



# teknopomp

Teknolojik Pompa ve Hidrofor Sistemleri

## GRINDER WASTEWATER PUMPS

INSTRUCTIONS FOR INSTALLATION,  
OPERATION & MAINTENANCE



PLEASE DO NOT INSTALL AND OPERATE PUMP GROUP  
BEFORE READING THIS DOCUMENT THOROUGHLY



ISO 9001: 2008



This manual is intended to be a reference guide for users of pump providing information on

- "Pump installation and maintenance instructions,
- "Pump start-up, operation and shut - down procedures.

## IDENTIFICATION OF SAFETY AND WARNING SYMBOLS



Safety instructions in this manual which could cause danger to life if not observed.



The presence of a dangerous electric current.

### **ATTENTION**

Non – observance to this warning could damage the machine or affect its functions.

## GENERAL INSTRUCTIONS

This manual should be kept in a safe place and ALWAYS be available to the QUALIFIED operating and maintenance personnel responsible for the safe operation and maintenance of the pumps.

Qualified personnel should be experienced and knowledgeable of safety standards.

To avoid faulty operation and malfunctioning of pumps the instructions in this manual are to be CAREFULLY studied and followed at all stages of the pump installation and operating life.

The user is responsible for ensuring that inspection and installation are carried out by authorized and qualified personnel who have studied this manual carefully.

The pump should be used ONLY in the operating conditions given on the order for which the pump and materials of the construction have been selected and tested.

If the pump is to be used for a different application please contact sales office or representative of the manufacturer. TEKNOPOMP refuses to assume any responsibility if the pump used for different applications without prior written permission.

If the pump is not to be installed and operated soon after arrival, it should be stored in a clean and dry place with moderate changes in ambient temperature. Extreme low or high temperatures may severely damage the pump unless suitable precautions are taken. The user is responsible for the verification of the ambient conditions where the pump will be stored or installed.

TEKNOPOMP does not guarantee repairs or alterations done by user or other unauthorized personnel. The use of original spare parts and accessories authorized by manufacturer will ensure safety.

This manual does not take into account any site safety regulation, which may apply.

TEKNOPOMP model wastewater pumps are submersible pumps operating in water with 220-230 v / 50 hz or 380 v / 50hz electricity.

MODEL	Amper A	Volt V	Power HP	Max. Depth (m)	Max. Particle Diameter	Discharge (inch)	Pressure m.	Capacity m <sup>3</sup> /h
GRINDER 15-1.1M	8	220	1.5	10	10 mm	2"	13-3	5-20
GRINDER 15-1.1T	2	380	1.5	10	10 mm	2"	13-3	5-20
GRINDER 16-1.5M	9.0	220	2	10	10 mm	2"	14-6	5-25
GRINDER 16-1.5T	2.5	380	2	10	10 mm	2"	14-6	5-25
GRINDER 22-2.2M	12	220	3	10	10 mm	2"	20-9	10-40
GRINDER 22-2.2T	4.5	380	3	10	10 mm	2"	20-9	10-40
GRINDER 24-3T	5	380	4	10	10 mm	3"	21-9	10-50
GRINDER 25-3T	5	380	4	10	10 mm	2.5"	24-8	10-50
GRINDER 30-4T	8	380	5.5	10	10 mm	3"	24-6	20-90
GRINDER 30-5.5T	10	380	7.5	10	10 mm	4"	26-8	20-90

Motor Protection : IP68  
Motor Isolation Class: B  
Max. Water Temperature: 35 C°  
Noise Level : 70 dB

Pump Type	HP	V	Con.	Capacity									
				m <sup>3</sup> /h	0	5	7	10	13	15	18	20	25
GRINDER 15-1.1M	1.5	220	2"	h(m)	15	13	12	11	9	8	5	3	-
GRINDER 15-1.1T	1.5	380	2"		15	13	12	11	9	8	5	3	-
GRINDER 16-1.5M	2	220	2"		16	14	13	12	11	10	9	8	6
GRINDER 16-1.5T	2	220	2"		16	14	13	12	11	10	9	8	6

Pump Type	HP	V	Con.	Capacity									
				m <sup>3</sup> /h	0	10	15	20	25	30	35	40	50
GRINDER 22-2.2M	3	220	2"	h(m)	22	20	18	16	15	13	10	9	-
GRINDER 22-2.2T	3	380	2"		22	20	18	16	15	13	10	9	-
GRINDER 24-3T	4	380	3"		24	21	19	18	17	15	14	12	9
GRINDER 25-3T	4	380	2.5"		25	24	23	22	20	17	14	11	8

