

# BRITTHERM<sup>®</sup>

## BRITTHERM CIRCULATOR PUMPS

### S4 series

(stainless steel volute pumps with 9 control programs)



636199

INSTALLATION AND  
OPERATION MANUAL

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## WARNING SIGNS



General safety warning



Shock hazard



Injury hazard



Thermal hazard (burns)



General warnings or recommendations



### PLEASE READ DETAILED INSTRUCTIONS.

Only qualified and licensed engineers should install the pump. If you do not have an engineer to install and operate the pump, we strongly recommend contacting the local engineer or visit us at [www.brittherm.co.uk](http://www.brittherm.co.uk) or call us on 0208 9044 832.

You should carefully read the instructions and specifications of the pump, purpose and recommendations for pump operation before changing the pump operation mode (speed). The best way is to contact the engineer who installed the pump for you and consult with him on the issues in which you are interested.

Once the installation has been completed and the pump has been commissioned, you have 30 calendar days to register your warranty at <https://www.brittherm.co.uk/guarantees> by scanning the QR code that you see on the pump nameplate. To complete the warranty registration, you will need the following information: pump model, invoice number, purchase/installation date, name and email address of the owner, and address where the pump is fitted. Please see the last page for the warranty information.



In case of any anomalies that you observed in the pump operation, you should contact the engineer who installed the pump for you and consult with him. Do not try to disassemble and troubleshoot the pump yourself. This can be a life-threatening activity.

## PRODUCT DESCRIPTION

The S4 Series Pump is a modern intelligent automatic pumps in stainless steel EN1.4521 type casing designed for pumping cold and hot drinking water that meet the most strict ErP regulations and with a minimum  $EEI \leq 0.17\sim 0.23$ .

These pumps have 9 built-in automatic modes, automatically adjust to the characteristics of any water pumping system for optimal comfort and minimum energy consumption.

### **It is suitable for:**

- Circulation of drinking cold and hot water
- Recirculation of drinking cold and hot water
- Cold and hot water supply

The pump design consists of a motor and a pump part. All components of the S4 Series Pumps that contact with drinking water comply with WRAS standards.

The electric glandless pump motor provides lubrication of bearings and cooling by the pumped fluid.

The power supply is performed by connecting the cable from the kit to the pump connector. It does not require the use of any tool.

The pump is mounted using coupling nuts.

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## PUMP OPERATION



Make sure that the system is filled and under the required pressure before turning on the pump. Pump operation without the pumped fluid can disable the pump. Warranties do not cover such breakdown.

Make sure that the pump is installed correctly, check the direction of the required fluid flow, check that there are no fluid leaks at the pump and pipe connections.

Check the correct connection of the electrical cable - phase, zero and ground.

Make sure that the valves upstream and downstream of the pump are open.

Energise the pump. The pump operation and rotor rotation direction should be checked using special tools - rotation indicators, which the engineer must have. The pump should run quietly. Bleed air as described above if extraneous noises appear.

The air outlet from the heating system should be through air vents at top points.



Pump operation characteristics in all modes are indicated in Appendix I thereto.

# PROGRAM CONTROL

## Everything under control

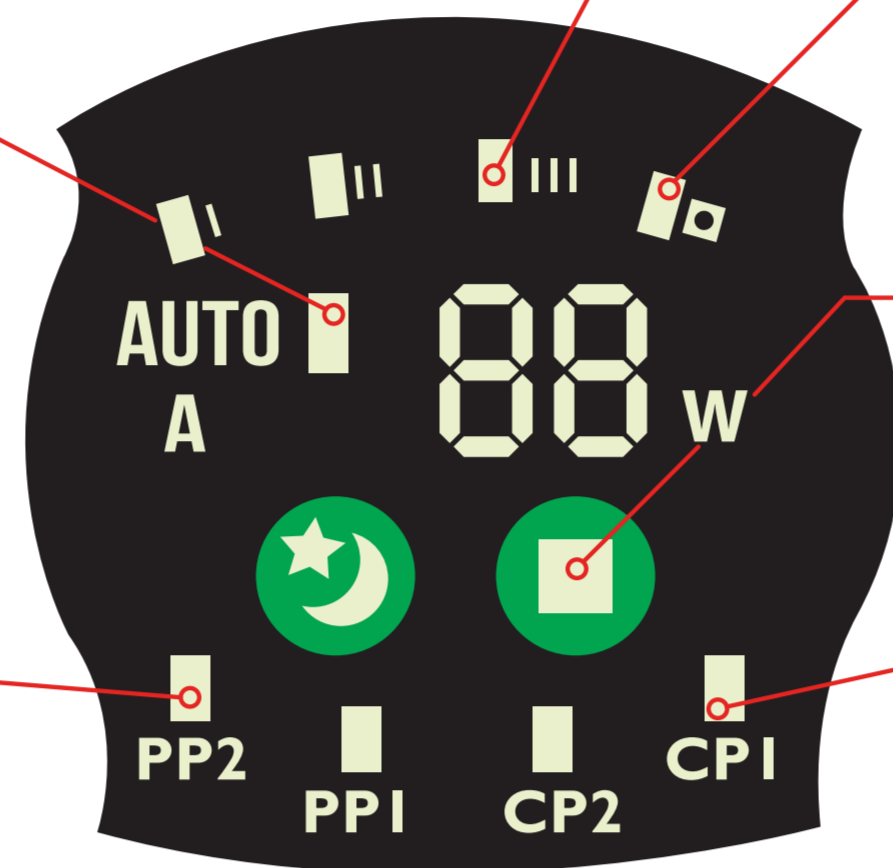
9-segment power display provides an easy overview of all that is going on in the pump.

## Autoadapt mode

- The factory setting, AUTO, analyzes the heating system and automatically adjusts the pump setting to meet the heating requirement. The result is optimum comfort and a minimum of energy consumption.
- AUTO can be used in 80% of the heating system.

## Proportional pressure mode

- If the proportional pressure mode is selected, the differential pressure varies proportionally with the flow, i.e. higher flow means higher differential pressure
- Proportional pressure is the preferred choice for one-string systems with high flow variation
- Proportional pressure curve (high and low).



## Constant speed mode

Three constant speed modes for constant flow applications.

## Night mode

The night mode reduces the power consumption to a minimum with power-saving features.

## Easy operation

Intuitive one-touch operation makes control mode selection simple.

## Constant pressure mode

The pump maintains constant pressure regardless of the flow.

- The preferred operation mode for under floor heating and 2 string systems with low flow variation
- Constant pressure curves (low and high).



## NIGHT MODE

Push the button to start the Night Mode.

Once the Night Mode is enabled, the pump would reduce its power consumption automatically.

After 2 hours the power would drop to its minimum level (5-10 Watts).

After 7 hours the pump would revert to its original setting automatically.

## PACKAGE

- Pump assembly - 1 piece;
- Set of coupling nuts with gaskets - 1 set;
- Thermal insulation foam jacket - 1 piece;
- Power cable, 1.3m long, with plug (UK) - 1 set;
- Installation and operation manual - 1 piece;
- Individual packaging - 1 piece.

Full specifications are given in Appendix I thereto.

## INSTALLATION

Figures of pumps are given for understanding the installation rules and may differ from the actual products.



Pumps should be installed by personnel who have a permit to work with electrical equipment, trained and have sufficient experience in operations with similar pumping equipment!

Check the completeness, absence of mechanical damage on the pump, nuts, electric cable and electric plug before installation.

The pump motor, during installation, should always be placed parallel to the horizontal surface relative to the floor in the room.

The correct layout of the pump is shown in Fig. 2 and 3.

