



GOL PUMP SUBMERSIBLE SEWAGE PUMP ***OPERATION MANUAL***

Series : GSTO / GFO



**FOR YOUR SAFETY
PAY ATTENTION TO
THIS MANUAL**

GFO



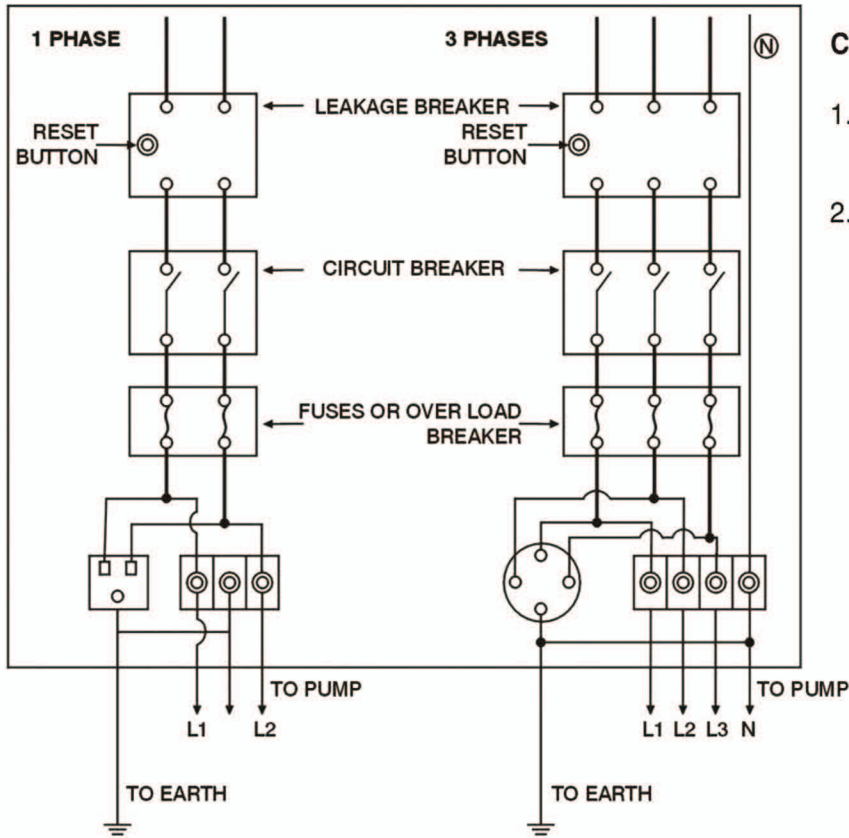
GSTO



- **Electricity could be dangerous to LIFE!**
- **Water is a conductor of electricity.**
- **Electricity can be conducted by water flow from the pump to any end points of the water!**

WARNING 1

CORRECT WIRING OF THE CONTROL BOX OR CONTROL PANEL



CAUTION:

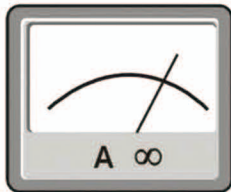
1. Breakers and fuses should comply with specifications of the pump
2. If the leakage breaker activated, DO NOT push the "RESET" button immediately, carefully check the circuit and find out problems.

WARNING 2

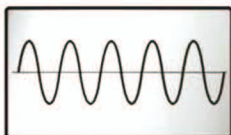
Confirm the Voltage, Amperage, and Frequency



