IMPPUMPS
Intelligent Motor Pumps

FMT Micro

BTU / BT / BU / B



English (EN) - Installation and operation manual

Compliance of the product with EU standards

EU directive	Harmonized standard
Low Voltage 2014/35/EU;	EN 60335-1 EN 60335-2-51
Electromagnetic Compatibility Directive (EMC) 2014/30/EU	EN 55014-1 EN 55014-2 EN 61000-6-1 EN 61000-6-2 EN 61000-6-3 EN 61000-6-4 EN 61000-3-2 EN 61000-3-3 EN 61000-3-11 EN 61000-3-12
Restriction of the Use of Certain Hazardous Substances (RoHS)	2011/65/EU

Contents

1 General information 4
1.1 Symbols 4
1.2 Safety 4
2 Usage 5
3 Technical specifications 6
3.1 Pump data 6
3.2 Flow medium 6
3.3 Temperature and humidity 7
3.4 Electrical specification 8
3.5 Main components 9
4 Installation 10
4.1 Hydraulic connection 10
4.2 Electric connection 11
5 Setting and operation 12
5.1 Features 12
6 Maintenance, spare parts, disposal 16
6.1 Preventive measures 16
6.2 Cleaning 17
6.3 Service and spare parts 18
6.4 Disposal 19
7 Warranty 19

We reserve the right to make changes!

1 GENERAL INFORMATION

1.1 SYMBOLS

The following symbols are used throughout the document::



Advice:
Tips that will make the use of the product easier.



Safety warning:
Ignoring safety warnings can cause bodily harm and damage the device.

1.2 SAFETY



These instructions must always be kept in the immediate vicinity of the pump. Failure to follow the instructions may result in material or bodily injury and will void the warranty.

Before installing and starting up the pump, carefully read these instructions which are intended to assist you with installation, operation, and maintenance. Follow the safety instructions. The installation and connection of the pump must be carried out in accordance with local regulations and standards. The pump may only be serviced, installed, and maintained by qualified personnel.

Failure to comply with the safety instructions and standards may result in injury to persons and damage to products, or may lead to the loss of the right to claim compensation. The safety functions of the pump are guaranteed only if the pump is maintained according to these instructions and used within the permitted operating range.



The pump may only be upgraded or modified in agreement with the manufacturer.

1.3 PUMP LABELLING

	FMT	Micro	--		
			BTU	✓	✓
			BU	×	✓
			BT	✓	×
Pump family			B	×	×
Model name					
Version					
Equipped with				*Thermostat*	*Timer*

2 USAGE

FMT Micro circulation pumps (Flat Motor Technology) are intended for installation in building water supply systems, primarily to ensure continuous flow in additional circulation lines for immediate availability of hot water at points of use.

3 TECHNICAL SPECIFICATIONS

3.1 PUMP DATA

Pumps are intended for operation in the following conditions:

FMT MICRO B/BU/BT/BTU	
Maximum system pressure	10 bar(1.0 MPa)
IP (Ingress Protection) rating	IP 44

3.2 FLOW MEDIUM

For normal operation of the pump it is necessary to supply clean water without aggressive or explosive additives and impurities and without mineral oils, solid or fibrous particles. The pump must not be used for pumping flammable or explosive media, nor in explosive atmospheres.

Due to the magnetic rotor, the pump is prone to the accumulation of magnetic particles on the magnet, which can damage the pump internal surfaces. In addition, limescale, sludge, and other impurities commonly found in water can accumulate on the rotor and other internal parts. These sensitivities have been minimized through design measures; nevertheless, such failures (wear of bearing surfaces, rotor blockage) are under no circumstances covered by warranty claims.

The pump is designed to allow for regular cleaning. See chapter 6.3 .



The pump must not run dry.



It is prohibited to pump corrosive, toxic, or flammable liquids, strong acids or bases, and seawater.



For more reliable and long-lasting operation, we recommend installing a particle filter in the building's water supply system. In areas with hard water, we also recommend using a water softening device.

3.3 TEMPERATURE AND HUMIDITY

Medium		Environment	
Minimum temperature	5 °C	Minimum temperature	0 °C
Maximum temperature	85 °C	Maximum temperature	50 °C
Maximum system pressure	10 bar (1.0 MPa)	Maximum relative humidity	95% at 50 °C



The pump is intended for use indoors. Use in explosive atmosphere is prohibited.



Operating outside the permitted conditions may shorten the service life and void the warranty. Prolonged operation under limit conditions can accelerate ageing and wear of the pump.