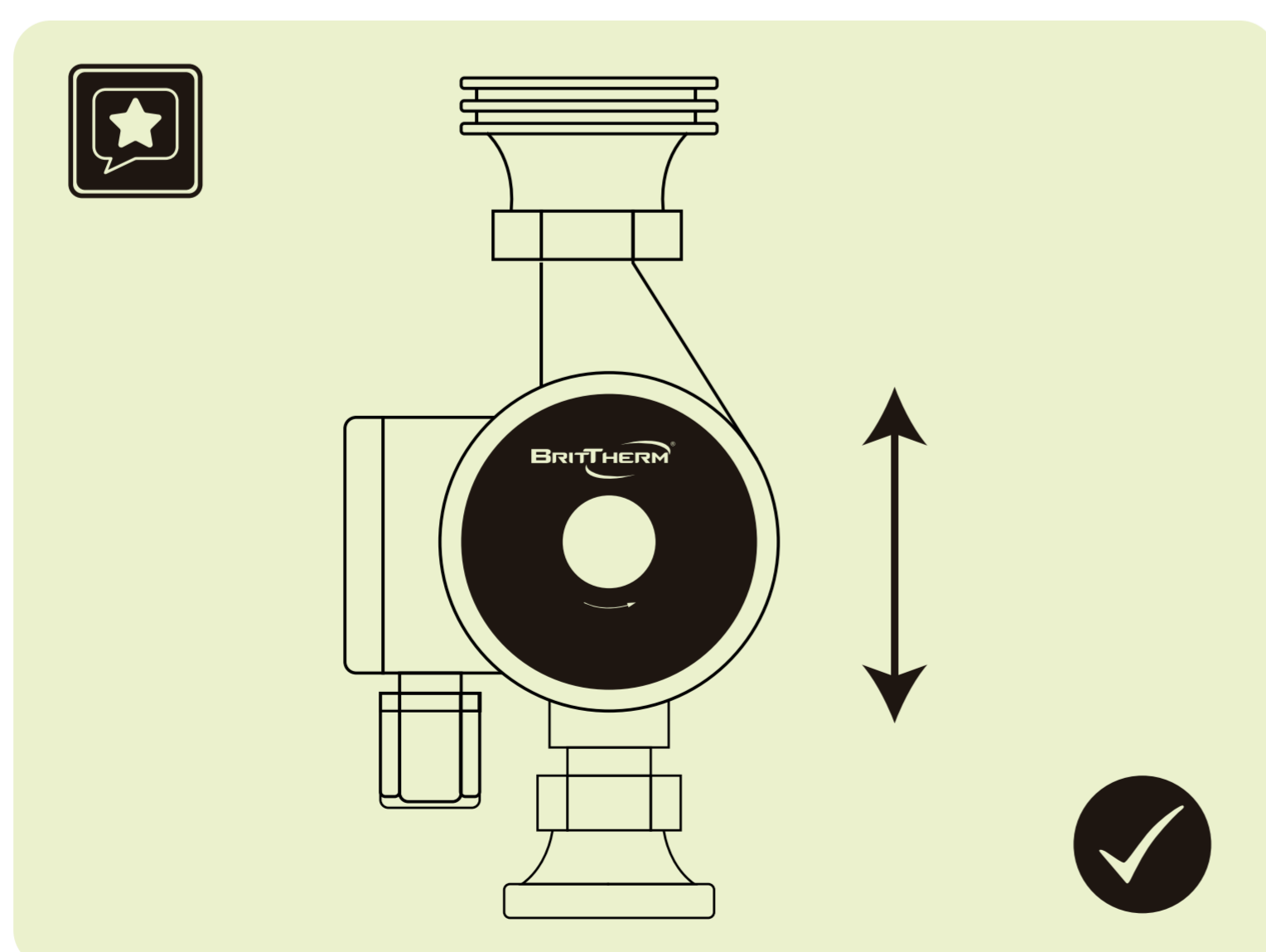


Fig. 2

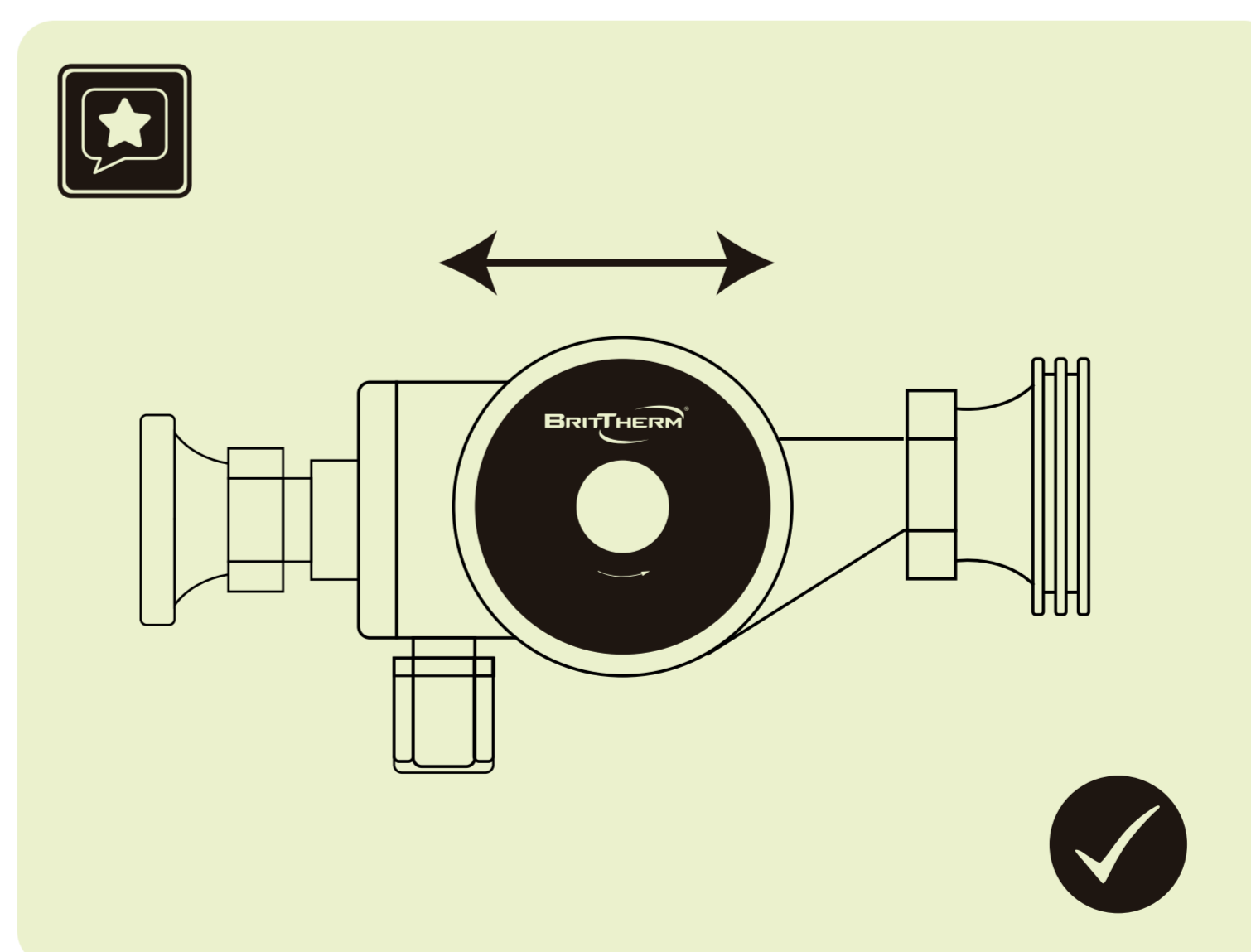


Fig. 3

Incorrect layout of the pump is shown in Fig. 4 and 5.