CORRECT VOLTAGE :
110V , 220V , or 380V , or 460V

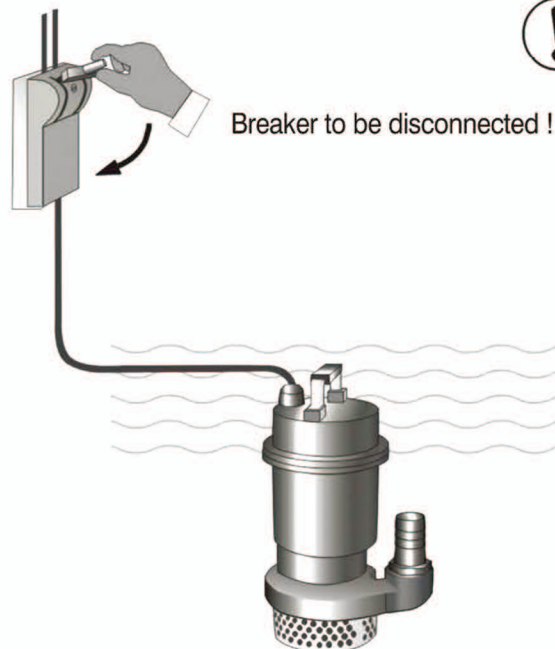


SUFFICIENT AMPERAGE

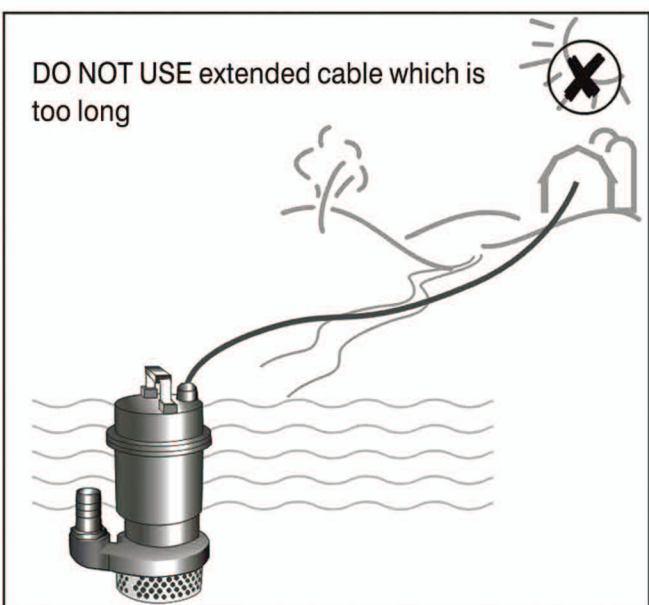
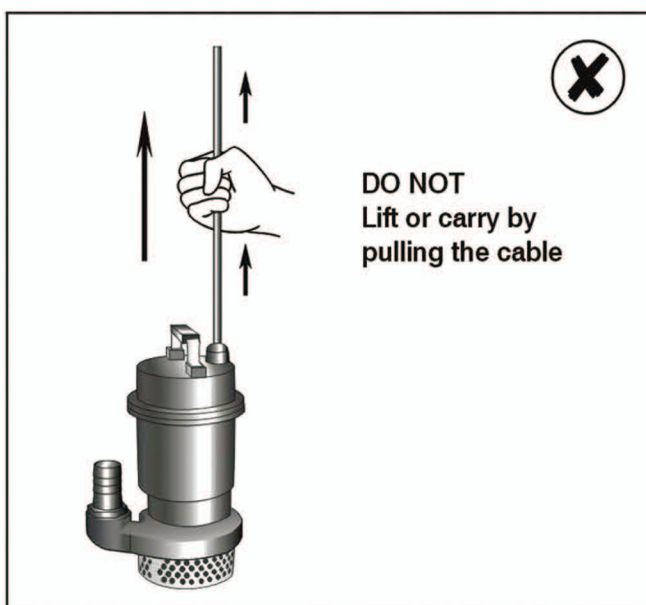
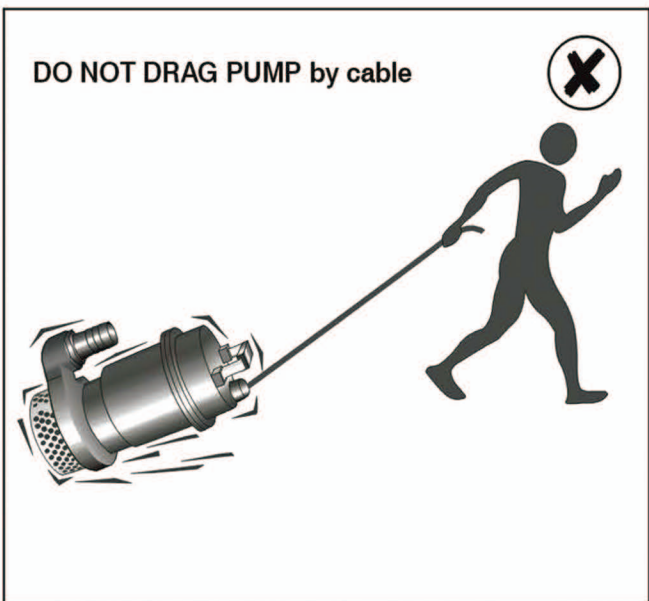
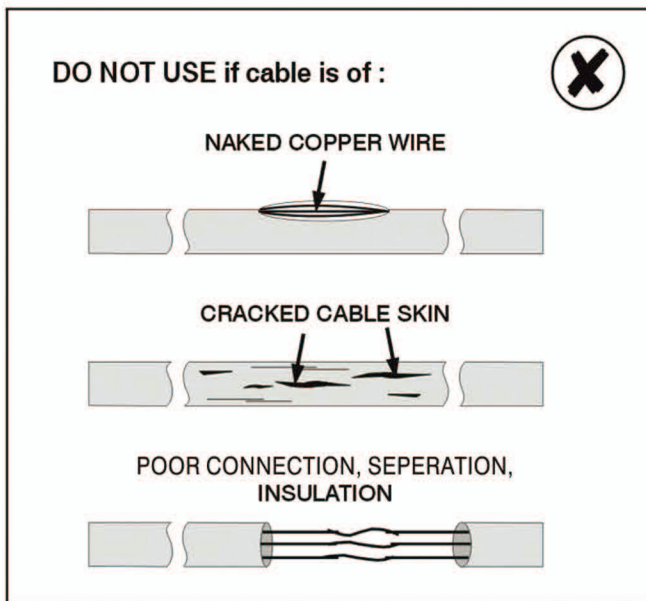
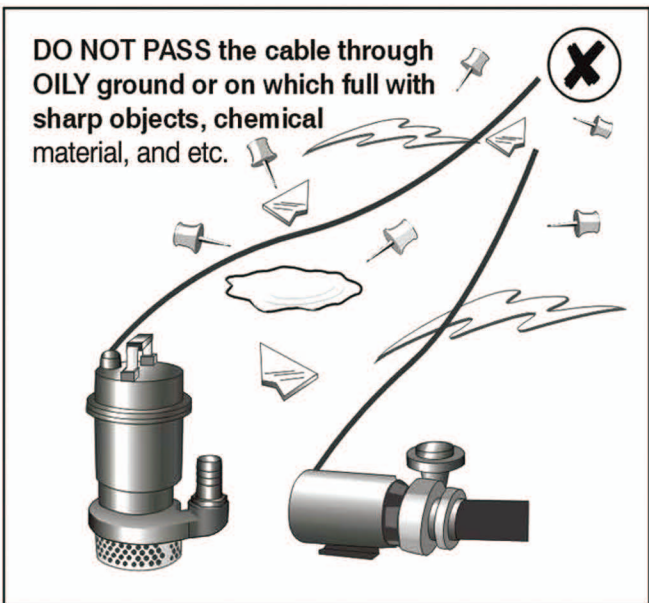
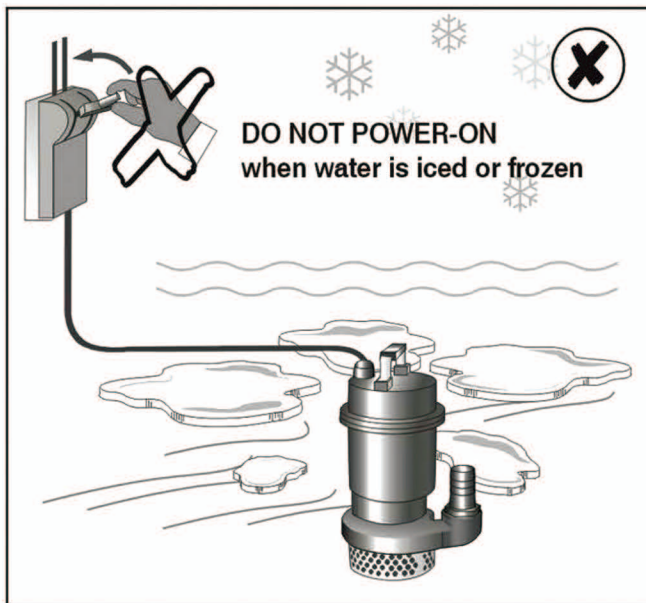


CORRECT FREQUENCY (Hz):
50Hz or 60Hz

Disconnect the Set Breaker When Not in Use



Breaker to be disconnected !



■ FOREWORD

We appreciate that your selection is **Go! Pumps Technology INC.** Before undertaking any operation, please read this manual carefully to ensure the pump is installed correctly and is used safely. If you have any questions regarding damage or technicalities, please contact our authorized dealers, or you may ask the technicians who are specialized in electric machineries. To ensure the pump is in good condition, please use it correctly.

Please keep this manual in an easily accessible location.

Before installing this pump, make sure you read and follow these instructions.

WARNING

1. The pump is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge.

It must be installed by a qualified electrician.

2. The pump must be connected to an approved electrical box as per the local electrical code.

3. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

4. The electrical box must have a motor-control switch.

5. If the pump is not provided with motor protection. the pump must be protected from overload and overcurrent conditions per the local code during the installation

6. If the pump is intended for sewage purpose, then the tank is to be vented in accordance with local plumbing codes

WARNING

7. The pump is not to be installed in locations classified as hazardous in accordance with the National Electrical Code, ANSI/ NFPA 70.

CAUTION

8. Risk of electric shock. Do not remove cord and strain relief.

Do not connect conduit to pump. (for three phase cord-connected submersible pumps)

CAUTION

9. This pump has been evaluated for use with water only.

10. Maximum pumping water temperature is 40°C

11. After installation, the pumps would not easily accessible. Please ask the electricians to install the duplicate nameplate (packed together with the operation manual), at the well head, on the control box, or suited location, so that the nameplate would be readily visible.

■ GROUNDING INSTRUCTIONS (for cord and plug-connected pumps)

WARNING

Risk of electric shock - this pump is supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that it is connected only to a properly grounded, grounding-type receptacle.

■ OPERATION INSTRUCTION

(A) Before Operation

1. Use the pump handle to carry the pump. Never pull the cable to move or install the pump.
Pulling the cable may result in electricity leakage.
2. Properly locate the pump during the transportation, and ensure the pump is not cracked.
3. Please install a Ground Fault Circuit Interrupter (Leakage Circuit Breaker) in circuit to ensure the safe operation. Due to long-term use, the cable may be worn out to have defects on the surface, leading to electrical accidents. Therefore, the Ground Fault Circuit Interrupter (Leakage Circuit Breaker) is an important device for installation.
4. Confirm the supply voltage and frequency to comply with specified voltage and frequency on the nameplate.
5. Check the pump is running normally when the power turns on. If the pump can not run smoothly, please check whether the impeller is squeezed because of rust.
6. Whether the pump is single phase or three phase, they should rotate in a clockwise direction when viewing from the motor end.
Confirm the motor is rotating in clockwise direction
 - ① Single phase motor : it has a fixed rotating direction in spite of cable connection,
 - ② Three phase motor : if the motor runs reversely, please interchange two(2) of three(3)wires respectively in the power supply terminal connection.

Note: If the motor turns reversely, abnormal sound and vibration could be noticed; and the water volume is obviously reduced.

Thus, the motor's service life will be shortened eventually.

(B) During Operation

No matter what kind of pump, it always accompanies with a normal sound while the pump works. Any abnormal sound, vibration, amperage, or less water is the signal of latter breakdown. If any unusual signals are noticed, please immediately switch off the power to stop the pump.

-Refer to the next page for trouble shooting.

(C) After Operation


1. Do not leave the pump in water when the pump is not being used for a certain period of time, so as to prevent interior/exterior surface being rusted by water.
2. Wash the pump in clean water by running it for a few minutes; clean up material in strainer or on impeller.
Store the pump in dry place after fully dried.

Note: Be sure to perform a trial operation before reinstalling the pump.