Pump Type	HP	V	Con.	Capacity									
				m <sup>3</sup> /h	0	20	30	40	50	60	70	80	90
GRINDER 30-4T	5.5	380	3"	h(m)	30	24	22	20	18	15	13	9	6
GRINDER 30-5.5T	7.5	380	4"		30	26	24	22	20	17	15	11	8

### PRIVATE SAFETY INSTRUCTIONS FOR MACHINES

1. Pull the plug from the socket before all kind of maintenance.
2. Maintenance and repair of the pump should only be performed by authorized service personnel.
3. Do not touch the pump or water while pump is working.
4. Motor structure and construction are designed to prevent direct and indirect contact with electricity carrying parts. Do not touch the electrical system and parts. Do not attempt to make any changes or adjustments to the motor's electrical system. Do not remove the motor terminal box cover. Do not leave it open. All electrical malfunctions and adjustments must be made by an authorized electrician.

### ATTENTION

This pumps can be used transfer of water in 35° C temperature.

Do not start the pump in low voltages.

Do not use the pump in the liquid types of acid, olive oil, petroleum and misuse. These pumps are available to use few dirty water discharge. Do not use with other type of fluids.

Check whether there is ripped, hole or disintegration on the energy cable before starting the pump.

Do not certainly start the pump without water.

Do not touch the pump or water while pump is working.

## **TRANSPORTATION**

The pumps are dispatched from our factory as ready for working.

Place the pumps during transportation in a way in which they are not harmed while they are loaded and unloaded from the transportation vehicle.

Do not drop the pump on ground while carrying it with or without packing, do not place any weights on it.

Use gloves, hard-tipped shoes and helmet during the carrings. Take necessary safety precautions.

Having to carry heavy loads with your hands can cause waist and back injuries.

Lifting and transporting operations must be carried out in accordance with transport instructions and with authorized operators.

\*During the carrying do not lift the pump from its energy cable.

## **THE ISSUES TO BE CARED DURING COMMISSIONING OF THE PUMP**

1- Make the electricy connection of the pump to an electricity tehchnician or a qualified electrician.

2- These pumps are availabel to use few dirty water discharge. Do not use with other type of fluids.

3- Do not use the pump in the liquid types of acid, olive oil, petroleum and misuse.

4- If the pump installation will be done with water piper or sleeve, be careful not to excess clamp, otherwise it will cause cracking in the output of the pump.

5- Do not certainly hang down the pump from its energy cable, use suspension cable.

6- Pump has to be fastened with a rope or chain which can be the weight of pump and installment after energy and installment connection of pump is made and lifted down to weller sewage.

7- Use the pump after reclaim the borehole if there is massive particulars and extremely sludges in the borehole.

8- Check whether there is ripped, hole or disintegration on the energy cable before starting the pump.

9- Do not start single phase pumps by inserting to the three phase plug.

10- Install the energy cable to the network, mounted as close as the wall.

11- Do not start the pump in low voltages.

12- Pay attention to water hose not to break in 90° while pump is working.

13- Do not touch the pump or water while pump is working.

14- Do not connect float switch to the electric cable vertically in order to discharge all water which used for evacuation of backwater. Otherwise pump motor may be burned. Pump should be completely underwater.

15- Do not start the pump when the pump freezes in winter months.

16- Do not certainly start the pump without water.

### ATTENTION

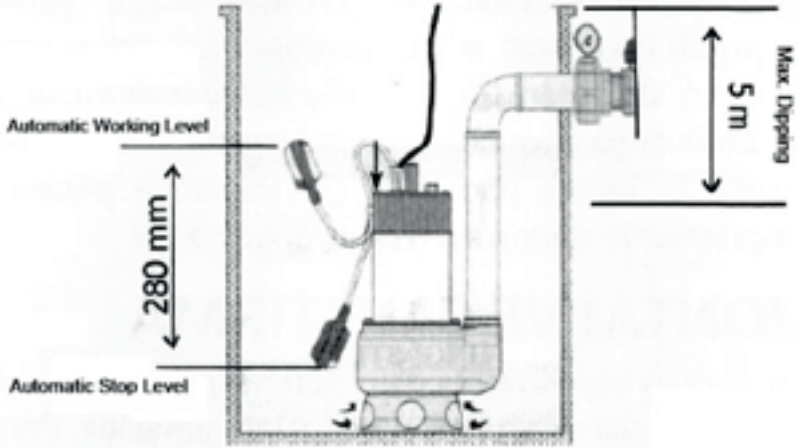
- 1- in the environment you are working in; if you have a warning sign, an instruction, or a code of conduct for a specific workplace, you should definitely suitable with this rule.
- 2- You are absolutely unfamiliar with the basic rules of work and work safety, even it is not required by your business administration.
- 3- Necessary for your protection; Such as helmet, gloves, armored boots, protective work clothes, safety goggles, masks, and so on.
- 4- Ensure business and business security by contacting your first supervisor for any situation you do not know or are unsure about.