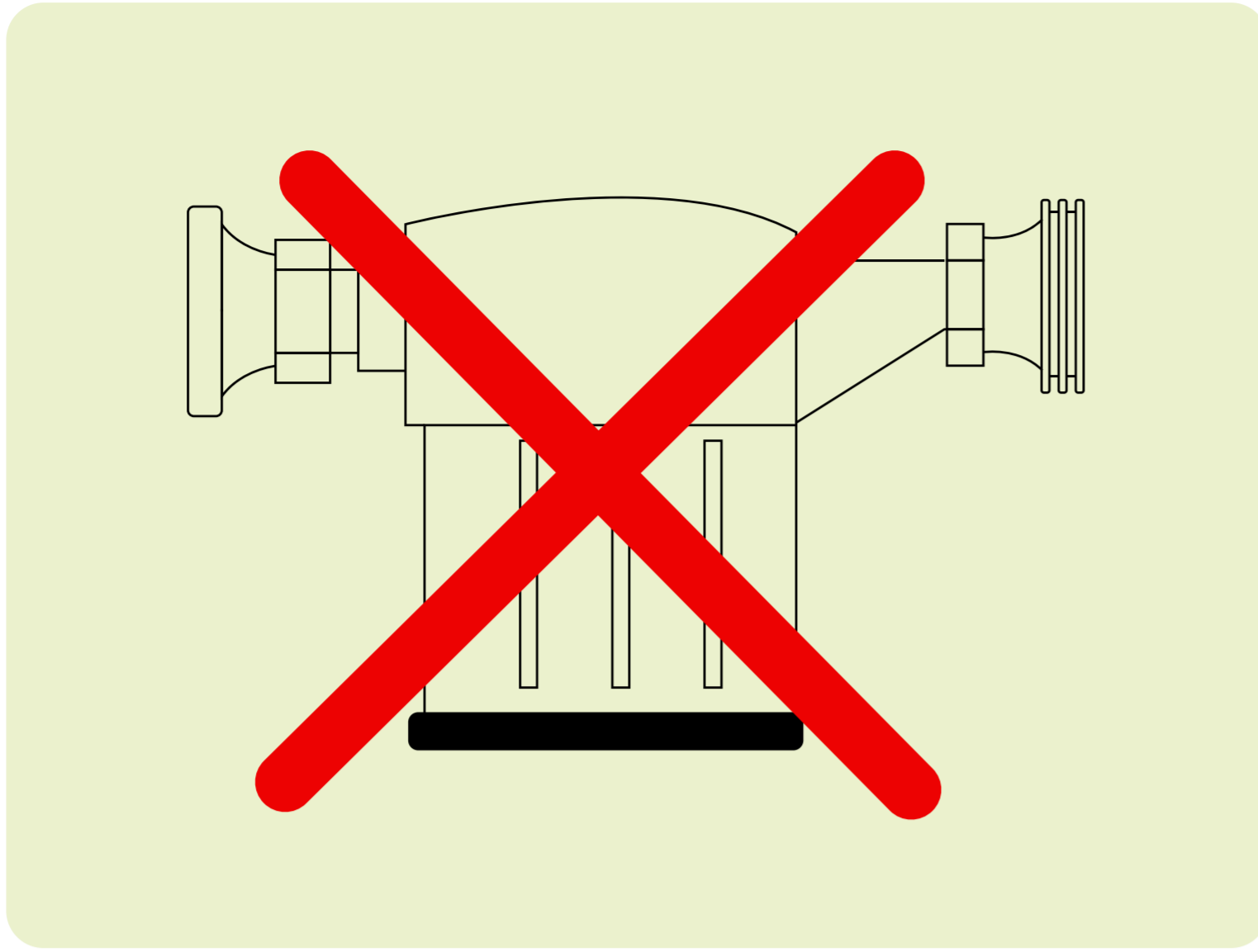


Fig. 4

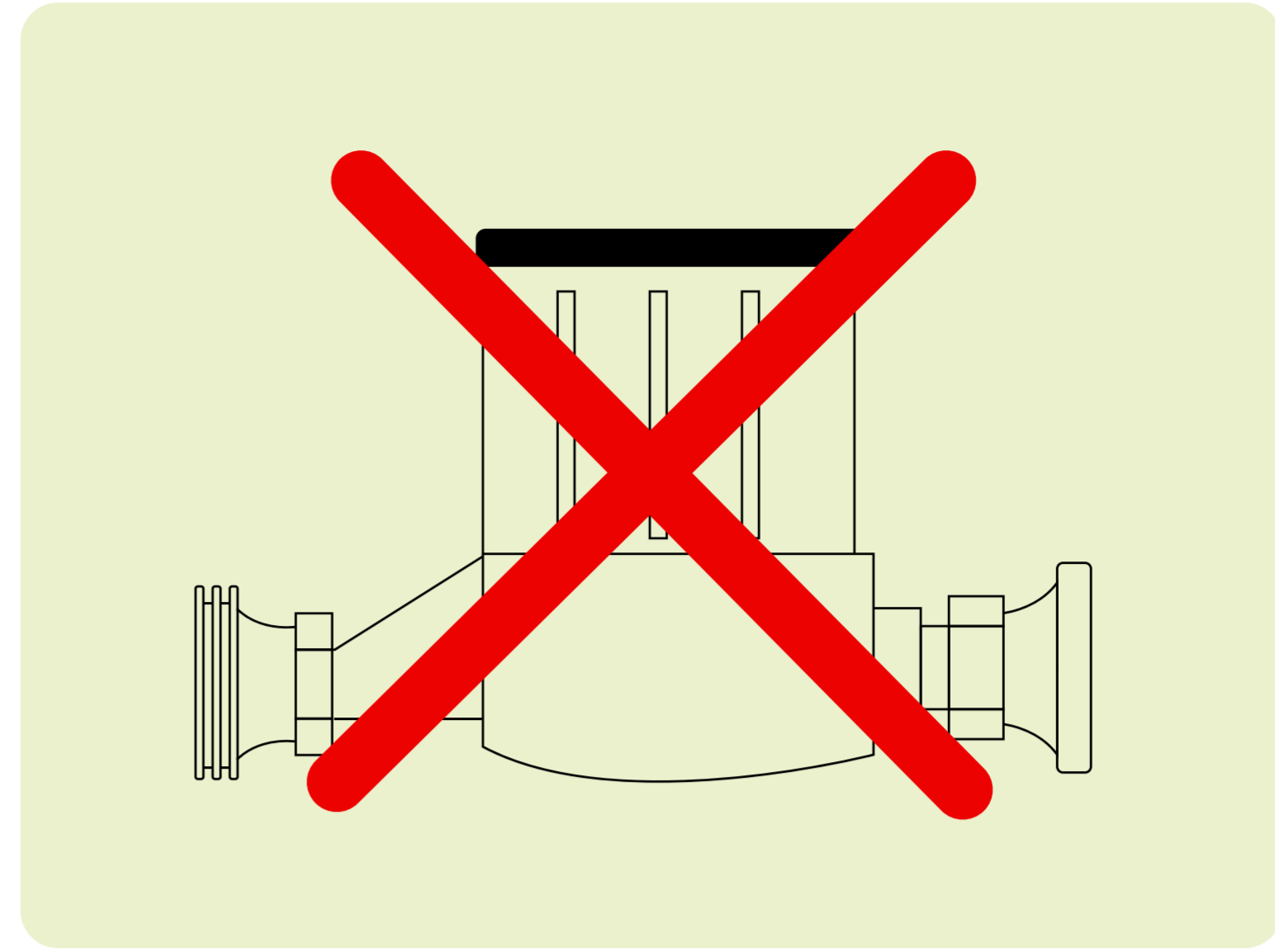


Fig. 5

Do not position the pump casing with the terminal box down, Fig. 6

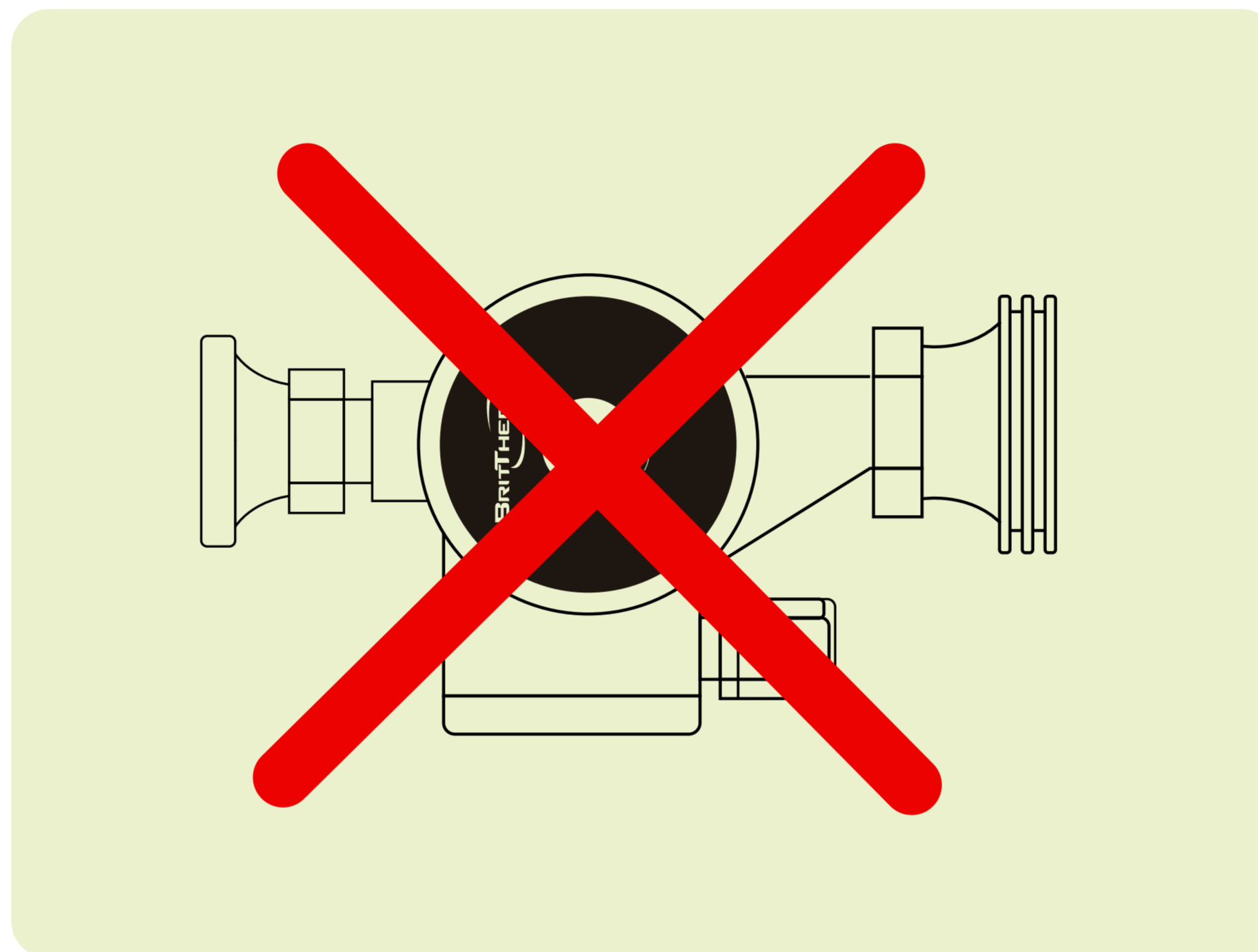


Fig. 6

Permissible layout of the pump and terminal box are shown in Fig. 7

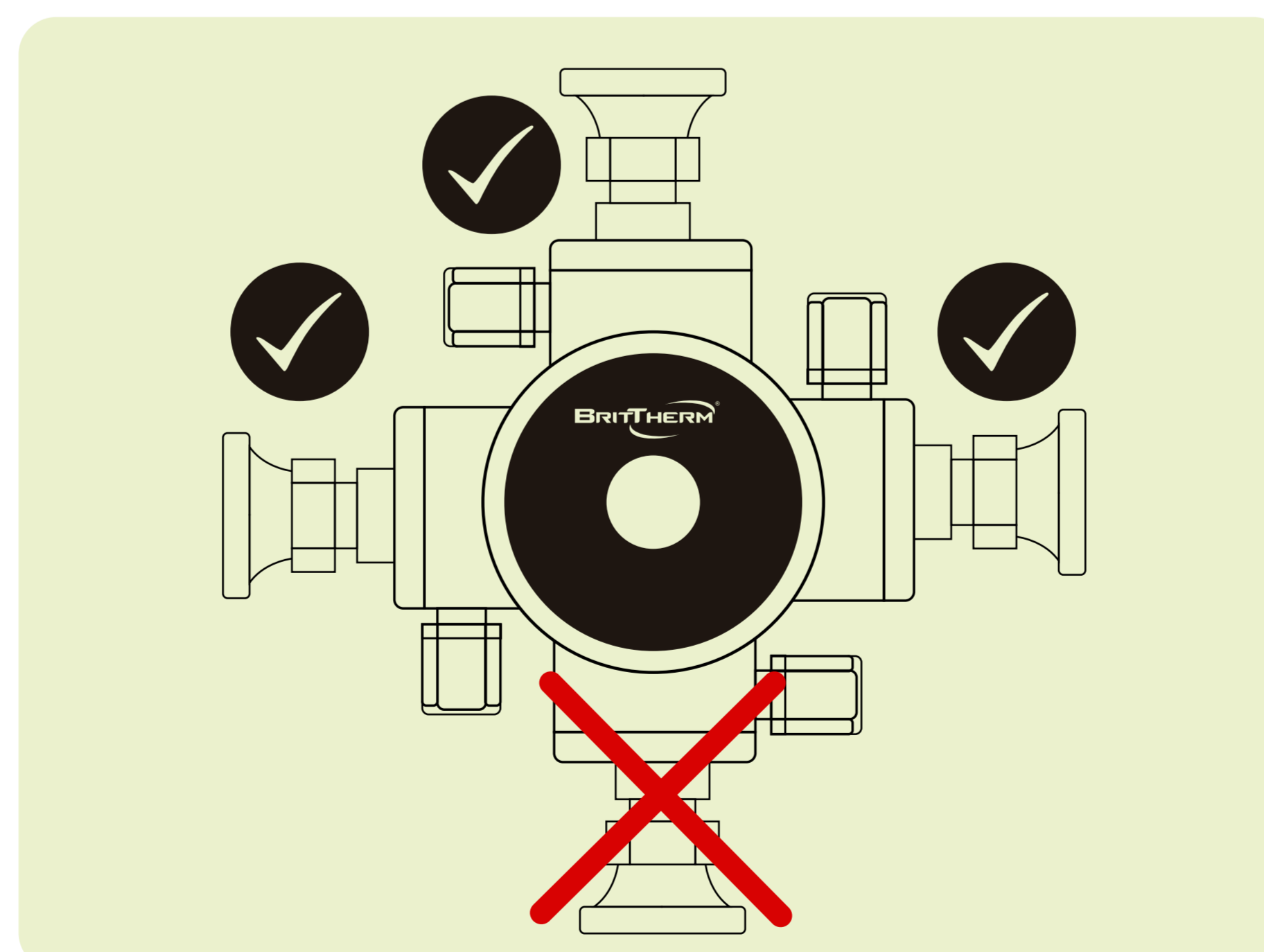


Fig. 7



It is recommended to install shut-off valves upstream and downstream of the pump as shown in Fig. 8.