■ WARRANTY

1. All of our distributors will reserve sufficient spare parts for servicing the customers.
This will provide the users with quick, better replacement and maintenance.
2. Any failure caused by human-error, incorrect power source or natural disaster is out of our liability of warranty.
3. To use the pump, be sure to use a special control panel that has special terminals for temperature sensors or water leakage. In this case, you can use the pump warranty according to the conditions stated in the warranty card. If you do not use these control panels, your pump has no protection to prevent the pump from burning, and in no way can this pump use the warranty benefits even for one hour. Burning of the coil means not using a proper protection system

■ TROUBLE SHOOTING

 **WARNING** Before inspecting the pump, make sure to disconnect the electrical power to prevent serious accidents.

PROBLEM	CAUSES	RECOMMENDED SOLUTIONS
Pump Fails to Start	Open circuit or poor cable connection.	Check to properly connect the cable.
	Voltage drop due to cable extension	Change cable to a larger size, or shorten the extension
	The impeller is locked	Inspect and remove the foreign objects.
	Phase interruption	Inspect connections and the external magnetic switch.
Motor Protector Trips	Overburden due to heavy sand water	Use mesh guard or replace with a higher power pump.
	The Impeller is locked.	Inspect and remove the foreign objects.
	Phase Interruption	Inspect connections and the external magnetic switch.
	A 50Hz pump is used at 60Hz.	Check the nameplate and replace the pump.
	Motor protector malfunction	Replace a new one.
	Pump has been operating for a long time while exposed to air.	Stop the pump, and increase the water level.
Low Pumping Volume	The impeller is worn out.	Replace a new impeller or a suction cover.
	The strainer or impeller is clogged.	Remove the foreign objects.
	There is a leak in the piping	Repair or replace a new pipe.
	A 60Hz pump is used at 50Hz.	Check the nameplate and replace the pump.
	The motor rotates in reverse	Interchange two of the three wires.
Pump Makes Noise or Vibration	Worn bearing or damaged Impeller.	Inspect and replace the parts.
Leakage in Motor Casing	The mechanical seal is worn out.	Replace a new mechanical seal.
	Oil seal or gasket is worn out	Replace a new one oil seal or gasket.
Amperage Overload	Abnormal voltage or voltage drop	Check the power to ensure the voltage matches with the nameplate.
	The motor rotates in reverse.	Interchange two of the three wires
	Phase interruption	Inspect connections and the external magnetic switch.
	A 50Hz pump is used at 60Hz.	Check the nameplate and replace the pump.
	The motor bearing is damaged.	Disassemble the motor and replace a new bearing.
	The pump or the impeller is clogged.	Remove the foreign matters.
Leakage Circuit Breaker is Activated	Worn mechanical seal	Replace new mechanical seal.
	The cable is damaged.	Replace a new cable.
	The motor is burned.	Replace a new motor.

If you use the good and suitable digital panel for this pump

All problems will be reported to you and your pump will be prevented from burning under any circumstances

Suitable control panel means very good safe insurance

MODEL	HP	HZ	Phase	Voltage	Starting Method	Rated Current(A)	Wiring Diagram (with Manual)	Motor Protection Type	Seal Leakage Sensor	Power Cable(pcs)	Signal Cable(pcs)
GSTO-732	7.5	60	3	480V	D.O.L.	9.6	GTB-S-03	MTP (Miniature Thermal Protector)	---	1	1(2*1.5)
GSTO-1032	10	60	3	480V	D.O.L.	13.7	GTB-S-03	MTP (Miniature Thermal Protector)	---	1	1(2*1.5)
GSTO-1532	15	60	3	480V	D.O.L.	20.6	GTB-S-02	MTP (Miniature Thermal Protector)	SLS (Seal Leakage Sensor)	1	1(4*1.5)
GSTO-2032	20	60	3	480V	D.O.L.	25.6	GTB-S-02	MTP (Miniature Thermal Protector)	SLS (Seal Leakage Sensor)	1	1(4*1.5)
GFO-112	1	60	1	230V	D.O.L.	6.5	GTB-S-S1	(Built-in) Thermal Protector	---	1	0
GFO-132	1	60	3	230V	D.O.L.	3.5	GTB-S-04	CTP Circle Thermal Protector "self-reset"	---	1	0
GFO-212	2	60	1	230V	D.O.L.	13	GTB-S-S1	(Built-in) Thermal Protector	---	1	0
GFO-232	2	60	3	230V	D.O.L.	5.8	GTB-S-04	CTP Circle Thermal Protector "self-reset"	---	1	0
GFO-332	3	60	3	230V	D.O.L.	8.6	GTB-S-04	CTP Circle Thermal Protector "self-reset"	---	1	0
GFO-532	5	60	3	230V	D.O.L.	14.3	GTB-S-04	CTP Circle Thermal Protector "self-reset"	---	1	0
GFO-732	7.5	60	3	230V	D.O.L.	19.3	GTB-S-05	MTP (Miniature Thermal Protector)	---	1	1(2*1.5)
GFO-1032	10	60	3	230V	D.O.L.	28.7	GTB-S-05	MTP (Miniature Thermal Protector)	---	1	1(2*1.5)
GFO-1532	15	60	3	230V	(Star-Delta)	38.3	GTB-S-01	MTP (Miniature Thermal Protector)	SLS (Seal Leakage Sensor)	2	1(4*1.5)
GFO-2032	20	60	3	230V	(Star-Delta)	53.5	GTB-S-01	MTP (Miniature Thermal Protector)	SLS (Seal Leakage Sensor)	2	1(4*1.5)
GFO-332C	3	60	3	230V	D.O.L.	8.6	GTB-S-04	CTP Circle Thermal Protector "self-reset"	---	1	0
GFO-532C	5	60	3	230V	D.O.L.	14.3	GTB-S-04	CTP Circle Thermal Protector "self-reset"	---	1	0

Important Notes:

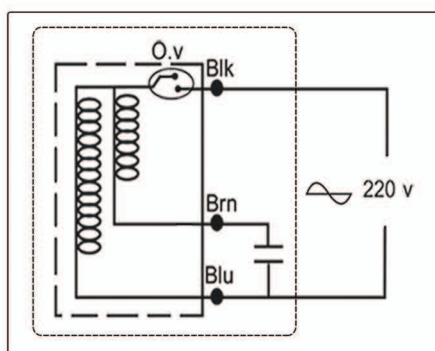
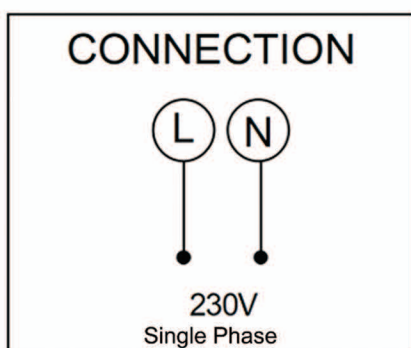
Your pump is equipped with one of the Thermal Protector systems in accordance with the UL standard

Built – in: Internal system for single-phase pumps not more than 2 hp

This thermal protector is installed inside the winding of the pump and is connected in series in the input power network. This overload has one Normally closed contact (NC), that, in the event of any problems that cause the current to rise and generate heat, will cut off the input power to prevent burns, but will automatically reconnect the power after cooling. This operation can be done several times, but repeating it, is not good for pump and will be damaged the insulation of the pump alternator, and it is better to cut off the network power by this warning and fix your pump by an experienced service repairman and possible defect.

GTB - S - S1

For Single Phase



Circle Thermal Protector " CTP "

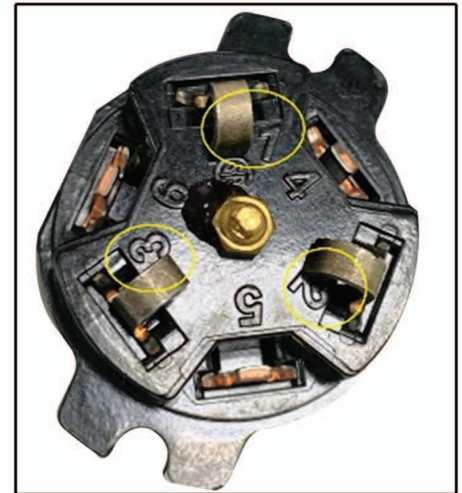
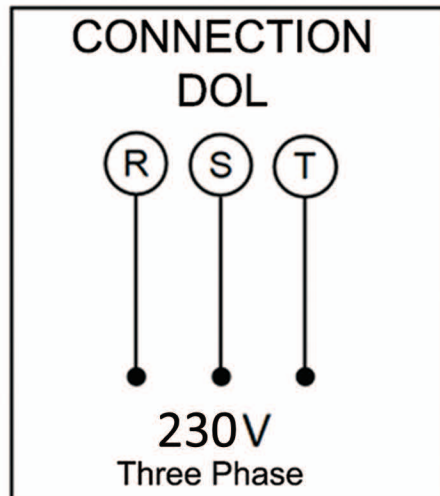
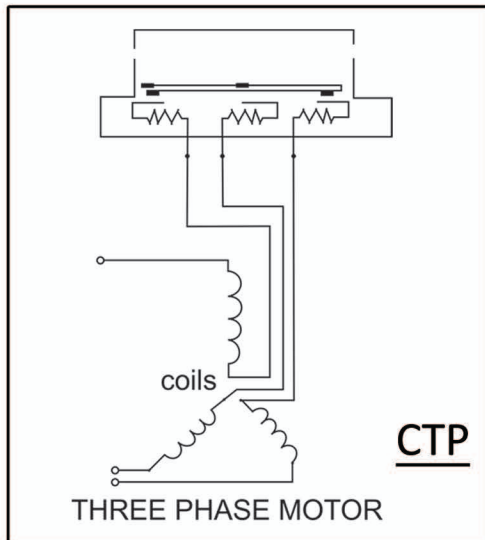
Internal heat controller of three-phase pumps' Motor

This overload is also installed inside the electric motor of the water pump and controls the current flowing and excessive heat of the pump's alternator.

