strada®

DHCP
Domestic Heating Circulation Pump
Installation and Operational Manual

Notes

1. Read the installation manual carefully before installation and use.
2. The manufacturer will not be liable for any personal injury, pump damage or any property damage due to failure to comply with contents specified in the safety warning.
3. The installers and operators must comply with local safety regulations.
4. This product must only be installed and maintained by a qualified professional.
5. The pump should not be installed in a damp environment.
6. To provide convenient access for maintenance, isolating valves should be installed on both sides of the pump.
7. The power supply of the pump should be isolated before installation and maintenance.
8. In hard water areas heat supply pipelines should be adequately protected to avoid a build up of lime scale in the circulating water which may block the impeller.
9. Do not run the pump without liquid.
10. This model is **not** suitable for drinking water.
11. The liquid circulating through the pump may be at high temperature and high pressure therefore, the system must be completely drained down or the isolating valves on both sides of the pump closed before removal and maintenance is carried out.
12. Adequate ventilation must be ensured in high ambient temperature periods to avoid condensation that could cause electrical malfunctions.
13. If the ambient temperature drops below 0°C the pump system will not operate. Under these conditions the liquid in the system should be completely drained to avoid damage of the pump body.
14. If the pump is left unused for an extended period of time, the isolating valves should be closed on both sides of the pump and the power supply disconnected.
15. If the power supply cable is damaged, it must be replaced by a qualified professional.
16. If the pump overheats, the isolating valves must be closed off on both sides and the power supply to the pump cut off immediately.
17. This product should be stored in a dry, well-ventilated location under room temperature.

The DHCP series circulation pump is intended for use in domestic heating systems only.

This pump is equipped with a permanent magnet motor and differential pressure controller, capable of automatically & continuously adjusting motor performance to meet the actual needs of the system. It is equipped with a control panel on the front for easy operation by the user.

Advantages

Easy installation and start-up.

Provided with self adaptive mode AUTO (Initial setting). In most cases, the pump needs no adjustment and can be readily started and automatically adjusted to meet the actual needs of the system.

High degree of comfort.

Low operational noise of the pump.

Warning

Before installation, please carefully read the installation and operation manual. Installation and use of the equipment must comply with local regulation and applicable operation standards.

Signs

Warning

Failure to comply with this safety instruction may lead to personal injury!

CAUTION **Caution**

Failure to comply with this safety instruction may lead to equipment malfunction or damage!

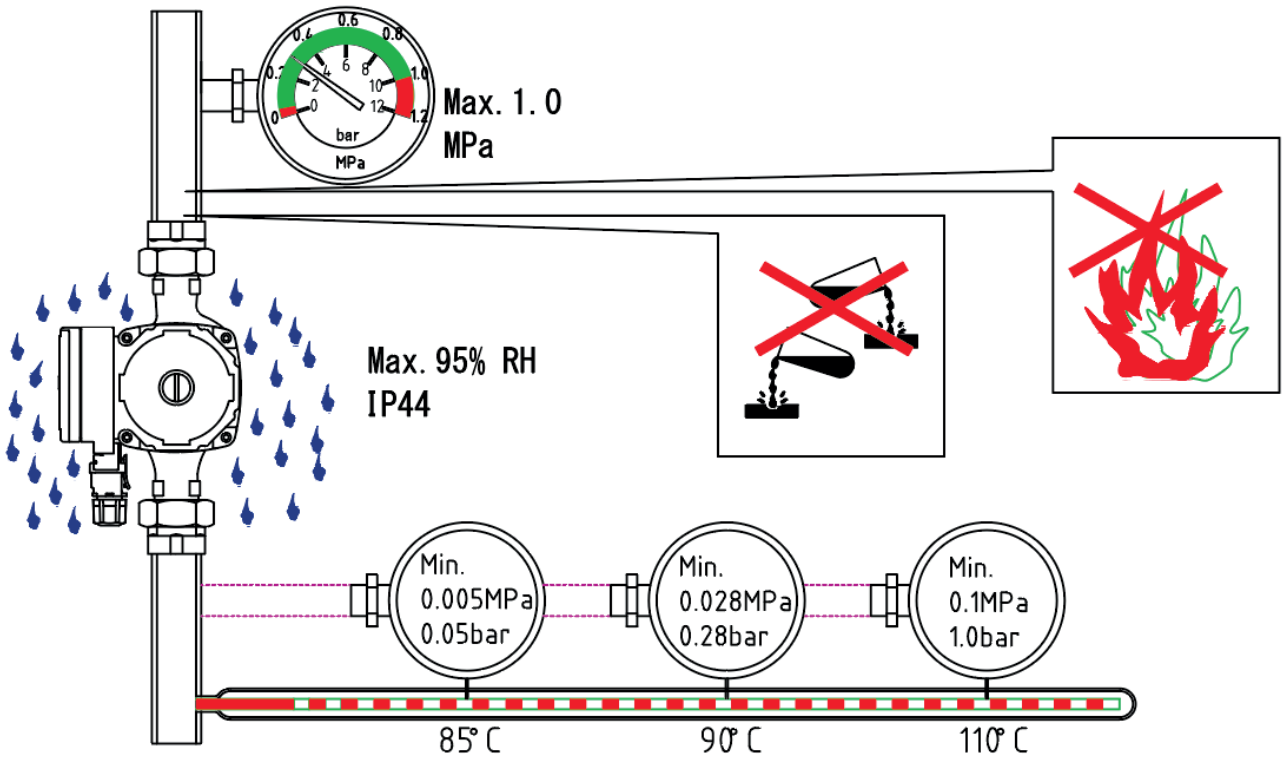
Operating Conditions	
Ambient Temperature	0~+ 40°C
Relative Humidity (RH)	Max. Humidity 95%
Medium (Liquid Delivery) Temperature *	+2°C - 110°C
System Pressure	Maximum Pressure 1.0 mPa (10 bar)
Degree of Protection	IP44

