



USER MANUAL

EYS HGP SERIES INLINE PUMPS

HGP55

HGP75

GP150

Jan 2020

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1 INTRODUCTION

Congratulations on your purchase of the EYS inline pump!

We are glad that you chose EYS inline pump and are confident that you will be more than satisfied with your purchase.

This manual is intended to provide basic information about the operation of the EYS Pump, and to point out to main areas of consideration while operating and maintaining the machine. Please read this manual carefully before operating the machinery, and keep it in an easily accessible place for future reference. If any of your questions or concerns are not covered in this manual, please contact the respective dealer who had installed the machinery. Your dealer's contact information is:

If you are not able to reach your dealer and in need of immediate support, then please contact EYS directly at:



Apart from providing technical and operational instructions, this manual also includes certain safety warnings that must be followed by the user. **The safety instructions and warnings listed in this manual are by no means a complete list of all safety concerns associated with operating the machine. Users must apply common sense and abide by the general safety guidelines that govern operating of machinery.**

Contents of this manual refer to the latest product models currently in production at the time of preparation of the document. EYS reserves the right to make changes in the product design at any time.

Carefully following the instructions set forth in this manual are essential for maintaining operator safety as well as the longevity and efficiency of the machinery. Dealers must provide a copy of this manual to the customer along with the purchased product.

Please make sure that the operator in charge of operating and/or maintaining this product has full access to this manual and that he/she has read it entirely prior to running or servicing the machine. Also please record your product model number and serial number from the machine's info-tag to the following section. These info will be necessary and useful when ordering replacement parts in the future.

Congratulations again on your purchase of the EYS inline pump!

PRODUCT INFO**Product** : EYS INLINE PUMP**Product Type** : ☐ HGP55 ☐ HGP75 ☐ HGP110 ☐ HGP150**Serial Number** : _____**Dealer:** : _____**Address** : _____**Telephone** : _____**Fax** : _____**Installation Date:** _____**Customer** : _____**Address** : _____**Telephone** : _____**Fax** : _____

Please keep serial number of your machine in a safe place and specify model and serial number when you contact with your dealer or manufacturer.

This form confirms that the product installation and start-up has been completed successfully. Basic training has been provided and this manual has been handed over to the responsible personnel below.

Responsible person on behalf of
the dealer/distributor
(date and sign)

Responsible person on behalf of
the customer
(date and sign; please print name)



NOTE

Manufacturer's warranty is not valid unless this form is signed and dated upon installation!

1.1 WARRANTY AND SERVICE

This manual is valid for 5,5 kW, 7,5 kW, 11 kW and 15 kW inline pumps.

Provided that the principles, warnings and standards contained in this manual are followed, EYS Endüstri Makina San. ve Tic. A.Ş. grants 2 (two) year warranty against material and manufacturing defects for inline pumps.

The warranty conditions are specified in the warranty certificate, which is supplied with the inline pump in accordance with the provisions of the relevant law. Please read this information carefully. The product warranty document is signed by the point of sale along with the product and sent to you. You must keep your warranty certificate in a safe place so that it can be presented to authorized service personnel so that warranty work can be carried out during the service process.

Guarantee transactions only apply to transactions made by persons authorized by EYS Endüstri Makina San. ve Tic. A.Ş. is not responsible for any interference with the product by unauthorized, non-professional individuals. If you have any problems with the product, please EYS Endüstri Makina San. ve Tic. A.Ş. Our customer service is always available.

EYS inline pump has technological and high-quality materials that can serve you for many years without any problems. The minimum lifetime specified by the Ministry of Customs and Trade for the pump is 10 (ten) years. Under the current law, the manufacturer undertakes to maintain the submersible pump and to provide spare parts within this period.

1.2 General Instructions

Qualified Operators should be properly trained in their assigned area of responsibility, be knowledgeable about general machinery handling precautions and related hazards/risks, capable of

foreseeing and preventing potential damages to the machine before they happen, and be able to apply necessary first-aid practices as necessary.

Operational Responsibility

Responsibility of operating the machine in accordance with its intended purposes lies with the customer. The manufacturer is not in anyway responsible for any damages that may be caused by inappropriate handling of the waste streams resulting from the operation of the product. Likewise, the manufacturer can not be held responsible for any damages resulting from the use of un-approved and/or non-original spare parts on the machine.

