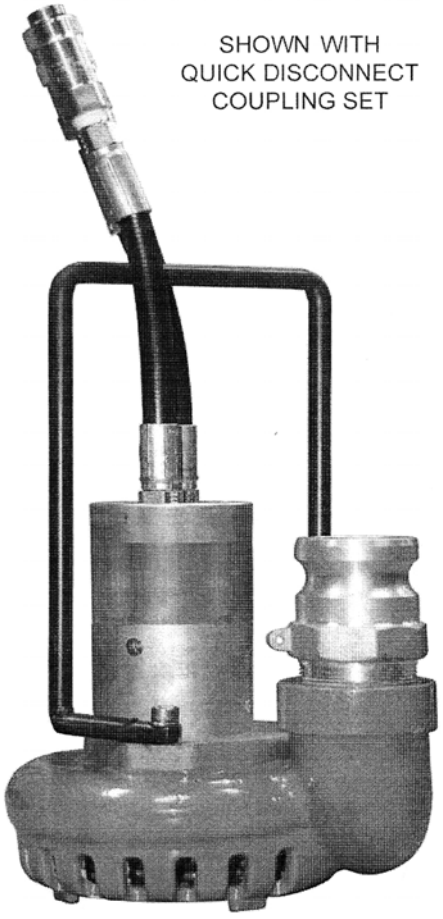
2” SUBMERSIBLE HYDRAPUMP INSTRUCTIONS



REIMANN & GEORGER CORPORATION
CONSTRUCTION PRODUCTS **BUFFALO, NY**
P/N 612---- **2/16/11**

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2 SPECIFICATIONS

2.1 INTRODUCTION

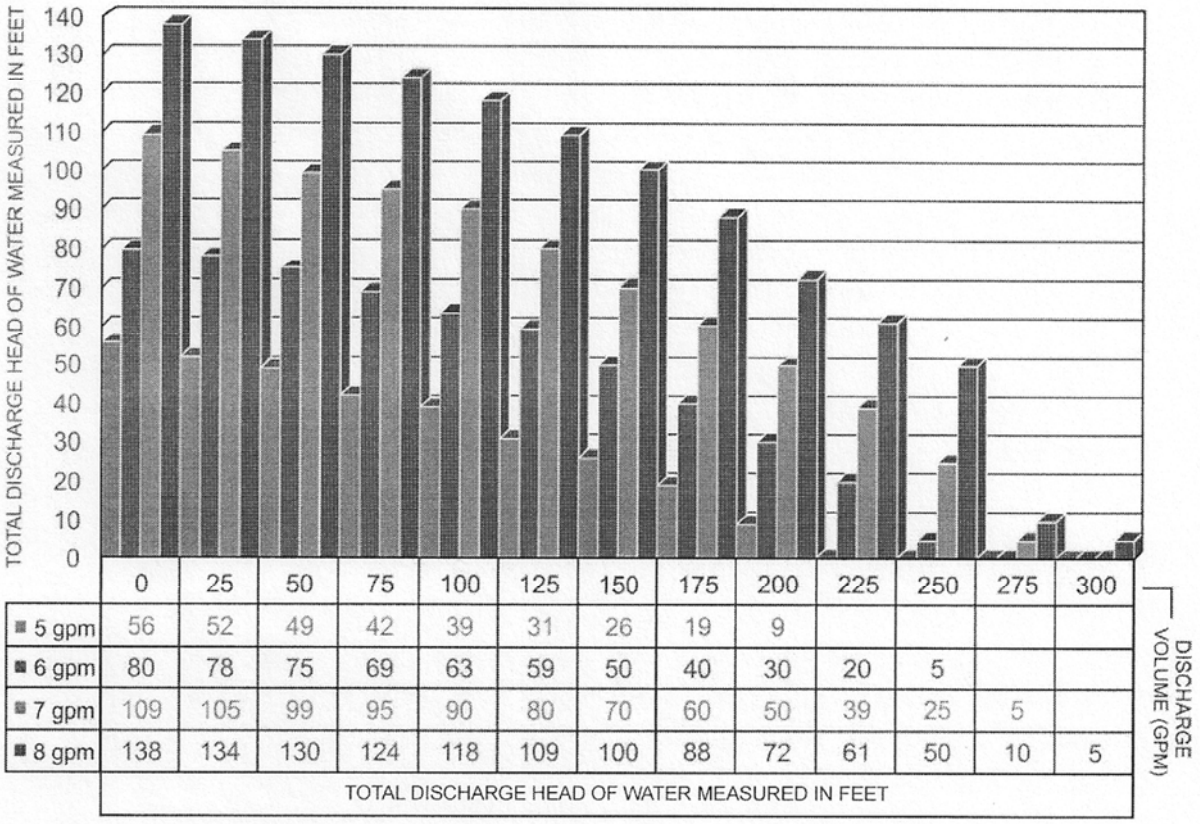
The Reimann & Georger Corporation HydraPumps a hydraulic submersible pump is the lightest, most efficient way to move large quantities of liquids. NO priming required! These pumps are compact, lightweight submersible pumps. Operate on a open or closed center systems. X-long carry handle aids in placement. The pump has a high impact strainer housing. Hose whip set and flush couplers included. The pump can run dry without damage.