This overload has three Normally closed contacts that connect the three ends of the coil to the star connection position, and in case of any problem that causes the current to rise and generate heat to prevent the three phase Coils from burning together.

It will be disconnected, and the power will be cut off, but it will reconnect automatically after cooling
 This operation can be done several times, but repeating it, is not good for pump and will be damaged the insulation of the pump alternator, and it is better to cut off the network power by this warning and fix your pump by an experienced service repairman and possible defect.

GTB - S - 04



Motor thermal Protector MTP

Internal heat controller of three-phase pumps' Motor

This overload system include three single thermal Protector that connect together by series and install on the between coils and connected to additional cable to manage with control panel. this system is one of best controller for protect the Motor of water pump, it controls the current flowing and excessive heat of the pump's alternator and in case of any problem that causes the current to rise and generate heat to prevent the three phase Coils from burning together.

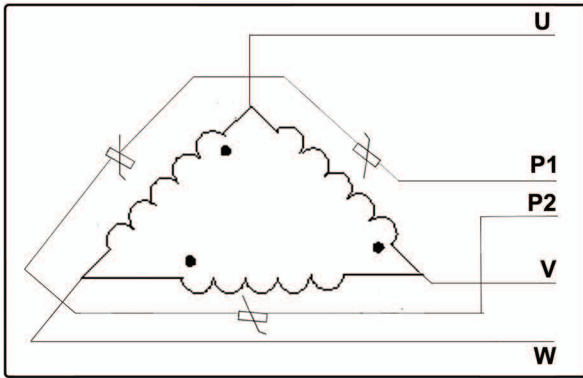
It will be disconnected the contactor of control panel and power will be cut off form Pumps, in this case it will not reconnect automatically after cooling. and must be restart manually and control the system by Pump's operator, and if disconnected again, it is better to cut off the network power by this warning and fix your pump by an experienced service repairman and possible defect.

This is a water leakage control located in the mechanical seal chamber, and if water seeps into the seal chamber, it reacts immediately and gives the power control command for turn off to the control panel.

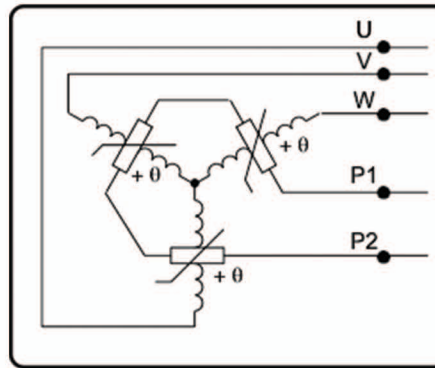
Some of these pumps are started in two stages (Star & Delta) , which requires a special panel that makes the starter two-stage and controls water leakage protection, and most importantly, it must control the engine temperature 100%.

Note the various diagrams below

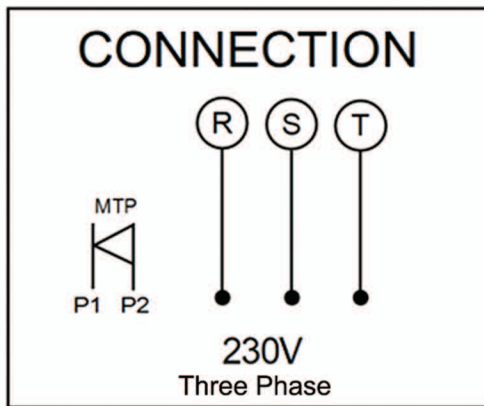
230V DELTA WIRING



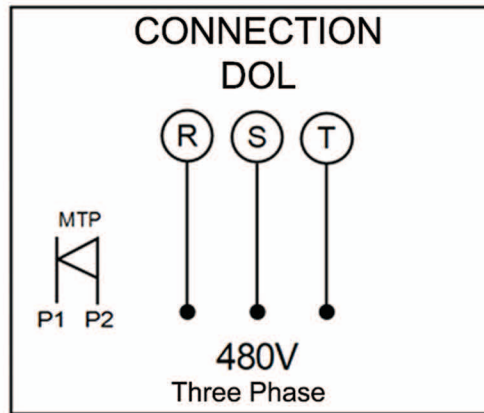
480V STAR WIRING



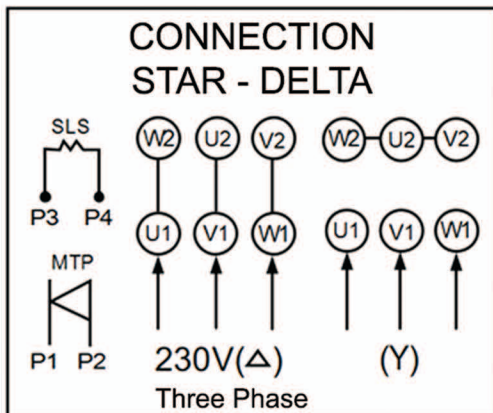
GTB - S - 05



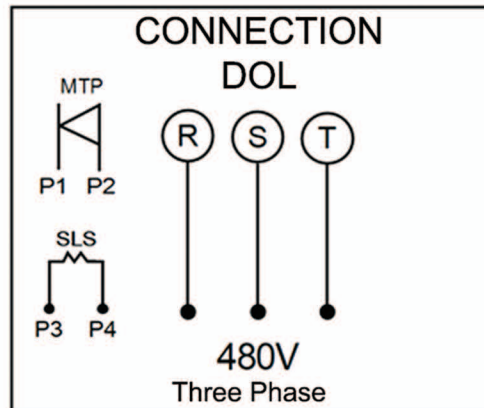
GTB - S - 03



GTB - S - 01



GTB - S - 02



Warning

For GFO and GSTO

All single phase Sewage Pumps that Protect with thermal Protector or Self-reset circle Motor Protector Design for direct to power network, But must be attention that special important matter, Thermal Protector can protect your pump up to 65% against all possible problems.

All thermal and all overload is self-reset,

This means that, whenever for any reason and problem this sensor is cut off the network, when it cools down, it resets again in a few minutes and connect to the network automatically, and if there is still a problem, it will cut off the power of the network again.

This behavior is a very good warning for the operator of this pump to immediately cut off the network power manually after two or three times continuous starting, and deliver the pump to an experienced service center for control.

It should be noted that a pump according to its power, it cannot start more than 6 to 10 in an hour .

By repeatedly turning on the pump in one hour, excessive heat is generated and may damage the pump insulation,

Usually, all pump manufacturers state the number of times a pump can be started per hour in the pump technical information.

However, it is better to either use a good digital control panel to start the pump, so that after any problem occurs, the mains power is cut off and the mains power is not reconnected when the pump cools down,

Or after maximum 5 times be started, the network power must be cut and pump should be checked and serviced by an experienced repairman.

All three phase sewage pumps used MTP thermal Protector and have additional Cable, and these pump Must be Start with three phase Good digital Control Panel that support Thermal protector system . by these protection and this Control panel can protect your pump up to 85% against all possible problems.

For more information, refer to the installation manuals of the Gol Pump control panel .