Second-hand Ownership

In the case of transfer of ownership of the product to a new customer, the original owner is responsible for handing over this user-manual to the new owner. New owner must be informed and trained about the basic operation of the product accordingly.

Operational Liability

The entire liability of operating the product properly lies with the customer. The customer is responsible for making sure that the product is used in accordance with the guidelines set forth in this document, plus other general machinery operating rules that may not be covered here but are expected to be known by any machinery operator. The maximum liability of the manufacturer in any event can not exceed the monetary value of the product itself.

Purpose of Use

EYS inline pumps are produced to transfer manure or slurry. Operations apart from the structure mentioned above are considered as inappropriate use. The manufacturer is not responsible for the results occurred of inappropriate use. The damages which will be resulted of the inappropriate use will be the buyer's responsibility. The purpose of the operation of the machine at the same time covers the conformity with the start of the machine, maintenance and service instructions. EYS inline pumps should only be used by staff who are able to cope with the damages which may occur from the machine. The prevention of the accidents and all first aid rules should be analyzed carefully. Any change that will be done on the machine by unauthorized staff will make the manufacturer not to be responsible for the possible damages.

1.3 Index of Figures

	WARNING	This warning box is used to highlight safety related precautions through the document. Remember that there is risk of personal injury with every “warning” sign topic and it is of utmost importance to understand and follow the contained information.
	CAUTION	Failure to follow instructions can result in damage to a part or the whole of the machine, possibly putting the machine out of commission.
	NOTE	It is especially important to understand and implement the instructions highlighted therein for the successful long-term operation of the machine.
		All control panels must be grounded.
		Freezing hazard.
		Read the instructions.
		Use your personal protective equipment.
		Danger of explosion.
		Before starting the machine, check electric cables against damages.
		Danger of fire.
		Electrical shock or burn hazard.
		Do not use the machine without checking all parts.
		In case of leakage of oil or protective materials, prevent contact with skin.
		Provide sufficient lightning in the area.
		All electrical and safety connections must be done according to local regulations.

2 SAFETY INSTRUCTIONS

FOR CORRECT AND SAFE USAGE



NOTE

It's strictly forbidden for untrained, unauthorised personnel to montage, maintain and operate the machines and to be around the machine.

EYS inline pump can not be used except of it's intended use.

2.1 Control Panel

All information about EYS pump's electrical details are available on identification label(power, voltage, frequency, current).

2.2 Usage Information

- Never change thermic settings.
- Never disable or bridge relays in control panel such as phase protection relay, liquid leakage relay etc.
- If voltage is different than identification label or the value range in this manual, don't start the engine.
- Make sure the control panel is properly ventilated and protected against rain and moisture.
- Professional electricians should maintain control panels in 6 month periods and malfunctioning and defect parts should be replaced.
- Never supply power from EYS mixer control panel to external devices or external environments.
- While sending EYS mixer to manufacturer for maintenance, send control panel if necessary.
- Contact EYS for every situation like maintenance, repairment etc.



All control panels must be grounded.

Check conformance with safety instructions prior to each start-up!

1. In addition to the specific instructions contained in this document, general machinery operating rules and precautions must be followed!
2. Safety related signs are marked on the product as necessary. These signs and stickers are important for personal safety, so do not remove them!
3. Do not operate the machine before replacing/installing all safety and protection related parts/covers!
4. Make sure you understand the general functioning principle of the machine before operation!
5. Put on relatively snug operational outfit when operating the machine. Loose outfits and long sleeves can get caught by the moving parts during operation and servicing.
6. Slurry can emit flammable gases under certain conditions; so avoid smoking or carrying open fire near the machine!
7. Machine should be installed at a properly ventilated area. Avoid spending long periods of time in poorly ventilated areas around the slurry!
8. When working with machine, the ambient light must be sufficient.
9. The machine must be kept clean so that fire damage can be avoided!
10. When working with manure, make sure that the ventilation is adequate.
11. Manure should not come in direct contact with the hand, suitable gloves must be used.



