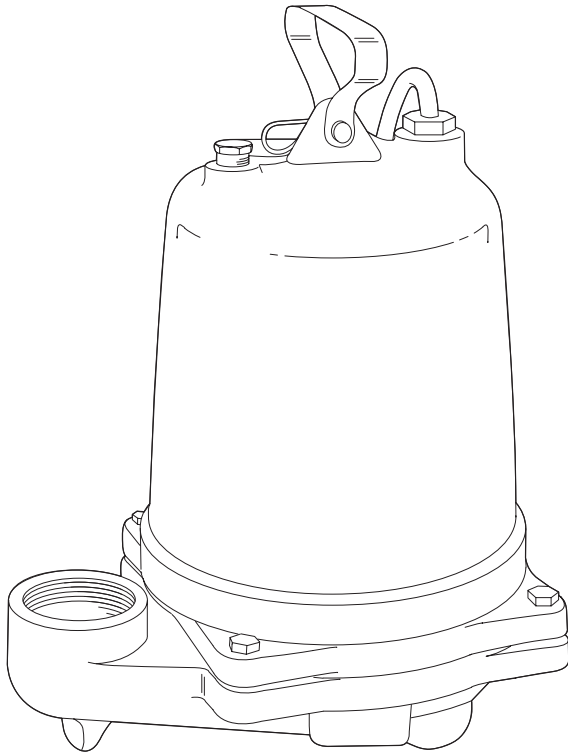


Installation, Operation and Maintenance Instructions

Models 3885, 3886, 3887



Owner's Information

Model Number: _____
 Serial Number: _____
 Dealer: _____
 Dealer's Phone No. _____
 Date of Purchase: _____ Installation: _____
 Current Readings at Startup:
 Single Phase: _____
 Three Phase – 1st Phase: _____
 2nd Phase: _____ 3rd Phase: _____

Table of Contents

SUBJECT	PAGE
Safety Instructions	2
Description and Specifications	2
Lifting of Pump	2
Sliderail System	2
Piping	2
Access Doors	3
Liquid Level Controls	3
Pump Motor Control Panels	3
Wiring and Grounding	3
Operation	4
Maintenance	4
Disassembly/Assembly	5
Mechanical Seal Replacement	5
Power Cable Replacement	5
Start Capacitor Replacement	6
Motor Replacement	6
Engineering Data	7
Sectional Assembly	8
Repair Parts and Materials of Construction	9, 10
Typical 2" Slide Rail Installation	11
Typical Plumbing and Installation	11
Trouble Shooting	12
Goulds Pumps Limited Warranty	12

SAFETY INSTRUCTIONS

TO AVOID SERIOUS OR FATAL PERSONAL INJURY OR MAJOR PROPERTY DAMAGE, READ AND FOLLOW ALL SAFETY INSTRUCTIONS IN MANUAL AND ON PUMP.

THIS MANUAL IS INTENDED TO ASSIST IN THE INSTALLATION AND OPERATION OF THIS UNIT AND MUST BE KEPT WITH THE PUMP.



This is a **SAFETY ALERT SYMBOL**. When you see this symbol on the pump or in the manual, look for one of the following signal words and be alert to the potential for personal injury or property damage.



DANGER Warns of hazards that **WILL** cause serious personal injury, death or major property damage.



WARNING Warns of hazards that **CAN** cause serious personal injury, death or major property damage.

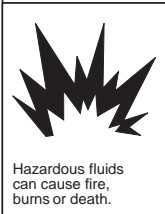


CAUTION Warns of hazards that **CAN** cause personal injury or property damage.

NOTICE: INDICATES SPECIAL INSTRUCTIONS WHICH ARE VERY IMPORTANT AND MUST BE FOLLOWED.

THOROUGHLY REVIEW ALL INSTRUCTIONS AND WARNINGS PRIOR TO PERFORMING ANY WORK ON THIS PUMP.

MAINTAIN ALL SAFETY DECALS.



Hazardous fluids can cause fire, burns or death.

UNIT NOT DESIGNED FOR USE WITH HAZARDOUS LIQUIDS OR FLAMMABLE GASES. THESE FLUIDS MAY BE PRESENT IN CONTAINMENT AREAS.

NOTICE: INSPECT UNIT FOR DAMAGE AND REPORT ALL DAMAGE TO THE CARRIER OR DEALER IMMEDIATELY.

DESCRIPTION AND SPECIFICATIONS

The Model 3885 is a 2" NPT discharge, $\frac{3}{4}$ " (19 mm) solids handling, submersible effluent pump. The Model 3886 is a 2" (50 mm) solids handling, submersible sewage pump. The Model 3887 is a 2" flanged (standard) 3" flange (optional) discharge, 2" (50 mm) solids handling, submersible sewage pump.

Lifting of Pump



Hazardous voltage can shock, burn or cause death.

DO NOT LIFT, CARRY OR HANG PUMP BY THE ELECTRICAL CABLES. DAMAGE TO THE ELECTRICAL CABLES CAN CAUSE SHOCK, BURNS OR DEATH.

- Lift the pump with an adequately sized chain or cable attached to the lifting handle (458). **DO NOT** damage electrical cables while raising and lowering unit.

Sliderail System

- The **OPTIONAL** Goulds Model A10-20 sliderail system is recommended for proper installation.

NOTICE: FOLLOW THE INSTALLATION AND OPERATION INSTRUCTIONS PROVIDED WITH THE SLIDERAIL SYSTEM.

- Installation of the sliderail system should locate the pump opposite the influent opening, preventing stagnate areas where solids can settle.
- The pit floor **MUST** be flat under the sliderail base and have sufficient loading capacity to support the entire weight of the assembly, including the sliderail base, sliderail guide, pump and all assorted piping.

Piping

- Discharge piping should be no smaller than 2" (51 mm) diameter and kept as short as possible, avoiding unnecessary fittings to minimize friction losses.
- Install an adequately sized check valve (suitable for handling $\frac{3}{4}$ " (19 mm) solids for effluent applications and 2" (50 mm) solids for sewage applications) in the discharge pipe to prevent backflow. Follow the check valve manufacturer's installation instructions.
- Install an adequately sized gate valve **ABOVE** the check valve for pump, plumbing and check valve maintenance.
- To deter air locking, drill a $\frac{3}{16}$ " (4.8 mm) hole, 2" (50.8 mm) beyond the pump discharge connection.
- All piping must be adequately supported, so as not to impart any piping strain or loads on the pump.

