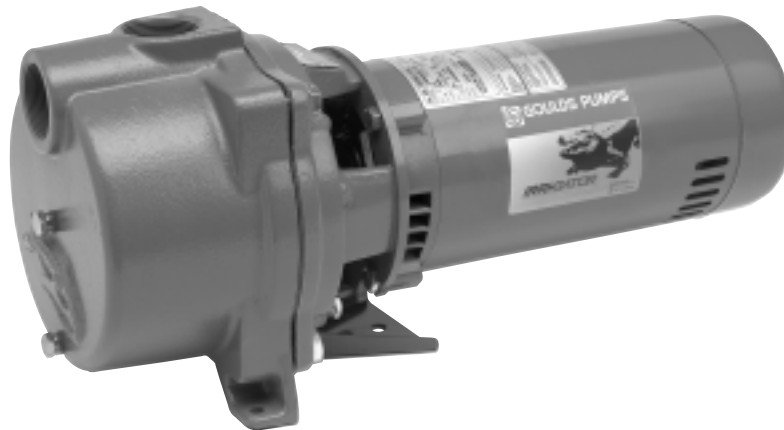


Installation, Operation and Maintenance Instructions

IRRI-GATOR™ Self Priming Model GT



Models and Owner's Information

Single Phase
GT07
GT10
GT15
GT20
GT30

Three Phase
GT073
GT103
GT153
GT203
GT303

Model Number: _____

Serial Number: _____

Dealer: _____

Dealer Telephone: _____

Purchase Date: _____

Installation Date: _____

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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 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.

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

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

MAINTAIN ALL SAFETY DECALS.

NOTICE: INSPECT UNIT FOR DAMAGE AND REPORT ALL DAMAGE TO THE CARRIER OR DEALER IMMEDIATELY. DO NOT USE PUMP IF DAMAGE IS SUSPECTED.

WARNING



UNITS NOT DESIGNED FOR USE WITH HAZARDOUS LIQUIDS OR FLAMMABLE GASES.

Description and Specifications

- The Model GT embraces a line of end suction, single stage, self-priming centrifugal pumps for lawn sprinkling, HVAC systems, and general water transfer.
- Casing is cast iron construction with tapped openings provided for vacuum gauge and casing drain.
- Impellers are enclosed design, glass filled Noryl™, threaded directly on motor shaft.
- Standard motors are NEMA standard, 3500 RPM, open drip proof enclosure.

Engineering Data

Model	HP	Ph/Hz	Suction	Discharge	Wt. lbs.
GT07	¾	1/60	1½" NPT	1½" NPT	48
GT10	1				52
GT15	1½				60
GT20	2				65
GT30	3				76
GT073	¾	3/60	1½" NPT	1½" NPT	49
GT103	1				52
GT153	1½				55
GT203	2				69
GT303	3				71

- Maximum Liquid Temperature: 160°F (71°C)
- Maximum Starts per Hour: 20 – evenly distributed

Piping

- Pump **MUST** be installed horizontally on a solid flat surface, with discharge on top.
- Allow adequate space for servicing and ventilation. Protect the unit from weather and water damage due to rain or flooding or freezing temperatures.
- Piping should be no smaller than the suction and discharge connections and kept short as possible, avoiding unnecessary fittings to minimize friction losses.
- All piping **MUST** be independently supported and **MUST NOT** place any piping loads on the pump.

NOTICE: DO NOT FORCE PIPING INTO PLACE AT PUMP SUCTION AND DISCHARGE CONNECTIONS.

- All pipe joints **MUST** be airtight.
- The use of Teflon™ tape, or equivalent, is recommended for **ALL** pipe joints.

SUCTION

- Total suction lift, including elevation and pipe friction loss, should not exceed 25 feet of head.
- Install an airtight union in the suction line close to the pump. See Figure 1.
- Installation of a foot valve at liquid source is recommended.

NOTICE: FOR INSTALLATIONS WITH LONG SUCTION PIPING, BOTH A FOOT VALVE AND A CHECK VALVE ARE RECOMMENDED.

- To avoid air pockets, no part of the piping should be above the pump suction connection and piping should slope upward from liquid source.
- For installations with long suction piping, fill the suction pipe with water before connecting to pump.

DISCHARGE

- Install a tee at the discharge connection of the pump. The top opening of the tee is required for initial priming. See Figure 1.