2.3 Electric Driven Equipment

1. All electrical work except standard maintenance must be carried out by a professional electrician!
2. Malfunctioned or defect plug, socket etc. must be replaced by a professional electrician!
3. If there is an application including plug and socket (hoist, modular control panel etc.) never unplug cables. Firstly make sure the machines are not running and main power is off. A damaged electric cable may cause leakage of electricity and cause short circuit. Never cut electric cables (to pass the cable through wall etc.). pull the plug not cable.
4. extension cables which are connected to main power line or extension cables which will be used for main power line must only be used for a short time! Never should be a long term solution!
5. If extension cables are to be extended on a road, they must be connected from 5 meters height minimum.
6. Then executing any operation on the machine, make sure the main power is off.
7. Before starting the machine always check cables for damages, cuts etc. protect cables from direct sunlight, sharp edges and oil. Replace unusable cables before starting the machine.
8. If there is not enough precautions against moisture and dust in sticky or fire risky area, don't use electrical equipment.
9. Covering electric motors can prevent proper cooling and can cause heat consistence and can cause harm to the equipments, even fire!



 NOTE	Make sure all the malfunctions are solved when the power is back on.
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 NOTE	Check electric cables regularly. This process must be done after the main power is cut off.
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2.4 Maintenance

1. Never perform any maintenance, service or cleaning before fully stopping the machine and the other system components.
2. Always check and verify that the bolts/nuts on the machine are securely tightened.
3. Always wear work gloves when handling sharp and metal objects during maintenance.
4. Always observe local regulations when disposing of lubricants/grease, etc.
5. Never work on the control panel and/or electrical connections without fully cutting off the power first.
6. Only manufacturer approved spare parts must be used for repairs and replacements.