Access Doors

- Access doors can be single or double leaf design. Doors should include a lifting handle and a lock provision for tamper resistant operation. Standard and heavy duty steel or aluminum doors are available.
- The pit access door must be of sufficient size to allow for inspection, maintenance and crane or hoist service.

Liquid Level Controls

- Single float operation can be used on 1/3 and 1/2 HP models. Mounting of the float switch must be checked by the installer to insure proper turn on and turn off. The pump may be plugged directly into the piggy back style plug located on the cord of the float switch.
- The recommended float operation sequence used with a control panel requires a three or four float system. In the three float system, the floats are designated SW-1 for the bottom float, SW-2 for the middle float and SW-3 for the top float. In a four float system the fourth float is designated SW-4.
 - Simplex Control – The rising liquid level raises float SW-2, turning on the pump. When the liquid level falls sufficiently, SW-1 will turn the pump off. If the influent is excessive, or if the pump fails to operate correctly, SW-3 will activate an alarm, which will remain on until manually reset.
 - Duplex Control – The duplex control will alternate the two pumps, causing the lead pump to change at each system cycle. When equipped with three floats, the system will cycle the same as the simplex control, described above, except that the SW-1 will cause the lead pump to alternate.
 - If the influent is excessive, or if the lead pump fails to operate correctly, the rising level will activate SW-3, turning on the lag pump and the alarm. As before the alarm must be manually reset.
 - Four Float Control – The four float system operates the same as the duplex control system, except that float SW-3 will not turn on the alarm. In this system SW-4 turns on the alarm, which again must be manually reset.
- Several different float controls are available from the Goulds Catalog.

NOTICE: POSITION THE FLOATS SO THAT THEY DO NOT SNAG OR TANGLE ON THE PUMP, DISCHARGE PIPING, OR OTHER EQUIPMENT.

- The lower most float turns the unit off and should be set as shown in the “**TYPICAL PLUMBING and INSTALLATION**” drawing provided in this manual.
- Increasing the distance between the SW-1 and SW-2 floats lengthens the running time. One (1) minute is the minimum recommended pump cycle time.

NOTICE: DURING PUMP OPERATION, INSURE THAT THE LIQUID LEVEL DOES NOT DROP BELOW THE PUMP MOTOR FOR EXTENDED PERIODS. THIS CAN CAUSE THE PUMP MOTOR TO OVERHEAT, CAUSING MOTOR DAMAGE AND VOIDING THE WARRANTY.

Pump Motor Control Panels

- Control panels shall be in accordance with local and National Electrical Code requirements.
- Single phase installations shall be equipped with a Goulds’ “SES” or “A” Series panel, or **AS A MINIMUM**, a control panel with a properly sized magnetic contactor and a disconnect switch.
- Three phase installations shall be equipped with a Goulds’ “SES” or “A” Series panel, or **AS A MINIMUM** with a 3 pole circuit breaker, an across the line magnetic starter NEMA rated for the appropriate horsepower, ambient compensated Quick Trip Class 10 overload relays.

Wiring and Grounding

- Use only stranded copper wire to motor and ground. The ground wire must be at least as large as the wires to the motor. Wires should be color coded for ease of maintenance.



Install, ground and wire according to local and National Electrical Code requirements.



Install an all leg disconnect switch near the pump.



Disconnect and lockout electrical power before installing or servicing pump.



Electrical supply **MUST** match pump’s nameplate specifications. Incorrect voltage can cause fire, damage motor and voids warranty.



Single phase motors are equipped with automatic thermal protectors which open the motor’s electrical circuit when an overload exists. This can cause the pump to start unexpectedly and without warning.



Some models are equipped with a 3-prong grounded plug and **MUST** be used in a grounded 3-wire receptacle. **DO NOT** modify the plug or remove the ground prong.

- Where cables must be spliced or connected to the motor leads, splices **MUST** be water tight. Commercially available potting or heat shrink kits may be used, if allowed by local or federal regulations.

NOTICE: FOLLOW THE SPLICE KIT MANUFACTURER'S INSTRUCTIONS.

- Where wire splices are used, follow one of these procedures:
 - Butt join the wires using properly sized and correctly crimped Sta-Kon™, or equivalent, connectors. Insulate and water proof each joint using heat shrink tubing equipped with a self contained sealer. Apply heat evenly from a torch until adequately sealed.

OR

- Use plastic insulators and a neoprene gasket sleeve set with properly sized and correctly crimped Sta-Kon™ connectors. Place a cap and gasket on each wire end, center insulator body over splice, insert the sleeve into the body as far as possible, hand tighten caps.
- In the case of multiple conductors, stagger the joints.



FAILURE TO PERMANENTLY GROUND THE PUMP, MOTOR AND CONTROLS BEFORE CONNECTING TO ELECTRICAL POWER CAN CAUSE SHOCK, BURNS OR DEATH.

Operation

- If the unit has been stored for an extended period, check the oil level in the motor and seal chamber, to insure that they are full, using the following procedures:
 - Motor Cover – With the pump in the upright position, remove the oil fill plug (358E), being careful that nothing enters the motor. The oil level should be above the top of the motor. With the correct oil fill as required. **DO NOT** over fill.
 - Cable Gland Assemblies – Re-torque both the power and sensor cable glands to values given in step 10 of “POWER CABLE REPLACEMENT”.
- Before lowering the pump(s) into the containment area, three phase units should be jogged to insure correct rotation. See the motor rotation arrow on the motor cover (341). Check both pumps in a duplex operation.

NOTICE: MOTOR STARTUP TORQUE, “KICKBACK”, WILL CAUSE THE MOTOR TO TWIST IN THE DIRECTION OPPOSITE ROTATION. INSURE THAT THE PUMP ASSEMBLY IS ADEQUATELY RESTRAINED.



DO NOT PLACE HANDS IN PUMP SUCTION WHILE CHECKING MOTOR ROTATION. TO DO SO WILL CAUSE SEVERE PERSONAL INJURY.

NOTICE: DO NOT SWITCH PRIMARY POWER LEADS COMING INTO A THREE PHASE DUPLEX CONTROL PANEL, THIS WILL REVERSE ROTATION OF BOTH PUMPS.

- If the three phase motor(s) rotation is backwards, reverse any two pump power cable leads at the pump control panel.



MOTOR OVERHEAT/OVER CURRENT SENSING DEVICES AUTOMATICALLY RESTART THE MOTOR UNEXPECTEDLY AND WITHOUT WARNING. THIS CAN CAUSE SEVERE PERSONAL INJURY.

