Instruction manual

CE EEI≤0,23

CIRCULATION PUMP

MAGI-H

MAGI H 25-120/180, MAGI H 32-120/180

CAUTION! Read the instruction manual before use. For safety reasons only persons knowing precisely the instruction manual may operate the pump.

Table of contents

Any use of the device, other than the intended use, is a foreseeable misuse of the device.

Information / symbols used in the manual device

Warning!

"Danger" symbol used for notes whose non-observance may result in danger to life or health caused by the electrical installation. The power cord of the pump must be disconnected from the power supply before carrying out the operations marked with this symbol.

Warning!

"Danger" symbol used for notes whose non-observance may result in danger to life or health.

Failure to follow the rules contained in this manual will result in the risk of explosion or ignition.

Note!

Symbol used for notes whose non-observance may result in a risk of damage to the equipment and danger to life or health.

Please read this installation and operating manual carefully before installing and operating the product to avoid unnecessary losses.

Attention!

The operating manual is an essential part of the contract of sale. Failure by the user to observe the instructions in the operating manual constitutes non-compliance with the contract and excludes any claims arising from a possible failure of the equipment resulting from use contrary to the instructions.

The manufacturer shall not be liable for malfunctions if the equipment was incorrectly connected, damaged, modified and/or used for a purpose outside the scope of the recommended work or contrary to the guidelines included in this manual. The manufacturer shall also not be liable for possible errors in the operating manual caused by misprints or copying errors. The manufacturer reserves the right to make any modifications to the product which it may deem necessary and useful and which do not affect its essential characteristics.

DAMBAT shall not be liable for damage to the equipment, property or personal injuries as a result of failure to adhere to the instructions in the manual, including incorrect selection of the equipment, assembly not complying with the manual, applicable standards and national regulations, incorrect maintenance of the equipment and the entire system.

This equipment is not intended for use by persons (including children) whose physical, sensory or mental abilities or lack of experience and knowledge prevent them from using it safely without supervision or instructions.

Safety of use

This manual has been created for users to facilitate the correct operation of the MAGI-H pumps. The information contained in this manual is subject to change without prior notice.

To ensure correct and safe use of MAGI-H pumps and to avoid possible damage to the pump and dangerous situations for users, please read the following instructions carefully before installing and operating the device.

Precautions on use of MAGI-H series pumps

1. Before installation, read the following manual carefully
2. Failure to observe the fragments marked with warning signs may cause bodily injury, pump damage and other property losses, for which the producer takes no lability, including but not limited to liability for damages.

3. The fitter, maintenance technician and user have to observe the local safety regulations.
4. The user must confirm that the installation and maintenance of the product are performed by personnel having adequate knowledge and professional experience connected with the structure and operation of water systems.

5. Pumps cannot be installed in moist environment or in places which can be exposed to flooding with splattering water.
6. To make maintenance easier, place a ball valve on both sides of the pump.

7. During installation and maintenance, cut off the electric power supply from the pump.
8. The hot water circuit cannot be frequently refilled with non-softened water to avoid accumulation of scale in the pipeline. High accumulation of scale can block the rotor of the device.

9. The pump cannot be run without water.

10. If the pump is dismounted from the pipeline, either discharge the water from the system or close the ball valves cutting the pump off before dismounting to avoid possible burning with hot water. Please remember that the the waetr can have high temperature and pressure.

11. In dismounting the pump from the pipeline, the water, which can have high temperature and high pressure, will flow outside. Please be careful not to cause bodily injury due to burning and not to flood other devices.

12. In summer or when the ambient temperature is high, pay attention to proper ventilation in the room where the pump has been installed. It will help prevent condensation of humidity, which can cause an electric failure.

