

UP(S) 15 circulators

With line cord and optional timer control

Installation and operating instructions



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GRUNDFOS 

English (US) Installation and operating instructions

Original installation and operating instructions.

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Warning

Prior to installation, read these installation and operating instructions. Installation and operation must comply with national, state, and local regulations and accepted codes of good practice.



Warning

The use of this product requires experience with and knowledge of the product. Persons with reduced physical, sensory or mental capabilities must not use this product, unless they are under supervision or have been instructed in the use of the product by a person responsible for their safety. Children must not use or play with this product.



1. 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 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.

2. Symbols used in this document



Warning

If these safety instructions are not observed, it may result in personal injury.



Warning

If these instructions are not observed, it may lead to electric shock with consequent risk of serious personal injury or death.



If these safety instructions are not observed, it may result in malfunction or damage to the equipment.



Notes or instructions that make the job easier and ensure safe operation.

3. Product introduction

3.1 Introduction

Grundfos pumps are carefully inspected and tested before shipment. This pump should provide long, efficient, trouble-free performance. To ensure maximum performance and reliability, please follow the simple instructions in this manual.

3.2 Delivery and handling

3.2.1 Shipment inspection

Examine the components carefully to make sure no damage has occurred to the pump during shipment.



Do not drop or mishandle the pump; dropping will damage the pump.

Shipping carton contents should include the following:

- one Grundfos pump
- two gaskets
- one installation and operating instructions.

3.3 Identification

3.3.1 Nameplate

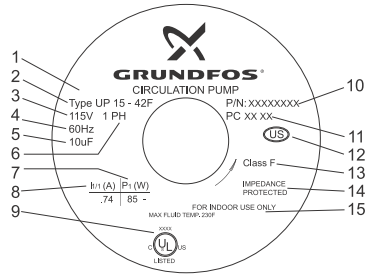


Fig. 1 Nameplate

Pos.	Description
1	Circulator
2	Pump type
3	Voltage
4	Frequency
5	Capacitor
6	Single-phase
7	Power
8	Current
9	Approval
10	Product number
11	Production code (year, week)
12	Country of origin
13	Insulation class
14	Impedance-protected
15	Maximum liquid temperature

3.4 Applications

This Grundfos UP(S) 15 pump is designed for domestic hot water recirculation.

3.5 Pumped liquids

Warning



The pump must not be used for the transfer of flammable liquids such as diesel oil, gasoline, and similar liquids.

Pump not for pool or marine use.

This Grundfos pump is intended for pumping clean, thin, non-aggressive and non-explosive liquids, not containing solid particles, fibers or mineral oils.

If required, a 50 % by volume solution of propylene glycol and water can be used; however, a psi decrease in pump performance may result due to an increase in the viscosity of the solution. Check with manufacturer for information regarding suitability of the pump for pumping other liquids.

UP(S) Series 15 pumps are designed to circulate water from 36 to 230 °F (2 to 110 °C)* up to a maximum pressure of 145 psi (10 bar).

* Exceptions:

- Grundfos UPS 15-35, from 36 to 165 °F (2 to 73 °C).
- Grundfos UP(S) 15 pump with timer, maximum water temperature 150 °F (65 °C).

4. Operating conditions

Grundfos UP(S) Series 15 pumps are designed for indoor use only.

Grundfos UP(S)15 series pumps with stainless steel or bronze volutes can be used in both open and closed systems.

4.1 Temperatures

4.1.1 Maximum water temperature

For UP(S) Series 15 pump with line cord only

The maximum allowable water temperature is determined by the ambient or surrounding air temperature as shown in this table:

	Temperature [°F (°C)]				
Ambient air	95 (35)	130 (54)	140 (60)	160 (71)	175 (79)
Water (max.)	230 (110)	220 (104)	210 (98)	190 (87)	175 (79)

Although the pump is designed to operate at maximum water temperature of 230 °F (110 °C), we recommend to keep the operating temperature as low as possible (i.e. below 140 °F (60 °C) to avoid precipitation of calcium.

See exceptions in section [3.5 Pumped liquids](#).

4.2 Inlet pressure requirements

The pressure required at the inlet of the pump is a function of the temperature of the water as shown in this table:

Water temp. [°F (°C)]		190 (87)	165 (73)	140 (60)
Required inlet pressure	[ft (m)]	5.0 (1.5)	4.5 (1.4)	3.0 (0.9)
	[psi (bar)]	2.2 (0.15)	1.9 (0.13)	1.3 (0.09)

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

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

5. Installation

Warning



Do not energize pump until it is properly installed.

Risk of electric shock — do not use this pump in swimming pool or marine areas.

Caution

Do not start the pump until the system has been filled and checked for leaks or other possible component failure.

When making piping connections, be sure to follow pipe manufacturer's recommendations and all code requirements for pipe material.

5.1 Mechanical installation

5.1.1 Pump mounting

Arrows on the side or bottom of the pump housing 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 fig. 2.

We recommend that isolating valves be installed on either 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 pipework to reduce thermal and mechanical stress on the pump.



Fig. 2 Acceptable pump mounting positions

5.1.2 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. If there are suspended particles in the water, we recommend that a strainer and/or filter be installed and cleaned regularly.
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 section [4.2 Inlet pressure requirements](#) is fulfilled.
6. Closed system: Install a safety relief valve to protect against temperature and pressure build-up.

5.1.3 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 pointing down. See [fig 3](#).