- After installing the pump into the containment area, with adequate submergence, open the discharge valve fully. Start the unit using manual controls. If flow is appreciably less than rated performance, pump may be air bound. To expel trapped air, jog the unit several times, using the manual controls.
- Have a qualified electrician take current measurements on the single or all three phases. Record these readings in the space provided in the “OWNER’S INFORMATION” section of this manual for future reference.
- The unit is now ready for normal operation. Place the controls in the automatic position.

Maintenance



FAILURE TO DISCONNECT AND LOCKOUT ELECTRICAL POWER BEFORE ATTEMPTING ANY MAINTENANCE CAN CAUSE SHOCK, BURNS OR DEATH.



UNIT MUST BE FLUSHED AND DISINFECTED, INSIDE AND OUT, PRIOR TO SERVICING.

Periodic Maintenance

NOTICE: ROUTINE PERIODIC INSPECTIONS ARE REQUIRED AND SHOULD FOLLOW THE FREQUENCY AND MAINTENANCE SCHEDULE PROVIDED.

FREQUENCY	REQUIRED MAINTENANCE
MONTHLY	<ul style="list-style-type: none"> • Duplex Units – Check for even operating times. Uneven operation times indicate a defective unit, float switch or control. • Unimpeded float operation.

Disassembly/Assembly

⚠ WARNING

Hazardous voltage

FAILURE TO DISCONNECT AND LOCKOUT ELECTRICAL POWER BEFORE ATTEMPTING ANY MAINTENANCE CAN CAUSE SHOCK, BURNS OR DEATH.

NOTICE: FOLLOW ALL SAFETY AND LIFTING INSTRUCTIONS PROVIDED IN THIS MANUAL.

- Following the slide rail instructions, remove the pumping unit from the sewage containment area.

⚠ WARNING



Biohazard can cause serious personal injury.

UNIT MUST BE FLUSHED AND DISINFECTED, INSIDE AND OUT, PRIOR TO SERVICING.

MECHANICAL SEAL REPLACEMENT

1. Follow **ALL** instructions provided in the “**DISASSEMBLY**” section of this manual.
2. To gain access to the pump impeller and mechanical seal remove the four casing hex cap screws (372D). Remove casing (100) and casing gasket (351); discard the gasket.

⚠ CAUTION



Hazardous pressure can cause personal injury or property damage.

FAILURE TO REMOVE DRAIN PLUG CAREFULLY CAN CAUSE HOT OIL TO ERUPT FROM OIL RESERVOIR CAUSING PERSONAL INJURY OR PROPERTY DAMAGE

3. Removal of the mechanical seal assembly (387) requires draining the special insulating oil from the motor cover. This is accomplished by removing the drain plug and draining the oil into an adequately sized clean receptacle. See “**ENGINEERING DATA**” section for required volume.
4. To remove the impeller (101), it may be necessary to heat the impeller and impeller locknut (304), three phase motors only, with a torch. Use no more heat that is necessary, as excess heat will damage the mechanical seal. Secure the impeller from rotation, and remove the impeller lock nut, by turning the lock nut **COUNTERCLOCKWISE**. Remove the impeller from the motor shaft by holding the motor shaft with a screw driver and turning the impeller **COUNTERCLOCKWISE**.

5. Remove and discard the mechanical seal and stationary seat assembly. **DO NOT** damage the motor shaft or the stationary seat bore.
6. Inspect and wipe clean the stationary seat bore.
7. To install the new stationary seat into the seal housing, lubricate the stationary seat bore and motor shaft with clean motor insulating oil. Using Goulds mechanical seal installation tool (A02A013), slide the stationary seat fully and squarely into the seal housing.
8. With a clean, lint free cloth, wipe the stationary face clean of all lubricating oil or debris. **DO NOT** scratch or otherwise damage the seal face.
9. Lubricate the inside of the rotary elastomer with clean motor insulating oil. Using the Goulds installation tool, slide the seal rotary assembly onto the motor shaft and seat fully against the stationary seat. Remove the seal installation tool.
10. Install the impeller onto the motor shaft by turning the impeller on **CLOCKWISE**, tighten securely. Treat the impeller with Loctite™ #271 and securely install. When provided, securely install the impeller locknut.
11. Fill the motor cover with motor special insulating oil to within ½" (13 mm) of the seal chamber housing. Tape drain plug with Teflon™ tape and install plug securely.
12. Reassemble casing and new casing gasket to pump assembly by installing the four casing hex cap screws, torquing in sequence to 35 lbs ft (47 N m).

NOTICE: FOLLOW THE INSTRUCTIONS PROVIDED IN THE “**WIRING AND GROUNDING**” AND “**OPERATION**” SECTIONS OF THE MANUAL AFTER UNIT DISASSEMBLY, REASSEMBLY.

POWER CABLE REPLACEMENT

1. To gain access to the motor cover screws follow steps 1 through 6 in the “**MECHANICAL SEAL REPLACEMENT**” section of this manual.
2. Remove the power cable strain relief (484B) assembly from the motor cover and slide up the cable.
3. Remove the four bearing housing socket head screws (371C). Carefully slide the motor cover from the motor assembly. **DO NOT** damage the power cable.
4. Disconnect the power cable wires from the motor assembly (338).
5. Remove cable from motor cover, inspect and replace as required, following the procedures provided.

NOTICE: DISCARD STRAIN RELIEF ASSEMBLY. THEY CAN NOT BE REUSED.

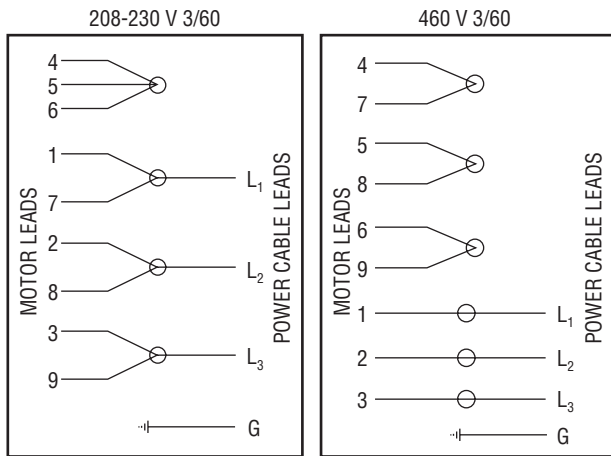
6. Install new motor cable strain relief assembly onto cable, sliding the hex gland on first, then the washer and finally the packing. Insert the cables into the motor cover hole. Pull an appropriate amount of cable through the motor cover to allow for connecting the cable leads. **DO NOT** tighten the strain relief gland.