3.4 ELECTRICAL SPECIFICATIONS

Quantity	Min	Max	Unit
Grid voltage	100	240	V
Grid frequency	50	60	Hz
Rated power		7	W
Supply current	0.1	2.5	A
Rotor speed	2500	3400	RPM

3.5 MAIN COMPONENTS

1 - Hydraulic casing
2 - O-ring seal
3 - Rotor
4 - Bearing
5 - Electronics housing
6 - Screws
7 - Connector

* - flow direction



4 INSTALLATION

4.1 HYDRAULIC CONNECTION

The flow direction of the medium is marked on the pump housing. In some return (circulation) line systems, it is recommended to install a check valve after the pump, to ensure that when a valve/tap is open, water flows only through the line without the pump. However, a check valve is not mandatory for pump installation.

The pump head, i.e., the electronics housing, can be rotated freely relative to the hydraulic housing. Instructions for disassembly and assembly can be found in section 6.3 .

The area around the pump should be dry and well lit. The pump sealing prevents the ingress of water and dust from the surroundings as defined by the IP protection class.

The pump does not have a vent screw as it de-aerates automatically. Until the pump is fully vented, air inside it may cause noise. Once the air is let out, this noise will disappear.



Incorrect connection or overloading may switch off the pump or cause permanent damage.

The pump must not be installed in safety pipelines.



The pump must not be used as a support when welding the piping system, as this may cause damage!



If the O-ring between the hydraulic housing and the pump motor is not installed correctly, the pump will not seal properly and there is a risk of damage due to water ingress.

Hot media pose a risk of burns. The pump housing itself can also reach temperatures hazardous to people.

4.2 ELECTRIC CONNECTION

The electrical connection of the pump to the mains must be carried out using an appropriate cable (3G 1 mm², H05RR-F) connected to the supplied connector. Connection instructions are included in the connector bag.

The pump has built-in temperature protection and basic over-voltage protection. It does not require an additional thermal protection switch. The supply conductors must be suitable for continuous load at the rated power of the pump and must be properly protected. The use of a grounding conductor is mandatory and should be connected first. Grounding is sufficient only for protecting the pump itself. The pipelines must be grounded separately.



The connection of the pump must be carried out by trained and qualified personnel.

The connection cable must not touch piping or pump housing to prevent possible contact with conductors due to high temperatures.



The device is not intended for use by children or persons with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they are supervised or instructed in the use of the device by a person responsible for their safety. Children must be supervised to prevent them from playing with the device.

5 SETTING AND OPERATION

5.1 COMMON FEATURES

All versions (B/BT/BU/BTU) have two buttons and a touch-sensitive (notched) edge on the housing.

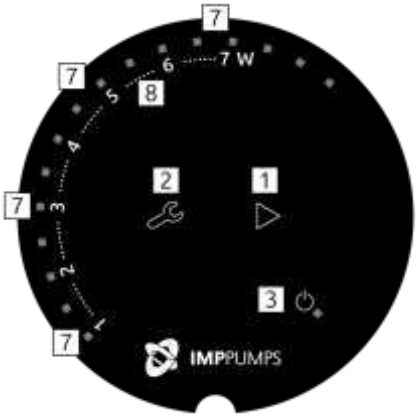
By default pumps are in *operating mode* - either on standby (always off), regulated mode or continuous operation (always on). Mode-selection button ▷ cycles between those.

Settings button 🔧 switches to *settings mode*, enabling the user to modify parameters of the *operating mode*.

5.2 VERSION B

This pump is designed for continuous operation. The user can adjust pump power and/or put it on stand-by. It has no regulated mode.

5.2.1 USER INTERFACE



1 - Mode Selection Button
2 - Power Setting Button
3 - Operation Indicator Light
7 - Touch-sensitive Edge
8 - Power Dial

5.2.2 USAGE

The Mode Selection Button ▷ cycles between standby and continuous operation.

Pressing the Settings button 🔧 puts the interface into adjustment mode that allows setting pump power using the Touch-Sensitive Edge. Another 🔧 press saves the changes; a press of the ▷ button or 30 seconds of user inactivity cancels changes and returns to previous Operating mode.

5.2.3 EXAMPLE: FIRST SET-UP

1. Turn the power on.
2. By default, the pump runs continuously on a factory-defined power.
3. Press the Settings Button 🔧. The Operation Indicator Light ⏻ starts blinking.