2.2 TECHNICAL DATA

	ENGLISH	METRIC
Maximum lift		
PW200	138 ft	(23 m)
Maximum discharge flow		
PW200	275 gpm	(1031 lpm)
Discharge diameter		
PW200	2 in npft	(51 mm)
Pump diameter at widest point		
PW200	14 in	(35.6 cm)
Weight		
PW200	15 lbs	(6.8 kg.)
Oil flow range		
PW200	5 – 8 gpm	(18 – 30 lpm)
Working pressure		
PW200	1500 – 2000 psi	(105 – 140 bar)
System pressure relief	2200 psi	(150 bar)
Maximum back pressure in return line	200 psi	(14 bar System Type
System Type	OC, HTMA Type II	
HTMA Class II	7-9 GPM@ 2000psi	
EHTMA Category	30 lpm @ 138 bar	
Sound Pressure	<85 dBA @ 1m	
Maximum back pressure in return line	200 psi	(14 bar)
QD Couplings	1/2” HTMA flush face	

2 INCH HYDRAULIC SUBMERSIBLE PUMP

The graph below illustrates discharge volume and head with relation to hydraulic flow.



DISCHARGE VOLUME (GPM)	0	25	50	75	100	125	150	175	200	225	250	275	300
5 gpm	56	52	49	42	39	31	26	19	9				
6 gpm	80	78	75	69	63	59	50	40	30	20	5		
7 gpm	109	105	99	95	90	80	70	60	50	39	25	5	
8 gpm	138	134	130	124	118	109	100	88	72	61	50	10	5

TOTAL DISCHARGE HEAD OF WATER MEASURED IN FEET

The test above was conducted using a regulated hydraulic source and a fixed discharge assembly.

Results may vary under field conditions.

2.3 RECOMMENDED HYDRAULIC OIL

Viscosity	160 – 230 SUS at 100°F	(32-46 cSt at 40°C)
Viscosity index	Minimum 100	

Many types of compatible hydraulic oil are available through your local dealer/distributor. As an original equipment manufacturer, RGC supplies a Grade ISO VG 32 hydraulic turbine oil.

Hydraulic oil types are too numerous to list in this manual. If you have any question concerning the type of oil suitable for pump operation, please consult your local supplier or Reimann & Georger Corporation for details.

2.4 NAMEPLATE AND SERIAL NUMBER TAG

It is important to identify your pump completely and accurately whenever ordering spare parts or requesting assistance in service. The pump has a product nameplate which states the model and serial number. The pump label should appear as the sample nameplate shown in Figure 2-2. Record the model and serial numbers for future reference.

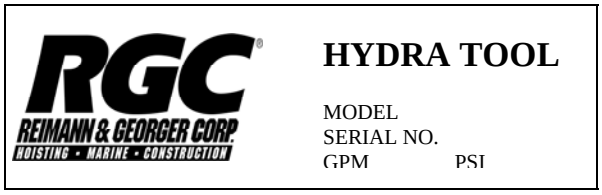


Figure 2-2.
Typical Pump Product Nameplate

MODEL _____

SERIAL NUMBER _____

3 OPERATION

Before making any connection to the pump unit check for live electrical wiring near the work site, or submerged in the fluid to be pumped.

3.1 BEFORE OPERATION

1. Read and fully understand the operating manual for the hydraulic power source being used.

2. Always check the hydraulic power source flow and pressure output. Never exceed the pump unit's maximum hydraulic flow rate or pressure. Power source must be open center, single direction, and have an unrestricted return flow from the hydraulic motor to the oil reservoir.