7. Connect the power cable leads to the motor assembly as follows:

- Single Phase Motors – Connect the **BLACK** wire to motor terminal L₁. Connect the **WHITE** wire to motor terminal L₂. Connect the **GREEN** wire to the motor ground.
- Three Phase Motors – See Figure 1.

WARNING
Hazardous voltage

FAILURE TO CONNECT POWER AND SENSOR WIRES TO DESIGNATED WIRES CAN CAUSE SHOCK, BURNS OR DEATH.



THREE PHASE MOTOR WIRING DIAGRAM

Figure 1

8. Wire tie the power cable to the motor assembly.
9. Slide the motor cover onto the motor assembly, while carefully pulling the power cable out through the motor cover hole. **DO NOT** damage cables. Install the four seal housing socket head screws, torquing to 90 lbs in (10 N m).
10. Install the power cable strain relief assembly torquing the nylon bushing to 75 lbs in (8.5 N m) and the steel bushing to 100 lbs in (11.3 N m).
11. Continue the assembly following steps 7 through 12 of the **“MECHANICAL SEAL REPLACEMENT”** section of this manual.
12. If the motor cover was replaced, it is necessary to transfer the Goulds nameplate. Using two stainless steel No. 2 round head metallic drive screws, install the Goulds nameplate.

NOTICE: FOLLOW THE INSTRUCTIONS PROVIDED IN THE **“WIRING AND GROUNDING”** AND **“OPERATION”** SECTIONS OF THE MANUAL AFTER UNIT DISASSEMBLY, REASSEMBLY.

START CAPACITOR REPLACEMENT

1. On single phase motors only, to gain access to the motor start capacitor (376), follow steps 1 through 5 in the **“POWER CABLE REPLACEMENT”** section of this manual.

NOTICE: DISCARD STRAIN RELIEF ASSEMBLY. IT CAN NOT BE REUSED.

WARNING
Hazardous voltage

FAILURE TO DRAIN CAPACITOR OF STORED ELECTRICAL CHARGE BEFORE SERVICE CAN CAUSE A SEVERE SHOCK.

2. Remove the capacitor retaining screw and retaining bracket from the motor assembly. Remove the two wires from the capacitor. Discard the capacitor.
3. Connect the two motor wires to the new capacitor and reassemble with the retaining bracket and retaining screw, tightening securely.
4. Reassemble unit following steps 6 through 12 in the **“POWER CABLE REPLACEMENT”** section of this manual.

NOTICE: FOLLOW THE INSTRUCTIONS PROVIDED IN THE **“WIRING AND GROUNDING”** AND **“OPERATION”** SECTIONS OF THE MANUAL AFTER UNIT DISASSEMBLY, REASSEMBLY.

MOTOR REPLACEMENT

1. To gain access to the motor assembly, follow steps 1 through 5 in the **“POWER CABLE REPLACEMENT”** section of this manual.

NOTICE: DISCARD STRAIN RELIEF ASSEMBLY. IT CAN NOT BE REUSED.

2. Remove the four motor thru bolts and carefully pull motor assembly from bearing housing. Further motor service **MUST** be provided by a qualified motor repair facility.
3. Insert the motor assembly into the bearing housing, visually aligning the motor thru bolts through the lower motor vent openings.
4. Install the four motor thru bolts, torquing to 35 lbs in (4 N m).
5. To complete the assembly follow steps 6 through 12 in the **“POWER CABLE REPLACEMENT”** section of this manual.

NOTICE: FOLLOW THE INSTRUCTIONS PROVIDED IN THE **“WIRING AND GROUNDING”** AND **“OPERATION”** SECTIONS OF THE MANUAL AFTER UNIT DISASSEMBLY, REASSEMBLY.

Engineering Data

Maximum Diameter Solids 3885	3/4 in	19 mm	Minimum Pump Submergence – Below Top of Motor Dome	6 in	152 mm
3886 and 3887	2 in	50 mm	Minimum Number of Evenly Distributed Starts per Hour	6	
Minimum Casing Thickness	5/16 in	8 mm	Maximum Operating Temperature		
Casing Corrosion Allowance	1/8 in	3 mm	Continuous Operation	40° C	104° F
Minimum Working Pressure	55 psi	380 kPa	Intermittent Operation	60° C	140° F
			Motor Cover Oil Capacity	4.5 qts.	4.3 L

ELECTRICAL DATA 3885

HP	RPM	Voltage	Phase /Hz	Amps	KVA Code	Winding Resistance Line to Line (Ohms)	Power Cable AWG	Fuse/Circuit Breaker Amps
1/3	1725	115	1/60	9.4	M	1.92	16/3	15
1/3	1725	230	1/60	4.7	N	7.58	16/3	10
1/2	3450	115	1/60	14.5	M	1.00	16/3	20
1/2	3450	230	1/60	7.3	M	4.03	16/3	10
1/2	3450	200	3/60	3.9	R	3.8	14/4	10
1/2	3450	230/460	3/60	3.4/1.7	R	5.81/23.24	14/4	10/10
3/4	3450	230	1/60	10.0	J	2.99	14/3	15
3/4	3450	200	3/60	6.2	L	5.7	14/4	10
3/4	3450	230/460	3/60	5.4/2.7	L	4.04/16.15	14/4	10/10
1	3450	230	1/60	12.5	J	2.09	14/3	20
1	3450	200	3/60	8.1	M	2.6	14/4	10
1	3450	230/460	3/60	7.0/3.5	L	4.04/16.15	14/4	10/10
1 1/2	3450	230	1/60	15.0	H	1.16	14/3	20
1 1/2	3450	200	3/60	10.6	K	1.9	14/4	15
1 1/2	3450	230/460	3/60	9.2/4.6	K	2.87/11.46	14/4	15/10
2	3450	230	1/60	18.0	F	M-1.1/S-2.2	14/3	20
2	3450	200-230/460	3/60	12.0-11.6/5.8	K	1.66/6.62	14/4	15/10