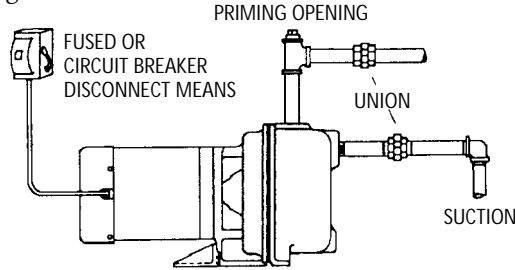


Figure 1

Wiring and Grounding



- ! Install, ground and wire according to local and National Electrical Code requirements.
- ! Install an all leg electrical power disconnect switch near the pump.
- ! Disconnect electrical power before installing or servicing pump.

! Electrical supply **MUST** match pump's nameplate specification. Incorrect voltage can cause fire or damage to the motor and voids warranty.

! Motors without built-in protection **MUST** be provided with contactors and thermal overloads for single phase motors, or starters with heaters for three phase motors. See motor nameplate.

- Follow motor manufacturer's wiring diagram on the motor nameplate or terminal cover carefully.
- Use only copper wire to motor and ground. The ground wire **MUST** be at least as large as the wire to the motor. Wires should be color coded for ease of maintenance.

RECOMMENDED MINIMUM WIRE SIZE

HP	Distance from Service Entrance to Motor							
	50 Ft. (15 m)		100 Ft. (30 m)		150 Ft. (46 m)		200 Ft. (61 m)	
	115 V	230 V	115 V	230 V	115 V	230 V	115 V	230 V
3/4	12	14	10	14	8	14	6	12
1	12	14	8	14	8	12	6	12
1 1/2	10	14	8	14	-	12	-	10
2	10	14	8	14	-	12	-	10
3	-	12	-	12	-	10	-	10



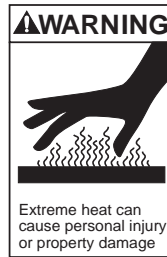
FAILURE TO PERMANENTLY GROUND THE PUMP, MOTOR AND CONTROLS BEFORE CONNECTING TO ELECTRICAL POWER CAN CAUSE SHOCK, BURNS, OR DEATH.

Rotation

NOTICE: INCORRECT ROTATION MAY CAUSE DAMAGE TO THE PUMP AND VOIDS THE WARRANTY.

- Correct rotation is right hand, **CLOCKWISE** when viewed from the motor end.
- Three phase unit rotation may be checked by removing motor end cap or plug and observing rotation of motor shaft. To reverse rotation, reverse any two of the three motor leads.

Operation



OPERATION WITHOUT PRIME, OR AGAINST A CLOSED DISCHARGE VALVE, CAN GENERATE HOT WATER OR STEAM CAUSING INJURY OR PROPERTY DAMAGE.

NOTICE: DO NOT OPERATE PUMP WITHOUT PRIME OR SEAL DAMAGE WILL RESULT.

- Prime pump by filling pump and piping through opening in top of tee with clean water. See Figure 1.
- Install pipe plug in top of tee using Teflon™ tape or equivalent.

NOTICE: IF PUMP IS DRAINED OR SHUT OFF DURING PRIMING PERIOD, CASING MUST BE REFILLED BEFORE RESTARTING PUMP.

- Start the pump and partially open discharge valve and wait for system pressure to stabilize. If system pressure is surging, or prolonged pressure drop is experienced, the system may not be completely primed.

Maintenance



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

- No lubrication is required on pump. For motor lubrication, refer to and follow manufacturer's instructions.

SEASONAL SERVICE

- To **REMOVE** pump from service, remove all drain plugs and drain all piping.
- To **RETURN** pump to service, replace all drain plugs using Teflon™ tape or equivalent.
- Reconnect suction line if removed, examine union and repair if necessary.
- Reprime and operate pump following all instructions and warnings in the "OPERATION" section of manual.

Disassembly

⚠WARNING



Hazardous voltage
can shock, burn or
cause death.

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

1. Remove foot bolt (10).
2. Remove casing bolts (12).
3. Remove back pull-out assembly from casing (2).
4. Remove diffuser seal ring (3) and diaphragm (4).
5. Remove diffuser screws (5) from adapter (11).
6. Remove motor end plug or cover.
7. Restrain motor shaft from rotation by utilization of the screwdriver slot, or $\frac{7}{16}$ " shaft flats, accessible at the motor shaft end.
8. Remove impeller (7), turning **COUNTER-CLOCKWISE**.
9. Using two screwdrivers, pry off rotary section of mechanical seal (8). Discard. See Figure 2.
10. Remove motor adapter bolts (12) and remove motor adapter from motor.
11. Push stationary seat of mechanical seal out of motor adapter. Discard seal seat.

