

## 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.**

## 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 UP(S)15, 26, 43 and 50 series pumps are generally designed to circulate water from 32 deg F to 230 deg F up to a maximum pressure of 150 psi. **Some models have temperature limitations which are shown in Table 2A below.** 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:** Model UP(S)15, 26, 43 and 50 series pumps with cast iron pump housings are designed to pump water compatible with their cast iron construction. They are recommended for use in closed hydronic systems. (i.e. airless, non-potable water).

**Open Systems:** Model UP(S)15, 26, 43 and 50 series pumps with stainless steel or bronze pump housings are designed to pump water compatible with their construction and 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.

Table 2A – Maximum Water Temperature					
Ambient (°F)	104	120	140	160	175
Water All UP* (°F)	230	220	210	190	175
*Exceptions below:					
UPS15-35	165	140	-	-	-
UP15-100F (°F)	205	195	185	175	-
UP26-120U (°F)	205	195	185	175	-
UP26-116 (°F)	150	140	-	-	-

### 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.

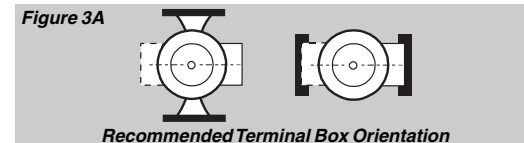
Table 2B - Minimum Required Inlet Pressure			
Fluid Temp	230° (110°C)	190° (88°C)	140° (60°C)
Feet of Water	36 ft. (1.10m)	9 ft (2.8m)	3 ft (0.9m)
Inlet Pressure	15.6 psi	4.0 psi	1.3 psi

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.).

## 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 impeller turns freely. If the impeller does not turn easily, repeat the disassembly/reassembly process.

### 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.**

#### CHECK VALVE REMOVAL:

1. Use needle nose pliers to remove check valve from pump housing.
2. Check to make sure no part of the valve remains in the pump housing.
3. Apply enclosed round "Check Valve Removed" label over the Check mark symbol located on the name plate of the pump.

## Electrical

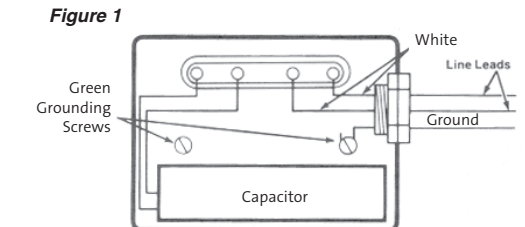
All electrical work should be performed by a qualified electrician in accordance with the latest edition of the National Electrical Code, local codes and regulations.

**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/white 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 single speed pumps.

## Maintenance-Free Circulators

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.

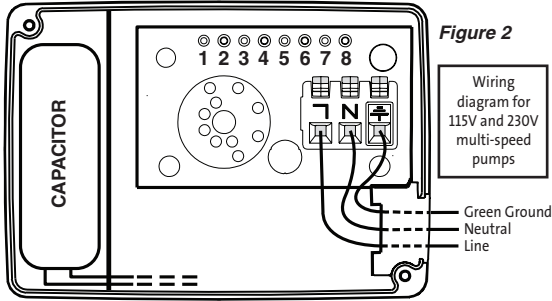


Figure 2

Wiring diagram for 115V and 230V multi-speed pumps

Green Ground  
Neutral  
Line

\*UP(S) 15 capacitor wire position 4 & 8 \*UP(S) 26/43/50 capacitor wire position 2 & 4

## 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.**

## Operation

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

## Failure to Operate

When UPS 15-42 and UPS 26/43 pumps are 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. 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.

**\*IMPORTANT NOTE\***: For figure 1, the cap plug has not been installed. This pump is supplied with two wiring ports. To ensure safe operation of your installation, the enclosed cap plug **MUST** be inserted into the unused port.

## Maintenance-Free Circulators

## Limited Warranty

UPS15, 26, 43 circulator pumps 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 36 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 UPS15, 26, 43 or UP15-42F circulator pump. 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.

All other UP and UPS small circulators 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 24 months from date of installation, but not more than 30 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.

BE > THINK > INNOVATE >

GRUNDFOS INSTRUCTIONS  
Installation and Operation

## Maintenance-Free Circulators

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