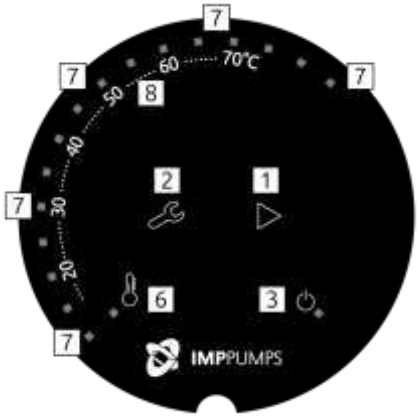
4. Swipe your finger over the Touch Sensitive Edge to adjust power. Set minimum power that still delivers hot water to your taps.
5. Press the Settings Button again to save and return to Operating mode.

5.3 VERSION BT

Version with a thermostat turns off when the measured water temperature reaches a user-set value. It can be put into continuous operation or stand-by to bypass the thermostat.

The temperature measurement is performed inside the pump and may differ from temperatures elsewhere in the system.

5.3.1 USER INTERFACE



1 - Mode Selection Button
2 - Settings Button
3 - Operation Indicator Light
6 - Thermostat Setting Light
7 - Touch-Sensitive Edge
8 - Temperature Dial

5.3.2 USAGE

The Mode Selection Button cycles between standby, regulated mode or continuous operation.

Pressing the Settings button puts the interface into temperature adjustment mode that allows setting the desired water temperature using the Touch-Sensitive Edge. Another press saves the changes; a press of the button or 30 seconds of user inactivity cancels changes and returns to previous Operating mode.

The blinking light on the Temperature Dial tells the current temperature as measured by the pump.

5.3.3 EXAMPLE: FIRST SET-UP

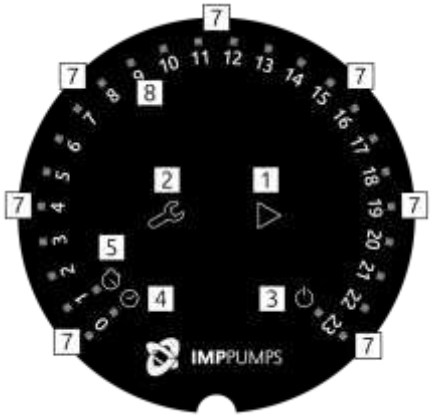
6. Turn the power on.

7. By default, the pump runs in regulated mode, maintaining a factory-set thermostat temperature.
8. Press the Settings Button . The Thermostat setting light starts blinking.
9. Swipe your finger over the Touch Sensitive Edge to set the desired temperature.
10. Press the Settings Button again to save and return to Operating mode.

5.4 VERSION BU

This version of the pump has a digital internal clock. The user defines time intervals in which the pump runs; outside those the pump is on stand-by. It can be put into continuous operation or stand-by to bypass the programmable timer.

5.4.1 USER INTERFACE



1 - Mode Selection Button
2 - Settings Button
3 - Operation Indicator Light
4 - Internal Clock Setting Light
5 - Timer Setting Light
7 - Touch-sensitive Edge
8 - Clock/Temperature Dial

5.4.2 USAGE

The Mode Selection Button cycles between standby, regulated mode (programmable timer) or continuous operation.

By pressing the button you switch to setting mode and cycle through available settings. The value currently being adjusted is indicated by a flashing light next to the corresponding symbol:

1. Timer: While the light is blinking, touching or swiping on the Touch Sensitive Edge toggles the working hours of the pump. Swiping from an active hour will deactivate all swiped hours; on the contrary, starting from a deactivated hour will delete everything on the way.
2. Clock: Touching the edge while the is blinking will set current clock to a full hour; swiping between two consecutive hours will set the half-hour in between.

Pressing the button confirms (saves) the current setting and moves to the next one or returns to operating mode. To cancel changes, press the button. After 30

seconds of inactivity the pump automatically cancels the changes and returns to operating mode.

In operating mode the indicators show:

- Standby: all indicators are off.
- Continuous operation: all indicators are on.
- Regulated mode: the set time intervals are illuminated. The timer indicator is on when the condition for pump start is met (internal clock is within set working hours).

The indicator next to the symbol signals whether the pump is running or is at standstill.



The blinking light on the Clock Dial indicates the pump's internal time.



To stop the pump it is recommended to always use the standby mode. A pump that is not connected to the power supply does not keep track of time; therefore, after a longer disconnection, you will need to re-adjust the internal clock.