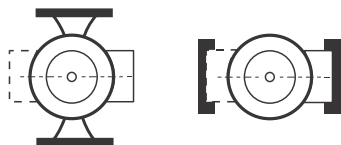


Fig. 3 Recommended terminal box orientation

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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 line cord is unplugged and close the isolating valves before removing the hex socket head screws.

To change the terminal box position:

1. Remove the four (4) hex socket head screws from the pump housing and stator (4 or 5 mm wrench) while supporting the stator (motor).
2. Carefully separate the stator from the pump housing and rotate it to the correct terminal box orientation and refit it.
3. Replace the hex socket head 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. See [fig. 7](#).

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

Note *UPS 15-42 does not require manual turning of shaft.*

5.2 Electrical installation



Warning

Do not energize pump until it is properly installed.

Warning

Risk of electric shock!

This pump is supplied with a grounding conductor. To reduce the risk of electric shock, be certain that it is connected only to a properly grounded grounding receptacle. The safe operation of this pump requires that it be grounded in accordance with the National Electrical Code and local governing codes and regulations.



5.2.1 Electrical requirements

The operating voltage and other electrical data are marked on the nameplate. Make sure that the motor is suitable for the electrical supply on which it will be used.

5.2.2 Electrical connection

Insert the 115 V plug of the line cord from the pump into a properly grounded 115 V outlet.

6. Timer

6.1 Timer technical data

Timer	
Supply voltage	115-120 VAC, 60 Hz
Contact rating	16 amps
Ambient temp.	-4 to +175 °F (-20 to +79 °C)
Max. liquid temp.	150 °F (65 °C)
Switching intervals	15 minutes
Switch modes	"Timer" "On" override "Off" override
Protection	Clear plastic cover for dust and moisture protection of the clock face

6.2 Timer technical description

The Grundfos timer is designed only for use with specified Grundfos Series UP circulators installed in indoor hot-water service systems.

The timer is designed to turn the circulator on and off at preset times, allowing the user to select operation of the circulator during high-use periods of the day.

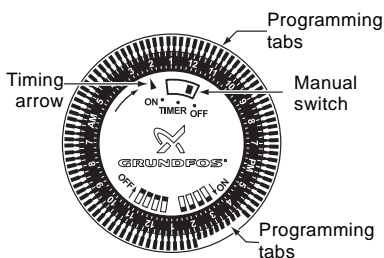


Fig. 4 Timer

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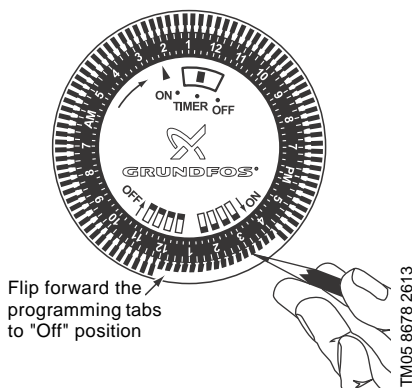
6.3 Timer operation

6.3.1 Setting and operating the timer and starting the pump

Caution

Before the circulator is started, the system must be filled with liquid and vented.

1. Set the timer switch to the actual time by turning the programming ring in the direction of the arrow until the timing arrow points to the actual time on the ring.
2. Switch on the power supply to the circulator and set the manual switch to the "On" position. The circulator will now start.
3. Set the required "On"/"Off" times on the programming ring by pushing the programming tabs either away from or toward the center of the ring. Tabs pushed away from the center indicate that the circulator is switched "On", while tabs pushed toward the center indicate that the circulator is switched "Off".



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Fig. 5 Timer programming tabs

4. Set the manual switch to the "Timer" position. The circulator will now start/stop according to the settings of the programming tabs.
5. For continuous operation, set the manual switch to the "On" position. To switch the circulator off, set the manual switch to the "Off" position. The "On"/"Off" modes may be used without affecting the function of either the programming ring or the timer switch.
6. In case of power outage, the timer will not keep time. After power has been restored, the correct time of day must be reset by rotating the programming ring in the direction of the arrow until the timing arrow points to the actual time on the ring.

7. Changing pump speed

1. Disconnect line cord from power supply.
2. Remove the two screws in the timer cover.
3. Gently push aside the timer, revealing the speed switch.
4. Gently rotate speed selector to desired speed. See fig. 6.
5. Re-fit the two screws in the timer cover.

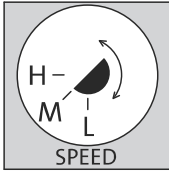


Fig. 6 Changing the speed

8. Fault finding

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:

1. Switch off the power supply.
2. Close the isolating valves on either side of the pump.
3. Remove the large screw in the middle of the nameplate.
4. Insert a small flat-blade screwdriver into the end of the shaft, and gently turn until the shaft moves freely. See fig. 7.
5. Replace and tighten the large screw.

Open the isolating valves and wait 2 to 3 minutes for the system pressure to equalize before starting the pump.

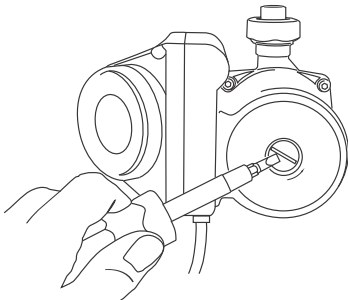


Fig. 7 Rotating the shaft by hand

9. Approvals



10. Disposal

This product or parts of it must be disposed of in an environmentally sound way:

1. Use the public or private waste collection service.
2. If this is not possible, contact the nearest Grundfos company or service workshop.

Subject to alterations.

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