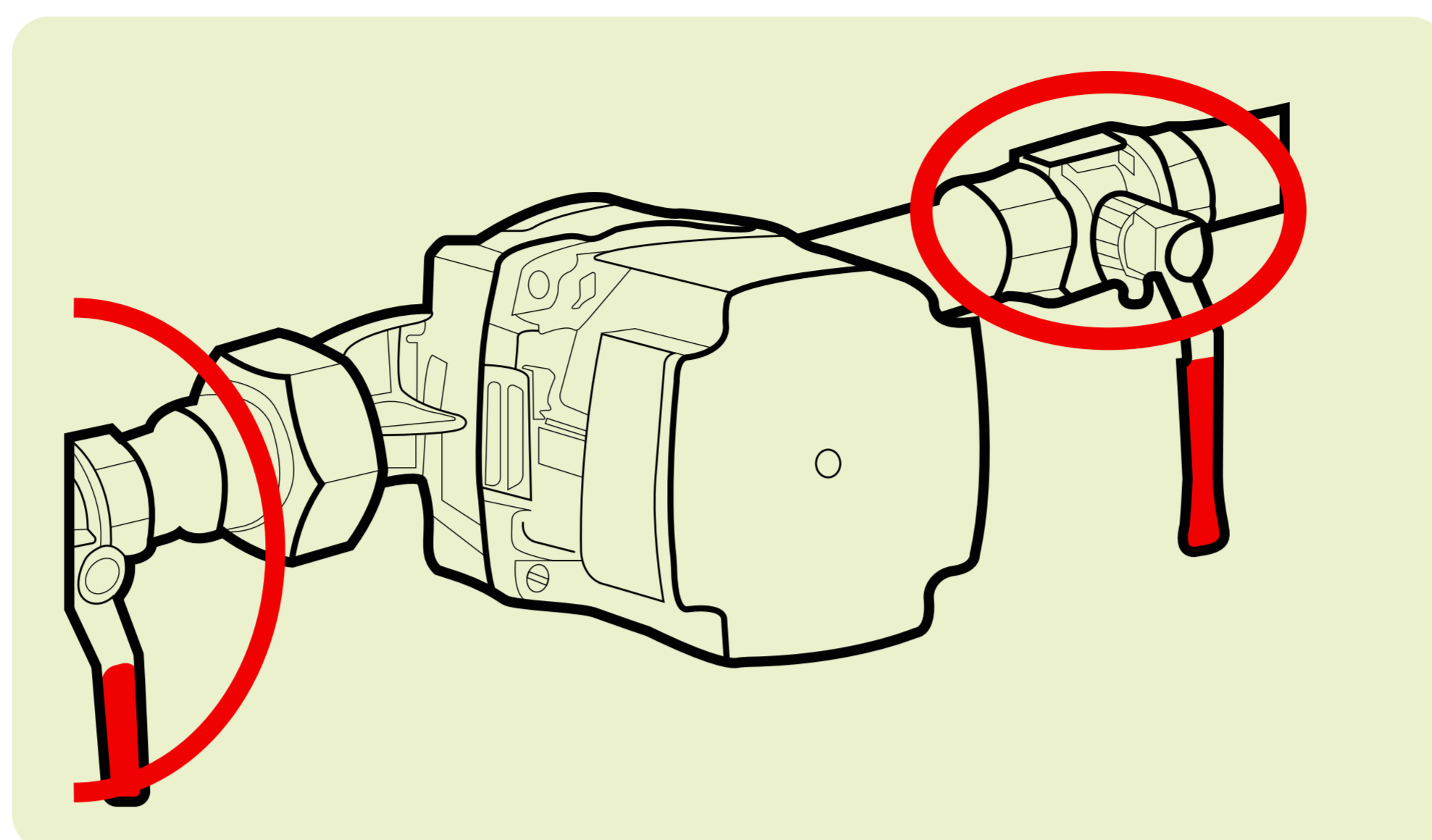


Fig. 8

If necessary, you can change the layout of the pump motor relative to the volute by 90-180-270 degrees. To do this, it is enough to unscrew the four screws securing the motor, rotate the body in 90-degree pitch and tighten the screws, as shown in Fig. 9.



To perform this procedure, it is necessary to close the valves upstream and downstream of the pump or drain the system, turn off the power supply and prepare a container for fluid. Water will flow from the pump after unscrewing the screws. Once the pump is in position, tighten the screws evenly and crosswise. Open the valves. The air outlet from the system should be through air vents at top points.

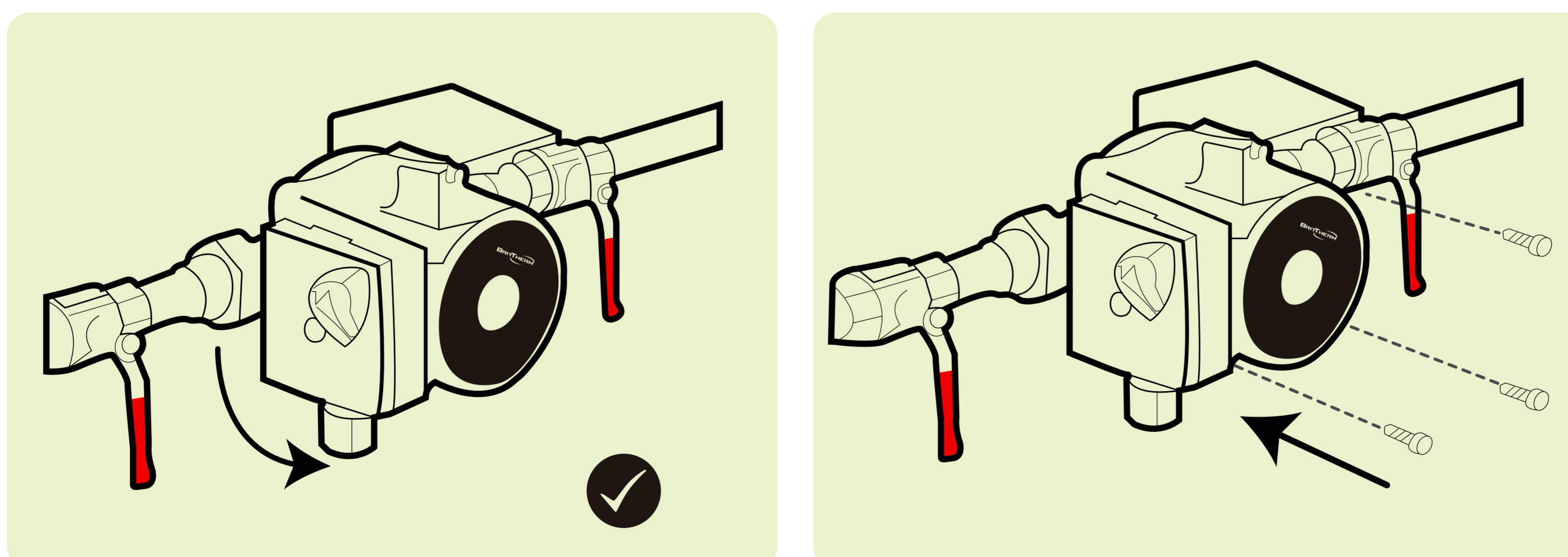


Fig. 9

Use coupling nuts and gaskets to mount the pump, Fig. 10.  
Use special or universal wrenches of the appropriate size.  
Do not overtighten the nuts as this may damage the rubber seals.

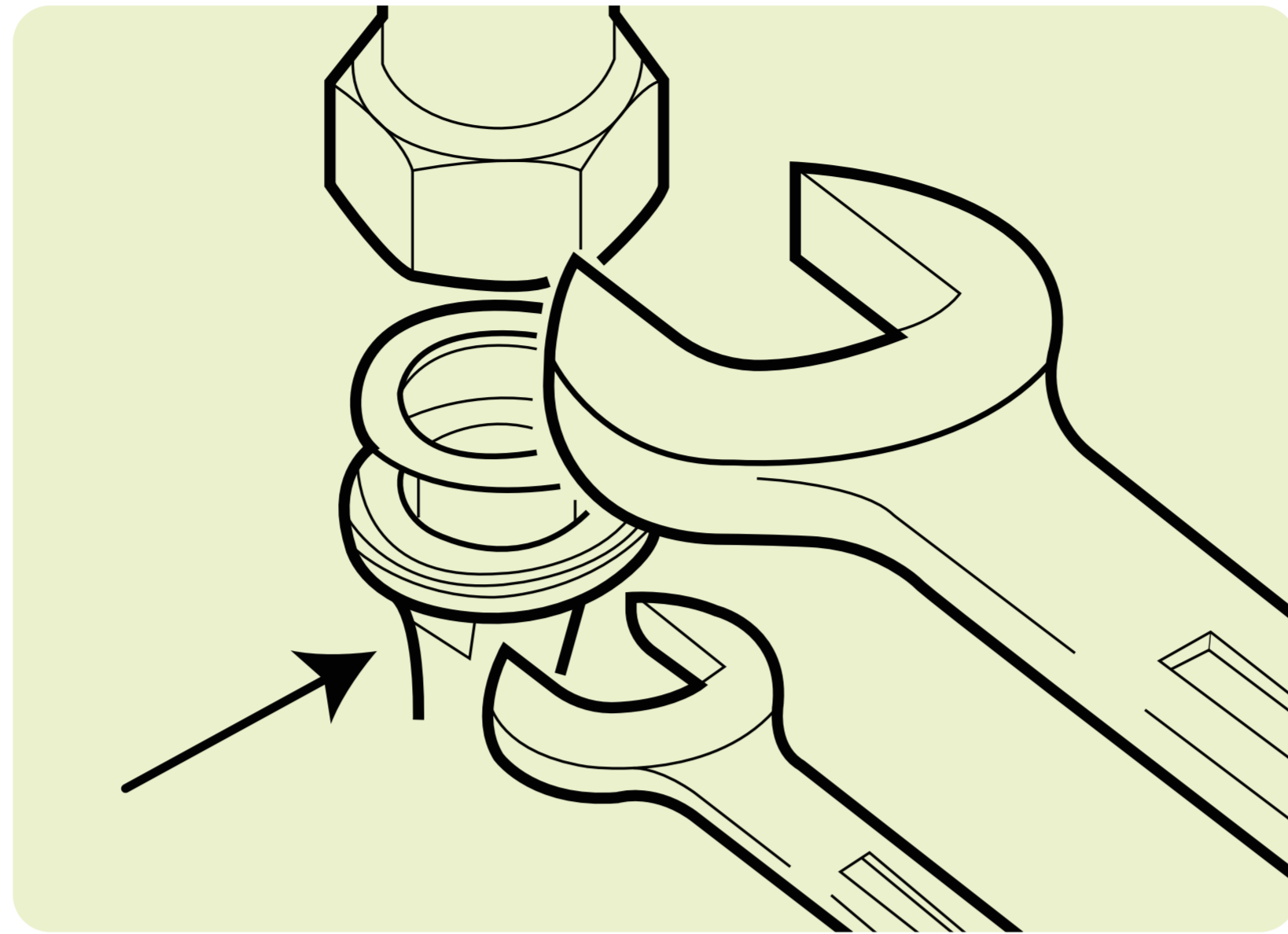


Fig. 10

The pump installation should be carried out taking into account the possibility of its replacement and maintenance.  
Always use new seals when replacing or installing the pump in a new place.