** To avoid condensation in the control box and the stator, the temperature of liquid being pumped must always be higher than the ambient temperature.*

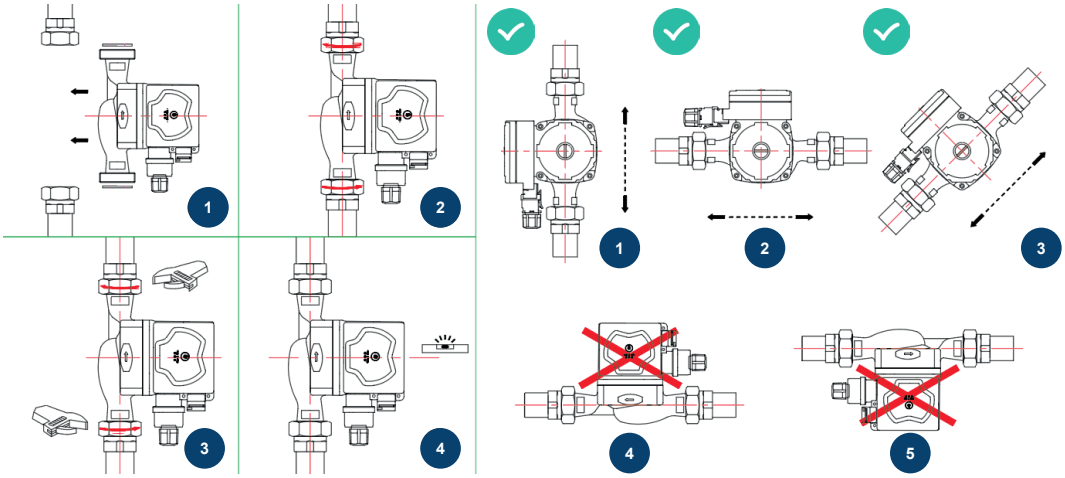
Liquid Temperature	<85°C	90°C	110°C
Inlet Pressure	0.05 bar	0.28 bar	1 bar
	0.5m head	2.8m head	10m head

Pumping Liquid

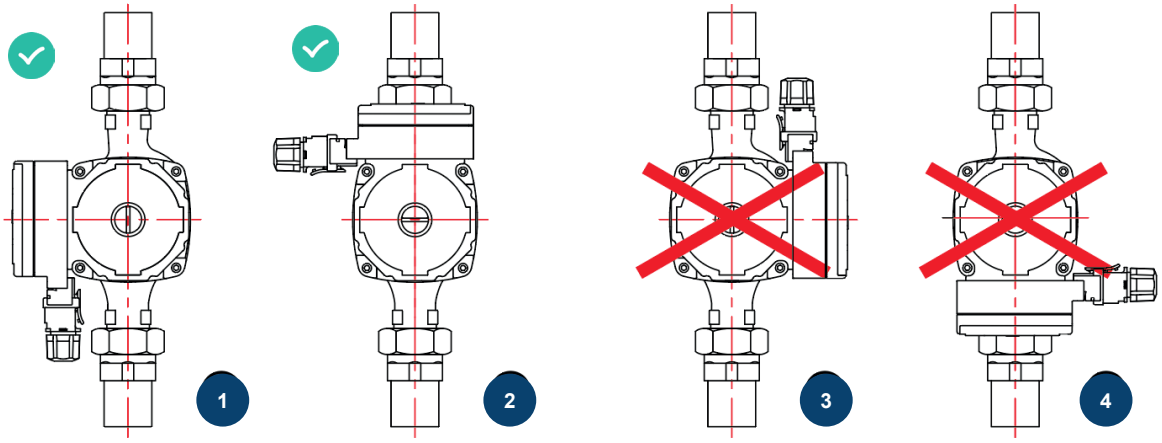
The pumping liquid must include only thin, clean, non-corrosive and non-explosive liquid which shall not contain any solid particles, fibre or mineral oil, and the pump must not be used to pump flammable liquids such as rapeseed oil and petrol.



