



# Operating and Maintenance Instructions

For Portable & Installation Models: UN726/.0/.1/.2/.1.2/.3  
Diaphragm Vacuum Pump Using Head Materials: SN, ST, TT

## Operating Instructions

**Note:** The following guidelines should be observed to promote safe and reliable operation of your KNF pump.

- KNF units are all 100% oil-free. No maintenance at all is necessary for the bearings and NO lubrication should be done. All bearings are sealed and permanently lubricated. For repair service, call KNF Customer Service.
- Be sure that the available electric power matches specifications marked on the motor. Serious damage may occur to the motor if connected to an improper voltage. All KNF units should be grounded using the provided brass screw or grounded 3-prong plug. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current.
- The pump should be placed where the surrounding temperature remains between 40°F and 104°F (5°C and 41°C). This is particularly important when the unit is installed in a confined space where heat may build up during operation.
- Standard models are designed to *start against atmospheric pressure only, not under load (Pressure or vacuum)*. Care must be taken to eliminate load when pump is turned off for any reason. Optional modifications for the pump to start under load may be available for certain models.
- Use this pump only to pump air or gas, not liquids or particulates. *Damage to the pump or loss of performance can occur if liquids or particulates enter the system.*
- Always install the pump in such a location that it is protected from direct (or indirect) moisture contact.
- Avoid operating the pump in very dusty conditions. If necessary, install an inlet filter and change it frequently.
- If flow is throttled or restricted for any reason, care must be taken to avoid exceeding the maximum continuous operating design pressure of the unit.

- Be sure that the pump is installed at the highest point within the system to prevent possible liquid condensate from entering the unit.
- To avoid personal injury, remove any protective plastic plugs supplied prior to applying power to the motor.
- Run the pump for a few minutes to warm it up before handling saturated or nearly saturated vapors.
- After use, let the pump run for about 2 minutes in air before switching it off, to purge out droplets of liquid that may have formed on the inside of the pump. This prevents crystallization and/or absorption of liquids by the pump materials.
- Do not thread metal fittings into Kynar-coated (TT) pump heads. Use plastic or nylon only.

## Troubleshooting

**Warning! AC motors are thermally protected and will automatically restart unexpectedly when the overload device resets. - Don't pump flammable or explosive gases or operate this pump in an atmosphere containing flammable or explosive gases.**

Your KNF Pump should perform to specifications for years if the simple operating instructions and precautions are observed. If you experience a problem and suspect the pump, try these simple checks prior to calling for assistance:

- Check that all system interconnections are gas-tight and head screws are snug. Do not overtighten screws.
- Remove the head assembly as described in "Changing the Diaphragm and Valve plate". Look for any foreign matter; usually bits of Teflon® tape or particulates carried into the valve system or crystallized material from previously pumped vapors. All of the above must be cleared out and reassembled with clean parts.
- If pitting of the pump parts or tearing of the diaphragm is observed, it is possible that the gas/vapor being pumped is capable of dissolving the wetted parts of the pump.  
Chemical resistance charts should be consulted for compatibility with wetted parts. Generally, replacement of the diaphragm and valve plate will restore the pump to operating specifications if there is no pitting or debris in the valve seat area.
- Check that power is being supplied to the pump from the power source and the pump switch is in the on position.

## Spare Parts Kit *(One kit per head)*

### For Head Material SN

Part Number: K726-0XNA kit:

Qty	ID#	Description
1	G	Diaphragm
1	E	Neoprene Valve Plate

### For Head Material ST or TT

Part Number: K726-0XTA kit:

Qty	ID#	Description
1	G	Diaphragm
1	E	Teflon Valve Plate

**Note:** Above kit is to renew one head only. Two kits are required to renew a twin-head pump (.3 or .1.2 models).

## Changing the Diaphragm and Valve Plate

### Notes:

- If your model Number begins with MPU, PU or PJ, contact KNF Customer Service for the proper Parts Kit, as the contents may differ from those kits listed above.
- For twin-head pumps, always change the diaphragm and reed valves in both heads at the same time. Follow the below procedures for each head.

### Materials needed:

Proper replacement kit(s)  
Roll of Teflon® tape (available at most hardware stores)  
Marking pencil

### Tools Required:

4 mm socket key wrench  
20 mm open-end wrench  
Slotted-head screwdriver

### Procedure:

- Disconnect the pump from electrical power. When working with a double-head pump, make a sketch of the position of interconnecting tubes and fittings for ease of reassembly later. Remove them by undoing nuts with the 20 mm wrench and carefully pulling tubing from fittings.
- Mark the position of the pump headplate A, intermediate plate B and crankcase C relative to each other by drawing a line on the edges with a pencil or other marker to assure proper re-assembly.
- Remove the four socket screws D with the 4 mm socket key and remove the headplate A. Lift off the valve plate E. Note the positioning of the valveplate in relation to the valve ports on the intermediate plate.