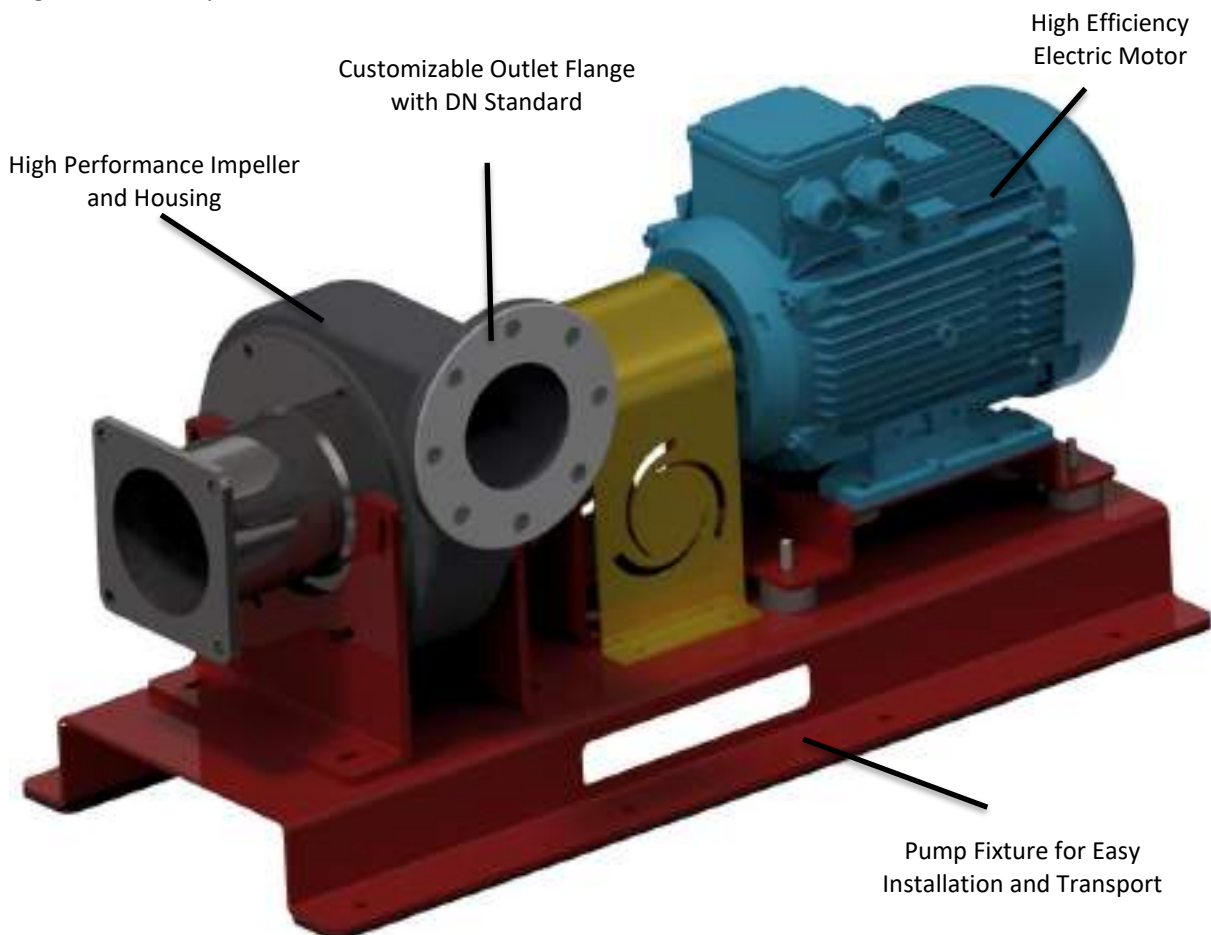


3. GENERAL INSTRUCTIONS

All EYS machine and equipment are manufacturer and quality controlled at each stage of production process. EYS inline pumps are produced to satisfy fully the needs in the liquid slurry pits and biogas systems. They are proper to be used in the liquid slurry pits which have high viscosity or high liquidity, and also for all pits containing stick, hay and even piece of fabric. Additional advantage of inline pumps are the short usage time, easy to use and to be safe with maximum performance.

The pump is driven by three-phase electric motor. Before running the pump, please check conformity with the voltage indicated on the label and the voltage on the facility.

Even the pumps seems to have an easy design, all information in the user manual should be read carefully and should be applied. Under these circumstances your machine will serve for long years with highest efficiency.



4. HANDLING

When handling the pump with/without package, always make sure the pump and cable aren't exposed to any damage.

Always check the pump and accessories before accepting the product against damages etc. any damage which occurred after the customer received the pump will not be covered by warranty.

 NOTE	Check electric motor and motor cable against and possible damage.
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Storage



In case of frost hazard, store the pump in a suitable place to prevent freeze.

5 TECHNICAL DETAILS

5.1 Technical Table

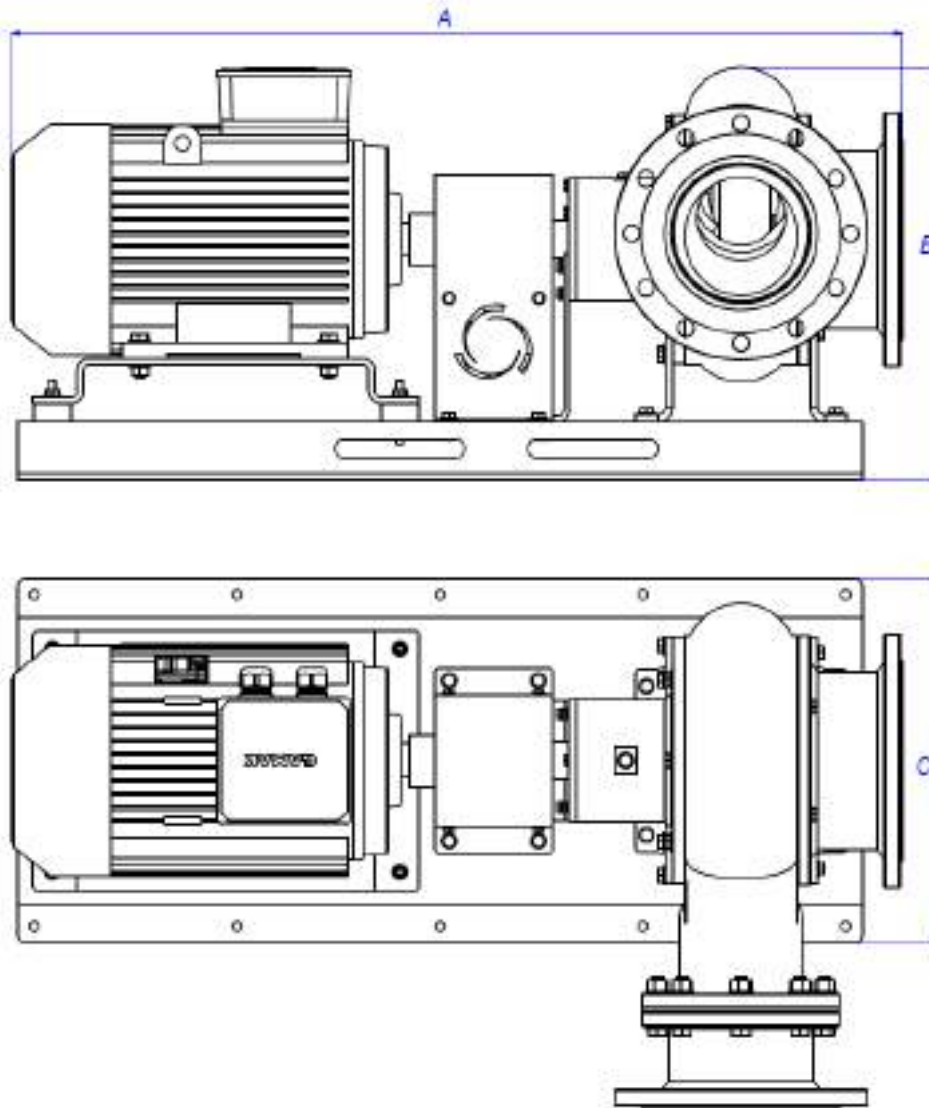
Technical data of EYS inline pumps are given in the table below.

