

# Installation Instructions **BRUTEII**

*Model UP15-42F  
Maintenance-Free  
Circulators*



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# 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.

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## 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 UP15-42F pumps have cast iron volutes and are recommended for closed hydronic systems (i.e.; airless, non-potable water). They 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 the higher viscosity of the solution as compared to water. Check with the manufacturer for information regarding the suitability of pumping other fluids.

### 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 (°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.

**Table 2B – Inlet Pressure Requirements**

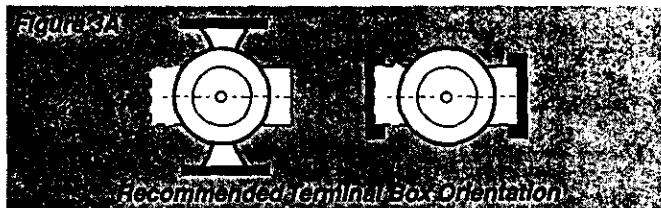
Water (°F)	190	165	140
Required Inlet Pressure (ft.)	5	4.5	3
(psi)	2.2	1.9	1.3

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

## 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 (4mm) 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.

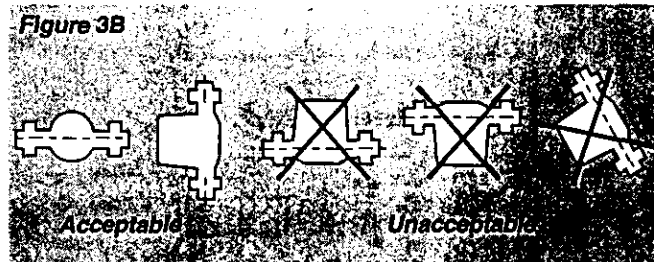
### Installation Requirements

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. Install a safety relief valve to protect against temperature and pressure build-up.
6. If there are excessive suspended particles in the water, it is recommended that a strainer and/or filter be installed on the inlet side of the pump and cleaned regularly.

### **Pump Mounting: For Indoor Use**

Arrows on the side of the pump volute 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 recommended that isolation valves be installed on each side of the pump. If possible, do not install elbows, branch tees, or other flow-changing fittings just before or after the pump. Provide support to the pump or adjacent plumbing to reduce thermal and mechanical stress on 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.***

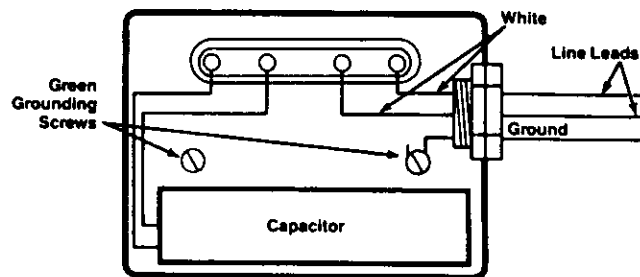
#### **Warning:**

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. The motor is impedance protected and does not require additional external protection. The temperature of the windings will never exceed allowable limits, even if the rotor is locked.

Wire size 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).

*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 UP15-42F series pumps**

### **Start-Up**

***Do not start the pump until the system has been filled.***  
Completely vent the system prior to starting the pump.  
Never operate the pump dry.

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## **4. Operation**

GRUNDFOS domestic circulator 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.

## 5. Limited Warranty

UP15-42F ("BRUTE II") 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 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. 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 operating 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.

# GRUNDFOS



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