13. In winter, if the hot water system where the pump has been installed does not work and the ambient temperature is below 0°C, discharge water from the hot water system. Please bear in mind that freezing water can burst the pump body.
14. If the pump does not operate for a long time, close the ball valves cutting off the pump and cut off electric power supply.
15. If the electric wire powering the pump is damaged, refer to an authorised servicing team to replace it along with its switch.
16. If the pump motor heats up excessively (more than usually), immediately disconnect the pump from its power source, close the cut off valves and contact a servicing team.
17. If a pump failure cannot be removed according to the manual, immediately disconnect the pump from its power supply, close the cut off valves and immediately contact the local manufacturer or the servicing centre.
18. The product must be placed in a place far away from children and measures to isolate the product must be taken to avoid children touching it.
19. The product must be connected to the electric mains equipped with efficient electric earthing. The yellow-green core of the connection cable is earthing.
20. The product must be connected to mains equipped with a residual current circuit breaker with tripping current ΔIn not exceeding 30 mA.
21. The product must be placed in a dry, well-ventilated and cool place and stored at room temperature.
22. This equipment is not intended for use by persons (including children) with reduced motor, sensory or mental capacities, or persons without experience or not familiarised with the equipment, unless it is performed under supervision or according to the instruction regarding operation provided by persons responsible for their safety. Attention should be paid so that children do not play with the equipment

Inspection / Conditions of use

The series of MAGI-H circulation pumps is used mainly in water circulation in boiler central heating systems in housesfor the circulation of domestic hot water.

The MAGI-H series circulation pump serves best in the following systems:

- Fixed-temperature heating system with variable flow
- Heating system with variable pipeline temperature
- Heating system with night mode
- Air conditioning system
- ndustrial circulation system
- Home central heating and home hot service water service

The MAGI series circulation pump is equipped with a motor with permanent magnets and pressure difference regulator, which constantly and automatically adapt the pump efficiency to meet the actual needs of the system. The MAGI series circulation pump is equipped with a control panel on the top of the motor, which makes it easier to use it.

Benefits of installation of MAGI pumps. Ease of installation and launch Terms of use

- MAGI-H series circulation pump has an auto-adaptation AUTO mode (factory settings). In most cases, the pump can be launched without the necessity to introduce any regulations and it can be automatically adapted to the current needs of the system.
- High comfort of use
- Low noise level of the pump and the entire system(under <43 dB(A))
- Low power consumption
- Compared to the traditional circulation pump, power consumption of the MAGI-H series pump is very low and can reach even 10W, depending on the system.

Conditions of use

- Permissible ambient temperature from 0°C to + 40°C.
- Maximum permissible relative humidity (RH) 95%
- Permissible water temperature +2°C~95°C. To prevent condensation of steam on the control panel and the stator, the temperature of the water circulating running through the pump must always be higher than the ambient temperature.
- The permissible maximum pressure in the system is 1,0 MPa (10 bar)
- Protection rating IP 42
- Pump input signal

To avoid damaging pump bearings by cavitation, the following minimum pressure must be maintained at the pump input:

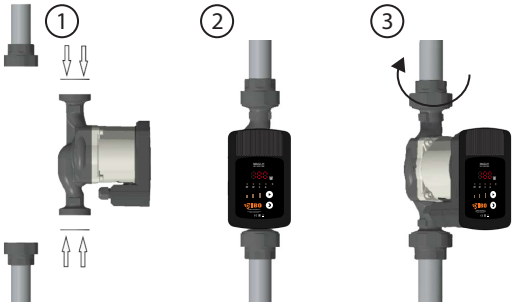
Heating medium temperature [°C]	<75°C	90°C	110°C
Minimum input pressure	0.05 bar	0.28 bar	1,08 bar
	0,5 m of H_2O column	2,8 m of H_2O column	5 m of H_2O column

Heating medium

Thin, clear and non-explosive liquid not causing corrosion does not contain any solid particles, fibres or mineral oil. The pump cannot be used to transport inflammable or explosive liquids such as vegetable oil or petrol. If the circulation pump is used to pump highly viscous liquid, the pump effectiveness will drop. In such a case, a stronger pump must be used to obtain proper parameters. Pump can work with water mixed with glycol in1:1 ratio.