When installing the DHCP circulation pump, the arrow on the pump case indicates the direction of flow of the liquid through the pump. When installing the circulation pump, the two supplied gaskets must be installed on the inlet and outlet. During the installation, the motor shaft of the pump must be fitted in a horizontal position.



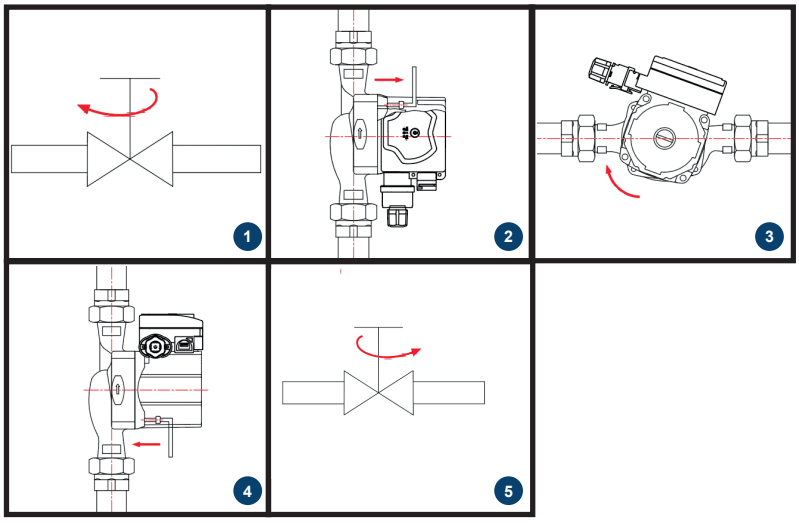
Positioning of the Junction Box



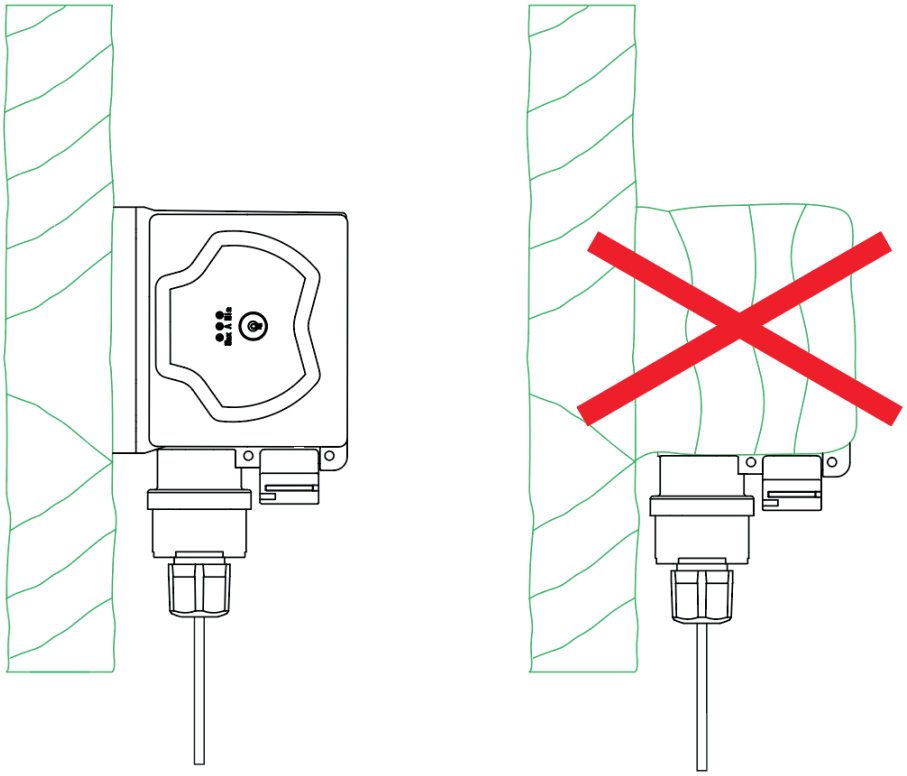
Changing Position of the Junction Box

The junction box can be rotated in a step of 90°. The procedures for changing the position of junction box are as follows.

1. Close the isolation valves at the inlet and outlet and release the pressure.
2. Unscrew and remove the four socket head screws that fasten the pump body.
3. Rotate the motor to the expected position and align the four screw holes.
4. Install the four socket head screws again and fasten them clockwise.
5. Open the isolation valves at the inlet and outlet.