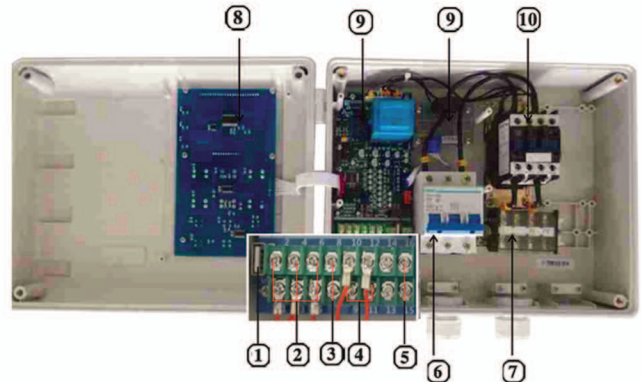
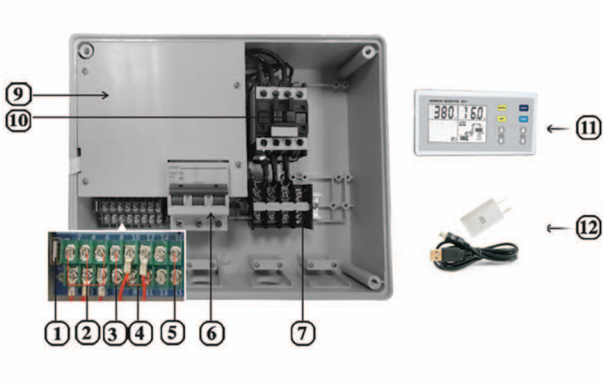
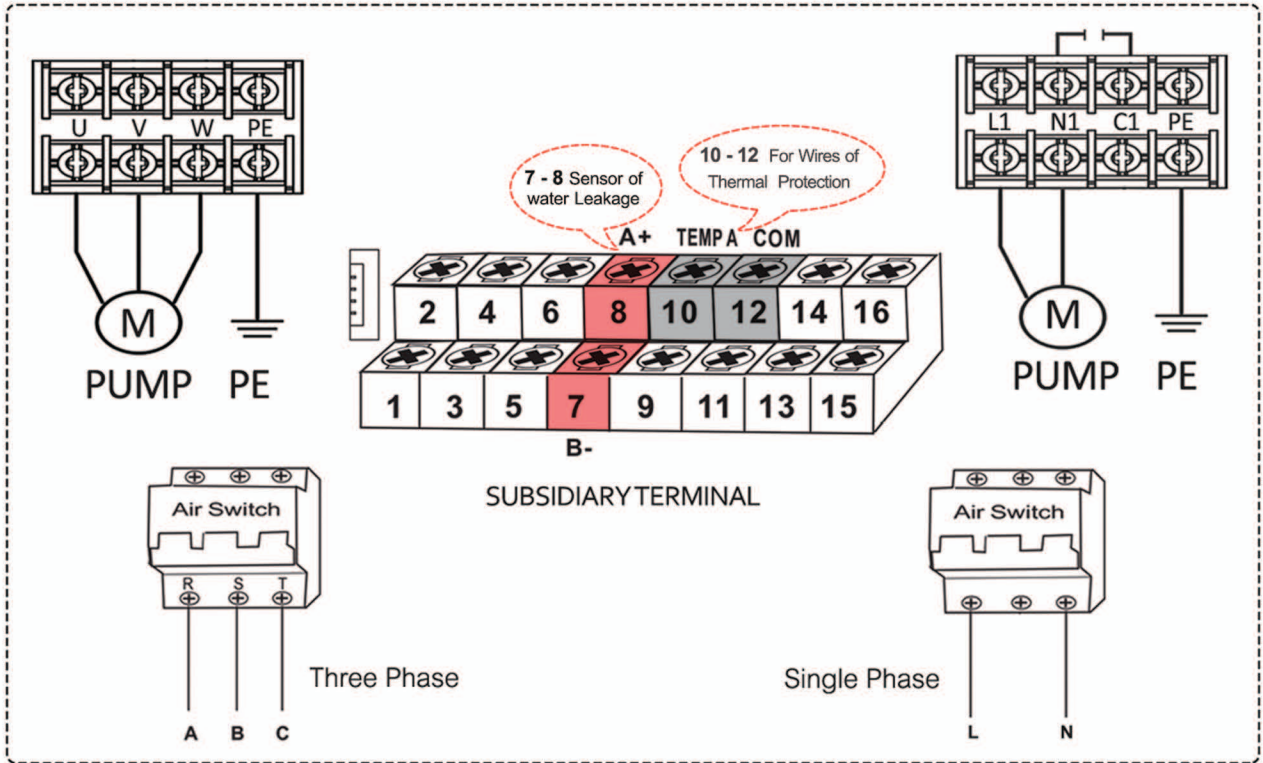
In Sewage pumps that have water leakage control sensors, digital panels must be used to turn on the pump, which have special terminals for water leakage sensors and thermal protector to complete protection .

Using a suitable digital control to start the pump provides warranty conditions and your pump will be guaranteed for one year.

Failure to use a suitable digital switchboard may cause the pump to burn out, so it does not even include a one-hour warranty.

All Direct thermal Protector can protect your pump up to 65% against all possible problems.

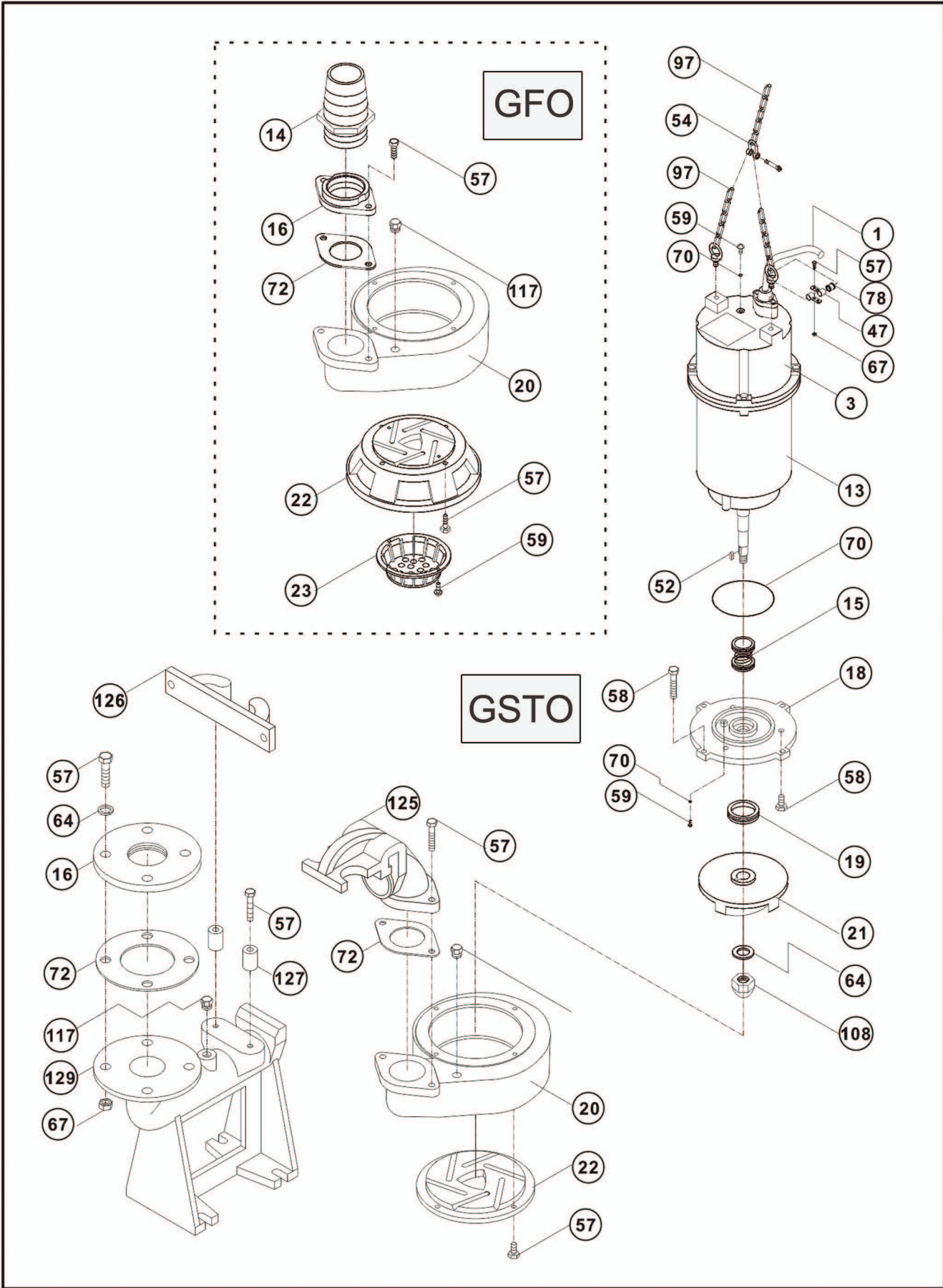
ATTN: If the pump is switched on by a digital control panel, announces the problem with the pump on its display, and it will be a full warranty for one year