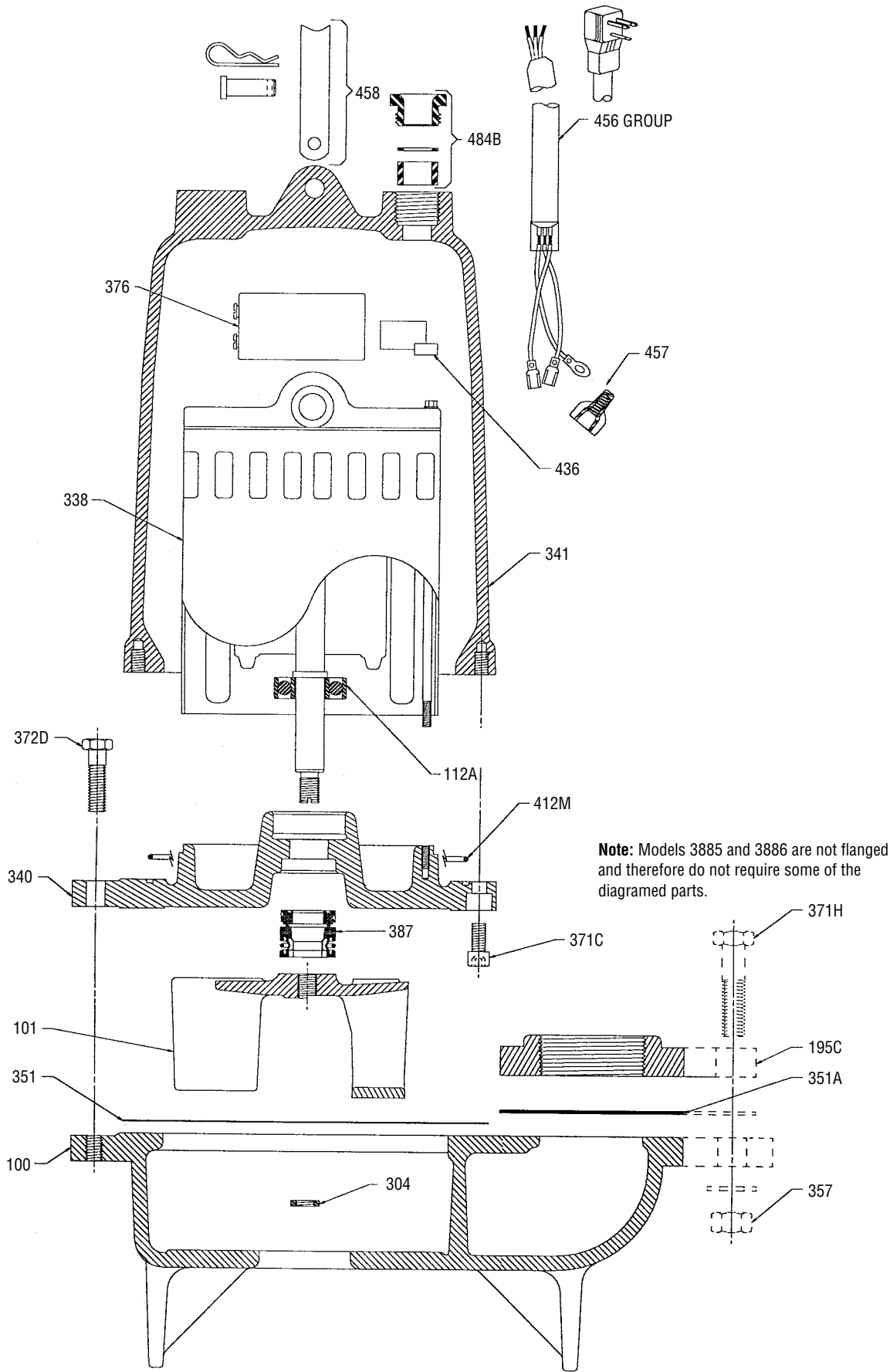
ELECTRICAL DATA 3886 AND 3887BF

1/3	1725	115	1/60	9.8	M	1.92	16/3	15
1/3	1725	230	1/60	4.9	N	7.58	16/3	10
1/2	1725	115	1/60	14.5	N	1.6	16/3	20
1/2	1725	230	1/60	7.3	K	6.4	16/3	10
1/2	1725	200	3/60	3.8	K	6.55	14/4	10
1/2	1725	230/460	3/60	3.3/1.7	K	9.9/39.4	14/4	10/10
3/4	1725	230	1/60	9.4	J	5.9	14/3	15
3/4	1725	200	3/60	4.1	H	4.3	14/4	10
3/4	1725	230/460	3/60	3.6/1.8	J	5.6/22.4	14/4	10/10
1	1725	230	1/60	12.3	H	2.6	14/3	20
1	1725	200	3/60	6.0	H	4.3	14/4	10
1	1725	230/460	3/60	5.8/2.9	J	5.6/22.4	14/4	10/10

ELECTRICAL DATA 3887BHF

1/3	1725	115	1/60	12.4	M	1.00	16/3	15
1/3	1725	230	1/60	6.2	M	4.03	16/3	10
1/2	3450	115	1/60	14.5	M	1.00	16/3	20
1/2	3450	230	1/60	7.6	M	4.03	16/3	10
1/2	3450	200	3/60	4.1	R	3.8	14/4	10
1/2	3450	230/460	3/60	3.6/1.8	R	5.81/23.24	14/4	10/10
3/4	3450	230	1/60	9.4	J	2.99	14/3	15
3/4	3450	200	3/60	6.2	L	5.7	14/4	10
3/4	3450	230/460	3/60	5.4/2.7	L	4.04/16.15	14/4	10/10
1	3450	230	1/60	14.5	J	2.1	14/3	20
1	3450	200	3/60	8.6	M	2.6	14/4	10
1	3450	230/460	3/60	7.5/3.8	L	4.0/16.2	14/4	10/10
1 1/2	3450	230	1/60	18.0	F	M-1.1/S-2.2	14/3	20
1 1/2	3450	200-230/460	3/60	10.0-9.6/4.8	K	1.66/6.62	14/4	15/10
2	3450	230	1/60	18.0	F	M-1.1/S-2.2	14/3	20
2	3450	200-230/460	3/60	12.0-11.6/5.8	K	1.66/6.62	14/4	15/10