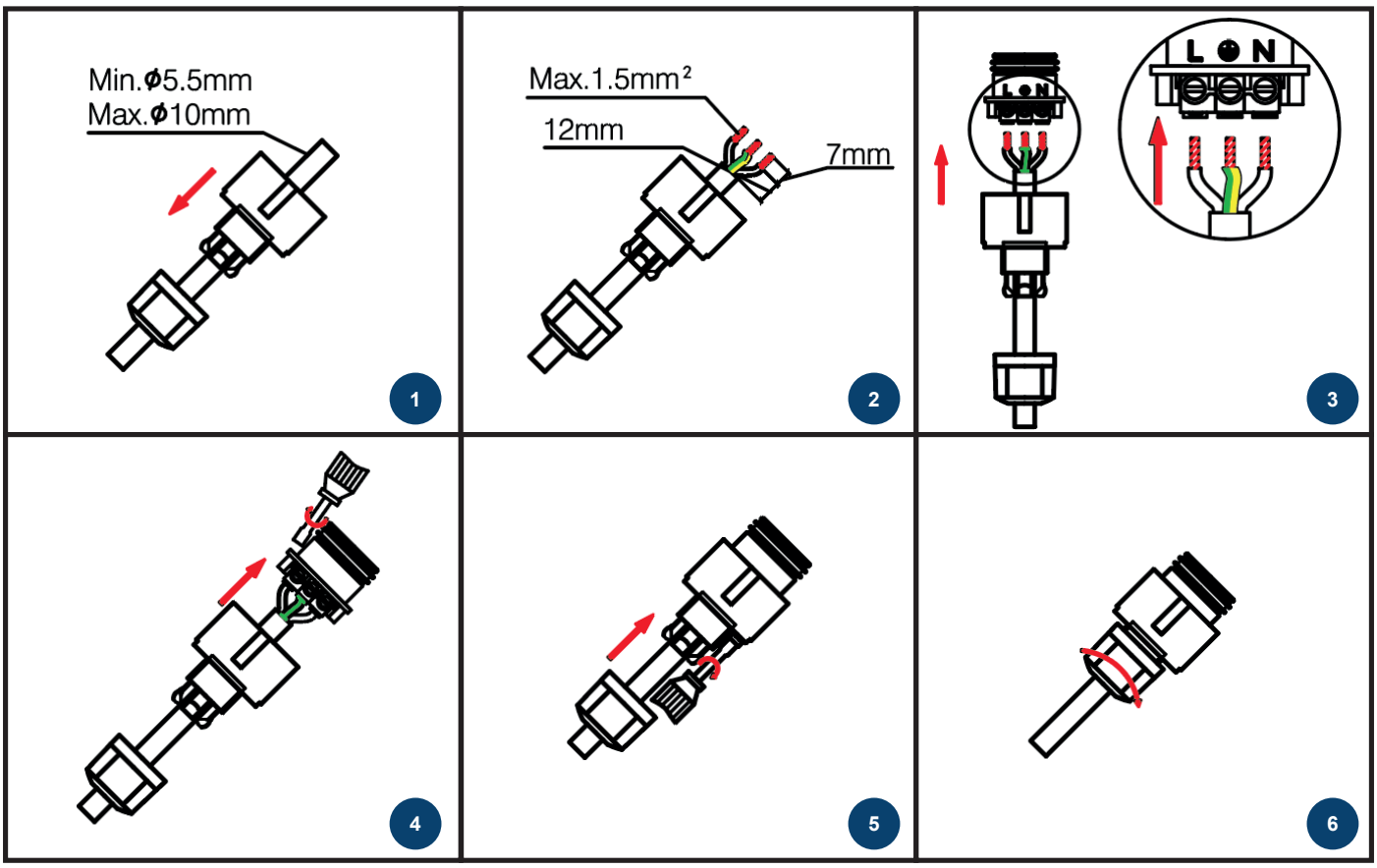


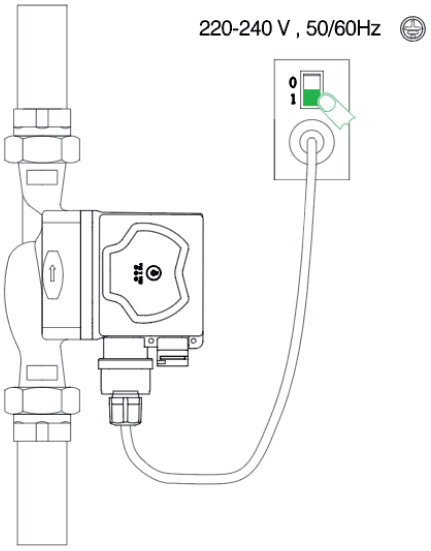
Pumping liquid may be high temperature and high pressure, therefore the liquid in the system must be completely drained or the valves on both sides of the pump must be closed off before removing the socket head screws.