The power supply is performed by connecting the cable from the kit to the pump connector. It does not require the use of any tool.  
Wire with plug is supplied complete with the product.



Be sure to check the compliance of the mains voltage at the site and on the pump nameplate marking. The use of grounding is a prerequisite for ensuring the electrical safety of the equipment, as well as the safety of people in this room and in rooms nearby.

# PUMP MAINTENANCE

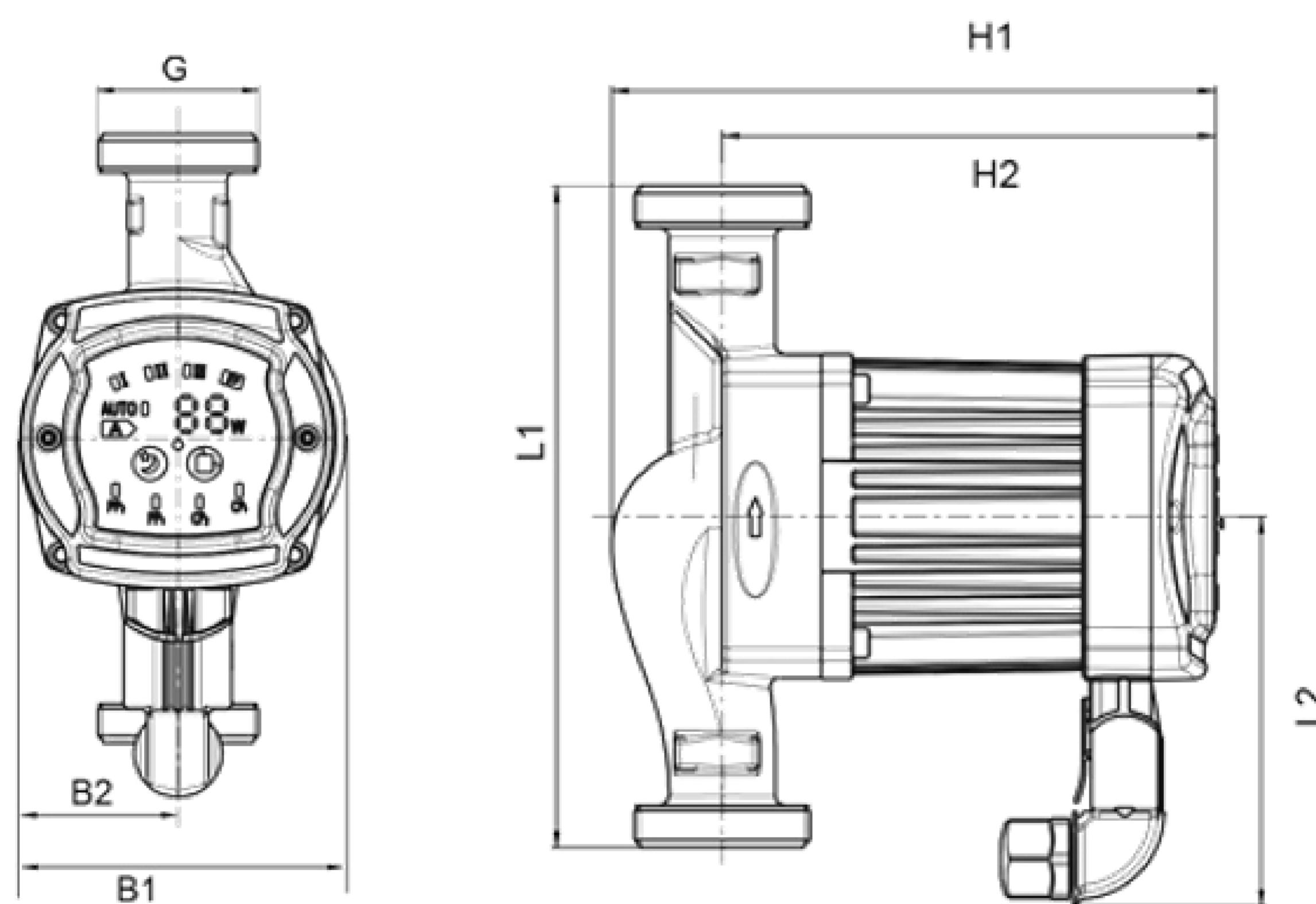
The pump structure is designed in such a way that it does not require special maintenance throughout the entire period of its operation.

It is recommended at least once every 6 months to check for fluid leaks at connections, for damage of the supply cable.