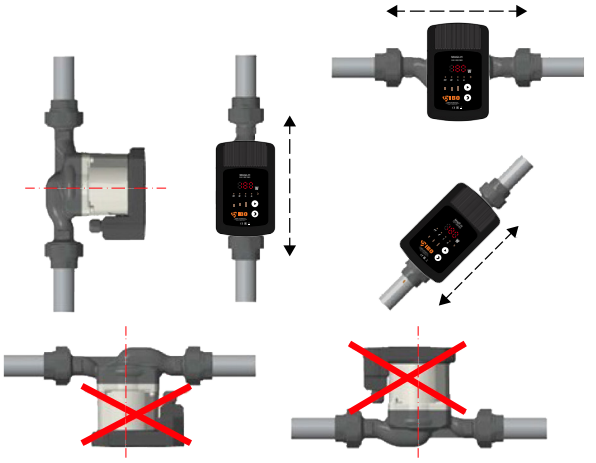
Installation

1. Before installing the pump, check that the pipeline system is clear, make sure that it is not contaminated with slag, dirt, etc. The power supply frequency is 50 Hz / 60 Hz at a voltage of 230 V. The permissible voltage fluctuation value can be between -10% and + 6%.
2. In installation, please pay attention to the flow direction of the heating medium. An arrow on the pump body shows the flow direction forced by the pump. That direction must be compliant with the circulation of the medium in the system.
3. In installation, please use the bolts with rubber sealing included in the set.
4. Check this function regularly and that the cold resistance does not exceed 50 MΩ.

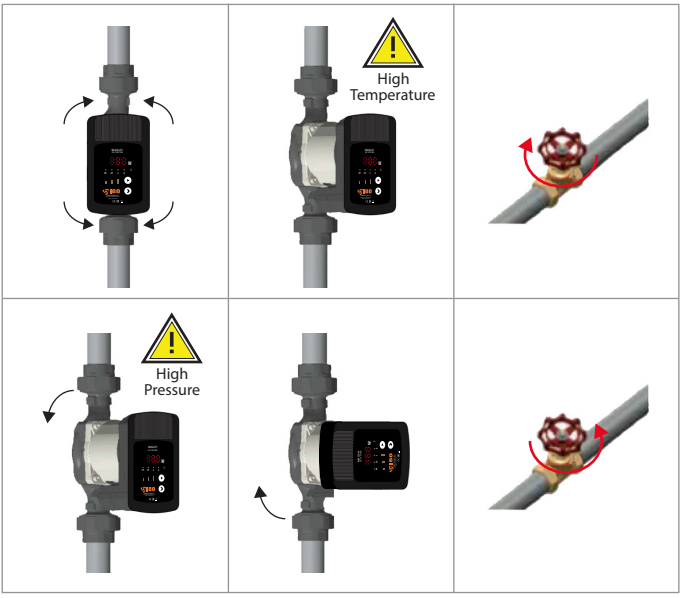


Installation

5. The pump should be installed in such a way that the pump shaft is horizontal



6. Permissible positioning of the control panel:



7. Change in arrangement of the control panel

The control panel along with the motor corpus can rotate every 90°. To change the position of the junction box, perform the following activities:

7. 1. Disconnect the pump from power supply.

7. 2. Close the cut off valves at the inflow and outflow of the pump and perform decompression;

7. 3. Loosen and remove four bolts fixing the head in the pump body;

7. 4. Rotate the motor into the desired position and fit four openings for bolts;

7. 5. Insert four ampoule head screws to proper sockets and tighten them;

WARNING! The heating medium can have high temperature and pressure, therefore it is necessary to discharge the liquid from the system or close the cut-off valves on both sides of the pump before the ampoule head screws are removed.

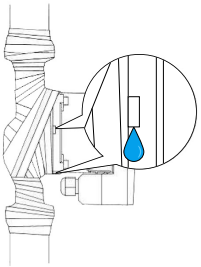
After the position of the pump control panel is changed, do not start it before the heating system is refilled with the heating medium or before the cut-off valves before and after the pump are opened.