5.4.3 EXAMPLE: FIRST SET-UP

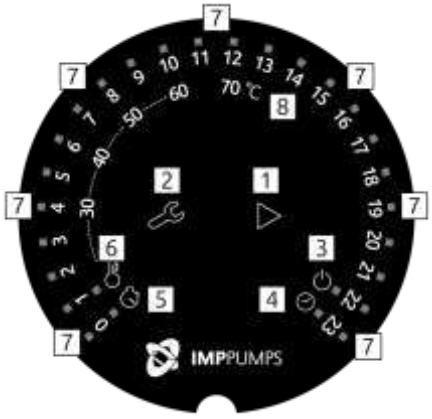
1. Power on the pump. The clock and timer will be set to a factory default.
2. Press to enter timer programming mode.
3. Touch the edge to activate or deactivate working intervals.
4. Press again to enter clock adjustment mode.
5. Touch the edge near current time. To add 30 minutes, swipe towards the next hour on the dial.
6. Press again to save settings.

5.5 VERSION BTU

The pump has a timer and a temperature sensor. Within the set time intervals, the pump switches on when the water temperature drops below the set value. It can be put into continuous operation or stand-by to bypass the thermostat and timer.

5.5.1 USER INTERFACE

1 - Mode Selection Button
2 - Settings Button
3 - Operation Indicator Light
4 - Internal Clock Setting Light
5 - Timer Setting Light
6 - Thermostat Setting Light
7 - Touch-sensitive Edge
8 - Clock/Temperature Dial



5.5.2 USAGE

The Mode Selection Button ▷ cycles between standby, regulated mode (programmable timer and thermostat) or continuous operation.

By pressing the 🔧 button you switch to setting mode and cycle through the settings. The value currently being adjusted is indicated by a flashing light next to the corresponding symbol:

3. ⏲ Timer: While the light ⏲ is blinking, touching or swiping on the Touch Sensitive Edge toggles the working hours of the pump. Swiping from an active hour will deactivate all swiped hours; on the contrary, starting from a deactivated hour will delete everything on the way.
4. 🌡 Thermostat: By tapping or sliding along the edge of the interface, you set the desired water temperature. While adjusting, the flashing indicator on the edge shows the current water temperature.
5. 🕒 Clock: By tapping you set the full hour of the pump's internal clock which must correspond to the current time. By sliding, you set the intermediate time between marked hours.

Pressing the 🔧 button confirms (saves) the current setting and moves to the next one or returns to operating mode. To cancel changes, press the ▷ button. After 30 seconds of inactivity the pump automatically cancels the changes and returns to operating mode.

In operating mode the indicators show:

- Standby: all indicators are off.
- Continuous operation: all indicators are on.
- Regulated mode: the set time intervals are illuminated. The timer and thermostat indicators are on when the condition for pump start is met - either the current time is within the set time interval or the temperature is below the set value on the thermostat.

In all modes the current internal clock is shown by a flashing indicator. The indicator next to the ⏻ symbol signals whether the pump is running or is at standstill.



In regulated mode, the pump starts only if both conditions are met: the internal clock is within the set time interval, and the water temperature is lower than the set value.



To stop the pump it is recommended to always use the standby mode. A pump that is not connected to the power supply does not keep track of time; therefore, after a longer disconnection, you need to adjust the internal clock.



The blinking light on the Clock Dial indicates the pump's internal time. When setting thermostat, the blinking light indicates current water temperature.



The temperature measurement is performed inside the pump and may differ from temperatures elsewhere in the system.

5.5.3 EXAMPLE: FIRST SET-UP

1. Pressing the button three times activates the clock setting.
    1. The indicator for the current internal clock turns on. Tap the edge of the pump at the current hour (full hour) or slide along the edge to set the intermediate time (30 minutes past the hour).
    2. With the next press of the button, you return to operating mode.
2. Pressing the button again activates the timer setting. The indicators for the currently set intervals light up. Tap or slide along the dial edge to set the hours when the pump should start.
3. Pressing the button again moves you to the thermostat setting. The indicator next to the symbol lights up. Tap to set the desired water temperature. The current water temperature is shown by the flashing indicator on the dial.
4. Press the button two more times. The first press will activate the internal clock setting (which is already set), so with the second press you exit the setting mode and return to regulated mode.
5. If you want to start the pump immediately, press the button to activate continuous operation. Press it again to stop (standby). Regulated mode is reactivated with the third press of the button.

6 MAINTENANCE, SPARE PARTS, DISPOSAL

6.1 PREVENTIVE MEASURES

Under normal conditions, the pumps operate for many years without maintenance. Cleaning should be carried out as needed; the frequency depends on the water quality.