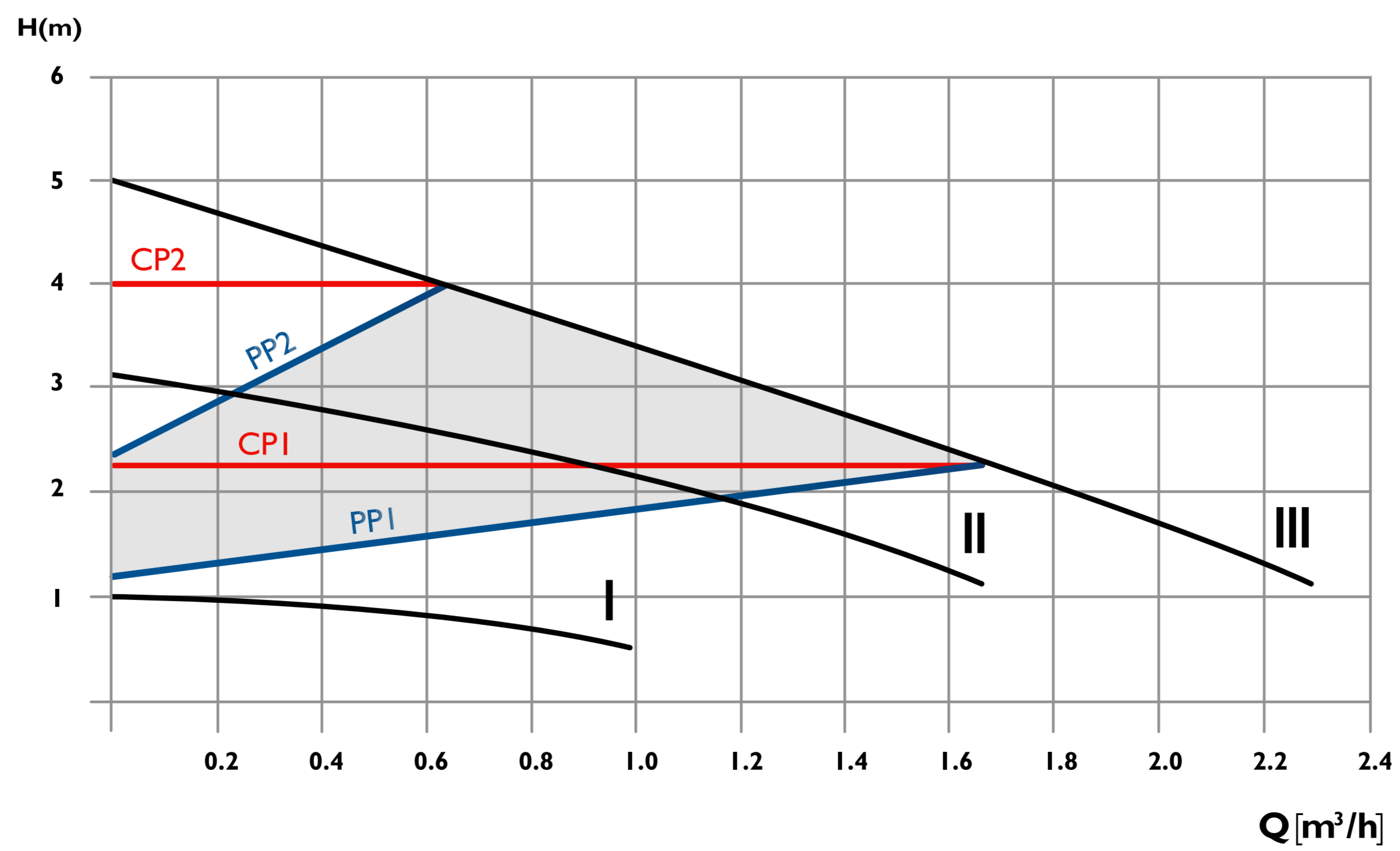
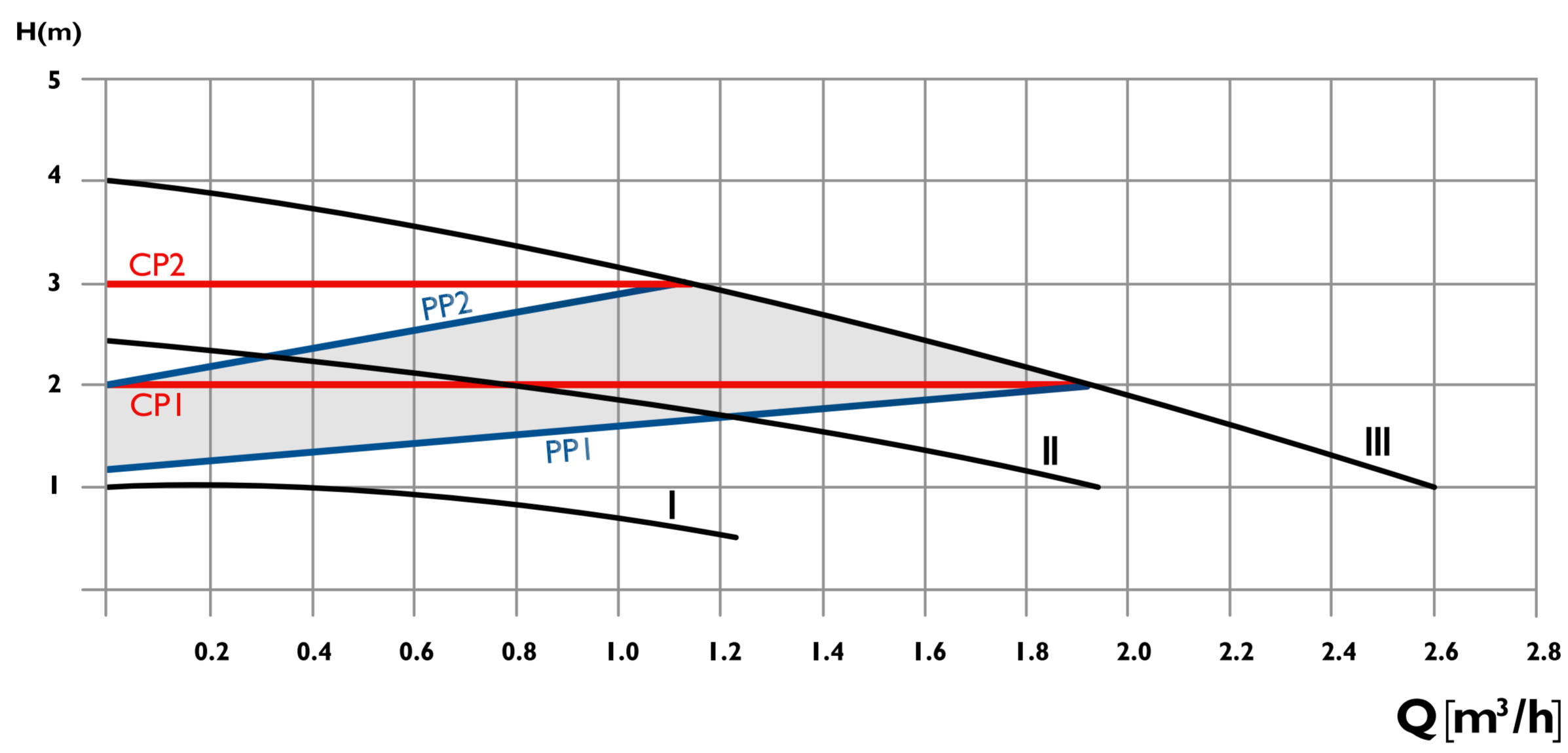
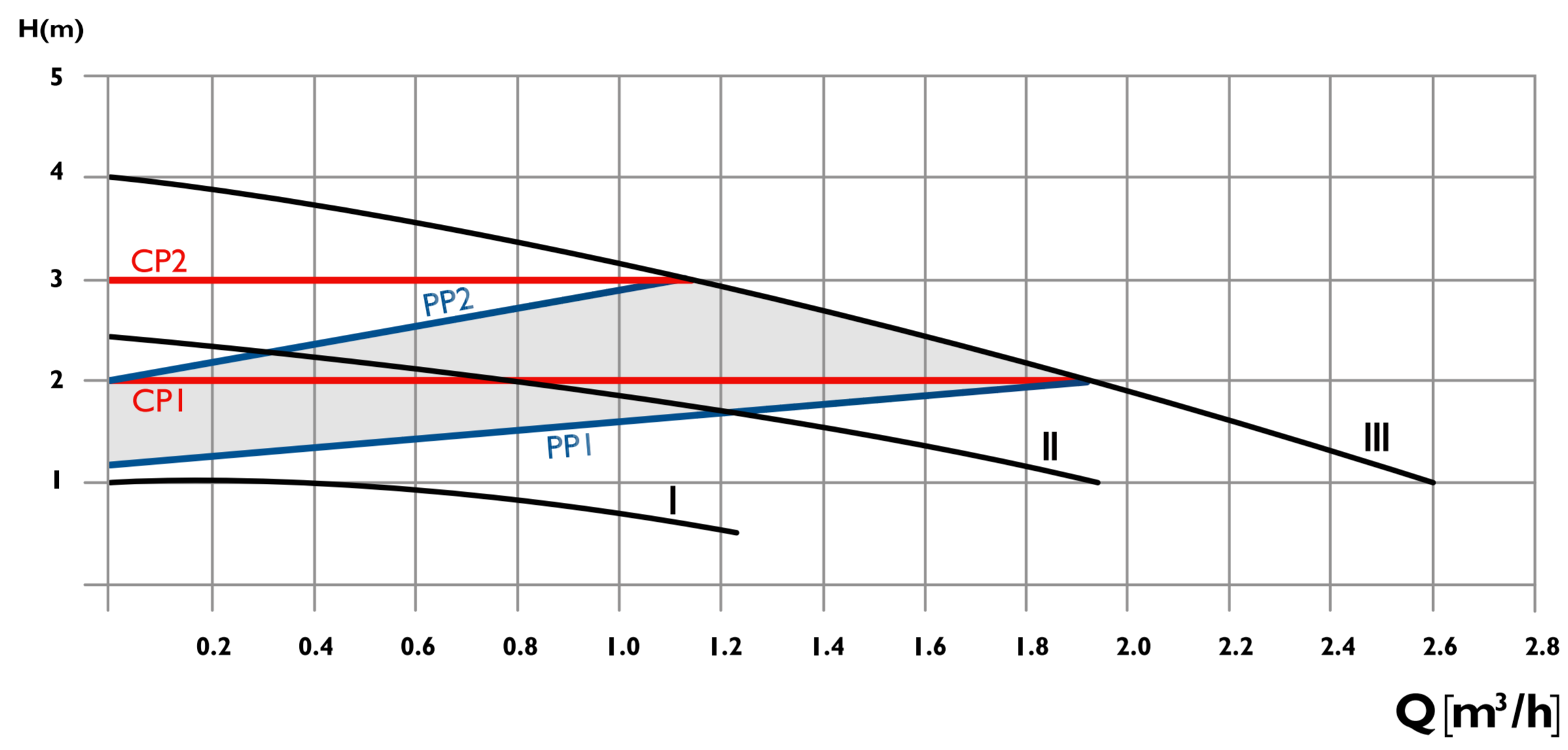
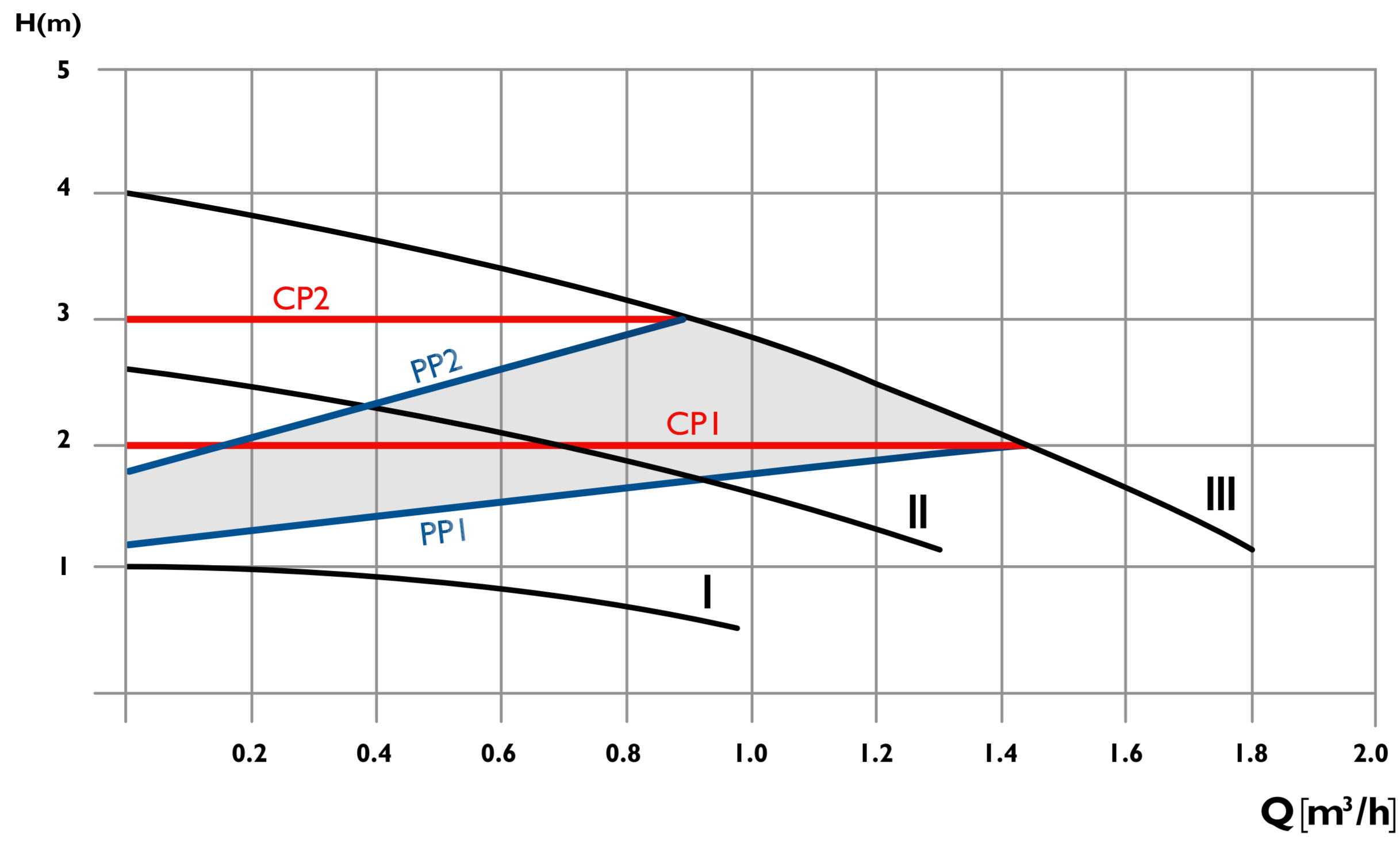
The pump should always run with a full system. Bearings are lubricated and pump is cooled by the pumped fluid.