Pump body and motor thermal insulation

In order to limit heat losses at the heating medium flow through the pump, the pump and motor body can be thermally insulated by means of, for example, a Styrofoam lining.

No not insulate or cover the junction box or the control panel.

If the unit is fitted with thermal insulation, make sure the condensation drainage holes in the motor housing are not closed up or obstructed in any way.



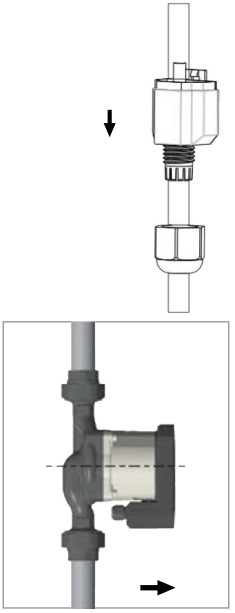
Electric connection

Electric connection

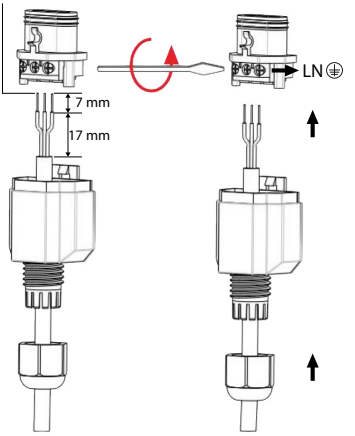
- The electrical connection and protection must be carried out in accordance with local regulations. The connection should be carried out by a person with the appropriate knowledge and experience.
- Pump must be connected to the ground wire ⏚.
  The pump must be connected to an external power switch and the minimum clearance between the electrodes should be 3 mm.

- MAGI-H series circulation pump does not re quire any external motor guards.
- Check if the power supply voltage and frequency are compliant with the parameters specified on the rating plate.
- Use the special plug supplied with the pump to connect the power supply cable.
- If the control signal on the control panel illuminates, the power supply is switched on.
- Power connected with the pump need 1 A fuse.

The original cable cores have a cross-section of 0,75 mm²

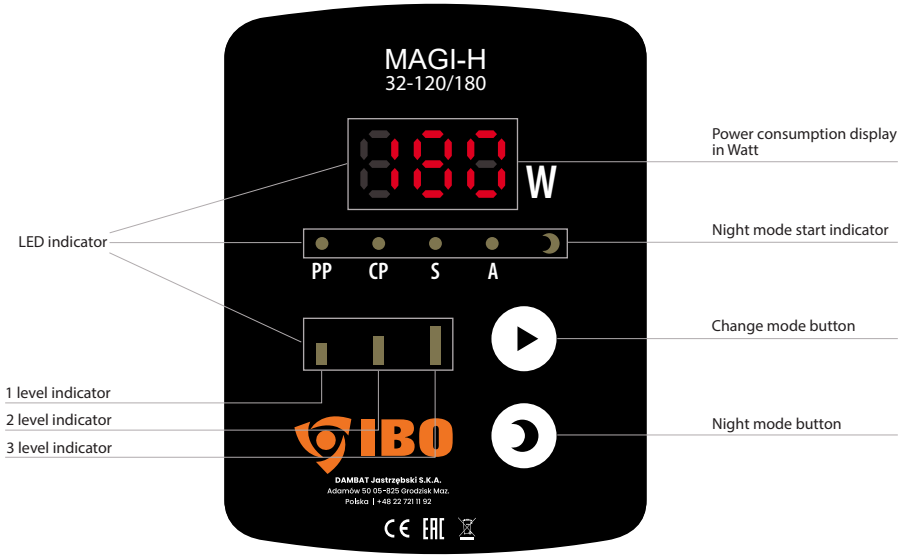


Insert cables and tighten them in proper sequence



Max. diameter is φ 1 mm²
Max. diameter is φ 0,5 mm²

Control panel elements



Operating mode selection procedure

After starting, all operating mode indicators will light up for a moment and then the pump will enter the last operating mode started before switching off.