	HGP55	HGP75	HGP110	HGP150
POWER	5,5 kW	7,5 kW	11 kW	15 kW
SPEED	1500 RPM			
VOLTAGE / FREQUENCY	220 / 380 V @ 50 Hz			
OIL	SAE 10 Mineral Oil (0,5 lt)			
FAN DIAMETER	190 mm	217,5 mm	222,5 mm	250 mm
SEALING	Mechanical Seal			
INLET DIAMETER	4" (Can be customized)			6" (Can be customized)
OUTLET DIAMETER	4" (Can be customized)			6" (Can be customized)

 NOTE	The cable of the motor can only be connected by a professional electrician. All controls should be done according to panel wiring diagram. The wiring diagram should be sent with the machine. The electric control box should be installed on the ground/wall. It is recommended to have a roof on the panel for protection from environmental conditions.
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 WARNING	While connecting the system to the main feeding unit be sure all connections cable are fit into their places and the motor turn in correct direction.
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5.2 Overall Dimensions



	A (mm)	B (mm)	C (mm)
HGP55	980	530	490
HGP75	970	530	490
HGP110	1080	560	490
HGP150	1200	560	490

5.3 Control Panel Components

Electric control panel includes the following parts below;



5.3.1 The Symbols of Used Materials in Control Panel

QA	: Cam switch (1-0-2)
Q1	: Thermal magnetic motor circuit breaker
F1	: Fuse for control phase
F2	: Fuse for socket
F3	: Fuse for DC power supply (For the panels which use 24V DC control phase)
K1	: Contactor
K2	: Contactor for delta (Δ) connection
K3	: Contactor for star (Y) connection
U1	: Socket
U2	: Phase protection relay
U3	: EYS-TKR15 relay for over-heating and liquid leakage
U4	: Timer relay to start star-delta connection
B1	: Start button with green lighted up during running
B2	: Stop button with red lighted up during fail
A01	: Emergency stop button
H1	: Indicator lamp for R phase
H2	: Indicator lamp for S phase
H3	: Indicator lamp for T phase
G1	: DC power supply (for the panels which have 24V DC control phase)

