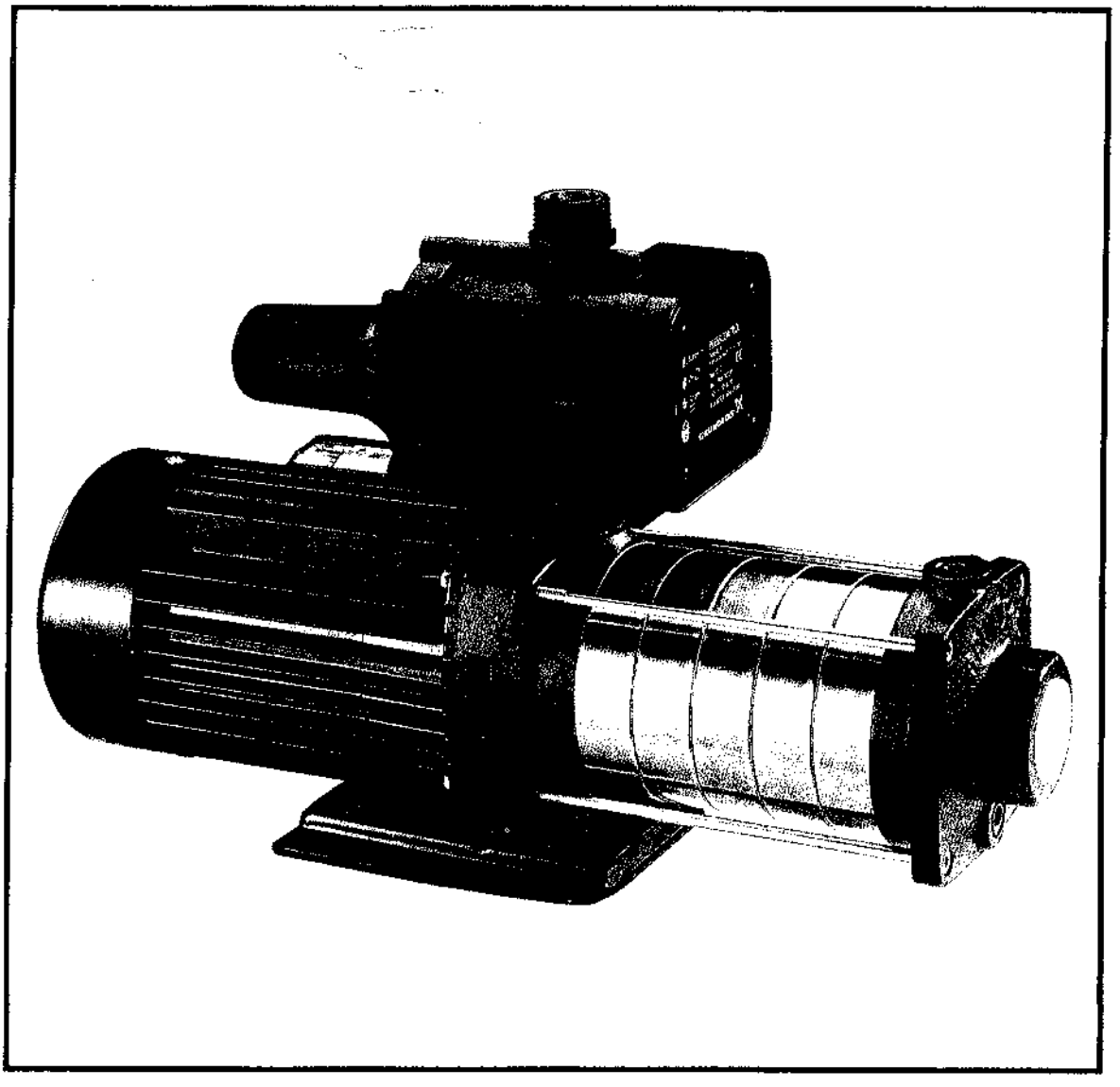
PSP

GRUNDFOS®

WATER PRESSURE SYSTEMS



INSTALLATION AND OPERATING INSTRUCTIONS

INSTALLATION INSTRUCTIONS

The GRUNDFOS JP-PC and CH-PC range of automatic water systems incorporate Presscontrol which has been designed for the control of domestic water systems.

The control automatically starts the pump when a tap is turned on and provides a constant flow from maximum pump capacity down to a minimum flow rate of 0.6 litres per minute.

This method of control eliminates short cycling (high frequency stops and starts) and simultaneously overcomes the problem of fluctuating shower temperatures.