Press once the main switch ▶ of the operating mode switch causes the mode change according to the following order:

AUTO (A), PP1, PP2, PP3, CP1, CP2, CP3, S1, S2, S3, A.

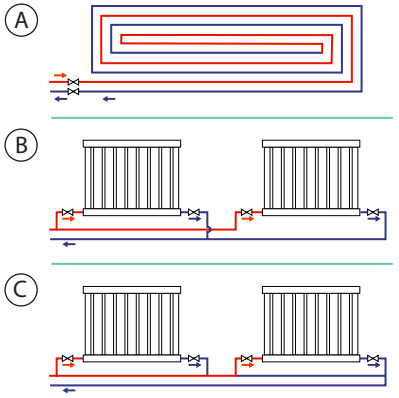
Each choice corresponds to highlighting the appropriate indicators. For the selection of the autoadaptive mode, the A indicator will be illuminated. For the positive displacement of the PP (proportional pressure) mode, the PP indicator and one of the level indicators 1,2,3 will be illuminated, which will correspond to the PP1, PP2, PP3 choices. For the CP constant pressure mode selection, the CP indicator and one of the level indicators will be illuminated. It will be the same for choosing the fixed speed mode for which the S indicator will be displayed, and the level indicators 1,2,3.

Operating mode selection

Operating mode selection depending on the central heating installation type

Factory settings – AUTO (auto-adaptation mode depending on the central heating system status).

Recommended possible pump settings, depending on the heating system type.



Symbol of the above diagram	System description	Pump setting	
		Optimum	Other admissible
A	Floor heating	AUTO (A)	CP
B	Heating system with a separate feeding pipe and separate receiving pipe	AUTO (A)	PP
C	Heating system with a single peripheral feeding-receiving pipe (serial)	PP1	PP2

- AUTO (auto-adaptation) adjusts the pump efficiency to the current system heat demand. Since the efficiency is regulated gradually, it is recommended to set the AUTO (auto-adaptation) mode at least a week before changing the pump settings.
- The pump settings change from the optimum settings to other optional settings. The heating installation is a free system, it is impossible to reach an optimum operating mode within several minutes or hours. If the optimum pump settings do not reach ideal heat distribution in each room, change the pump settings.
- Dependency between the pump settings and the efficiency curve, see chapter „Efficiency curve".

Starting the pump

Before starting the pump, make sure that the system is filled with liquid (heating medium), the system has been properly vented, and the pump inlet pressure has reached the minimum inlet pressure as required.

Bleeding

The pump must be bled before the first start-up and before each heating season. The above can be done by starting the pump in S3 mode i.e. highest constant speed. After a certain period of time, the pump should bled itself.

Dependency between pump settings and its operating parameters

Setting	Krzywa charakterystyki pracy pompy	Funkcja
AUTO (factory settings)	From the highest to the lowest curve of proportionate pressure characteristics	- The AUTO function controls the pump efficiency automatically in the specified range. - It adjusts the pump efficiency depending on the system size; - It adjusts the pump efficiency according to the load change for a certain period of time; - In the AUTO mode, the pump is set for the proportional pressure control mode.
PP1 / PP2 / PP3	Curves of proportionate pressure	The operating point will move up and down along the proportional pressure curve depending on the demand of the system flow: when the flow demand decreases - the water pump pressure drops; whereas when he energy demand increases - it increases.
CP1 / CP2 / CP3	Curves of constant pressure	The operating point of the pump moves forward and backward o the constant pressure curve according to the system demand. The water pump pressure remains constant, it has no relation to the flow demand.
S1 / S2 / S3	Curves of constant rotary speed	Regardless of the system demand, the pump maintains a consains set impeller speed