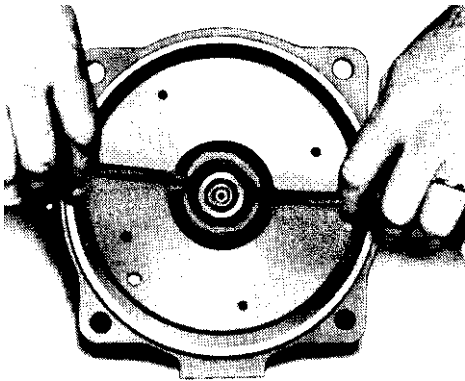


Figure 2

Reassembly

- Clean and inspect all parts before reassembly.

1. Inspect seal seat bore for wear and debris, clean and replace as necessary.

NOTICE: MECHANICAL SEAL MUST BE REPLACED WHENEVER SEAL HAS BEEN REMOVED. FOLLOW SEAL MANUFACTURER'S INSTRUCTIONS CAREFULLY.

2. If necessary, seat ring may be lubricated with water or glycerin to aid in installation. **DO NOT** contaminate the seal face. Fully and squarely install the stationary seat into the adapter. With a clean, lint free cloth, **CAREFULLY** wipe the seat face clean of debris. **DO NOT** damage the seal seat face.
3. Reinstall the motor adapter on the motor, making sure that the motor shaft does not dislocate or damage the stationary seal seat.

4. Fully and squarely install the seal rotary assembly against the stationary seat. Be sure rotating seal face does not drop out of holding collar and **DO NOT** damage seal face.
5. On three phase units, impeller **MUST** be installed with **LOCTITE® "Purple"**. Hold shaft from rotating, as explained in the **"DISASSEMBLY"** section of the manual, and install impeller by turning **CLOCKWISE** until tight against motor shaft shoulder.
6. Replace diffuser. Align to prevent impeller rub.
7. Install new diaphragm and new diffuser seal ring.
8. Install motor and liquid end into casing.
9. Check impeller for binding by rotating the motor shaft. If binding occurs, loosen casing bolts, readjust diffuser until impeller hub turns freely. Retighten casing bolts in a crossing pattern.
10. Replace all drain plugs and motor end components.
11. Reprime and operate according to instructions in the **"OPERATION"** section of this manual.

Trouble Shooting

⚠WARNING



Hazardous voltage
can shock, burn or
cause death.

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

SYMPTOM

Motor Not Running:

See Probable Causes 1 through 5.

Little or No Water Delivered:

See Probable Causes 3, 4, 6 through 12, 15.

Excessive Noise and Vibration:

See Probable Causes 3, 6, 7, 10, 12, 13, 14.

PROBABLE CAUSES

1. Motor thermal protector tripped.
2. Open circuit breaker or blown fuse.
3. Impeller binding.
4. Motor improperly wired.
5. Defective motor.
6. Pump is not primed, air or gases in pumpage.
7. Discharge, suction plugged or valve closed.
8. Incorrect rotation. (3 phase only)
9. Low voltage or phase loss.
10. Impeller worn or plugged.
11. System head too high.
12. NPSH_A too low – excessive suction lift or loss.
13. Discharge head too low – excessive flow rates.
14. Pump, motor or piping loose.
15. End of suction piping not submerged.