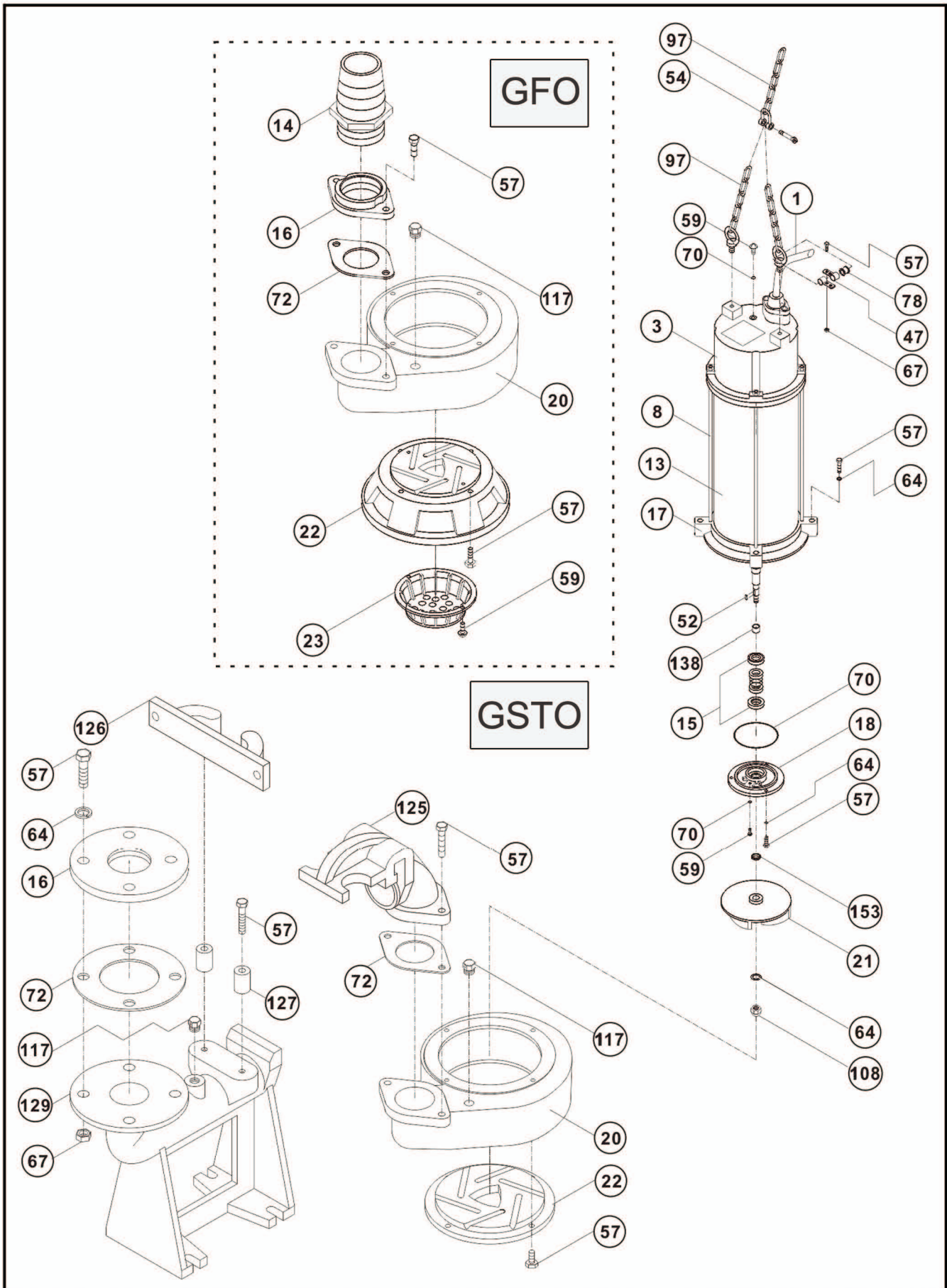
■ PART LIST

No.	PART NAME	No.	PART NAME	No.	PART NAME
1	Cable	24	Float Switch	90	Motor Base
2	Handle	47	Cable Fixed	97	Chain
3	Motor Head Cover	52	Key	106	Washer
8	Bolt	54	Shackle	107	Eye Bolt
12	Stator	57	Hex Bolt - Imperial	108	Cap Nut
13	Motor Casing	58	Hex Bolt - Metric	117	Vented Screw
14	Hose Coupling	59	Bolt - Imperial	121	Hex Socket - Metric
15	Mechanical Seal	60	Bolt - Metric	125	Guide Connector
16	Flange Setter	63	Washer	126	Guide Support
17	Motor Lower Cover	64	Spring Washer	127	Lower Guide Support
18	Mechanical Seal Cover	67	Nut - Imperial	129	Duck Foot Bend
19	Oil Seal	68	Nut - Metric	138	Sleeve
20	Pump Casing	70	O-Ring	143	Elbow
21	Impeller	71	Square Ring	153	Sand Proof Trap
22	Suction Cover	72	Rubber - Outlet		
23	Strainer	78	Cable Protection		