5.3.2 The Used Materials in Control Panel and Their Works

1. Cam Switch: Using for switching the direction of mixing rotation.
2. Thermal magnetic motor circuit breaker: Protects motor from excessive current and short circuit stations.
3. Fuses: Protects against possible accident and fault on circuits units by ignoring overcurrent
4. Contactors: Electromagnetic switches that let us control circuits by closing normally open contacts or opening normally closed contacts when the coil is energized. Contactors are chosen according to the motor power values.
5. Phase control relay: Prevents 3 phase motor from damages of staying 2 phase. It provides protection by stopping motor when phase instability is occurred. It controls phase connections. If red light is turned on, it means phase connection is wrong and there is no way to run the agitator. When the light is green, means phase connections are correct.
6. TKR-15: EYS Endüstri production relay protects the agitator from any negative situation when detection of overheat or liquid leakage occur.
7. Time relay: Lets us arrange time to passing from star to delta running to avoid overcurrent at the beginning of motor run
8. Start-Stop button: The lighted buttons are used for run and stop the motor. Start buttons lights up green during running. Stop button lights up red on fault situation. (According to customer request, we use water gauge to control automatically agitator running. That prevents the agitator to work without liquid. By that way, ON/OFF positioned control switch is used.)
9. Emergency button: To disable the energy in case of emergency.
10. Indicator lamps: Show us working situation of R-S-T phases. The lamp does not work whose phase has trouble such as breaking off or overcurrent.
11. DC power supply: Provides us 24V DC to use as control phase.

The special underwater cable comes from pump to panel: The thickness has chosen by motor power and cable length. The cable pass from waterproof bush and connects wires to electrical terminal(to the electrical terminal, opposite of U-V-W and Z-X-Y cables).

**NOTE**

Measure your mains voltage. The measured value can be tolerated between -%10 and +%6 rate for each phase.

**WARNING**

Fuses do not protect you! Fuses protect circuit elements in case of exceeding the current that is written on them. Thus, be careful against electrical shock!

6 MONTAGE PRELIMINARY

Montage and lowering EYS pump must be completed by a technical team. Don't lift the pump by holding electrical cables.

EYS pump must be unpacked in the installation area and should be checked if there are any damages occurred during transportation. If there aren't any damages, the installation should start. If you encounter any damages contact the manufacturer and if it's not safe to run the machine, don't assemble the machine before repairment.

If mixer installation ground isn't flat, don't install the mixer and prepare the ground for installation.

1. Check electric cables for scratches and damages. If there are any damages, contact EYS.
2. Protect cable ends from direct water and moisture.
3. Make sure the control panel is installed properly and the main power is connected.
4. Compare the voltage and current values of pump identification label with main power line values. If there are any differences don't start the machine until you reach the correct values.
5. Check identification label values.

6.1 Control Panel Assembly

1. Control panel must be installed in an area which won't be affected by weather conditions.
2. Mixer electric cable must be protected from mechanical impacts.
3. Control panel connections must be completed based on wiring diagram.

7 RUNNING OF THE MACHINE

7.1 First Controls

1. Check if the voltage on the main feeding line is in conformity with voltage on the machine label.
2. Check main power line voltage. Nominal deflection of measured value in all three phases must be between -%10 and +%6 tolerances. If the values are out of these values, don't start the machine.
3. The turning way should be vice versa of the clockwise when the pump is seen from the propeller.
4. Do not run the machine on the top surface of the manure (on the air) in the pit.

7.2 Last Controls

1. The direction of rotation of the pump fan is determined by the fan blades. If the direction of rotation of the fan is reversed, adjust the direction of rotation by changing the motor phases.
2. The motor connections must be made by a qualified electrician and the motor protection limits should be changed according to the motor values. These values are given in the technical table of the mixer.
3. Make sure there is oil in the oil reservoir of the pump, otherwise add oil. The type of oil to be used is given in the technical table.

 WARNING	Never disable liquid leakage relay (if available).
 WARNING	Inline pumps are designed to rotate only in a single direction. When running the pump for the first time, check fan rotation direction very quickly. Fan rotation of direction is not correct, change motor phase connections and check direction of rotation again.
 WARNING	Manure pit must be free of foreign materials like rock, sand and other abrasive materials. Otherwise these materials can damage the pump.
 WARNING	When the pump is running, never try to clean foreign materials in the manure pit such as rope, sack, garbage etc.

8 MAINTENANCE

In order to use EYS inline pumps for a long period of time, maintain the machine regularly. Replacement periods of parts are given in below table.

All parts in below table should be checked in case of wear and damages once a year. Oil should be checked once every six months.

 WARNING	Before holding, carrying, maintenance and/or cleaning of the machine close the electrical control panel from main feeding line.
 WARNING	Before intervening to any turning part close the electrical control panel from main feeding line.