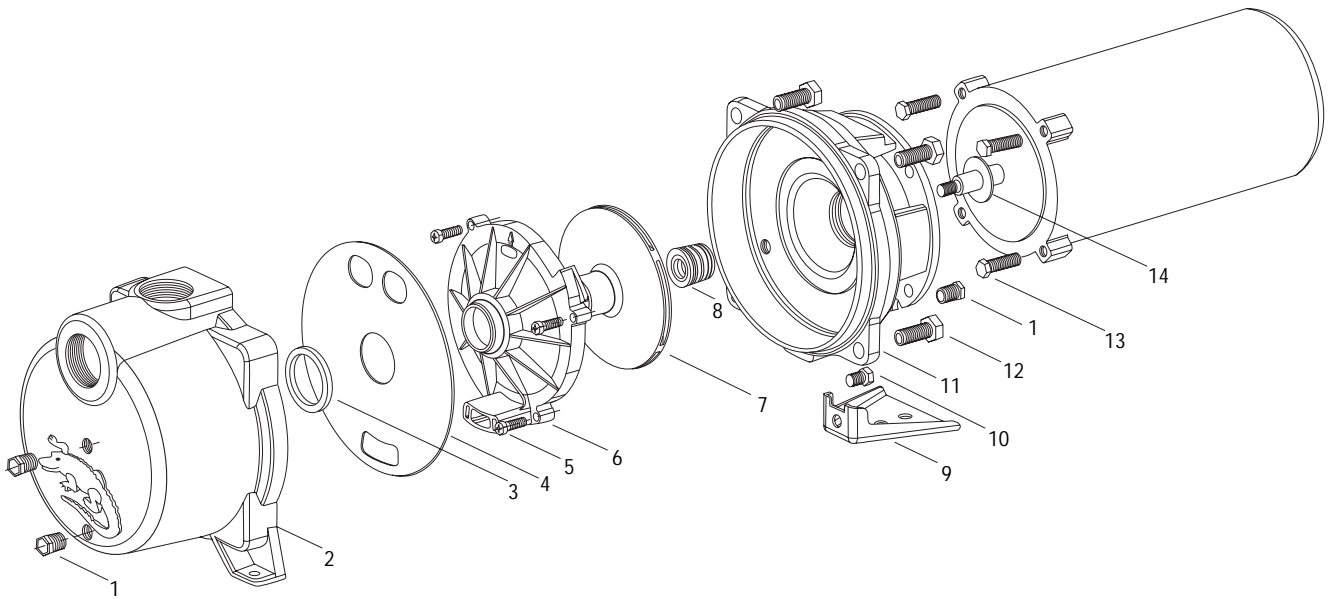
Electrical Data

Model	HP	Voltage	Full Load Amps	Fuse	Circuit Breaker		Ph/Hz
					Standard	Delay	
GT07	¾	115/230	13.8/6.9	45/25	45/25	25/15	1/60
GT10	1	115/230	16/8	50/25	50/25	30/15	1/60
GT15	1½	115/230	20/10	60/30	60/35	35/20	1/60
GT20	2	230	13.9	40	40	25	1/60
GT30	3	230	17	60	60	30	1/60
GT073	¾	208-230/460	3.1-2.8/1.4	10-10/10	10-10/10	10-10/10	3/60
GT103	1	208-230/460	4-3.6/1.8	15-15/10	15-15/10	15-10/10	3/60
GT153	1½	208-230/460	5.7-5.2/2.6	20-20/10	20-20/10	15-10/10	3/60
GT203	2	208-230/460	7.5-6.8/3.4	25-25/15	25-25/15	15-15/10	3/60
GT303	3	208-230/460	10.6-9.6/4.8	35-30/15	35-30/15	20-20/10	3/60

Repair Parts List

Item No.	Description	Material	GT07/	GT10/	GT15/	GT20/	GT30/
			GT073	GT103	GT153	GT203	GT303
1	¼" NPT Pipe Plug	Plated Steel	6K2				
2	Casing	Cast Iron	1K324				
3	Guidevane Seal Ring	BUNA	5K231				
4	Diaphragm	Neoprene	5K256				
5	Fillister Head Machine Screw	Stainless Steel	13K4	13K4	13K2	13K2	13K2
6	Guidevane	Lexan® 10% G.F.	3K72	3K71	3K70	3K70	3K69
7	Impeller	Noryl® 20% G.F.	2K715	2K716	2K714	2K713	2K712
8	Mechanical Seal	Carbon/Ceramic/ BUNA	10K10				
9	Pump Foot	Steel	4K408				
10	Pump Foot Bolt	Steel	13K252				
11	Motor Adapter	Cast Iron	1K310				
12	Casing Bolt	Steel	13K102				
13	Motor Adapter Bolt	Steel	13K89				
14	Deflector	BUNA	5K7				

Motor Codes		
HP	1Ø – ODP	3Ø – ODP
.75	J05853R	C05873
1.0	J06853R	C06873
1.5	J07858R	C07878
2.0	J08854R	C08874
3.0	J09854	C09874



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.