NOTE To limit heat loss the pump body and pipeline should be thermally insulated.

CAUTION Do not isolate or cover the junction box and control panel.





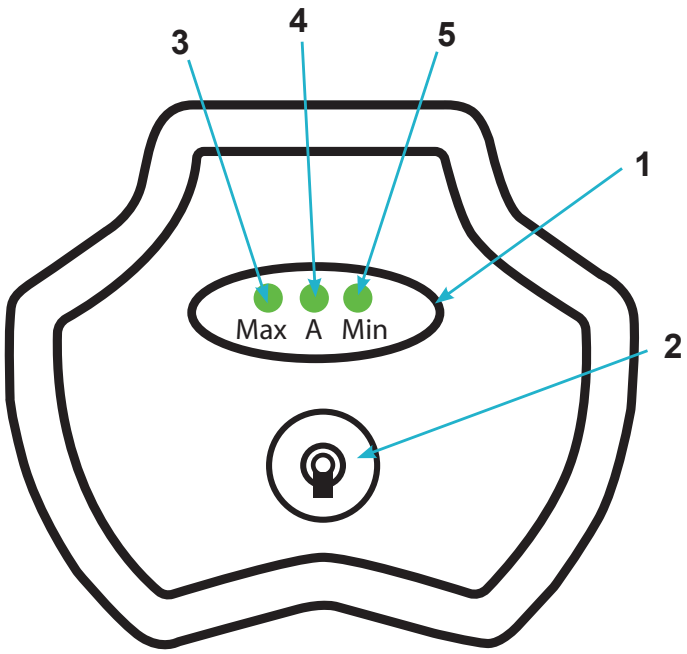
All electrical connections must be carried out by a qualified professional in accordance with local regulations.

The pump must be earthed ⏚.
The pump must be connected to an external power switch, and the minimum space between all the electrodes is 3mm.

The DHCP circulation pump needs no secondary protection.

Check if the supply voltage and frequency are the same as the parameters indicated on the nameplate of the pump. Connect the pump power supply with the electrical gland adaptor supplied together with the pump. After power is supplied, the indicator lamp on the control panel is ON.

Position	Descriptions
1	Indication lamp area of three operation modes set by pump.
2	Speed Control button for setting the operation modes of the pump.
3	Maximum Setting
4	Automatic Setting
5	Minimum Setting



The DHCP circulation pump has three settings which can be chosen with the speed control button.

The pump settings are indicated with different indication lamp areas.

Button Push	Indication Lamp Area	Descriptions
0	AUTO (Initial Setting)	Self-adaptive (AUTO)
1	MIN	Constant Speed Curve, Velocity Min
2	MAX	Constant Speed Curve, Velocity Max

Speed Control Button for Selecting Pump Settings

By pressing the button once at 2 second intervals, the pump setting mode will change once.

A cycle is constituted of every three presses on the button. For details, please refer to *Indication of the Pump Speed Setting* above.

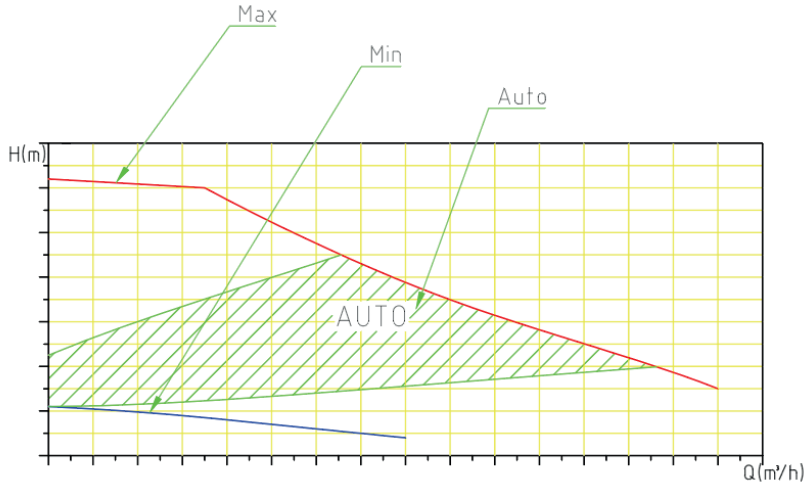
Pump Setting Based on System Type

Default setting = AUTO (self-adaptive mode). This is the recommended pump setting.