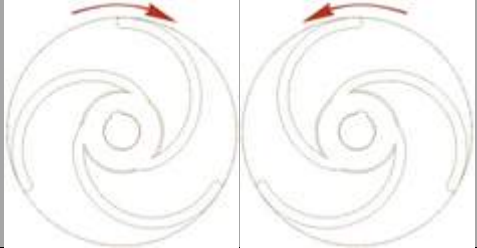
	Mechanical Seal	Impeller	Bearings	Oil
Replacement Frequency	8.000 h	8.000 h	10.000 h	Check every 3.000 h

9 LONG TERM STORAGE

If the pump will not be used for a long time, in order to protect from corrosion, clean the body with water. The pieces of the manure which will dry on the machine will prevent the machine to cool itself. Especially in the harsh winter conditions, the liquid in the pipeline should be discharged fully. Especially in climates where the weather conditions are too cold, the liquid in the piping should be completely drained if the pump will not be operated for a long time. In this way possible frost damage can be avoided.

Lubricate all necessary parts.

10 TROUBLESHOOTING

Problem	Reason	Solution
Pump is not pumping	Blockage in housing or around fan	Deassemble the housing and clean it.
	Too much solid material inside the liquid.	Water the pit
Pumping capacity is low	Blockage in the pipe line	Clean the blockage
	Too much solid material inside the liquid	Water the pit
	Reverse fan turning way	Change the phase from the panel. Direction of rotation can be understand from the shape of fan blades. Check direction of rotation while looking to the pump from bottom. 
Pump is not working	No voltage or fault in control panel	Check motor safety relay and system voltage. Contact EYS.
	Motor is burnt out	Contact EYS
	Wrong phase connections	A Professional electrician must check connections. (By making correct connections, green LED on phase safety relay will be on)
	Damage on pump cable or the cable is cut	First check if there is a fault with other connections. A Professional electrician must check and replace the cable. Contact EYS for replacement.
	Thermic relay fault	Check motor safety relay. If it's not working, replace immediately. <u>NEVER start the pump when motor safety relay is broken.</u>
Pump is running but motor safety is stopping the pump	Voltage error	Check voltage in the system.
	Mechanical fault	Check fan direction of rotation. Direction of rotation can be found on previous page.
	Foreign materials are stuck in the fan. So system is stopping itself because of overcurrent.	Clean the foreign materials on the fan. If there is a cage around the pump for foreign materials clean the cage regularly.

11 MACHINE LABEL

Please inform the serial numbers on the label of the machine on each contact to manufacturers or dealer. There is one label on your machine.

		ISO 9001	
Name :		Serial No :	
Type :		Date of Manufacture :	
Impeller :	mm	Propeller :	mm
Q :	m ³	Hm :	mms
Nm :	kW	Weight :	kg
V :		A :	
Cosφφ :		Frequency :	
EYS Endüstri Makina San. ve Tic. A.Ş. www.e-y-s.com / info@e-y-s.com Made in Turkey			

12 WIRING DIAGRAM

Please check control panel for wiring diagram.

13 EC DECLARATION OF CONFORMITY**EC DECLARATION OF CONFORMITY**

MANUFACTURER EYS ENDÜSTRİ MAKİNA SAN. VE TİC. A.Ş.

ADDRESS TEPECİK MAHALLESİ, ŞEHİT PİYADE ER M.ALİ TOSUN BULVARI, NO:
234/1 EFELER, AYDIN, TURKEY

The undersigned Company certifies under its sole responsibility that the item of equipment specified below satisfies the requirements of the Machinery Directive 2006/42/EC which applies to it. The item of equipment identified below has been subject to internal manufacturing checks with monitoring of the final assessment by **EYS ENDÜSTRİ MAKİNA SAN. VE TİC. A.Ş.**

PRODUCT INLINE PUMP

MODEL / TYPE HGP55, HGP75, HGP110, HGP150

DIRECTIVES MACHINERY DIRECTIVE 2006/42/EC
LOW VOLTAGE DIRECTIVE 2006/95/EC

REGULATIONS APPLIED ACCORDING TO HARMONIZED STANDARDS
EN ISO 12100:2010, EN 60204-1:2006, EN ISO 13857

Place and date of issue AYDIN / TURKEY 11.2012

Name and position of authorized person ORHUN ÇETİN
TECHNICAL MANAGER

Signature of authorized person


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