## APPENDIX I

### S4 SERIES PUMPS SPECIFICATIONS



Nº	Code	Model	Energy Efficiency Index EEI	Max Head (meter)	Max Flow (meter <sup>3</sup> /hour)	Power (watt)	Current (ampere)	Pump volute length (mm)	Inlet/Outlet Thread (inch)	Pipe connection (inch)
1	661999401	S4 15/4-130	EEI ≤ 0.23	4	1.8	5~22	0.05~0.22	130	1"	3/4"
2	661999402	S4 25/4-130	EEI ≤ 0.23	4	2.6	5~22	0.05~0.22	130	1 1/2"	1"
3	661999403	S4 25/4-180	EEI ≤ 0.17	4	2.6	5~22	0.05~0.22	180	1 1/2"	1"
4	661999404	S4 15/5-130	EEI ≤ 0.23	5	2.3	5~28	0.05~0.28	130	1"	3/4"
5	661999405	S4 25/5-130	EEI ≤ 0.20	5	3.1	5~28	0.05~0.28	130	1 1/2"	1"
6	661999406	S4 25/5-180	EEI ≤ 0.23	5	3.1	5~28	0.05~0.28	180	1 1/2"	1"
7	661999407	S4 15/6-130	EEI ≤ 0.23	6	2.4	5~46	0.05~0.46	130	1"	3/4"
8	661999408	S4 25/6-130	EEI ≤ 0.22	6	3.6	5~46	0.05~0.46	130	1 1/2"	1"
9	661999409	S4 25/6-180	EEI ≤ 0.23	6	3.6	5~46	0.05~0.46	180	1 1/2"	1"
10	661999410	S4 15/7-130	EEI ≤ 0.23	7	2.7	5~48	0.05~0.48	130	1"	3/4"
11	661999411	S4 25/7-130	EEI ≤ 0.21	7	3.7	5~48	0.05~0.48	130	1 1/2"	1"
12	661999412	S4 25/7-180	EEI ≤ 0.23	7	3.7	5~48	0.05~0.48	180	1 1/2"	1"



## APPENDIX 2

### MALFUNCTIONS



The pump is an engineering equipment in which the electrical part (motor) and the pumping part, where the fluid is pumped, are combined. Therefore, when performing any work, it is necessary to follow the rules of electrical safety. Be sure to turn off the power before doing any work. Make sure that fluid does not enter inside the terminal box and electrical cables, connectors, plugs, sockets, etc.



If you find any malfunctions or failures, we recommend you to contact the engineer who installed the pump first and then Brittherm Limited by 0208 9044 832 or email [info@brittherm.co.uk](mailto:info@brittherm.co.uk)

#### Possible malfunctions and elimination methods:

Error Code	Protection type	Likely causes	What to do
<b>E1</b>	Locked-rotor protection	Pump rotor is blocked	Remove the bleed screw completely, then use a flat-head screw driver to rotate the shaft of the rotor till it can rotate smoothly.
<b>E2</b>	Open phase protection	One or more phases of the internal connection circuit is disconnected	Replace the pump
<b>E4</b>	Over-current protection by hardware	Short circuit of internal connection circuit	Replace the pump
<b>E5</b>	Over-current protection by software	Short circuit of internal connection circuit	Replace the pump

# WARRANTY

## S4 SERIES PUMP WARRANTY INFORMATION

Your S4 Series Pump comes with a 6-year warranty against manufacturing defects.

This warranty ensures peace of mind and protection for your investment, provided the following conditions are met:

**CORRECT INSTALLATION:** The pump must be installed by a qualified engineer according to BritTherm's installation manual.

**PROPER MAINTENANCE:** The system must be maintained in line with BritTherm maintenance guidelines.

**WARRANTY REGISTRATION:** The warranty must be registered within 30 days of purchase at [www.brittherm.co.uk/guarantees](http://www.brittherm.co.uk/guarantees). Incorrect or incomplete registration will void the warranty.

### WARRANTY CLAIMS PROCEDURE

In the unlikely event of a manufacturing fault, you can make a warranty claim.

Please provide the following information:

- The unique warranty registration code received during registration.
- A copy of the pump purchase invoice.
- Additional evidence such as photos or videos may be requested to facilitate the claim process.

Send all claims to [warehouse@brittherm.co.uk](mailto:warehouse@brittherm.co.uk). Once your claim is validated, BritTherm will provide a replacement pump free of charge.

Please note, BritTherm does not offer repairs under this warranty.

### EXCLUSIONS AND LIMITATIONS

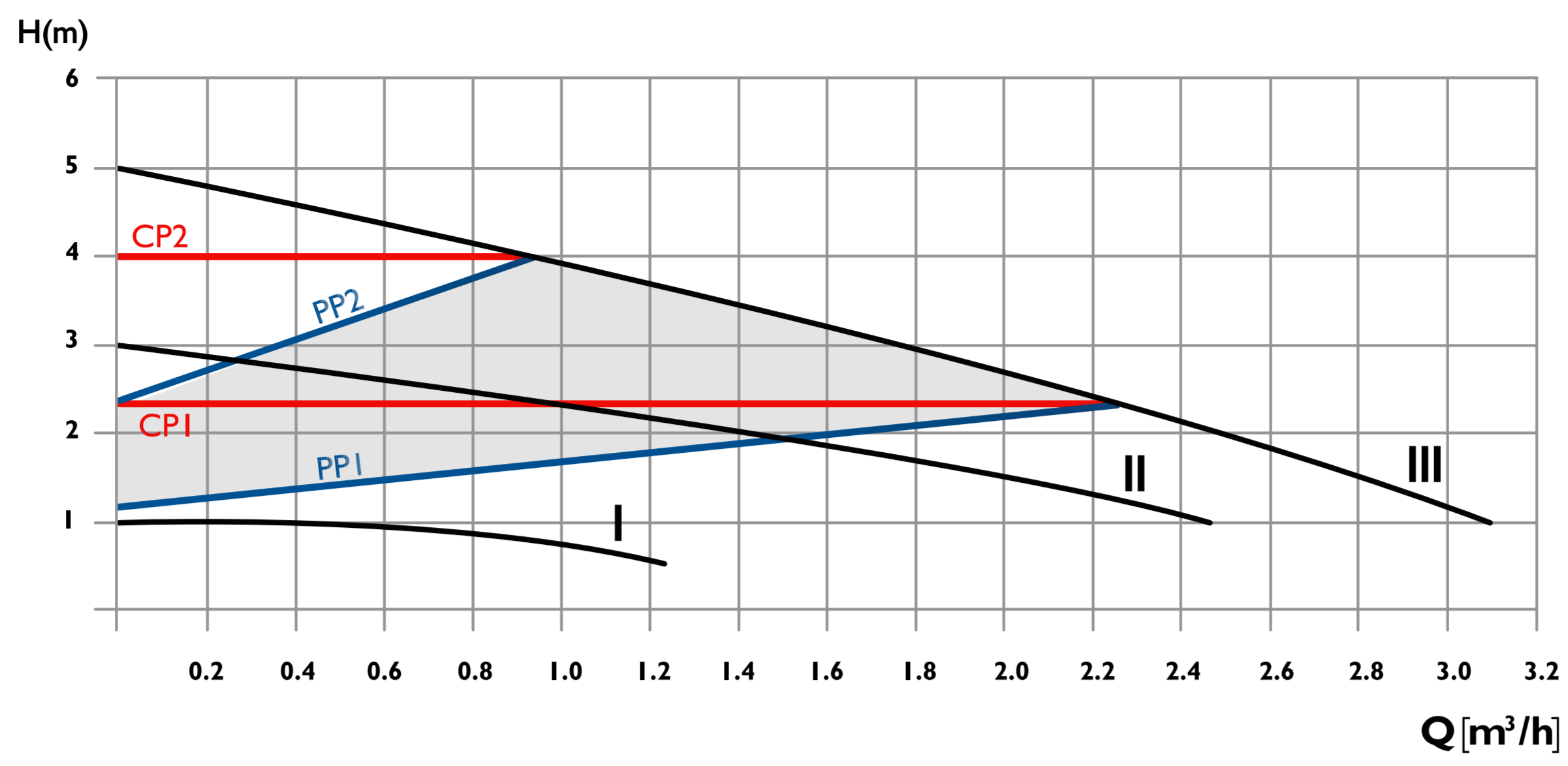
The warranty does not cover:

- Malfunctions due to incorrect installation, inadequate maintenance, or the use of inappropriate liquids (e.g., those containing solid particles, fibres, or mineral oil).
- Damage caused by improper use, storage, or maintenance.
- Labour costs for pump removal or reinstallation.
- For full terms and conditions, visit our website at [www.brittherm.co.uk/guarantees](http://www.brittherm.co.uk/guarantees).