EXPLODED DIAGRAM: GSTO/GFO - 112 - 132

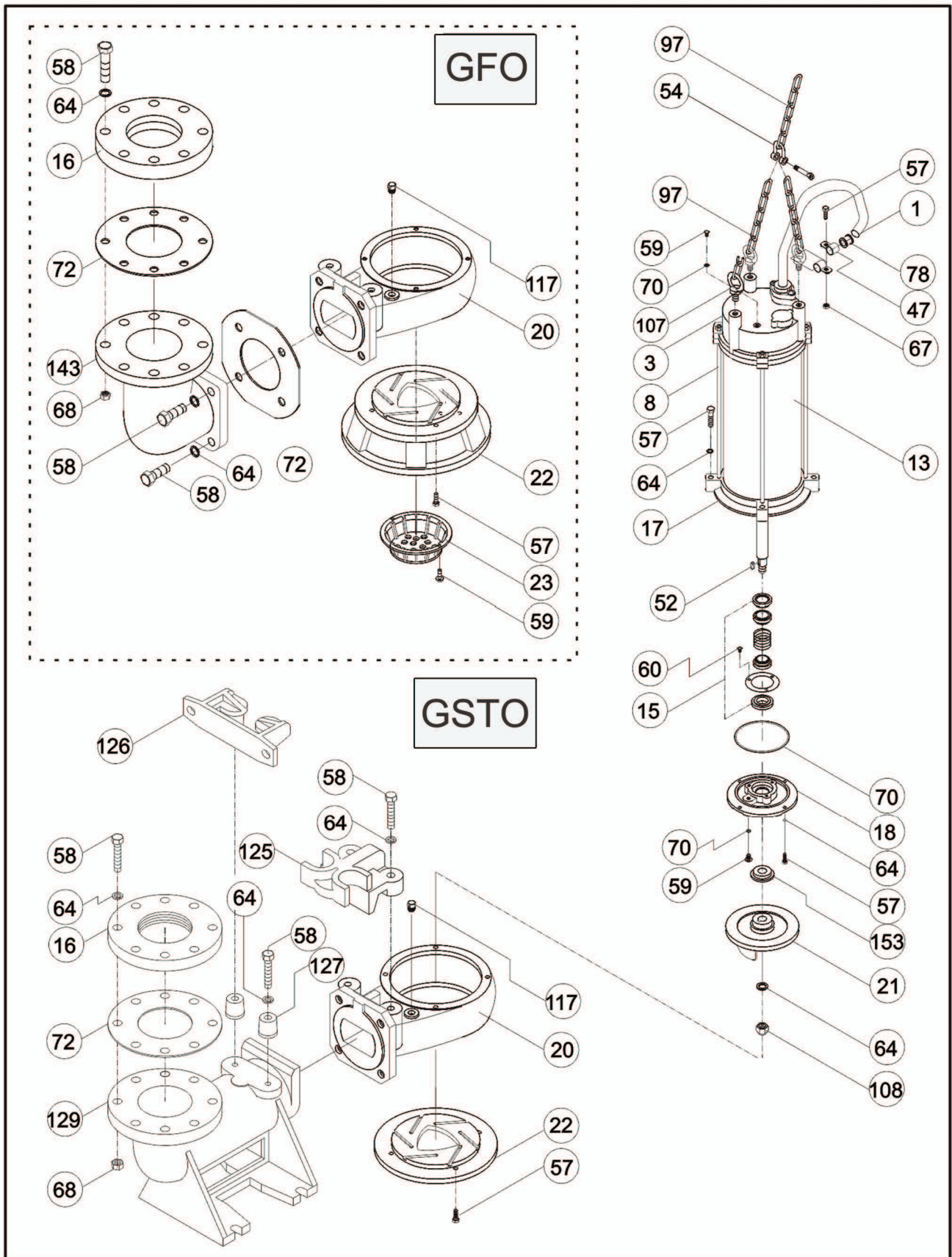


EXPLODED DIAGRAM: GSTO/GFO - 132 T- 112T

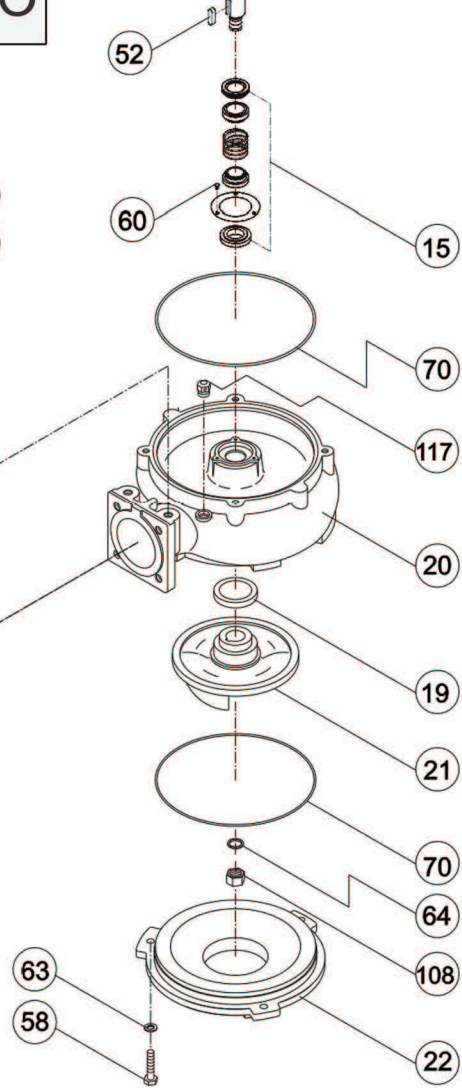
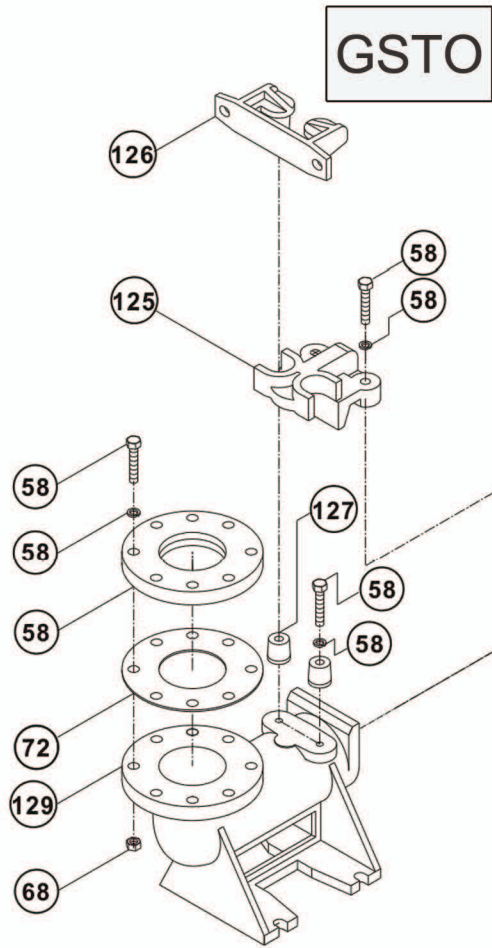
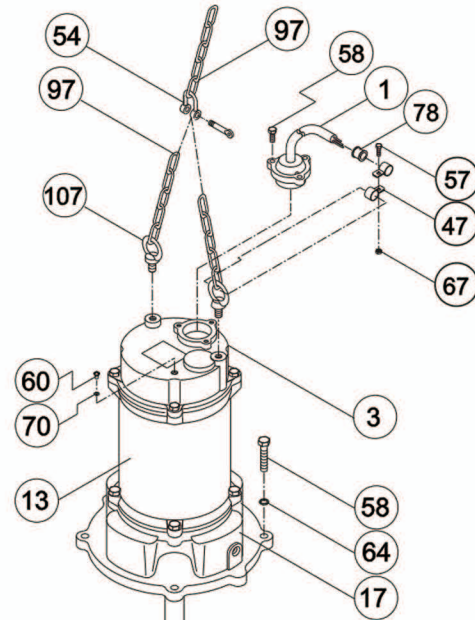
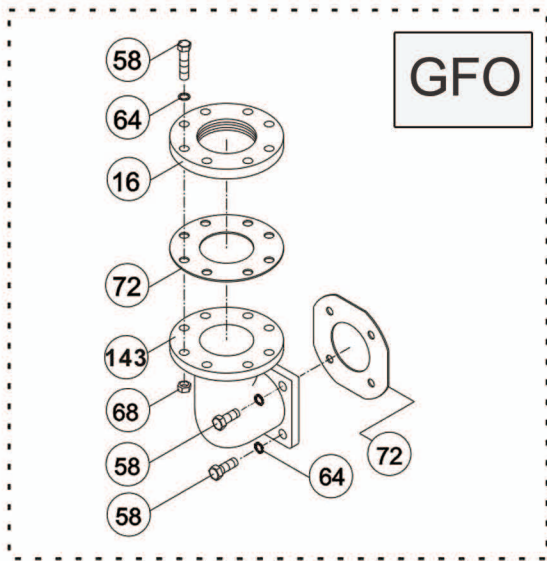


EXPLODED DIAGRAM :