3. If the oil flow from the hydraulic power source cannot be adjusted below the maximum flow rate, a flow divider must be installed. This will insure the pump unit receives the correct flow and the excess flow is returned to tank.

4. To protect the pump from excessively high pressure, the pressure relief valve of the power supply must be set at 2000 psi (138 bar) or less. If this is not possible, install a separate pressure relief valve set at 2500 psi (172 bar). If in doubt, contact your dealer.

5. The hydraulic power source must be fitted with a return line oil filter with a filter rating of 10 microns

6. Before making any hydraulic connections, inspect all hydraulic hoses for leaks and risks of rupture as follows:

    a. Inspect each hose for breaks, cracks, worn spots, bulges, chemical attack, kinks or any other damage. Never stop any detected leak with your hand or fingers. Do not put your face close to suspected leaks. Hold a piece of cardboard close to suspected leaks and then inspect the cardboard for signs of hydraulic oil.

    b. Replace a damaged hose immediately. Never repair the hose.

7. The back-pressure (return line pressure) at the pump should be as low as possible and must not exceed 200 psi (14 bar) measured at the pump. Back-pressure at the pump is created mainly by the length and diameter of the return line hose.

8. Use a high-pressure hose (inside diameter 1/2") which has a minimum working pressure of 3000 psi. The female hose connection is the oil inlet (pressure) labeled "IN" on the pump, and the male hose connection is the oil outlet (tank) labeled "OUT" on the pump.

9. The pump unit uses flush-face quick-release couplings that are durable and very easy to clean. To prevent contamination, wipe the mating surfaces of the couplings with a clean rag before connecting. They are always fitted such that the male part gives oil and the female part receives oil.

3.2 BEFORE OPERATING THE PUMP

1. Connect the discharge hose to the pump unit using a standard NPT male threaded hose or adapter coupling. Ensure the hose is securely connected before operating. Do not use hoses and/or fittings that are damaged, worn, cut, leaking, kinked, and/or corroded.

2. Connect an appropriate suspension cable to the eyehook or handle of the pump. Do not use the hydraulic hoses for lifting, suspending or lowering pump unit.

3. Place pump into position being careful not to damage hydraulic hoses or discharge hose. Do not lift or lower the pump unit using your back, improper lifting/lowering can cause serious back injury.

4. Securely restrain the discharge hose; the force of the pump discharge can cause rapid and powerful reactionary forces from the discharge hose.

5. Ensure that the discharge hose is not kinked and free of all obstructions.

6. Clear the working area including the discharge hose area of all bystanders. Place barricades or secure the area in such a manner that no personnel would be injured by flying debris or the discharge.

7. Ensure all personnel are using the appropriate safety equipment such as safety shoes, hard hats, ear and eye protection and work gloves.

3.3 OPERATING THE PUMP

1. To start the pump, turn on the hydraulic flow making sure not to exceed the pump's rated flow or pressure.

2. Do not kink or obstruct a discharge hose while in operation.

3. Keep all body parts away from the pump discharge

WARNING:

FORCE OF THE PUMP DISCHARGE CREATES STRONG REACTIONARY FORCES FROM DISCHARGE HOSE. WORK AREA IS TO BE KEPT CLEAR OF UNAUTHORIZED PERSONNEL AT ALL TIMES. PLACE BARRICADES OR SECURE THE AREA IN SUCH A MANNER THAT NO PERSONNEL WOULD BE INJURED BY FLYING DEBRIS, DISCHARGE FLUID OR BY THE DISCHARGE HOSE IF IT BECAME OBSTRUCTED.

4. Never adjust or service the pump during operation or while connected to a hydraulic power source.

3.4 PREPARING PUMP FOR SHUTDOWN

1. Stop the pump by turning the hydraulic flow off.

2. Stop the hydraulic power source following the procedure in the respective instruction manual.

3. Retrieve the pump unit. Do not use the hydraulic hoses for lifting, suspending or lowering pump unit. Do not lift or lower the pump unit using your back, improper lifting/lowering can cause serious back injury.

4. Allow the system and hydraulic fluid to cool before disconnecting hydraulic hoses.

5. Always stop the hydraulic power source and depressurize the hydraulic system before disconnecting hydraulic hoses.

WARNING:

NEVER DISCONNECT OR REMOVE HYDRAULIC COMPONENTS, HOSES, LINES, OR FITTINGS WHILE THE POWER SOURCE IS RUNNING, PRESSURIZED, OR WHENEVER THE HYDRAULIC FLUID IS HOT.