Efficiency curve

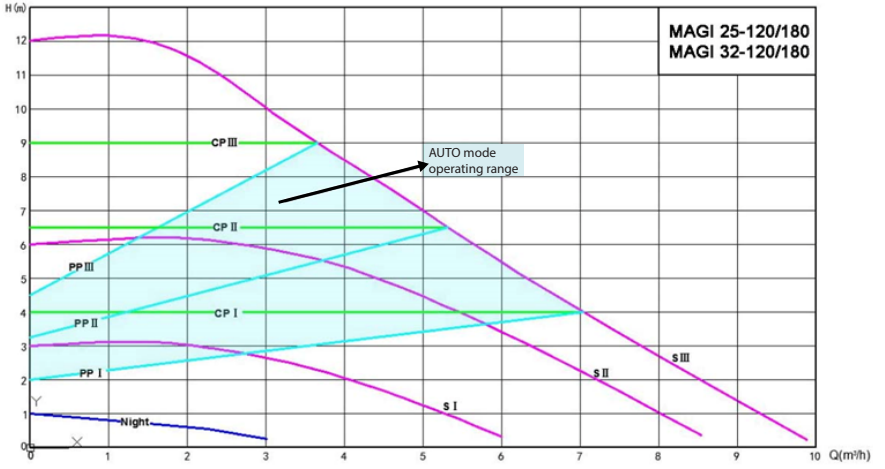
Efficiency curve guidance

Any pump setting will have a proper efficiency curve (Q / H curve). The AUTO (auto-adaptation) mode covers the efficiency scope.

Conditions to obtain the curve

Poniższy opis dotyczy krzywych wydajności dla pomp serii MAGI-H:

- Pumped medium: water without gas.
- The water density for which the curves were created was ρ= 983,2 kg / m^3, temperature + 60°C.
- All values expressed with curves are means, they cannot be treated as guaranteed curves. If a specific efficiency is required, carry out a separate measurement for the given pump.
- The curves were created using pumped water kinematic viscosity υ = 0,474 mm^2/ s (0,474CcST).



The reference criterion for the most energy-efficient circulators is EEI ≤ .20.

For the MAGI pump, the EEI≤0.23 coefficient means that the MAGI pump is an energy-saving pump.

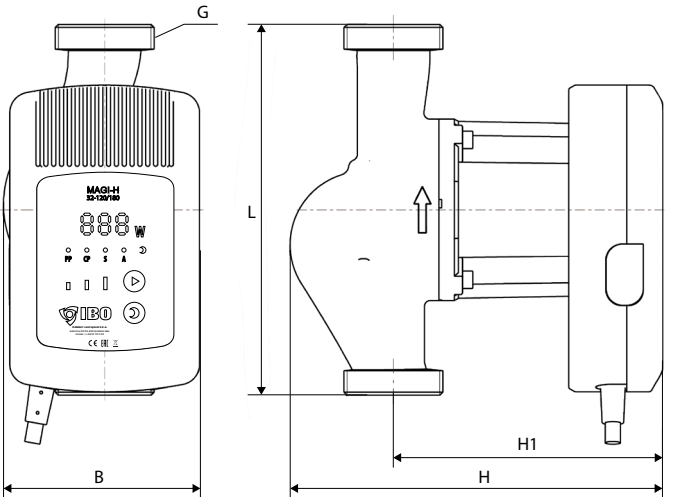
In order to protect the control panel and the pump stator against water steam condensation, always keep the temperature of the heating medium higher than the ambient temperature.		
Ambient temperature [°C]	Heating medium temperature [°C]	
	Minimum [°C]	Maximum [°C]
0	2	110
10	10	110
20	20	110
30	30	110
35	35	90
40	40	70
If the pump is used in the hot usable water system, it is recommended to reduce the water temperature below 65 °C.		