AUTO (self-adaptive mode) adjusts the performance of the pump based on the actual heat demand of the system. As the performance is adjusted gradually, before changing the pump setting, it is recommended to maintain the AUTO (self-adaptive mode) setting for at least one week. If you select to change back to AUTO (self-adaptive mode), the DHCP pump can memorise its last setting in AUTO (self-adaptive mode) and continue adjusting the performance automatically.

It may take several minutes or even hours to reach the optimal operation mode after the pump setting is changed from the recommended AUTO (self-adaptive mode), to other optional settings. If the optimal setting of the pump fails to enable each room to obtain the desired heat distribution, then you should change the pump speed to another setting.

Relations between Pump Setting and Performance



Setting	Pump Characteristics Curve	Functions
AUTO	Highest to Lowest Proportional Pressure Curve	AUTO (self-adaptive mode) function will automatically control the pump performance within the specified scope. Adjust pump performance based on system scale. Adjust pump performance based on load variance within a period of time. Under the AUTO mode, the pump will be set to proportional pressure control.
MAX	Velocity Max	It runs on the constant curve in a constant velocity. In the Velocity Max mode, the pump is set to work on the highest curve under all working conditions.
MIN	Velocity Min	It runs on the constant curve in a constant velocity. In the Velocity Min mode, the pump is set to work on the lowest curve under all working conditions.

Guide on Performance Curve

Every setting of the pump has a corresponding performance curve (Q/H curve). However AUTO (self-adaptive mode) covers just one performance scope.

The input power curve (P1 curve) belongs to every Q/H curve. Power curve represents the power consumption of the pump in given Q/H curve with the unit of measure in Watts.

Curve Conditions

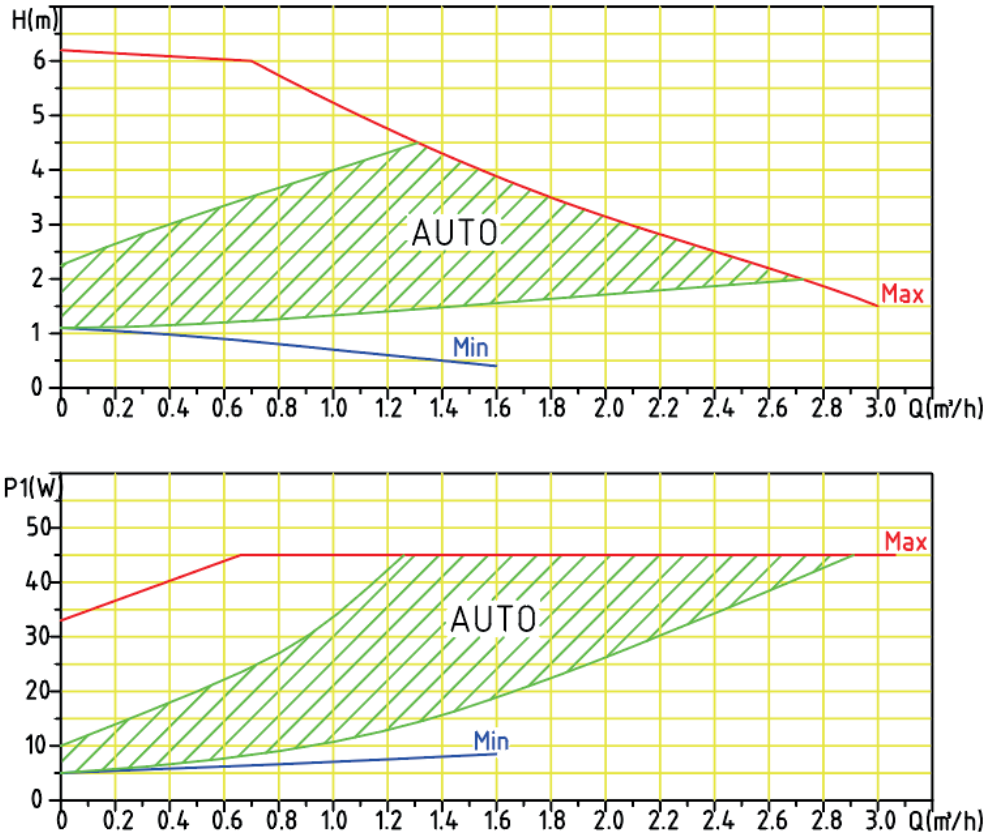
The following are applicable to the performance curve specified below;

Test liquid: air-free water
- Applicable density of curve ρ = 983.2 kg/m³, and liquid temperature +60°C
- All curves represent an averaged value, and shall not be used as a guarantee curve