LIQUID UNDER HIGH PRESSURE CAN PIERCE THE SKIN, CAUSING SERIOUS INJURY OR DEATH. HOT LIQUID CAN CAUSE SERIOUS PERSONAL BURNS. IF AN INJURY OCCURS, GET IMMEDIATE MEDICAL ATTENTION.

6. Disconnect discharge hose and store it to prevent damage.

Secure the pump and hydraulic power source to prevent unauthorized use.

4 INSPECTION AND MAINTENANCE

4.1 GENERAL MAINTENANCE RULES

Hydraulic fluid can become contaminated after extended periods of use which can cause restrictions in the system. Check to see that the fluid is clean, and change at recommended intervals to extend pump's life. Refer to the respective manual for maintenance information on the hydraulic power source.

1. Proper maintenance of the pump and related equipment requires timely adhering to all the guidelines given in this chapter. Proper maintenance is required to maintain the system in good condition and free of defects.

2. Review and follow all the safety rules given in Chapter 1 before attempting any maintenance.

3. Only authorized personnel should be allowed in the maintenance area. Authorized personnel are the trained people as defined below and their supervision.

4. Repairs must be made only by trained personnel. A trained person is one who has read and thoroughly understands this instruction manual and related equipment manuals and, through training and experience, has shown knowledge regarding the safe operational procedures.

WARNING:

NEVER SERVICE OR ADJUST THE PUMP DURING OPERATION OR WHILE CONNECTED TO A HYDRAULIC POWER SOURCE.

WARNING:

BEFORE DISCONNECTING HYDRAULIC HOSES, STOP THE HYDRAULIC POWER SOURCE, DEPRESSURIZE THE HYDRAULIC SYSTEM, AND ALLOW THE SYSTEM AND FLUID TO COOL DOWN.

4.2 DAILY MAINTENANCE

1. Keep all surfaces free of grease, dirt, and foreign material.

2. Inspect hydraulic hoses for leaks, breaks, cracks, worn spots, bulges, chemical attack, kinks or any other damage. Replace a damaged hose immediately. Never repair the hose.

3. Disconnect hydraulic hoses and wipe couplings clean, especially before a connection is made. This is the single most common point of entry for foreign particles which can cause premature wear of hydraulic components in the system.

4. Check that all hardware on the pump is tight.

5. Before each use**,** insure that all broken, worn or defective parts are repaired or replaced.

6. Insure all moving parts, contact area, and pivot points have a coating of lithium based grease.

4.3 LONG-TERM STORAGE

During long-term storage, all moving parts, contact area, and pivot points have a coating of lithium based grease to protect against corrosion. Connect the quick-release couplings together. Insure that the hydraulic oil is clean, free of all contamination.