Repair Parts Diagram for Models 3885, 3886 and 3887



Model 3885 Repair Parts Table

Item No.	Part Name	Material	Qty. Reqd.	Repair Parts Order Number						Max. Wt. (lbs.)
				1725 RPM	3450 RPM					
				1/3 HP	1/2 HP	3/4 HP	1 HP	1 1/2 HP	2 HP	
100	Casing – 1/3 HP "L" model only	Cast Iron	1	1K171	N/A					13.0
	Casing – all others			1K170						
101	Impeller	Cast Iron	1	2K158	2K220	2K219	2K218	2K217	2K840	2.0
	Impeller	Bronze		2K271	2K272	2K273	2K274	2K275	2K841	2.5
	Impeller – high head	Cast Iron		N/A	2K225 HH	N/A	N/A	2K221HH	N/A	3.5
	Impeller – high head	Bronze		N/A	2K276 HH	N/A	N/A	2K277 HH	N/A	4.0
112A	Lower Ball Bearing	Steel	1	4K132					4K384	–
112B	Upper Ball Bearing	Steel	1	4K132						–
218	Insulating Oil (gallon) Gallons required	Turbine Oil – Sunvis 932, Convis 150		4K432 (5 gallons)					7.5 lbs./ gal.	
				1.2 gallons						
304	Impeller Locknut (3 PH only)	AISI 300 series SS	1	13K6					–	
338	Motor	Stainless Steel Short Ext.	1	118-121R	118-1222R	N/A	N/A	N/A	N/A	13.0 to 24.0
				118-122R	118-1223R	118-1232R	118-1233R	118-1334R	120-845R	
				N/A	118-1321R	118-1322R	118-1323R	118-1324R	120-8425R	
				N/A	118-1333R	118-1334R	118-1335R	118-1336R	120-8425R	
340	Bearing Housing	Cast Iron	1	1K167					1K332	10.0
341	Motor Cover	Cast Iron	1	1K207	1K207	1K208	1K208	1K208	1K208	23.0
				1K208						
351	Casing Gasket	Composite	1	5K170					–	
358E	Plug – motor cover 3/8" NPT	Steel	1	6K3					–	
371C	Skt. Hd. Screw – brg. housing to motor cover	AISI 300 series SS	2	13K210					–	
372D	Hex Screw – seal housing to casing	AISI 300 series SS	4	13K186					–	
376	Capacitor (1 PH only)	Varies	1	1K197	9K197	9K197	9K197	9K197	275470130	–
				N/A	N/A	N/A	N/A	N/A	279342110	
387	Mechanical Seal – standard	Silicon Carbide	1	10K63 (John Crane Type 6)					10K71	–
	Mechanical Seal – optional	Tungsten Carbide	1	10K30 (John Crane Type 21)					10K72	–
412M	O-ring – motor cover	BUNA-N, AS 568A-166	1	4K252					–	
436	Solid State Switch			N/A					294811980	
456	Power cable		1	See chart below					–	
457	Wire nut	Nylon Housing	4	9K145					–	
	(power cable)		6	9K145					–	
458	Handle Assembly	AISI 300 series SS	1	4K243					–	
484B	Strain Relief Assembly (power cable)	Varies	1	5K113	5K113	5K111	5K111	5K111	5K111	–
			1	N/A	5K111					–
	Loctite #271		1	AL271121					–	

Model 3885 Power and Sensor Cables Description	Type and AWG Size	Standard length*	Optional Lengths			Wt. (lbs./5 ft.)
		20'	30'	50'	100'	
Power Cables						
1 PH: 1/3 and 1/2 HP, 115 V; standard with plug, optional with bare leads	SJTOW – 16/3	9K165	9K214	9K215	N/A	0.5
1 PH: 1/3 and 1/2 HP, 230 V; standard with plug, optional with bare leads	SJTOW – 16/3	9K164	9K214	9K215	N/A	0.5
1 PH: 3/4 – 1 1/2 HP, 230 V with bare leads	STOW – 14/3	9K163	9K216	9K161	9K217	0.9
1 PH: 1 1/2 – 2 HP, 230 V with bare leads	STOW – 14/3	9K266	9K267	9K268	9K269	0.9
3 PH: 1/2 – 2 HP, 208–230/460 V with bare leads	STOW – 14/4	9K153	9K218	9K154	9K219	1.1

Model 3886 and 3887 Repair Parts Table

Note: The 1K168 is the casing for the 3886 ½ HP. The 1K178 is the casing for the 3887 ½ – 1 HP.

Item No.	Part Name	Material	Qty.	Repair Parts Order Number							Max. Wt. (lbs.)
				1725 RPM				3450 RPM			
				⅓ HP	½ HP	¾ HP	1 HP	1 HP	1½ HP	2 HP	
100	Casing	Cast Iron	1	1K168 for NPT 3886			1K178 for flanged 3887		1K330		16.5
101	Impeller	Cast Iron	1	2K268	2K239	2K240	2K241	2K242	2K800	2K798	3.0
	Impeller	Bronze	1	2K279	2K280	2K281	2K282	2K283	2K801	2K799	3.5
112A	Lower Ball Bearing	Steel	1	4K132					4K384		–
112B	Upper Ball Bearing (Not Shown)	Steel	1	4K132							–
195C	Discharge Flange (2" NPT STD.)	Cast Iron	1	6K76							1.5
	Discharge Flange (3" NPT OPT.)	Cast Iron	1	A1-3							1.5
218	Motor Insulating Oil (Approx. 1 Gallon Required)	Turbine Oil	1	4K432							7.5 lbs./gal.
304	Impeller Locknut (3 PH only)	AISI 300 series SS	1	13K6							–
338	Motor – 1 Phase, 115V	Stainless Steel	1	118-121R	118-123R	N/A	N/A	N/A	N/A	N/A	13.0 to 24.0
	Motor – 1 Phase, 230V			118-122R	118-124R	118-1212R	118-1213R	118-1233R	120-844R	120-845R	
	Motor – 3 Phase, 230/460 V			N/A	118-132R	118-1304R	118-134R	118-1323R	N/A	N/A	
	Motor – 3 Phase, 200 V			N/A	118-1314R	118-1316R	118-1316R	118-1335R	N/A	N/A	
	Motor – 3 Phase, 200-230/460 V			N/A	N/A	N/A	N/A	N/A	120-8425R	120-8425R	
340	Bearing Housing	Cast Iron	1	1K167					1K332		10.0
341	Motor Cover – 1 Phase	Cast Iron	1	1K207	1K207	1K208	1K208	1K208	1K208	1K208	20.0
	Motor Cover – 3 Phase			1K208							
351	Casing Gasket	Composite	1	5K170							–
351A	Discharge Flange Gasket	Composite	1	5K150							–
357	Hex Nut – discharge flange	AISI 300 series SS	2	13K99							–
358E	Plug – motor cover ⅜" NPT	Steel	1	6K3							–
371C	Skt. Hd. Screw – brg. housing to motor cover	AISI 300 series SS	4	13K210							–
371H	Hex Screw – discharge flange	AISI 300 series SS	2	13K153							–
372D	Hex Screw – bearing housing to casing	AISI 300 series SS	4	13K186							–
376	Capacitor (1 PH only) Start	Varies	1	9K197	9K197	9K235	9K235	9K197	275469128	275470130	–
	Capacitor (1 PH only) Run			N/A	N/A	N/A	N/A	N/A	N/A	279342110	
387	Mechanical Seal – standard	Silicon Carbide	1	10K63 (John Crane Type 6)					10K71		–
	Mechanical Seal – optional	Tungsten Carbide	1	10K30 (John Crane Type 21)					10K72		–
412M	O-ring – motor cover	Nitrile	1	4K252							–
436	Solid State Switch (motor)	–	1	N/A					294612982	294811980	–
456	Power Cable	–	1	See chart below							–
457	Wire Nut 3 PH, 200/230 V	Nylon Housing	4	9K145							–
	Wire Nut 3 PH, 460 V		6	9K145							–
458	Handle Assembly	AISI 300 series SS	1	4K243							–
484B	Strain Relief Assembly (power cable)	Varies	1 PH	5K113	5K113	5K111	5K111	5K111	5K111	5K111	–
			3 PH	N/A	5K111					–	
528	Washer – discharge flange	AISI 300 series SS	2	13K82							–
	Loctite #271	–	1	AL27121							–