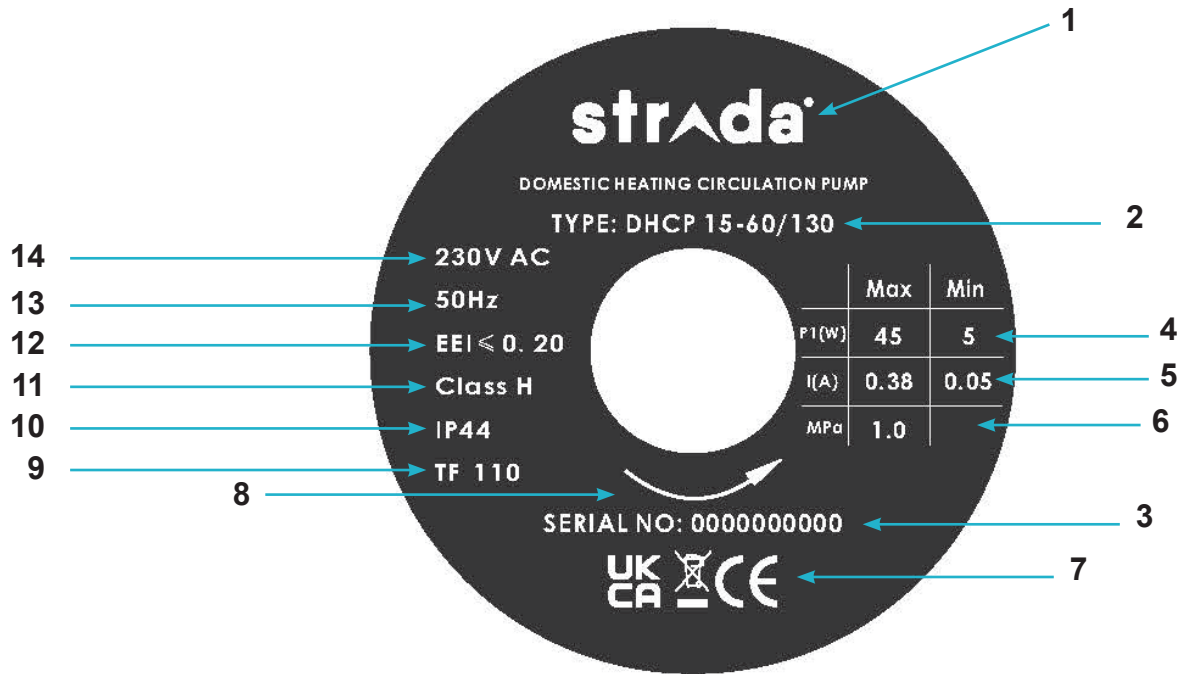
If a specific performance is needed, then separate measuring should be conducted.
- Velocity Max, Min curves have all been marked
- The applicable Kinetic viscosity of the curve υ = 0.474 mm²/s (0.474CcST)

Performance Curve

Model - DHCP 15-60/130



Data Plate Information



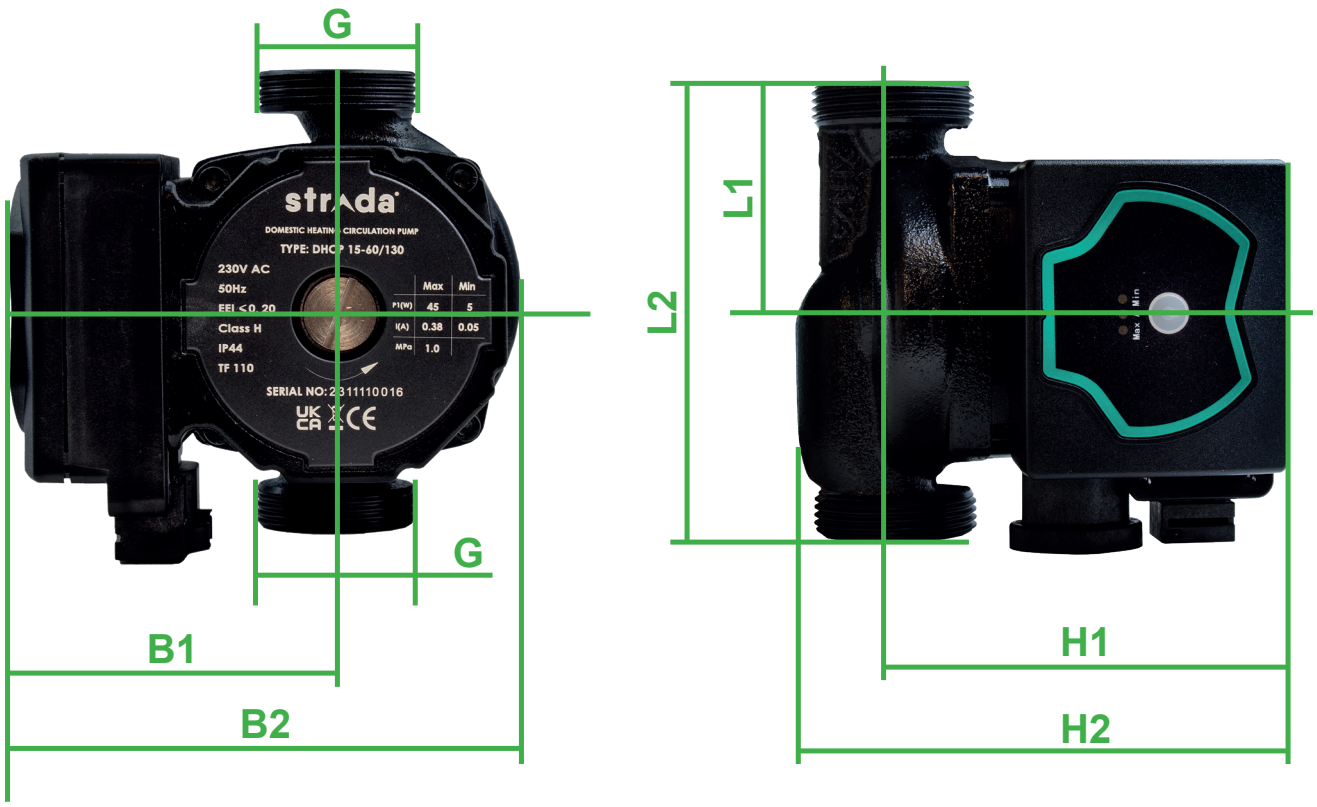
No.	Descriptions
1	Manufacturer Name
2	Product Model
3	Serial Number
4	Power Rating (P1)
5	Current (Amp)
6	Maximum System Pressure (mPa)
7	Authentication marks
8	Direction of rotation
9	Temperature Class
10	Degree of protection
11	Insulation Class
12	Energy Efficiency Index (EEI Rating)
13	Frequency (Hz)
14	Voltage (V)