INSTALLATION

To obtain optimum performance and service life from your GRUNDFOS system, the following points should be observed.

a. The pump should be located as close as possible to the water supply.

b. If externally located, the system should be housed in a weatherproof enclosure suitably ventilated to provide effective motor cooling.

c. If the column of water between the pump and the highest tap exceeds 15 metres, the unit cannot be installed directly on the pump, but it has to be raised until 15 metres or less is achieved.

d. It is imperative to install the unit with arrows marked on the body suction and delivery ports are in a upward position.

PRIMING

Before starting the pump ensure it has been filled with water, and the system vented of air.

APPLICATION 1 — FLOODED SUCTION INSTALLATION

ie: Ground level or overhead storage tank, where the pump is installed below the water level in the supply tank.

Operating under these conditions, the pumps do not require the installation of a check or non-return valve in the suction line.

APPLICATION 2 — NEGATIVE SUCTION INSTALLATION

ie: Underground tank, well, dam or stream where the water level is below the pump location.

It should be noted that not all pumps are self priming, therefore, to be successfully installed on a negative suction, careful design and installation of the suction line is essential.

We strongly suggest that you discuss installation with your GRUNDFOS Dealer before attempting to install your GRUNDFOS system.

The following general rules relating to suction line design should always be observed.

a. Locate pump as close to water supply as possible with the least vertical suction lift.

b. High spots in the suction line should be avoided as they can cause air locks and make priming difficult.

c. Install a large diameter suction pipe to reduce friction loss to a minimum. The following can be used as a guide:–

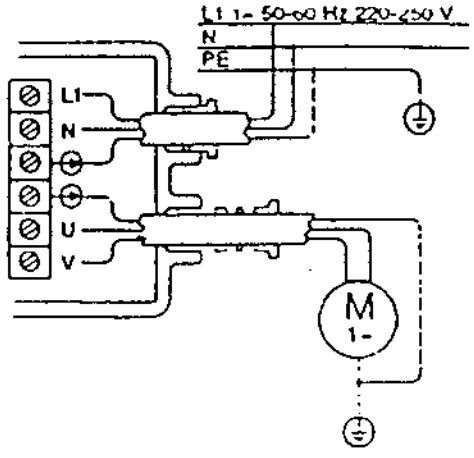
Suction Pipe Length	**Recommended Size**
Up to 4 metres	32 mm
5 to 9 metres	40 mm
10 to 30 metres	50 mm

d. Fit a GRUNDFOS footvalve and strainer on the end of the suction line.

ELECTRICAL CONNECTIONS

The electrical connections should be carried out by an Authorised Electrician in accordance with local regulations.

Figure 1

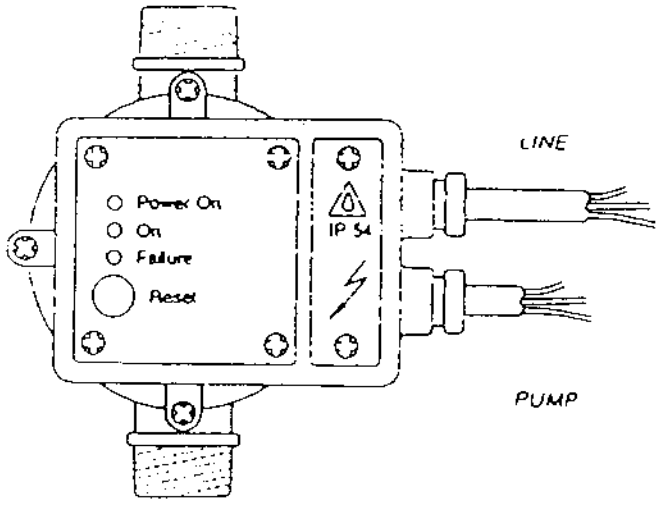


On the terminal box cover of the Presscontrol, a drawing shows how to make connections correctly. Wiring diagram is for single phase 220 volt to 250 volt pumps and up to 1.1 kW (1.5 HP) single phase. (Fig. 1)

Above 1.1 kW (1.5 HP) 220 volt to 250 volt single phase, and all 380 volt to 415 volt three phase motors, should be wired through a contactor. Refer to your GRUNDFOS Dealer if in doubt.

The cable used should have 6 mm minimum and 9 mm maximum outside diameter. In order to guarantee the water tight enclosure of the box, the six screws on the box must be tightly screwed.

Figure 2



Starting

When the unit is connected to the electrical network, the green L.E.D. **POWER ON** lights up and the yellow L.E.D. **ON** (Pump In Operation) indicates that the pump has been started. (Fig. 2)

The pump continued to operate for a few seconds enabling the system to fill in the pipes and to reach the required pressure.

