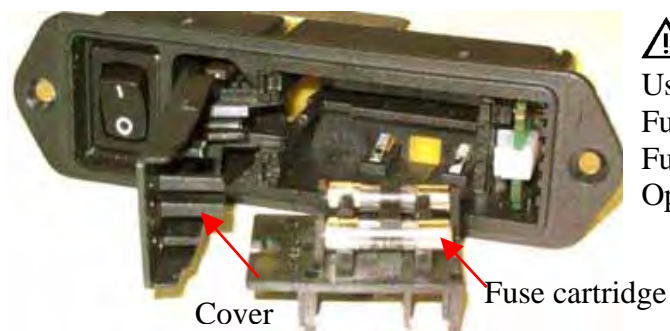
STOP Warning:

Before resetting the voltage, turn off the pump. Be sure to disconnect the power cord from its source.



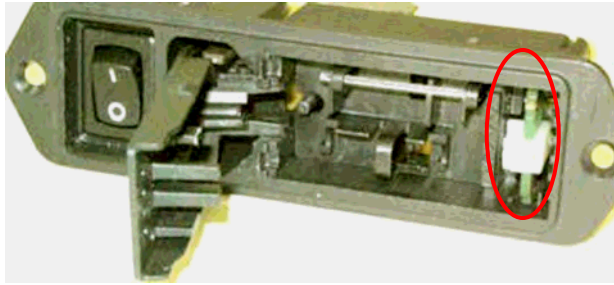
Use a small screwdriver to open the fuse cartridge (as indicated in the picture).

Replace the fuses as appropriate.

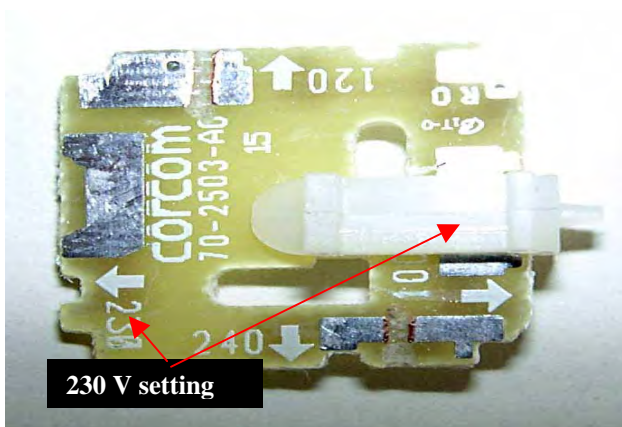


⚠ Important:

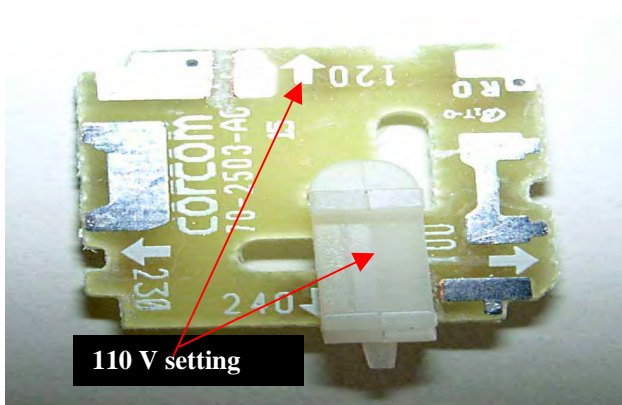
Use only appropriate fuses (for 230 V setting: Fuse, 1 A, TT, 5 x 20 mm; for 115 V setting: Fuse, 2 A, TT, 5 x 20 mm). See the P680 Operating Instructions for details.



Use small pliers or tweezers to pull the small voltage selector board out of the power socket housing.



Place the board (with the writing face up) on a firm surface. Turn the board so you can see the voltage selection. Without turning the board, adjust the plastic clip to the correct voltage. Make sure the clip locks into position.



Reinstall the voltage selector board and the fuse cartridge. Verify once again that the voltage setting is appropriate (see the first picture in this section).

i Please note: For minimum interference, all modules should be connected to the same mains output (same phase).

9. Connect power cable and USB / LAN connection



Connect the pump to the mains using the power cord shipped with the pump.

For the USB connection, connect the USB cable to the USB port.

i Please note:

The length of the USB cable between the pump and a PC or a USB hub must not exceed 5 m. A special USB extension cable (Dionex part no. 8911.0004) is available if longer connections are required. Up to five extension cables may be connected in series. For system reasons, the overall length must not exceed 30 m.

i Please note: Install the Chromeleon software before connecting the pump to the USB port on the Chromeleon server PC.

i Please note: Windows NT 4.0 does not USB.

For Chromeleon versions 6.20, 6.30 and 6.40, the USB driver installation of the pump is via the Setup program from the current driver CD. Insert the CD into the CD drive of your Chromeleon server PC. Double-click Setup.exe in the root directory. Click Next to have the Setup program check which Chromeleon version is installed on your PC. If a version is found for which no driver is available, the setup aborts.

For Chromeleon versions higher than 6.40, the USB driver installation for the pump is handled during the Chromeleon setup.



For the LAN connection, connect the LAN cable to the LAN port.

 Please note:

Use the LAN connection only with Windows NT 4.0. For any other supported Windows operating systems, we recommend using a USB connection.

For TCP/IP setup, please refer to the P680 Operating Instructions.

10. Chromeleon Server Configuration

You can now configure the P680 pump for software communication. If you need assistance with the software installation and/or configuration of the Chromeleon Server, please refer to the P680 Operating Instructions.

Your P680 pump system is now ready for fluidic connection to other HPLC instruments.