

1. Shipment Inspection

Examine the components carefully to make sure no damage has occurred to the pump during shipment. Care should be taken to ensure the pump is NOT dropped or mishandled; dropping will damage the pump.

2. Pre-Installation Checklist

Before beginning installation procedures, the following checks should be made. They are all important for proper installation of the circulator pump.

1. Uses:

Model UPS 15, and UP15, 25, 26 and 43 series pumps are designed to circulate water from 50°F to 230°F up to a maximum pressure of 145 psi. If required, a 50% by volume solution of ethylene or propylene glycol and water can be used, however, a decrease in pump performance may result due to an increase in the viscosity of the solution. Check with manufacturer for information regarding suitability of pumping other fluids.

Closed Systems: UPS 15 and UP 26 and 43 series pumps with cast iron volutes are recommend for closed hydronic systems (i.e. airless, non-potable water).

Open Systems: UP 15, 25, 26 and 43 series pumps with stainless steel or bronze volutes can be used in both open and closed systems.

2. Maximum Water Temperature:

The maximum allowable water temperature is determined by the ambient or surrounding air temperature as shown in Table 2A.

Ambient (°F)	104	120	140	160	175
Water (°F)	230	220	210	190	175

3. Inlet Pressure Requirements

The amount of pressure required at the inlet of the pump is a function of the temperature of the water as shown in Table 2B.

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Water (°F)	190	165	140
Required Inlet Pressure (ft.)	5	4.5	3
(psi)	2.2	1.9	1.3

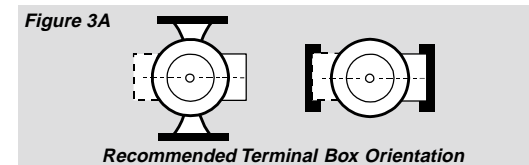
In a pressurized system, the required inlet pressure is the minimum allowable system pressure.

In a system open to the atmosphere, the required inlet pressure is the minimum distance the pump must be located below the lowest possible water level of the water source (tank, pool, etc.).

3. Installation

Position of terminal box:

Proper installation of the pump will have the terminal box located to one side of the pump or the other, with the conduit entry down. See Figure 3A.



If the terminal box position needs to be changed, it is best to do so before installation. However, if the pump is already installed, ensure that the electrical supply is turned off and close the isolation valves before removing the Allen screws.

To change terminal box position:

1. Remove the four (4) Allen screws (4 or 5mm wrench) while supporting the stator (motor).
2. Carefully separate the stator from the pump chamber and rotate it to the correct terminal box orientation.
3. Replace the Allen screws and tighten diagonally and evenly (7 ft.-lb. torque).
4. Check that the motor shaft turns freely. Remove the large screw in the middle of the nameplate, insert a small flat blade screwdriver into the end of the shaft, and turn gently.

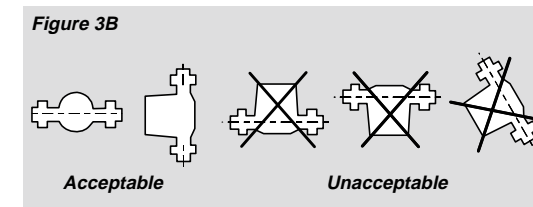
If the shaft does not turn easily, repeat the disassembly/reassembly process.

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NOTE: UPS15-42 does not require manual turning of shaft.

Pump Mounting: For Indoor Use

Arrows on the side or bottom of the pump chamber indicate direction of flow through the pump. GRUNDFOS circulators can be installed in both vertical and horizontal lines. The pump must be installed with the motor shaft positioned horizontally. Under no circumstances should the pump be installed with the shaft vertical or where the shaft falls below the horizontal plane. See Figure 3B.



It is recommend that isolation valves be installed on each side of the pump. If possible, do not install elbows, branch tees, and similar fittings just before or after the pump. Provide support to the pump or adjacent plumbing to reduce thermal and mechanical stress on the pump.

Installation Requirements

1. Thoroughly clean and flush the system prior to pump installation.
2. Do not install the pump at the lowest point of the system where dirt and sediment naturally collect.
3. Install an air vent at the high point(s) of the system to remove accumulated air.
4. Ensure that water does not enter the terminal box during the installation process.
5. (Open System) Install the pump in the supply line; the suction side of the pump should be flooded with water. Ensure that the static head requirement from Table 2B is achieved.
6. (Closed System) Install a safety relief valve to protect against temperature and pressure build-up.
7. If there are excessive suspended particles in the water, it is recommended that a strainer and/or filter be installed and cleaned regularly.
8. **DO NOT START THE PUMP UNTIL THE SYSTEM HAS BEEN FILLED.**

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4. Electrical

All electrical work should be performed by a qualified electrician in accordance with the latest edition of the National Electrical Code, local codes and regulations.

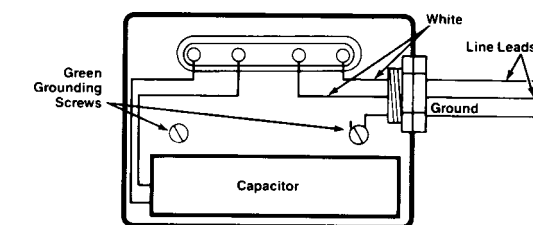
Warning:

The safe operation of this pump requires that it be grounded in accordance with the National Electrical Code and local governing codes or regulations. The ground wires should be copper conductor of at least the size of the circuit conductor supplying power to the pump. Minimum ground wire size is 14 AWG. Connect the ground wire to the grounding point in the terminal box and then to an acceptable ground. Do not ground to a gas supply line.

