

Instructions for the ELSD Air Pump

Overview

This air pump is intended for use with the integrated Teledyne Isco ELSD systems which includes: the CombiFlash® Rf+ Lumen, CombiFlash® EZ-Prep, and ACCQPrep HP125.

Note

This air pump can replace the use of a compressed gas such as nitrogen, but use of certain chromatography solvents may result in a flammable gas exiting the drift tube of the ELSD.

Installation of the Air Pump

Place the air pump assembly near the chromatography system where there is easy access to the power switch and there is adequate clearance for cooling air to be drawn into the motor cooling fan. In addition, the water separator should be visible and easily accessed (a clear plastic reservoir on the pump outlet). Due to vibration of the pump, it could “walk” during operation, so it should be placed where it can’t fall off of an elevated surface. Route the air line, included with the chromatography system, to the air pump and insert the air line in to the push to connect air fitting. Once inserted, tug gently on the air line to ensure it is engaged in the fitting.

Operation

Press the button on the bottom of the pump’s water separator. This ensures there isn’t excessive water in the separator and relieves any existing air pressure. If pressure remains in the system from a previous separation when the pump is switched on, the pump may be unable to start against the pressure. Turn on the switch on the air pump to start operation. Sufficient pressure for normal operation is achieved in a few seconds. Press Play to start the separation. After the separation is completed, turn off the air pump to extend the life of the pump and to allow pressure in the system to dissipate. There are a few reasons for this recommendation:

- The air pump is unable to start operation against pressure. If pressure remains in the system from a recent separation, the pump may be unable to start.



Air Pump



Drain Button

- If the air pump continues to operate after the separation is completed, some pumps may build up sufficient pressure to activate the pressure relief valve. While this is harmless, the relief valve can produce an annoying noise. Even if the relief valve isn’t activated, continuous operation against a closed system could result in excess motor temperature and cause the thermal cut-out to activate. In this case, the air pump switch must be turned off to allow the motor to cool.

Check the water separator level periodically, especially in a humid environment. If the water level exceeds 2 cm in depth, depress the button on the bottom of the separator to drain the water.

Troubleshooting

If the pump isn’t supplying air, turn off the switch and let the pump cool if warm. Disconnect the output air line to ensure there is no pressure present and then turn the pump ON to verify operation.

Maintenance

For continuing reliable operation:

- Rebuild the valves and diaphragm every 5000 hr. of operation. A rebuild kit is available from KNF Neuberger, part number 071723, description “Spares- Kit Dia, Reed Valve N022/N026AN. The instructions included refers to a number of pumps. The instructions particular to pump “UN022ANI” should be followed.

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