If this lapse is insufficient, the red L.E.D. **FAILURE** lights up. In this event, keep the **RESET** button pressed and wait, with a tap opened, until the red L.E.D. is off.

Once the button is released and the tap is closed, the unit stops the pump at its maximum pressure.

Functioning

With the starting operation achieved, the unit is programmed to perform all the pump control operations automatically.

When particular operational breakdowns occur, such as water failure, obstruction of the suction pipe, the unit recognises the breakdown and the red L.E.D. **FAILURE** lights up; at the same time, a stop signal is sent to the pump to prevent damages caused by its working in the absence of water.

Rectification of the failure that has caused the stoppage, allows the system to be restarted by pressing the **RESET** button.

PRESS CONTROL SPECIFICATION	
Input Voltage	220–250 V
Frequency	50–60 Hz
Current rating	10 A
Enclosure rating	IP 54
Maximum Working Pressure	1000 kPa (145 psi)
Maximum Temperature	60°C
Connections	1" male

PUMP SPECIFICATION

Input Voltage	220–240
Frequency	50 Hz
Amperage	Refer to Motor Label
Protection Rating	IP44
Maximum Operating Pressure	600 kPa (85 psi)
CH Liquid Temperature Range	0–90 Degrees Celsius
JP Liquid Temperature Range	0–40 Degrees Celsius

FAULT	CAUSE
i. Pump does not start	a. The electronic card is broken. b. Voltage failure. c. Pump jammed.
ii. Pump does not stop	a. The electronic card is broken. b. The flow detector is blocked in upper position. c. The reset button is jammed. d. Presence of leaks which are higher than minimum flow.
iii. Intermittent flow	a. The electronic card is broken. b. Presence of leaks which are lower than the minimum flow 0.6 litres/minute.
iv. The pump is jammed	a. Stones and debris blocked in suction of pump.

GB

CONTENTS

Before the unit is installed, these installation and operating instructions must be studied carefully. The installation and operation should also be in accordance with local regulations and accepted codes of good practice.

These instructions apply to the units:

- PRESSCONTROL®, types PC 15 and 22
- ECOPRESS®, types EC 15 and 22
- MASCONTROL®, types MC 15 and 22.

1. Applications

The units, which incorporate dry-running protection, are intended for mounting on Grundfos pumps.

They are used for automatic operation of pumps in small water supply systems in single-family houses and blocks of flats, for garden watering, etc.

2. Control panels

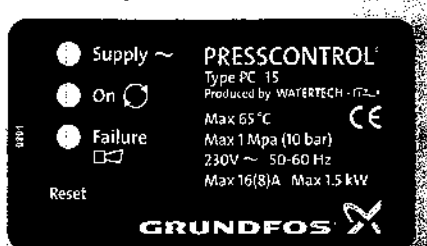


Fig. 1 PRESSCONTROL®, type PC

Fig. 2 ECOPRESS®, type EC

Fig. 3 MASCONTROL®, type MC

Function of indicator lights and button	
Green indicator light: Supply/Power on	is on when the electricity supply is switched on.
Yellow indicator light: On/Pump on	is on when the pump is running.
Red indicator light: Failure	is on in case of operation failure. See section *9. Fault finding chart*. **Note:** PC and MC only.
Reset: Reset/Restart	resets fault indications.

3. Installation

Install the unit on the discharge side of the pump, see fig. A.

When pumping from a well, borehole, etc., a non-return valve must always be fitted to the suction pipe of the pump.

It is recommended to connect the pump/unit to the piping system by means of unions.

The installation location must be clean and well ventilated.

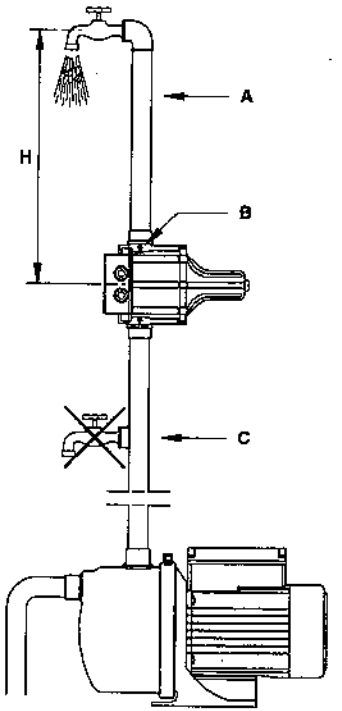


Fig. 4 Installation example

Type	H max.
PC 15 PC 22	15 m 22 m
EC 15 EC 22	8 m 10 m
MC 15 MC 22	15 m 22 m

The unit can be fitted directly to the discharge port of the pump or between the pump and the first draw-off point.