Technical Parameters and Installation Dimensions		
Power Supply Voltage	220V-240V,50/60Hz,PE	
Motor Protection	The pump does not require any secondary protection	
Degree of Protection	IP44	
Insulation Class	H	
Relative Humidity (RH)	Max. 95%	
System Load Bearing	1.0 mPa	
Suction Port Pressure	Liquid Temperature	Minimum Inlet Pressure
	≤+85°C	0.005 mPa
	≤+90°C	0.028 mPa
	≤+110°C	0.100 mPa
EMC Standard	EN61000-3-2 and EN61000-3-3EN55014-1 and EN55014-2	
Sound Pressure Class	The sound pressure level of pump is lower than 42dB (A)	
Ambient Temperature	0 ~ +40°C	
Temperature Grade	TF110	
Surface Temperature	The maximum surface temperature is not higher than +125°C	
Liquid Temperature	+2~110°C	

To avoid condensation in the control box and the stator, the temperature of liquid being pumped must always be higher than the ambient temperature.

Ambient Temperature	Liquid Temperature	
	Min. (°C)	Max. (°C)
0	2	110
10	10	110
20	20	110
30	30	110
35	35	90
40	40	70

For domestic heating, it is suggested that water temperature should remain below 65°C to reduce scaling.



Product Model	Dimension (mm)						
	L1	L2	B1	B2	H1	H2	G
DHCP	65	130	82	130	103	130	1 1/2”

Before conducting any maintenance and repair of the pump, ensure that the power supply has been disconnected.

Symptom	Control Panel	Cause	Corrective Action
Pump cannot be started	Indication lamp “Off”	Equipment fuse burned	Replace the fuse
		The circuit breaker of current control or voltage control opens	Connect the circuit breaker
		Intermittent power supply	Check cable for any brakes / damage
		Failure of pump motor	Return to manufacturer
	Flickers once	High Voltage	Check whether power supply is in specified range
	Flickers twice	Under Voltage	Check whether power supply is in specified range
	Flickers three times	PCB component failure or motor failure	Return to manufacturer
	Flickers four times	Missing phase protection	Return to manufacturer
	Flickers five times	Rotor blocked	Remove the pump house and clean rotor
	Flickers six times	No water in the pump	Open the valve and supply water to the pump
	N/A	Stuck bearing	Run the pump at its highest speed for a short period of time (10 mins minimum). Loosen the rotor at the end of the shaft
	N/A	Air trapped in the system	Vent the system. Install an automatic air vent if one not present
Noisy Pump	N/A	Air in the pump	Allow the pump to run, it will vent itself over time
	N/A	Inlet pressure is too low	Increase the inlet pressure until the noise stops (do not increase the pressure more than the recommended maximum)

strada®

Unit A - 82 James Carter Road, Mildenhall Industrial Estate, Suffolk, IP28 7DE