5 TROUBLESHOOTING

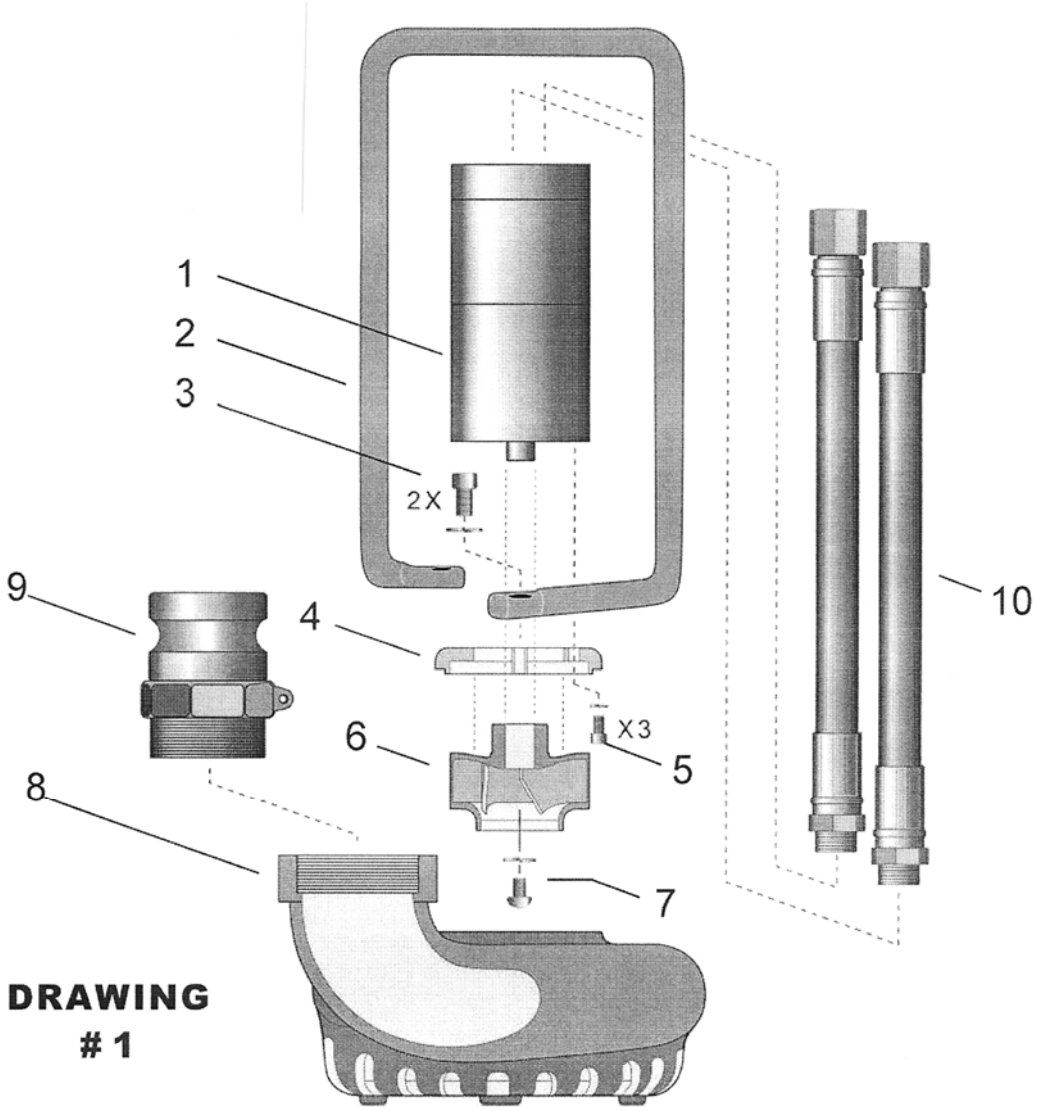
The following chart is intended to assist with troubleshooting. While not all inclusive, the chart outlines the most common causes of a problem and the recommended course of action.

The troubleshooting guide for the associated power supply is in the instruction manual specifically for this unit.

SYMPTOM	CAUSE	SOLUTION
Pump will not pump water.	Impeller jammed with debris.	Jammed impeller- Disconnect from hydraulic power source. Remove top motor plate and clear bowl/impeller of debris.
	Defective couplers; couplers installed backwards.	Replace couplers and install in correct orientation.
	Pump cavitations.	Clean vent hole near lifting eye.
	No Hydraulic fluid or pressure.	Check hydraulic power supply with flow and pressure meter.
Poor pump performance.	Hydraulic flow reversed.	Install couplers in correct orientation.
	Trash pump submersed in sediment.	Remove from sediment.
	Trash pump inlet restricted.	Inspect and clean.
	Discharge hose kinked or restricted.	Inspect and clean.
	Water lift too high.	Reduce lift to recommended height.
	Impeller worn or damaged.	Inspect and replace.
	Improper hydraulic fluid flow.	Check hydraulic power supply with flow and pressure meter.
Hydraulic fluid in discharge.	Motor shaft seal failure.	Worn shaft seal- Return to authorized RGC repair center. Leaking fitting or coupling- Tighten loose fittings. Worn/damaged fitting or coupling- Replace defective component.

6 PARTS LISTS

The following parts lists apply to the HydraPumps only. The parts list for the hydraulic power source is in the separate manual supplied for this item. Each item number on the following parts lists can be matched with the item number shown on the corresponding assembly drawing as indicated.



