

BEFORE ATTEMPTING TO INSTALL, OPERATE, OR SERVICE YOUR new pump read the following instructions and warnings carefully. Failure to comply with these instructions could result in personal injury and/or property damage! Retain these instructions for future reference.

WARNING

Before placing the pump in service make certain it is compatible with the material being pumped.

HAZARDOUS MATERIAL WARNING:

Protective eyewear and clothing should be used whenever pumping hazardous or toxic fluids.

- If a diaphragm ruptures, the pumped product can enter the air side of the pump and exit through the air exhaust. When the product is a hazardous or toxic material, the exhaust must be piped to an appropriate area for safe disposition. When the fluid source is at a higher level than the pump (flooded suction), the exhaust should be piped to a higher level than the fluid source to prevent spills caused by siphoning.
- Great care must be taken to reassemble the pump properly after maintenance.

FLAMMABLE FLUID WARNING:

Pumping of flammable materials may cause a build-up of a static charge within the electrically non-conductive pump. The pump, suction, and discharge piping must be grounded to remove any static charge build-up. The containers receiving the transferred fluid should also be properly grounded. Failure to provide proper grounding may result in fire and or explosion causing personal injury or loss of property.

PRESSURE AND TEMPERATURE WARNING:

Do not exceed the following limits --100 psi (6.8 bars) maximum pressure at 150°F (66°C). The maximum pressure rating for KN-10 models is 70 psi (4.8 bars). The maximum temperature is 200°F (93°C). Maximum temperature limits are based upon mechanical stress only. Certain chemicals significantly reduce safe operating temperature.

NOTE: USE MINIMUM air pressure when pumping at elevated temperatures.

INSTALLATION:

Position the pump suction as closely as possible to the source of the liquid to be pumped. The suction line between the pump and fluid to be pumped must be at least as large as the suction port size (for example, 1/2" suction line for pumps with 1/2" ports).

An air line regulator-filter is suggested on all installations. Pumps are self-lubricating - DO NOT USE AIR LINE LUBRICATION.

PRIOR TO INSTALLATION:

Tighten bolts before installing pump to make sure that they have proper torque.

UV PROCESS SUPPLY, INC.

1/4" POLY/TEFLON DOUBLE DIAPHRAGM PUMP INSTRUCTION MANUAL

PART # J004-103

INSTALLATION:

NOTE: The pipe thread connections on this pump are plastic. They seal much easier than metal threads. Hand tighten to seal. Over tightening will strip suction and discharge port threads. Maximum torque is 10 ft-pounds. Teflon tape is recommended to insure a good seal.

SUCTION LINES:

Due to the high suction vacuum at the suction inlet ~ air leak in the suction tubing or connections will allow air to be pulled into the suction tubes rather than pulling the fluid into the pump. The pump will then discharge a mixture of air and fluid.

AIR SUPPLY:

Do not connect the unit to an air supply in excess of 100 psi (6.8 bars). Install a shutoff valve in the air supply line to permit removal of the unit for servicing. When connecting an air supply of rigid piping, mount a section of flexible line to the pump to eliminate pipe strain. The weight of the air supply line and of the filter must be supported by some means other than the air valve cap. Failure to provide support may result in damage to the pump.

COMPRESSED GAS (OTHER THAN AIR):

Any compressed, non-flammable gas may be used to operate this pump.

HIGH VISCOSITY INSTALLATIONS:

1. Position the pump close to the source. If possible, flood the suction (that is, the suction inlet should be lower than the level of the fluid being pumped).
2. Suction lines should be increased in size -- up to three times the size of the inlet port. Using dual suction ports may also help to increase capacity.
3. Start the pump very slowly using the air flow control valve supplied with each pump. Control fluid flow by volume of air using the air flow control valve -- not air pressure.

TOTALLY SUBMERGED APPLICATIONS:

For totally submerged applications the air exhaust should be taken through an air line away from the pump. The pump can be submerged if the materials of construction are compatible with the pumped liquid and the exhaust is piped above the liquid level. Piping used for the exhaust should not be smaller than 3/8" for 1/2" models and 3/4," for 1," models. Reduced pipe size can restrict the exhausted air and reduce pump performance.

The air flow control valve is normally positioned immediately in front of the pump's air supply. For totally submerged applications it may be positioned anywhere in the air line between the pump and the filter-regulator.

OPERATION:

Your pump has been tested prior to shipment and is ready for use. It is completely self-priming and no initial filling with liquid is required. To begin pump operation, **open the air flow control valve** to allow sufficient cycling rate for the pump to prime (50 to 90 cycles per mm.). **After pumping starts, adjust the air flow control valve for the desired pumping capacity.** When further opening of the air flow control valve increases cycling rate without increasing the flow rate, the pump is being starved of liquid due to suction limitations. Further opening of the valve will waste compressed air

and decrease discharge rate. Set the air flow control valve for the lowest cycling rate that does not decrease flow rate for the most efficient operation.

FREEZING OR ICING OF EXHAUST:

Icing of the air exhaust can occur under certain conditions of temperature and humidity. Icing is more likely to occur when operating the pump at high discharge pressures. Icing can be minimized by using an air dryer in the compressor system. If that is impractical, a lubricator can be installed in the air supply line. The lubricator should be filled with ethyl alcohol (ethanol). This may be purchased at a drug store.

GENERAL MAINTENANCE:

- Keep inlet air clean and dry.
- Check periodically for product or air leakage. Tighten any joint where leakage is occurring.
- If pump capacity is decreasing check the air valve filter located at the air inlet. It may have become plugged with dirt or debris from the air line. Remove and clean filter.
- When pumping hazardous or toxic materials, diaphragms should be replaced at regularly scheduled intervals based upon pump usage.
- In freezing temperatures, the pump must be completely drained when idle.
- The pump can run dry indefinitely without damage.
- When pumping highly abrasive fluids, reduce discharge flow rate or reduce air pressure to prolong diaphragm life.

The pump may be shut down indefinitely with liquids in the pump with no resulting damage to seals or to pump components. If you are pumping a material that will settle or compact or set-up, the pump must be flushed before shut down.

CLEANOUT

If the pump is shut down for clean-out, flush through with an appropriate neutralizing solution and follow with a detergent water flush. Generally, no disassembly is required for most clean-out requirements.

If ultrapure materials are being pumped, then disassembly of the pump's wetted components is usually necessary.

WARNING

Before disassembly, shut off the compressed air line. Bleed the pressure and disconnect the air line from the pump. The discharge line of the pump may be pressurized and must also be bled of its pressure. When the pump is used for toxic or aggressive fluids it should be flushed clean prior to disassembly.

SEE PARTS GUIDE AND ASSEMBLY INSTRUCTIONS TO PROCEED WITH DISASSEMBLY.

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