GSTO / GFO - 212 - 232 - 212T - 232T - 312T - 332T - 532 T - 732 T - 1032T

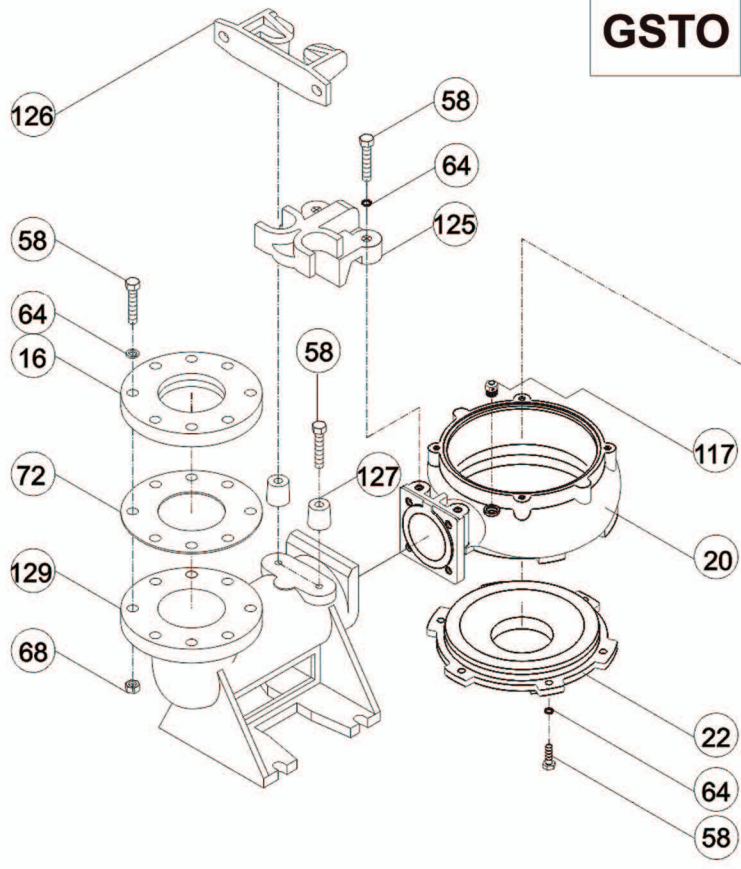
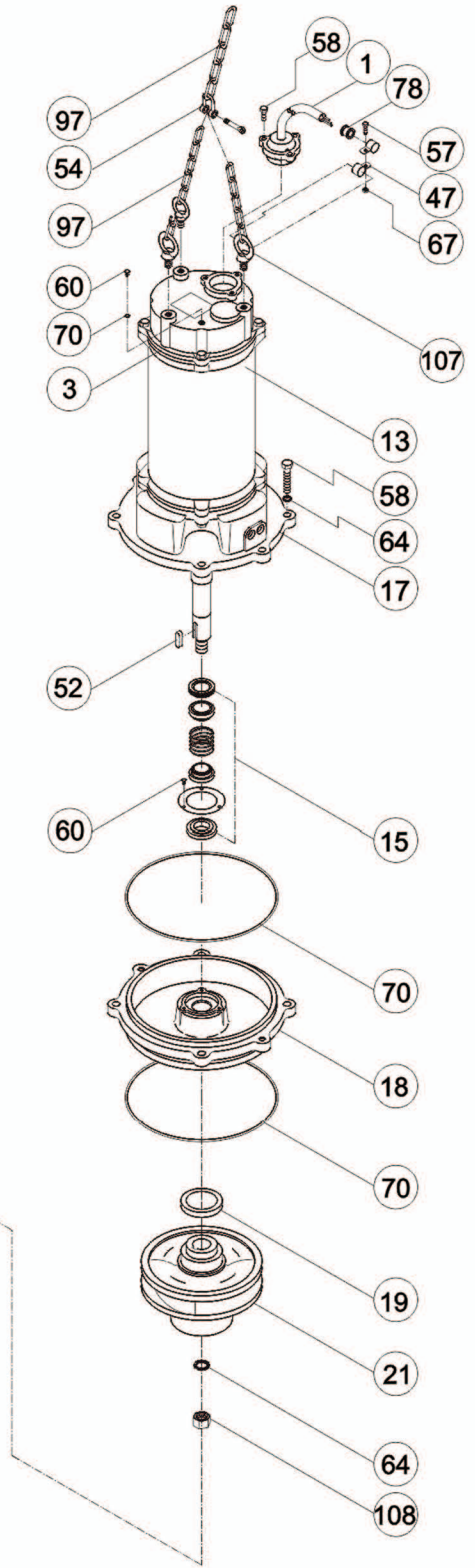
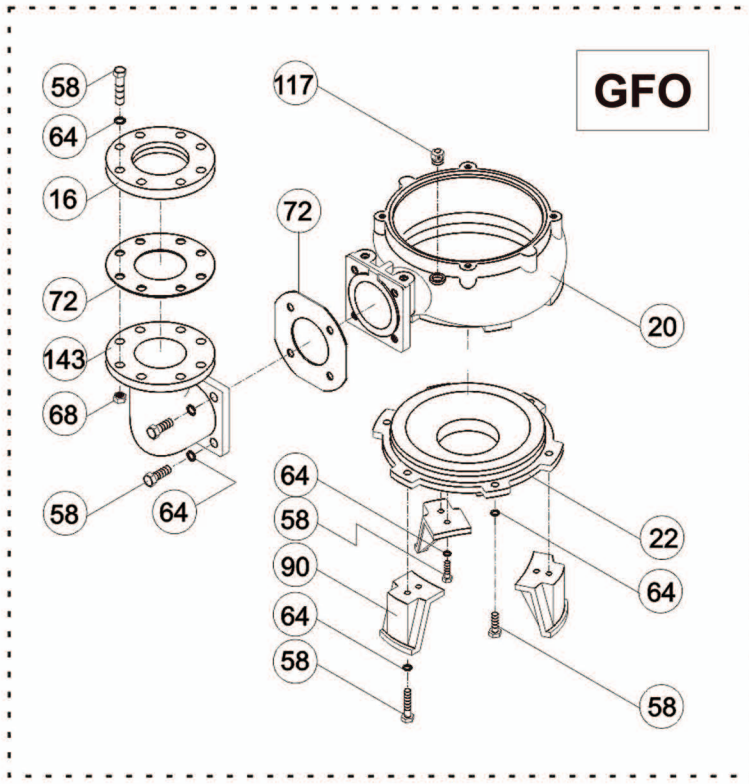


EXPLODED DIAGRAM :GSTO/GFO 332,332C,532,532C



532-532

EXPLODED DIAGRAM: GSTO/GFO- 732 - 1032 - 1532 - 2032

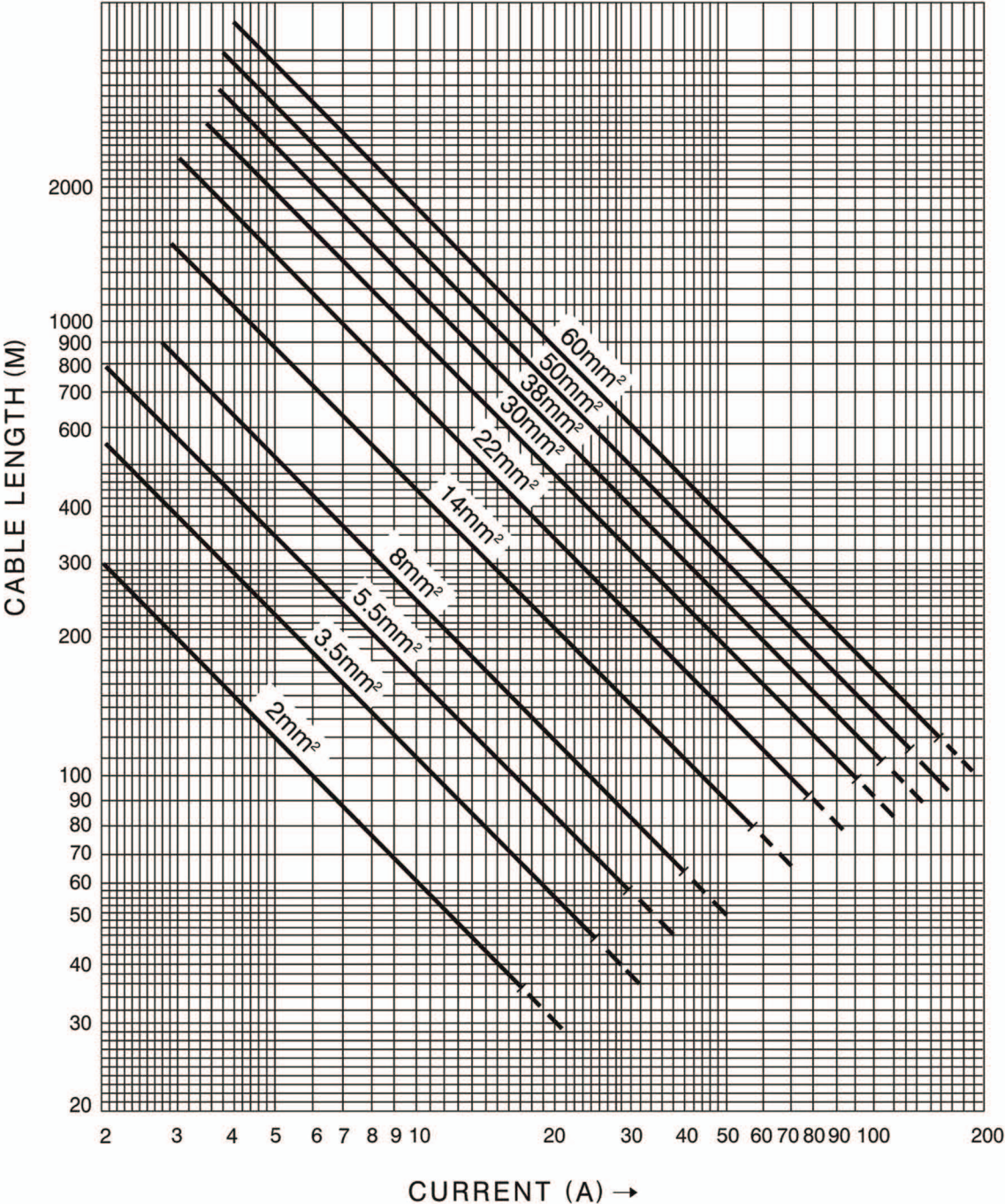


732-732

CAPACITY VS CABLE LENGTH

To minimize the voltage drop of the power cable, the following chart gives the proper choice of cable length and its safe current capacity.

Cable Temp. : 30°C Voltage drop : 5%



Dotted Line shows the condition of dangerous use.