The proper operating voltage and other electrical information can be found on the nameplate attached to the top of the motor. Depending on pump model, the motor has either built-in, automatic resetting thermal protection or is impedance protected and in either case does not require additional external protection. The temperature of the windings will never exceed allowable limits, even if the rotor is locked.

Wire sizes should be based on the ampacity (current carrying properties of a conductor) as required by the latest edition of the National Electrical Code or local regulations. Both the power and grounding wires must be suitable for at least 194°F (90°C).

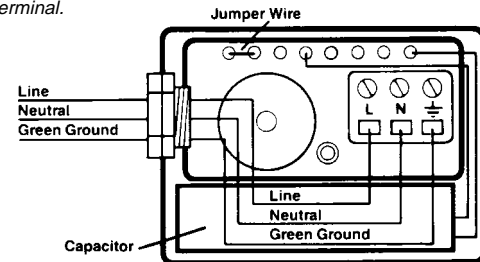
For all 115V and 230V models: Connect the white/yellow electrical leads from the circulator to the incoming power leads with wire nuts or other approved connectors. Attach incoming grounding wire to either of the green grounding screws.



Wiring diagram for all 115V and 230V models (except UPS15-42F).

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Wire the hot lead to terminal "L," neutral wire to terminal "N," and ground to the grounding terminal. For 230 volt pumps, the two hot leads should be to "L" and "N" and the ground to the grounding terminal.



Wiring diagram for UPS15-42F model multi-speed pumps.

Start-Up

Do not use the pump to vent the system. Do not start the pump before filling the system. Never operate the pump dry.

The pump should be manually vented as follows to prevent the possibility of any bearing damage at start-up. The pump will continue to automatically vent air once manually vented.

1. Once the system has been filled and vented, open the isolation valves and slowly remove the indicator plug in the middle of the nameplate.
2. Allow the air to purge from the pump until water appears. While air is venting, gently turn shaft and move it in and out, with a small flat blade screwdriver. Protect the terminal box from getting wet. After air has been vented, install and retighten the plug. The pump can now be started.

Operation

GRUNDFOS domestic circulating pumps, installed properly and sized for correct performance, will operate quietly and efficiently and provide years of service.

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Under no circumstances should the pump be operated without water circulation or without the minimum required inlet pressure for prolonged periods of time. This could result in motor and pump damage.

UPS model pumps are multispeed, and the speed can be changed by a speed selector switch located on the front of the terminal box. UP models are single speed.

7. Failure to Operate

When the pump is first started, the shaft may rotate slowly until water has fully penetrated the bearings. If the pump does not run, the shaft can be rotated manually. To accomplish this, switch off the electrical supply, and close the isolation valves on each side of the pump. Remove the indicator plug in the middle of the nameplate. Insert a small flat blade screwdriver into the end of the shaft, and gently turn until the shaft moves freely (see Figure 7). Replace and tighten the plug. Open the isolation valves and wait 2 to 3 minutes for the system pressure to equalize before starting the pump.

NOTE: After a long shut down multi-speed pumps should be started on speed 3 and then adjusted to the regular setting. The UPS 15-42 has automatic function to assist in restart.



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8. Limited Warranty

Products manufactured by GRUNDFOS PUMPS CORPORATION (GRUNDFOS) are warranted to the original user only to be free of defects in material and workmanship for a period of 18 months from date of installation, but not more than 24 months from date of manufacture. GRUNDFOS' liability under this warranty shall be limited to repairing or replacing at GRUNDFOS' option, without charge, F.O.B. GRUNDFOS' factory or authorized service station, any product of GRUNDFOS manufacture. GRUNDFOS will not be liable for any costs of removal, installation, transportation, or any other charges which may arise in connection with a warranty claim. Products which are sold but not manufactured by GRUNDFOS are subject to the warranty provided by the manufacturer of said products and not by GRUNDFOS' warranty. GRUNDFOS will not be liable for damage or wear to products caused by abnormal operating conditions, accident, abuse, misuse, unauthorized alteration or repair, or if the product was not installed in accordance with GRUNDFOS' printed installation and operation instructions.

To obtain service under this warranty, the defective product must be returned to the distributor or dealer of GRUNDFOS products from which it was purchased together with proof of purchase and installation date, failure date, and supporting installation data. Unless otherwise provided, the distributor or dealer will contact the GRUNDFOS factory or authorized service station for instructions. Any defective product to be returned to the factory or service station must be sent freight prepaid; documentation supporting the warranty claim and/or a Return Authorization must be included if so instructed.

GRUNDFOS WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSSES, OR EXPENSES ARISING FROM INSTALLATION, USE, OR ANY OTHER CAUSES. THERE ARE NO EXPRESS OR IMPLIED WARRANTIES, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH EXTEND BEYOND THOSE WARRANTIES DESCRIBED OR REFERRED TO ABOVE.

Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages and some jurisdictions do not allow limitations on how long implied warranties may last. Therefore, the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from jurisdiction to jurisdiction.

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L-UP-TL-006 Rev. 7/98
PRINTED IN USA

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