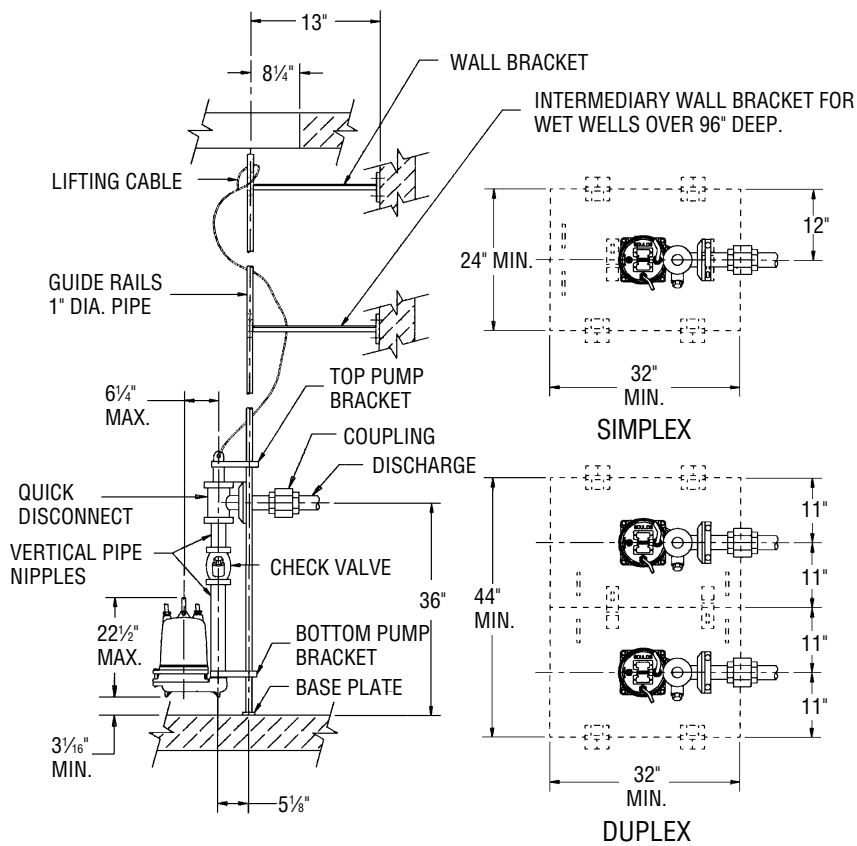
* Consult Factory

Model 3887 Power Cables Description	Type and AWG Size	Standard length*	Optional Lengths				Wt. (lbs./5 ft.)
		20'	30'	50'	100'		
Power Cables							
1 PH: ⅓ and ½ HP, 115 V; standard with plug, optional length with bare leads	SJTOW – 16/3	9K165	9K214	9K215	N/A	0.5	
1 PH: ⅓ and ½ HP, 230 V; standard with plug, optional length with bare leads	SJTOW – 16/3	9K164	9K214	9K215	N/A	0.5	
1 PH: ¾ – 1HP, 230 V with bare leads	STOW – 14/3	9K163	9K216	9K161	9K217	0.9	
1 PH: 1½ – 2 HP, 230 V with bare leads	STOW – 14/3	9K266	9K267	9K268	9K269	0.9	
3 PH: ½ – 2 HP, 208–230/460 V with bare leads	STOW – 14/4	9K153	9K218	9K154	9K219	1.1	

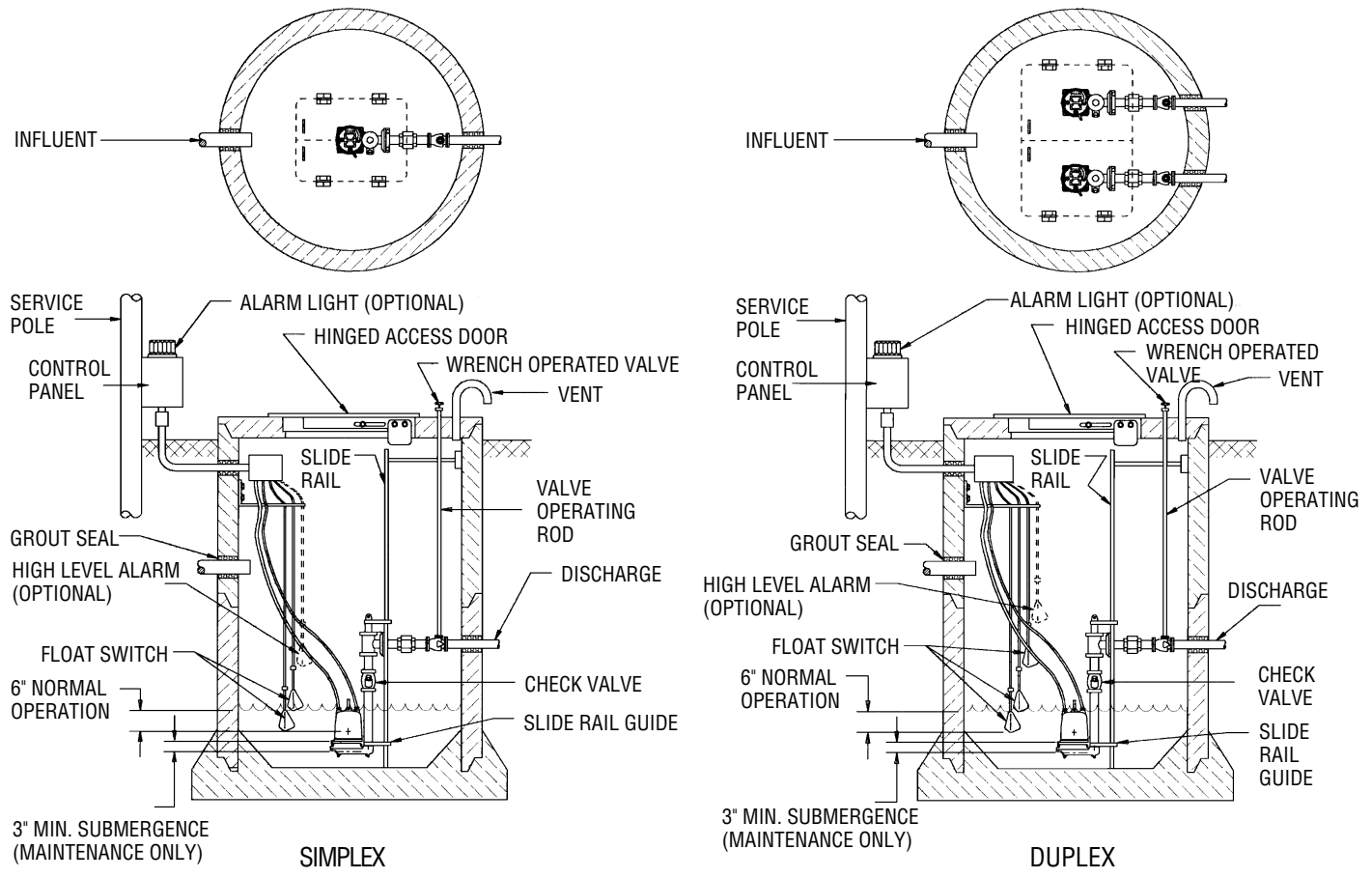
9K197 REF#615996 1 or 624751 1 MFD 110 VAC