Power supply	1×230 V +6% / -10% 50 Hz, PE	
Motor protection	There is no need for additional motor protection	
Protection rating	IP 42	
Insulation class	F	
Maximum relative humidity	≤ 95%	
Maximum pressure in the central heating system	1 MPa	
Minimum inflow pressure at suction depending on heating medium temperature	Medium temperature	Minimum inflow pressure
	≤ 75°C	0.005 MPa
	≤ 90°C	0.028 MPa
	≤ 110°C	0.108 MPa
Acoustic pressure of working pump	43 dB (A)	
Permissible ambient temperature	0~+40°C	
Maximum heating medium temperature	TF110	
Maximum heating up of pump surface	≤ 125°C	
Range of temperatures of pumped liquid	2~+110°C	
EEI	<0,23	

Technical data

Installation dimensions

Type:	L [mm]	B [mm]	H [mm]	H1 [mm]	G	Union
MAGI-H 25-120/180	180	95	182	131	1 ½"	1 ½" na 1"
MAGI-H 32-120/180	180	95	182	131	2"	2" na 1 ½"



Maintenance and storage

- Maintenance must only be carried out by a qualified electrician.
- Maintenance work is not necessarily identical with each equipment, and the extent of the work is decided by the maintenance technician.
- Any work after opening the device should be performed no earlier than 15 minutes after disconnecting it from the power supply.
- In summer, adequate ventilation is required. At the same time, the device should not be exposed to direct sunlight or rain. In winter, store in a warm place, away from flammable substances.
- Cut the power if the unit is not operating for prolonged periods.

Troubleshooting

Issue:	Possible cause:	Solution:
The pump fails to launch	Tripped installation fuse	Check the cause, replace the fuse
	Overcurrent circuit breaker switched off	Start the breaker
	Pump damaged	Replace the pump
	Voltage too low	Check if the main voltage is compliant with the supplier's specificationis compliant with the supplier's specification
	Pump rotor blocked	Unlock the rotor
Loud system operation	Air in the installation	Bled it
	Flow too high	Increase the inflow pressure at the inlet to the pump
Loud pump operation	Air in the pump	Bled it
	Inflow pressure too low - cavitation	Increase the inflow pressure at the inlet to the pump
Heat insufficiency in the installation	Pump parameters too low	If possible, increase the pump operation mode into a more efficient one, otherwise install stronger pump

Error cod display:

Error cod	Possible cause:	Solution:
E1	Pump is blocked	Unlock impeller, clean system
E2	Lacking phase	Replace pump
E3	Overvoltage or undervoltage	Check supply installation parameters
E4	Short circiut	Replace pump

Warning:
Before any maintenance or repair activities, make sure that the power supply is cut off and cannot be turned on by accident.

Utilization of used product

Let's take care of our environment!

Each user can contribute to the protection of the environment. It is neither difficult or Expensive. For this purpose, a cardboard box for waste paper, bags should be provided of plastics in the plastic container. Used device should be returned to an appropriate storage point.

Disposal Information

The packaging of this product can be recycled. Contact the local authorities for information on the correct method of disposal.

The used product is subject to disposal as waste only in selective waste collection organized by the Network of Communal Electric and Electronic Waste Collection Points. The consumer has the right to return the used equipment to the electrical equipment distributor's network, at least free of charge and directly, as long as the returned device is of the correct type and performs the same function as the newly purchased device.

It is forbidden to throw away the used device together with other household waste!

The year the device was marked with the CE mark.....
(entered by the seller on the basis of the nameplate)

EC declaration of conformity | module A

1. Circulating pumps MAGI-H:
   MAGI 25-120/180, MAGI 32-120/180

2. Dambat Jastrzębski S.K.A., Adamów 50, 05-825 Grodzisk Mazowiecki, POLAND, e-mail: **biuro@dambat.pl**

3. This declaration of conformity is issued under the sole responsibility of the manufacturer.

4. MAGI-H circulation pumps from the series included in point 1.

5. We declare with full responsibility that pumps included in the point 1 to which this declaration refers to are consistent with the following guidelines of the Council on legal regulations unification in member states of EC:

- LVD Directive No. 2014/35 / EU,
- EMC Directive No. 2014/30 / EU,
- Directive MD No. 2006/42 / EC,
- ErP Directive No. 2009/125 / EC

6. Applied standard:
   EN 809:1998+A1:2009+AC:2010,
   EN 60204-l:2006+Al:2009+AC:2010,
   EN 60335-l:2012+AC:2014, EN 62233 : 2008+AC:2008,
   EN 60335-2-41:2003+Al:2004+A2:2010,
   EN 60335-2-51:2003+Al:2003+A1:2008+A2:2012,
   EN 60034-l : 2010+AC:2010,
   EN 55014-1:2006+A1:2009+A2:2011,
   EN 55014-2:1997+A1:2001+A2:2008, EN 61000-3-2:2014,
   EN 61000-3-3:2013, EN 16297-1:2012, EN 16297-2:2012.