A It is recommended to install the unit so that the distance of height between the unit and the highest draw-off point does not exceed the values stated.

B The arrows on the unit indicate the flow direction. Always install the unit with the arrows pointing upwards.

C Do not install draw-off points between the pump and the unit.

4. Electrical connection

The electrical connections and protection must be carried out in accordance with local regulations.

Never make any connections in the terminal box of the unit unless the electricity supply has been switched off.

The unit must be connected to an external mains switch with a minimum contact gap of 3 mm in all poles.

Carry out the electrical connection as shown in fig. B, page 58.

Note: If the unit is incorporated in a system connected to an electricity supply system, which is/can be separated from the public supply, e.g. generator operation, the unit should be protected against overvoltage.

5. Start-up

See also figs. C and D, page 58.

Step	Action
1	Switch on the electricity supply. The green and yellow indicator lights illuminate.
2	The pump runs for a few seconds until there is pressure on the system. The pump stops and the yellow indicator light goes out. The system is ready for operation. **Note:** If there is no pressure on the system, • PC/MC: the red indicator light illuminates. Go to point 3. • EC: go to point 3.
3	Open a tap and press Reset/Restart • PC/MC: until the red indicator light goes out. • EC: until the water starts flowing.
4	Close the tap. The pump stops.
5	The green indicator light illuminates. The yellow indicator light goes out. The unit is ready for operation.

GB

GB

6. Operation

6.1 Normal operation

Step	Action
1	Open a tap.
2	The unit starts the pump. The pump runs as long as water is consumed.
3	Close the tap.
4	The unit stops the pump at maximum pump pressure.
5	The unit is ready for operation.

In case of minor system leakages, the pump starts.

Note: In case of a supply failure, the pump restarts automatically when the supply has been restored.

6.2 Dry running

Step	Action
1	**Dry running!** The unit stops the pump after approx. 10 seconds. PC/MC: The red indicator light illuminates. EC: No indicator light.
2	**Water flow!** Press Reset/Restart.
3	The unit is ready for operation.

6.3 Frost protection

If the unit is not being used during periods of frost, the unit and the pipework must be drained.

The unit has no drain hole and has to be removed for drainage.

7. Disposal

Disposal of this product or parts of it must be carried out according to the following guidelines:

1. Use the local public or private waste collection service.
2. In case such waste collection service does not exist or cannot handle the materials used in the product, please deliver the product or any hazardous materials from it to your nearest Grundfos company or service workshop.

8. Technical data

Data	EC	PC	MC
Supply voltage		1 x 230 V ±10%, 50/60 Hz	
Ambient temperature	+65°C	+65°C	+65°C
Maximum liquid temperature	+60°C	+65°C	+65°C
Cut-in pressure*	EC 15: 1.5 bar EC 22: 2.2 bar	PC 15: 1.5 bar PC 22: 2.2 bar	MC 15: 1.5 bar MC 22: 2.2 bar
Maximum system pressure	1 MPa (10 bar)	1 MPa (10 bar)	1 MPa (10 bar)
Contact load	6 A	8 A	16 A
Enclosure class	IP 65	IP 65	IP 65
Dimensions		See fig. A, page 57	

* The technical data may be limited by the pump data. See installation and operating instructions for the pump.

9. Fault finding chart

Before starting work on the pump/unit, make sure that the electricity supply has been switched off and that it cannot be accidentally switched on.

Fault	Cause	Remedy
1. The pump does not start.	a) The fuses in the electric installation are blown.	Replace the fuses. If the new ones blow too, the electric installation should be checked.
	b) The ELCB or the voltage-operated ELCB has tripped out.	Cut in the circuit breaker.
	c) No electricity supply.	Contact the electricity supply authorities.
	d) The motor protection has cut off the electricity supply due to overload.	Check whether the motor/pump is blocked.
	e) The pump is defective.	Repair or replace the pump.
2. The green indicator light is on, but the pump does not start when water is consumed.	a) Too high system pressure.	Reduce the pressure.
	b) Too big distance of height between the unit and the draw-off point.	Adapt the installation.
3. Frequent starts and stops.	a) Leakage in the pipework.	Check and repair the pipework.
	b) Non-return valve or foot valve leaking.	Replace the non-return valve or foot valve.
4. The pump does not stop.	a) The pump is not capable of delivering the required discharge pressure.	Replace the pump.
	b) The unit is defective.	Replace the unit.
5. The red indicator light is on.	a) No water available at the pump suction port.	Check the pipework.
	b) The pump starts to self-prime (jet pumps only).	See section *5. Start-up.*
	c) The pump or unit is defective.	Replace the pump or unit.

Subject to alterations.