DRAWING #1

NO.	NAME		QTY
1	MOTOR	EP201	1
2	HANDLE	R-SP2-H	1
3	BOLT & LOCK WASHER, HANDLE/FLANGE/VOLUTE		2
4	FLANGE	R-SP2-F	1
5	BOLT & LOCKWASHER, MOTOR/FLANGE		3
6	IMPELLER	EP203	1
7	BOLT & LOCKWASHER, IMPELLER/MOTOR		1
8	VOLUTE	EP202	1
9	F CONNECTOR, DISCHARGE	F	
10	WHIP SET	SPECIFY	1

LIMITED PRODUCT WARRANTY

Reimann & Georger Corporation
Hoisting and Construction Products

A. LIMITED WARRANTY

Reimann & Georger Corporation (the "Manufacturer") warrants to the original purchaser (the "Buyer") that all Reimann & Georger Hoisting and Construction products shall be free of defects in material and workmanship for a period of one (1) year from date of original purchase.

B. MANUFACTURER'S OBLIGATIONS

The Manufacturer's sole obligation under this Limited Warranty is the repair or, at the Manufacturer's discretion, the replacement of parts found to be defective. Parts and equipment must have authorization from the Manufacturer prior to return to the Manufacturer or repair by an authorized service person. Costs of transportation and other expenses connected with replacing or repairing parts are not covered under this Limited Warranty.

C. PARTS MANUFACTURED BY OTHERS

This Limited Warranty does not cover any parts manufactured by others. Such parts are subject to the warranty, if any, of their respective manufacturers, and are to be repaired only by a respective authorized service person for such parts. The Manufacturer shall have no obligation to undertake repairs of parts manufactured by others.

D. NO SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES

IN NO EVENT SHALL THE MANUFACTURER BE LIABLE TO THE BUYER OR ANY OTHER PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL LOSSES OR DAMAGES CONNECTED WITH THE USE OF THE PRODUCT UNDER THIS LIMITED WARRANTY. SUCH DAMAGES FOR WHICH THE MANUFACTURER SHALL NOT BE RESPONSIBLE INCLUDE, BUT ARE NOT LIMITED TO, LOST TIME AND CONVENIENCE, LOSS OF USE OF THE PRODUCT, THE COST OF A PRODUCT RENTAL, COSTS OF GASOLINE, TELEPHONE, TRAVEL, OR LODGING, THE LOSS OF PERSONAL OR COMMERCIAL PROPERTY, AND THE LOSS OF REVENUE.

E. NO LIABILITY IN EXCESS OF PURCHASE PRICE

IN NO EVENT SHALL THE MANUFACTURER'S OBLIGATIONS UNDER THIS LIMITED WARRANTY EXCEED THE PURCHASE PRICE OF THE PRODUCT.

F. NO EXTENSION OF STATUTE OF LIMITATIONS

ANY REPAIRS PERFORMED UNDER THIS WARRANTY SHALL NOT IN ANY WAY EXTEND THE STATUTES OF LIMITATIONS FOR CLAIMS UNDER THIS LIMITED WARRANTY.

G. WAIVER OF OTHER WARRANTIES

THE EXPRESS WARRANTIES SET FORTH IN THIS LIMITED WARRANTY ARE IN LIEU OF AND EXCLUDE ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

H. PROCEDURE FOR WARRANTY PERFORMANCE

If the product fails to perform to the Manufacturer's specifications, the Buyer must provide the Manufacturer with the applicable model and serial numbers, the date of purchase, and the nature of the problem.

I. ADDITIONAL EXCLUSIONS FROM THIS LIMITED WARRANTY. THIS LIMITED WARRANTY DOES NOT COVER ANY OF THE FOLLOWING:

1. Equipment which has been abused, damaged, used beyond rated capacity, or repaired by persons other than authorized service personnel.

2. Damage caused by acts of God which include, but are not limited to, hailstorms, windstorms, tornadoes, sandstorms, lightning, floods, and earthquakes.

3. Damage under conditions caused by fire or accident, by abuse or by negligence of the user or any other person other than the Manufacturer, by improper installation, by misuse, by incorrect operation, by "normal wear and tear", by improper adjustment or alteration, by alterations not completed by authorized service personnel, or by failure of product parts from such alterations.

4. Costs of repairing damage caused by poor or improper maintenance, costs of normally scheduled maintenance, or the cost of replacing any parts unless done as the result of an authorized repair covered by the one (1) year Limited Warranty.

5. Costs of modifying the product in any way once delivered to the Buyer, even if such modifications were added as a production change on other products made after the Buyer's product was built.

J. NO AUTHORITY TO ALTER THIS LIMITED WARRANTY

No agent, representative, or distributor of the Manufacturer has any authority to alter the terms of this Limited Warranty in any way.