### MAINTENANCE

- 1- Check over if there are negations such as perforation, crushing, fracture and tearing etc. in the energy cables.
- 2- Check over the pipe and hose connections.
- 3- Clean up the inside of the pump once in a week if there is a dirt holder.
- 4- Disconnect the power supply cables before carrying out maintenance and reparings. Make sure that there is no connection during operation.
- 5- All necessary safety precautions must be taken before maintenance and repairs are carried out. Make safety barriers, warnings and signs.

### CABLE SELECTION TABLE

POWER-VOLT.	3 x 1.5 mm <sup>2</sup>	3 x 2.5 mm <sup>2</sup>	POWER-VOLT.	3 x 1.5 mm <sup>2</sup>	3 x 2.5 mm <sup>2</sup>
0.34 HP 220 V	110 m	170 m	1.5 HP 380 V	180 m	235 m
0.50 HP 220 V	96 m	130 m	2 HP 380 V	135 m	225 m
0.75 HP 220 V	55 m	90 m	3 HP 380 V	120 m	190 m
1 HP 220 V	40 m	80 m	4 HP 380 V	-	150 m
1.5 HP 220 V	30 m	50 m	5.5 HP 380 V	-	110 m
2 HP 220 V	22 m	35 m	7.5 HP 380 V	-	80 m
3 HP 220 V	-	30 m	10 HP 380 V	-	60 m



- 1- Make the electric connection to an electric technician or qualified electrician.
- 2- Pump must be grounded while electric connection is in progress.(for life security)
- 3- Use convenient hose for pump end suction edge. Absolutely do not narrow the outputs.
- 4- Be careful not to occur an air pocket in the installation when you designing the installation. Otherwise pump will not flow water since it will not take water inside.
- 5- Pump working area must be like the pump should not dip to ground mud. Hang your pump with suspension cable min 20 cm up.
- 6- Pump float switch is factory set. Do not remove the float switch from its adjusting housing.



## FAILURES, CAUSES AND PRECAUTIONS

FAILURE TYPES	THE REASON OF THE FAILURE	INTERVENTION
<b>If pump does not work (If does not run the motor)</b>	There is not energy in the line.	Energy circuits should be checked by an authorized electrician.
	Low intensity.	Electric values measurements should be done by an electric technican.
	Broken float switch.	Check the float switch.
	Water level is not enough.	Wait fot the water level to achieve the available level.
	Electrical cable is broken.	Consult to an authorized service or our factory.
	Pump impeller is blocked, thermic is thrown.	Shut the energy off motor down and look inside from inlet pipe and pressure pipe. Impropriety situations has to be solved as stuck solids or removed impeller etc. The pump should be rerun by pushing thermic.
<b>If there is low capacity or the pump does not flow water</b>	Delivery pipe is restricted.	Clean the delivery pipe with return cleaning.
	Manometric (Hm) head is very high.	Calculate the static delivery head and system losses again.
	Impeller or body is restriced.	Pump should be removed and cleaned.
	Hose is broken or bored.	Check the hose.
	Impeller is weared out or broken.	Impeller should be changed.
<b>If the motor is burning.</b>	<ul style="list-style-type: none"> <li>&gt;Intensity is very low or vry high.</li> <li>&gt;Rapid intensity fluctuation.</li> <li>&gt;Float switch level is defective.</li> <li>&gt;Impeller or body is restricted.</li> <li>&gt;High current flow is pulled over.</li> <li>&gt;Pump works without water(dry).</li> <li>&gt;If there is water in the motor(water leakage)</li> <li>&gt;Bearing are spreaded and rotor is scuffing.</li> <li>&gt;Mechanical seal is weared out or broken.</li> <li>&gt;Pump works in wrong operating point.</li> <li>&gt;Used in high viscosity liquids such as heavy mud or sandy.</li> <li>&gt;Delivered fluid temperature is over 40 °C.</li> </ul>	Consult to TEKNOPOMP authorized service.
<b>! Please consult to authorized service or our factory for the other defects. !</b>		



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**Teknolojik Pompa ve Hidrofor Sistemleri**

Factory – Center Service and Spare Parts  
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