The pump must not operate without the circulating medium.
Do not use lubricants - the pump is designed to be lubricated by the medium itself.



To prevent limescale formation, we recommend keeping the water temperature below 65 °C.

If your system has a water softening device, follow the salt dosage instructions provided.

6.2 TROUBLESHOOTING

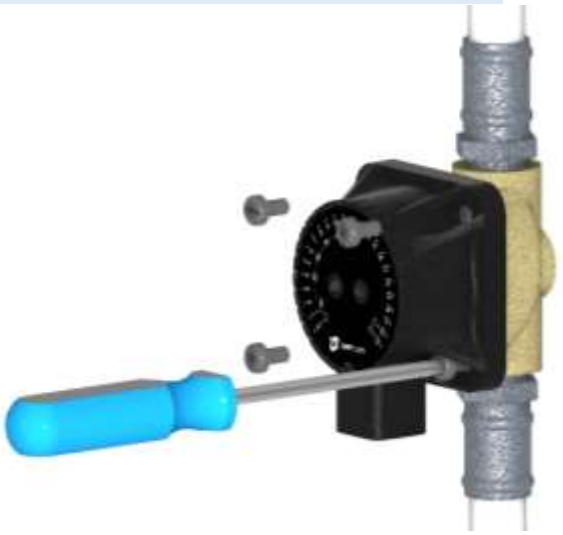
6.2.1 ERROR REPORTING

If there is a problem with the pump it will not run. Instead, the power indicator ⏻ will blink rapidly every three seconds. The number of blinks in a rapid succession will indicate an error code. Each code might give a possible cause and a solution to the problem.

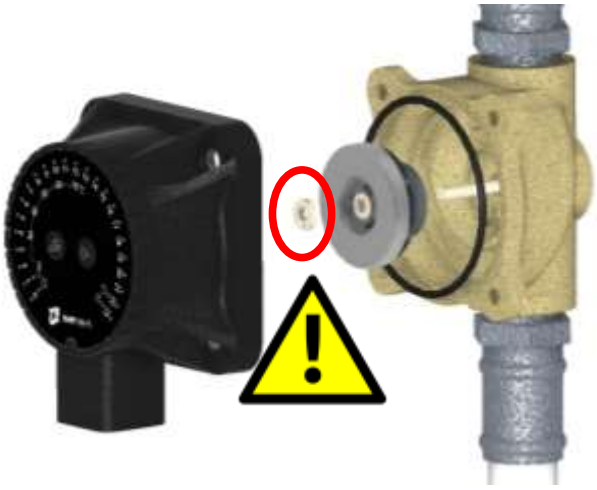
#	Description	Cause	Solution
1	Load errors	Low or high load detected.	The pump is running dry or rotor might be seized. Check for water and clean the pump if needed.
2	Protection active	Pump temperature or supply voltage is not within allowed limits.	Check power supply voltage and medium/environment temperature.
3	Pump errors	Software motor protection is active.	Clean the pump if the rotor is seized.
4	Device- specific errors	Faulty components	Contact local service.
5	Runtime error	The pump does not behave as expected.	

6.3 CLEANING

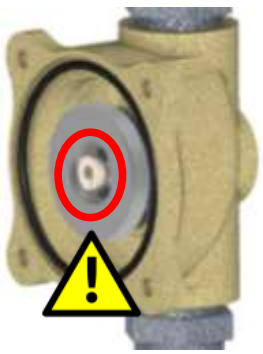
If the pump will not start, it is possible that the rotor has become blocked due to accumulated limescale and/or other dirt. Clean the pump as follows:



1. Disconnect the power supply.
2. Close the water supply up- and downstream of the pump and release the pressure in the system.
3. Unscrew the 4 screws on the electronics housing using a Torx 25 screwdriver.
4. Carefully remove the electronics housing from the pump. Pay attention to the bearing, rotor, and O-ring, as they may fall out of the pump.



5. Clean the rotor, bearing, and hydraulic casing. We recommend using a soft brush with a standard bathroom cleaner.
6. Reinstall the rotor onto the shaft and the bearing. Make sure the bearing is fully fitted onto the flattened top of the shaft in the correct orientation. Rotate it on the shaft until it falls into place.



7. Place the electronics housing back in position. Ensure that it sits steadily on the O-ring and that it does not rest incorrectly on a misaligned bearing in the centre.