Adam Jastrzębski
23.04.2023

WARRANTY CARD

The following warranty card is valid only with the original purchase document, i.e. invoice or receipt.
In addition, it must be certified by the seller with a signature and stamp.
The warranty card without the original purchase document attached is invalid.

1. The guarantor of the device is DAMBAT Jastrzębski S.K.A.; service address: Adamów 50, 05-825 Grodzisk Mazowiecki, Poland, Panattoni complex.
2. For customers with original proof of purchase in the form of a fiscal receipt, or original invoice, the warranty period is 36 months.
3. The warranty does not include, limit, or suspend the buyer's rights under the warranty provisions for defects in the goods sold.
4. The warranty includes free repair of defects in the device caused by a manufacturing error.
5. A condition of the warranty is that the instructions in the instruction manual are followed.
6. The warranty does not cover:
   - Damage resulting from improper handling or operation not in accordance with the intended use and operating instructions
   - Damage caused by external forces, the cause of which lies outside the device to which the warranty applies (e.g. frost damage, transport damage, fire, flood, etc.).
   - Damage caused by interference in the construction of the device by persons not authorized by the guarantor.
7. The warranty is void in the event of:
   - Determination at the authorized service center of design changes made by a person not authorized by the guarantor;
   - Finding at an authorized service center attempts to disassemble the device by a person not authorized by the guarantor, beyond the activities allowed by the operating instructions
   - Finding at the authorized service center any corrections in the warranty card, made by persons not authorized by the guarantor
   - Finding at the authorized service center any discrepancies between the entries on the warranty card and the purchase document.
8. The warranty covers only devices operated in the territory of the Republic of Poland.
9. In the case of shipping the device for repair by the user, when shipping equipment - among other things, weighing more than 20 kg - the guarantor covers the cost of transportation to the service. Before shipping, please contact the guarantor for information on which courier company to send the device (phone 22 632 86 09). The guarantor accepts only shipments sent in the standard service. Shipments sent at the expense of the guarantor using other than standard service will not be received. The guarantor does not accept COD shipments. The user should prepare (protect) the device for transport so that it is not damaged. Any damage caused by the customer is not subject to warranty repair.
10. Apart from the terms of the warranty, the buyer is not entitled to any compensation.
11. If you send a working device to the service center, not subject to warranty repair, you may be asked to reimburse the cost of inspecting the device, and reimburse the cost of returning the device from the service center to you.
12. In the event that the warranty provider does not consider the damage to be the fault of the manufacturer, the user may be asked to refund the cost of transportation to the service center and refund the cost of returning the device to the user.
13. Warranty repair will be carried out within 14 working days from the date of delivery of the device to the service, except for the following. including special cases when the defect is not permanent and longer diagnostics of the device are necessary.
14. The guarantor does not provide information about the status of the repair, as well as the course of the repair itself of the device sent for service.
15. If you have an email address, please provide it below:

    User email address: .....
16. Providing the address by the user will facilitate communication with the service and may speed up repairs.
17. Contact to nationwide service: tel/fax 22 632 86 09, e-mail: serwis@dambat.pl Business hours: Monday-Friday 8.00-16.00

DEVICE TYPE:

NO. PRODUCTION :

.....
DATE OF SALE (month in words)SELLER'S

.....
SEAL AND SIGNATURE

Notes

Notes

Notes

IBO | dambat.pl | BIURO@DAMBAT.PL | BIURO / OFFICE +48 22 721 11 92