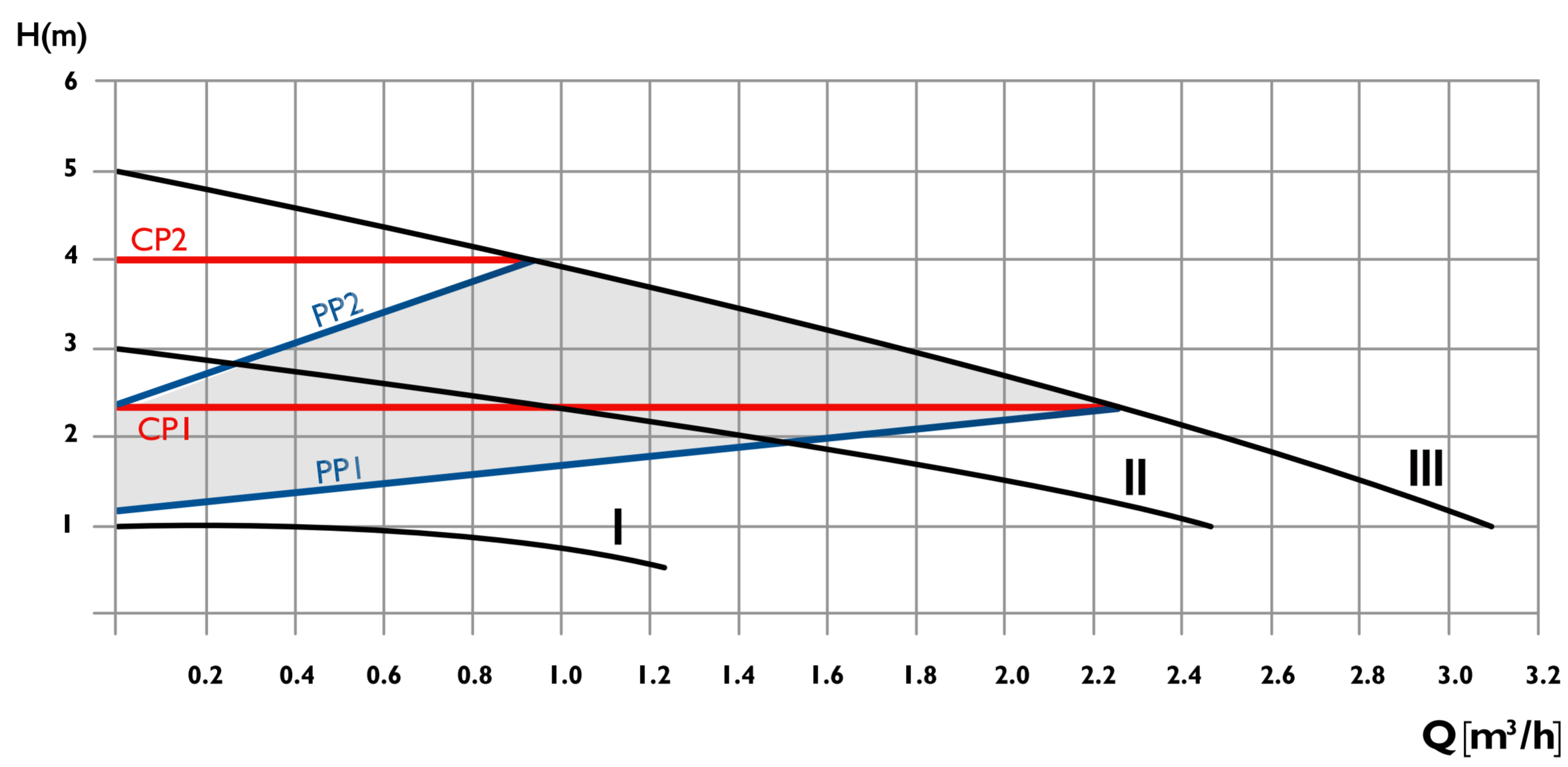
**BRITTHERM™ IS PROUD TO SUPPLY THE UK'S LONGEST-LASTING CENTRAL HEATING PUMPS, WITH FAST DELIVERY AND COMPETITIVE PRICING.**

THANK YOU FOR CHOOSING BRITTHERM!

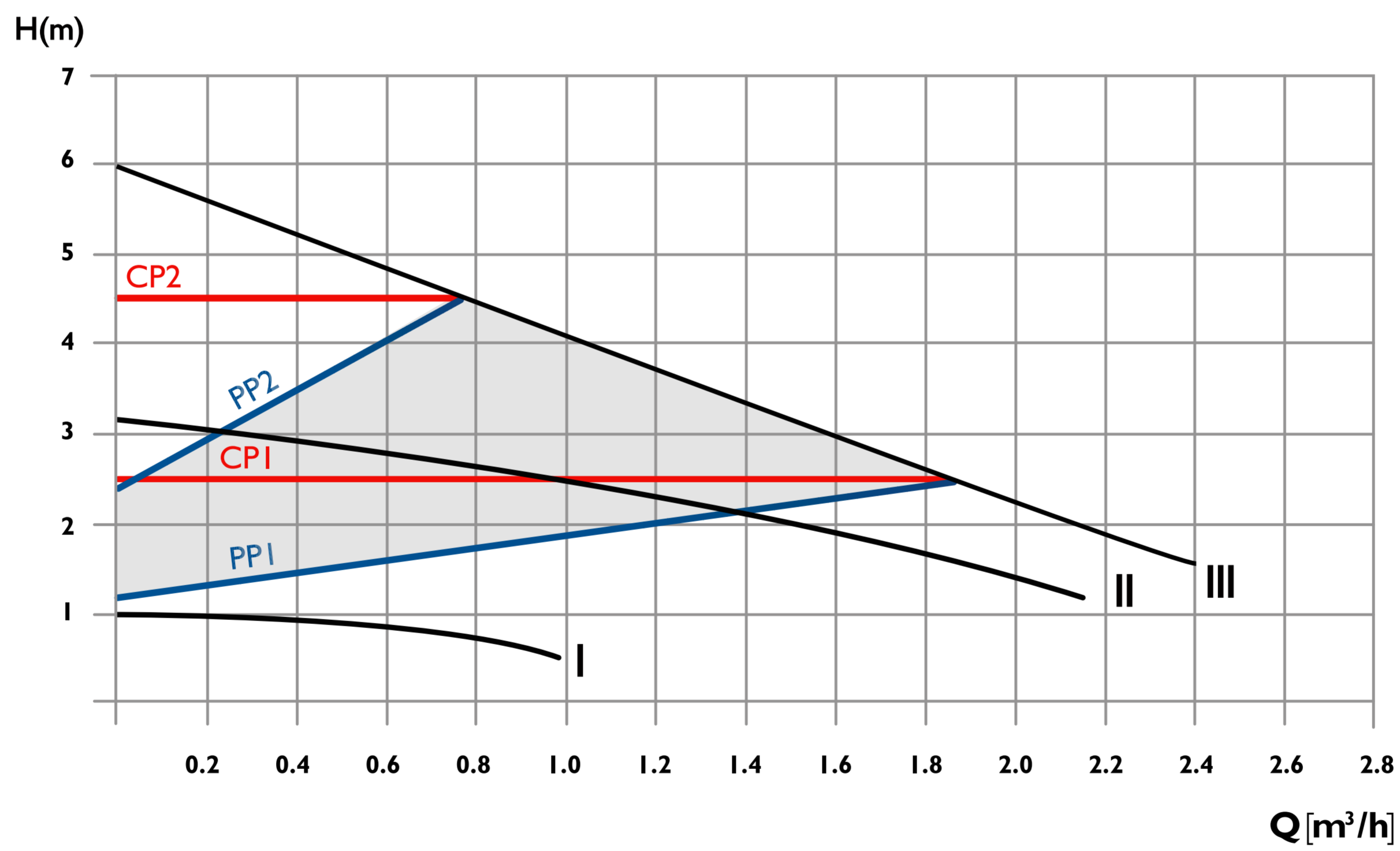




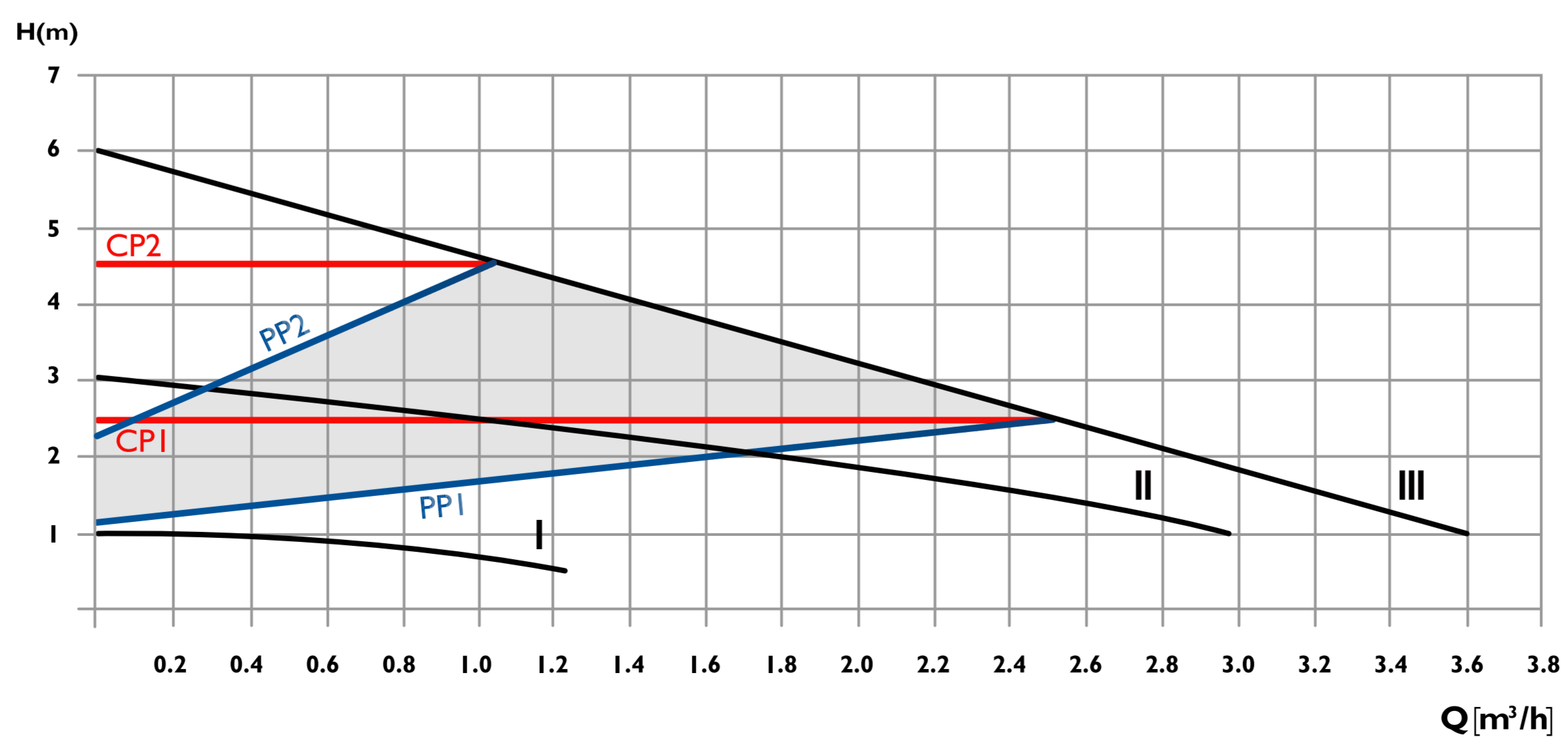
25/5-130



25/5-180



15/6-130



25/6-130