9K235 REF#615996 2 189/227 MFD 110 VAC

Typical 2" Slide Rail Installation



Typical Plumbing and Installation



Trouble Shooting

⚠WARNING
Hazardous voltage

FAILURE TO DISCONNECT AND LOCKOUT ELECTRICAL POWER BEFORE ATTEMPTING ANY SERVICE CAN CAUSE SHOCK, BURNS OR DEATH.

SYMPTOM	PROBABLE CAUSE	RECOMMENDED ACTION
MOTOR NOT RUNNING	Motor thermal protector tripped.	Allow motor to cool. Insure minimum pump submergence. Clear debris from casing and impeller.
NOTE: If circuit breaker “OPENS” repeatedly, DO NOT reset. Call qualified electrician.	Open circuit breaker or blown fuse.	Determine cause, call a qualified electrician.
	Pump impeller binding or jammed.	Check motor amp draw. If two or more times higher than listed in the “ DESCRIPTION AND SPECIFICATIONS ” section, impeller is locked, motor bearings or shaft is damaged. Clear debris from casing and impeller, consult with dealer.
a) Manual operation	Power cable is damaged.	Resistance between power leads must read as shown in “ ENGINEERING DATA ”. Resistance between power leads and ground should read infinity. If any reading is incorrect, call a qualified electrician.
b) Automatic operation in control panel.	Inadequate electrical connection	Inspect control panel wiring. Call a qualified electrician.
NOTE: Check the pump in manual mode first to confirm operation. If pump operates, the automatic controls are at fault. If pump does not operate, see above.	Defective liquid level switch.	With switch disconnected, check continuity while activating liquid level switch. Replace switch, as required.
	Insufficient liquid level to activate controls.	Allow liquid level to rise 3” to 4” (76 mm - 101 mm) above turn-on level.
	Liquid level cords tangled.	Untangle cords and insure free operation.
PUMP WILL NOT TURN OFF	Liquid level cords tangled.	Untangle cords and insure free operation.
	Pump is air locked.	Shut off pump for approximately one minute, then restart. Repeat until air lock clears. If air locking persists in a system with a check valve pipe, a 0.188” (5 mm) hole may be drilled in the discharge pipe approximately 2” (51 mm) beyond the discharge connection.
LITTLE OR NO LIQUID DELIVERED BY PUMP	Influent flow is matching pump's discharge capacity.	Larger pump may be required.
	Check valve installed backwards, plugged or stuck closed.	Check flow arrow on valve and check valve operation.
	Excessive system head.	Consult with dealer.
	Pump inlet plugged.	Inspect and clear as required.
	Improper voltage or wired incorrectly.	Check pump rotation, voltage and wiring. Consult with qualified electrician.
	Pump is air locked.	See recommended action, above.
PUMP CYCLES CONSTANTLY	Impeller is worn or damaged.	Inspect impeller, replace as required.
	Liquid level controls defective or improperly positioned.	Inspect, readjust or replace as required.
	Discharge check valve inoperative.	Inspect, repair or replace as required.
	Sewage containment area too small.	Consult with dealer.
	Liquid level controls defective or improperly positioned.	Inspect, readjust or replace as required.
	Influent excessive for this size pump.	Consult with dealer.

GOULDS PUMPS LIMITED WARRANTY

This warranty applies to all water systems pumps manufactured by Goulds Pumps.

Any part or parts found to be defective within the warranty period shall be replaced at no charge to the dealer during the warranty period. The warranty period shall exist for a period of twelve (12) months from date of installation or eighteen (18) months from date of manufacture, whichever period is shorter.

A dealer who believes that a warranty claim exists must contact the authorized Goulds Pumps distributor from whom the pump was purchased and furnish complete details regarding the claim. The distributor is authorized to adjust any warranty claims utilizing the Goulds Pumps Customer Service Department.

The warranty excludes:

- (a) Labor, transportation and related costs incurred by the dealer;
- (b) Reinstallation costs of repaired equipment;
- (c) Reinstallation costs of replacement equipment;
- (d) Consequential damages of any kind; and,
- (e) Reimbursement for loss caused by interruption of service.

For purposes of this warranty, the following terms have these definitions:

- (1) “Distributor” means any individual, partnership, corporation, association, or other legal relationship that stands between Goulds Pumps and the dealer in purchases, consignments or contracts for sale of the subject pumps.
- (2) “Dealer” means any individual, partnership, corporation, association, or other legal relationship which engages in the business of selling or leasing pumps to customers.
- (3) “Customer” means any entity who buys or leases the subject pumps from a dealer. The “customer” may mean an individual, partnership, corporation, limited liability company, association or other legal entity which may engage in any type of business.

THIS WARRANTY EXTENDS TO THE DEALER ONLY.