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4. Remove the intermediate plate B and housing cover F.
5. Unscrew the old diaphragm G by turning it counterclockwise using both hands. Do not use tools. **IMPORTANT** — Take care not to lose any spacers H positioned between the diaphragm stud and connecting rod, as the exact quantity must be reassembled later for proper pump operation.
6. Place the same quantity of spacers as removed in step 5 above onto the threaded stud of the new diaphragm. Carefully screw the new diaphragm G into the connecting rod J. Tighten firmly using both hands only. Do not use tools.
7. Turn the counterweight K until the diaphragm is in mid-position (flat across). Carefully center the diaphragm over the compressor housing C, or over the head spacer ring L. Note: Only double-head pumps are supplied with a head spacer ring.
8. Place the intermediate plate B onto the compressor housing, according to your previously drawn markings, then place the new valveplate on top of the intermediate plate, positioned in relation to the valve ports as shown in the drawing.
9. Place the headplate A on top of the valveplate according to your previously drawn markings. Then tighten the four socket screws D. Do not overtighten. Turn the counterweight K by hand to insure that the pump turns freely and then replace the cover F.
10. Carefully apply two layers of Teflon® tape around each fitting and reinstall the head connecting tubing and fittings as previously sketched in step 1 above. Do not use in excess or substitute any other type of tape.

Ensure that the compression rings (ferules) are correctly positioned under the union nuts before tightening the interconnection fittings..

**Note:** Should you need to send a KNF pump to our factory for repairs, please be sure to read the instructions in the Limited Warranty section with regard to obtaining an RMA (Return Materials Authorization) number prior to shipment.

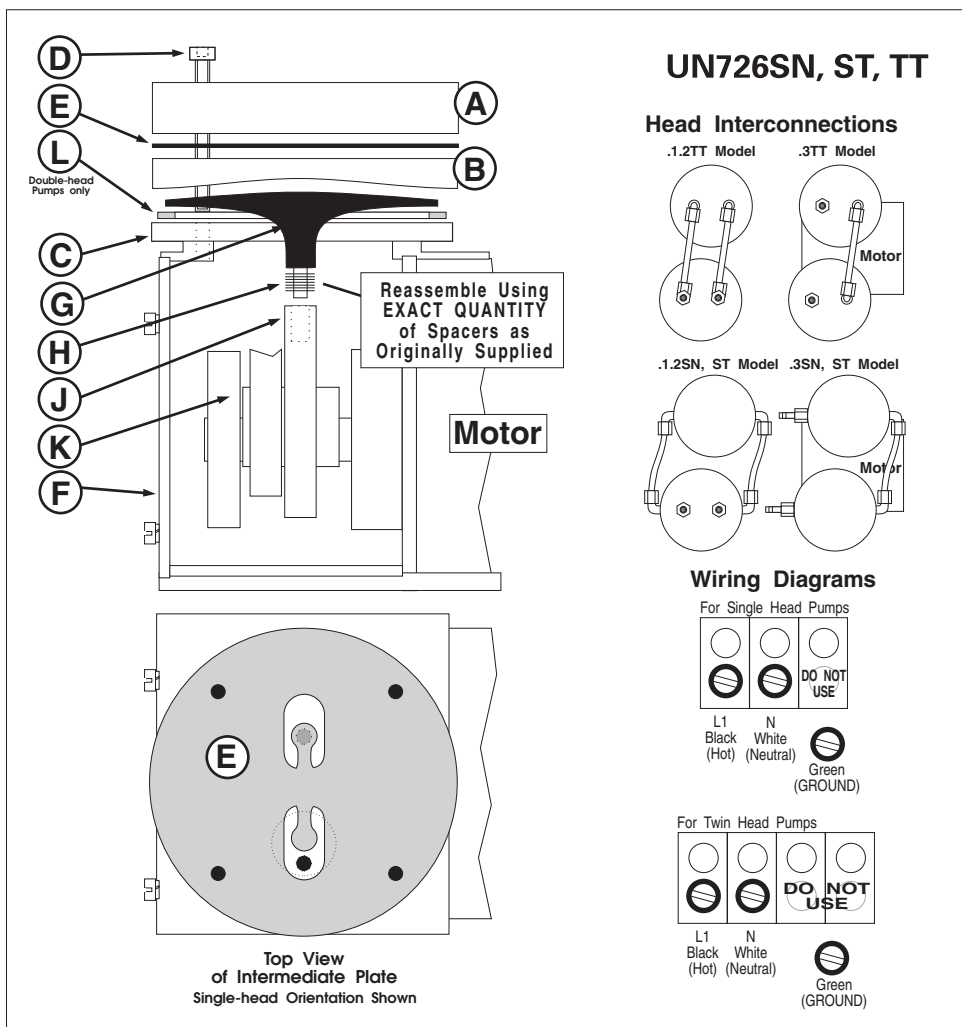
### Individual Parts:

(per head)

ID#	Description
A	Headplate
B	Intermediate Plate
D	Socket Screw (4 per head)
E	Valveplate
G	Diaphragm
H	Diaphragm Spacers (See Note 1)

### Notes:

1. Use same quantity as originally supplied.
2. Contact KNF Customer Service for ordering information.



### Returns:

KNF provides warranty and non-warranty repair services for all products.

1. A Return Material Authorization (RMA) number is required for all product returns.
2. To receive an RMA number, submit a completed Decontamination Declaration form to [rma@knf.com](mailto:rma@knf.com)
3. The Decontamination Declaration form can be obtained from our website or by contacting KNF Technical Services. [www.knf.com/pdfs/decontamdec.doc](http://www.knf.com/pdfs/decontamdec.doc)
4. Product return instructions will be provided when the RMA is issued.

### For Service or Parts, CONTACT:

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