8. Screw the electronics housing back onto the pump housing.
9. Refill the system and reconnect the pump’s power supply.



Do not use strong acids or bases for cleaning, abrasive cleaning agents or brushes with metal bristles.

Do not soak pump parts in cleaning agents for extended periods.

Do not submerge the electronics housing in any liquid.

6.4 SERVICE AND SPARE PARTS

The availability period for spare parts for this product is 7 years from the date the warranty expires. For service, please contact the seller, an authorized service technician, or IMP PUMPS.

6.5 DISPOSAL

This product and its parts must be disposed of in an environmentally friendly manner. Do this through specialized waste disposal companies. If this is not possible, contact the nearest IMP Pumps service centre or authorized service technician.

Follow local laws that prescribe recycling and waste disposal procedures.

7 WARRANTY

Warranty IMP PUMPS - statement

Warranty IMP PUMPS derives from the fact that all incorporated materials are validated before they are installed into products. In the process of production, each stage of manufacture is checked and at the end each pump is 100% tested and operates when it leaves the company.

All IMP PUMPS products have a 2-year warranty, which fully meets the legal requirements, except where the 5 YEAR WARRANTY is explicitly stated. The warranty period starts from the date of purchase but can not be longer than 30 months from the date of production for a 2 year warranty and 66 months from the date of production for a 5 year warranty.

IMP PUMPS 5-year warranty applies to NMT MINI, NMT PLUS and GHN threaded pumps purchased after January 1, 2019.

This warranty covers manufacturing or material defects but does not cover: errors at installation, errors in the operating system, due to sediment/dirt in the operating system or damaged packaging. IMP PUMPS is not responsible for any consequential losses from this title.

The warranty is included in the selling price.

The warranty applies only in cases of normal use - in accordance with the instruction manual.

Warranty claims will be rejected in the following cases:

If there are traces of impacts, unauthorized interference, improper handling, or incorrect installation of the pump and/or incorrect media on the pump.

- Incorrect choice of the pump according to the system,
- Abnormal wear
- Inadequate maintenance or interference by unauthorized persons
- Failure to comply with the instructions for use
- Overload due to voltage, pressure, temperature, etc.
- Use of inappropriate media (according to instructions for use)
- Effects of chemical or electrolytic action
- Magnetite in the medium
- The result of improper mounting and connection

The guarantee does not include payment of shipping/replacement/installation costs for defective products.

The warranty does not cover damage to other devices in the operating system in which the pump operated.

Warranty claims can be claimed by contacting your local sales company - IMP PUMPS or service providers and points of sale, which are authorized by IMP PUMPS.

To enforce the warranty, a proof of purchase must be provided, which is needed for a warranty claims.

Retailer	Retail company:		
	Date of purchase:		
Warranty	Product name:		
	Serial number:		
	Warranty period	24 months	60 months

Manufacturer		
IMP PUMPS d.o.o. Pod hrasti 28 1218 Komenda Slovenija	tel.: +386 (0)1 28 06 400 fax: +386 (0)1 28 06 460 e-mail: info@imp-pumps.com	Retailer's signature

Declaration of warranty and warranty terms

Manufacturer declares:

That the product will operate faultlessly within the terms of warranty in accordance with instruction manual

That he will repair faults at his own expense caused by the differences between the actual and prescribed/declared quality and/or those due to which the product does not operate faultlessly in case if the repair is not possible the manufacturer will replace the product.

Cost from the previous paragraph for repairing or replacing the product are valid for material, spare parts, work and shipping.

Shipping cost for restitution of the product are only recognized if the product was delivered to the nearest authorized service or retailer and comprise rail or postal charges.

That within the terms of warranty the repair of the product will be completed within 45 days from submission of a claim.

That the term of guarantee will be extended for the time the product was being repaired .

A warranty or purchase receipt/invoice is attached to the product

The warranty period begins on the date of purchase.

The guarantee is only valid with the submitted invoice and is not geographically limited

IMP PUMPS d.o.o. is committed to provide maintenance and spare parts after the expiry of the warranty period in accordance with the law

The warranty does not exclude consumer rights arising from the seller's responsibility for defects in products.

Warranty repairs can only be preformed by manufacturer's authorized/certified service provider. Warranty can be claimed only with approved Warranty Card or purchase receipt/invoice.



IMP PUMPS d.o.o., Pod hrasti 28, 1218 Komenda, SLOVENIJA
tel.: +386 (0)1 2806 400, fax: +386 (0)1 2806 460
e-mail: info@imp-pumps.com
www.imp-pumps.com