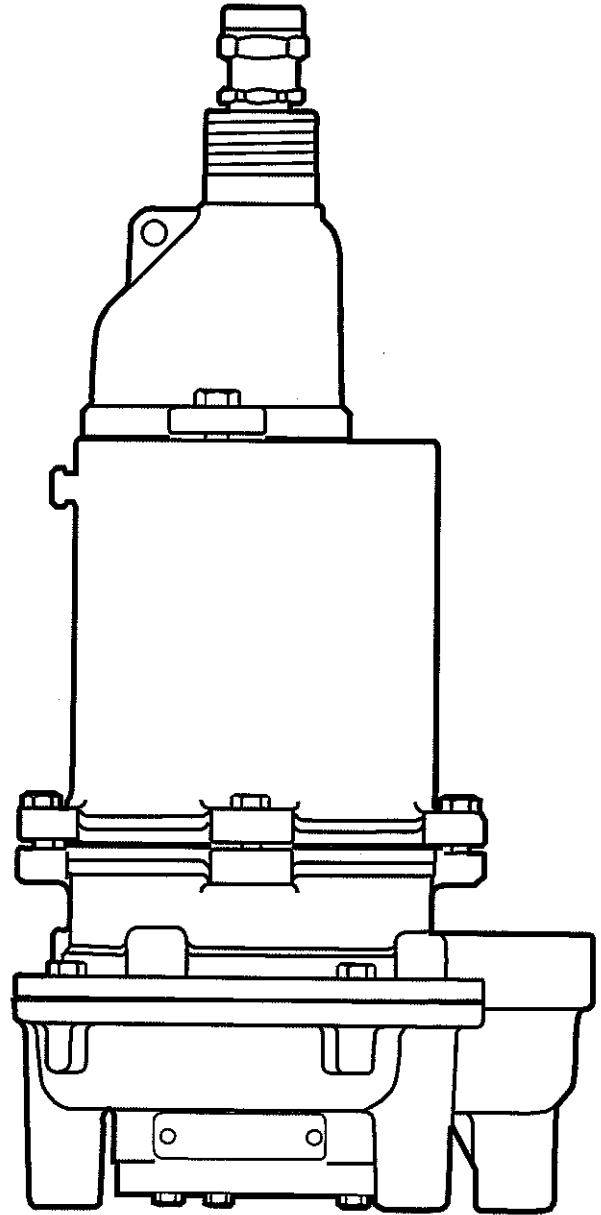




MYERS®



MODELS WGL20, WGL20H and WGL20F **GRINDER PUMPS**

INSTALLATION AND SERVICE MANUAL



NOTE! To the installer: Please make sure you provide this manual to the owner of the equipment or to the responsible party who maintains the system.

Thank you for purchasing your Myers® pump. To help ensure years of trouble-free operation, please read the following manual carefully.

SAFETY WARNINGS:

Before Installation: This manual contains important information for the safe use of this product. Read this manual completely and follow the instructions carefully. Reasonable care and safe methods relating to the installation and operation of this product should be practiced. Check local codes and requirements before installation.

⚠ **DANGER:** Risk of electrical shock or electrocution. May result in serious injury or death or fire hazard. Installer must disconnect all electrical sources prior to installation, handling or servicing. Only qualified personnel may install this system. NFPA 70/National Electric Code (NEC) or local codes must be followed. System must be properly grounded according to NEC. Do not lift pump by power cord.

⚠ **DANGER:** Biohazard risk. Once wastewater source has been connected to system, biohazard risk exists. Installer(s) and/or service personnel must use proper personal protective equipment and follow handling procedures per OSHA 29 CFR 1910.1030 when handling equipment after wastewater source has been connected to system.

⚠ **DANGER:** Risk of asphyxiation. Installer(s) and/or service personnel must use proper personal protective equipment and follow OSHA 29 CFR 1910.146 or OSHA 29 CFR 1926. Pump may be installed in a location classified as a confined space.

⚠ **DANGER:** Risk of fire or explosion. Do not smoke or use open flames in or around this system. This system is not intended for use in hazardous locations per NFPA 70 National Electric Code. Do not pump flammable liquids.

⚠ **DANGER:** Cutting risk. Risk of serious cutting or amputation exists. Disconnect all power sources prior to servicing pump or grinding mechanism. Pump may start without warning. Grinding mechanism is extremely sharp. Use caution when handling grinder mechanism.

⚠ Do not modify the cord strain relief. When wiring to a system control, connect the pump ground lead to the system ground.

⚠ Do not run the pump dry. Dry running can overheat the pump (causing burns to anyone handling it) and will void the warranty.

CALIFORNIA PROPOSITION 65 WARNING:

⚠ WARNING This product and related accessories contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

⚠ The pump normally runs hot. To avoid burns, allow it to cool for 30 minutes after shutdown before handling it.

⚠ Submersible grinder pumps are not approved for use in swimming pools, recreational water installations, decorative fountains or any installation where human contact with the pumped fluid is common. This specialized pump is designed to incorporate a grinding mechanism to remove wastewater particulate and pump the resulting slurry from a residential structure to a collection system.

⚠ On three-phase pumps only, "motor protection" must be provided by the installer. All three-phase pumps must be installed with magnetic starters having three-leg overload protection in accordance with the national electric code. For duplex installations, both pump motors must have separate overload protection.

⚠ Pumps with seal leak detectors must be connected to the proper control circuitry.

⚠ Examine all lifting devices, rope or chain for damage before and after each lift. Do not use any lifting devices that are not rated for and designed to lift the weights involved with these pumps.

PUMPS:

1. Keep clear of suction and discharge openings. Do not insert fingers in pump with power connected.
2. Make sure lifting devices are securely fastened each time before lifting pump.
3. Do not lift pump by the power cord.
4. Do not exceed manufacturer's recommendation for maximum performance, as this could cause the motor to overheat.
5. Secure the pump in its operating position so it cannot tip over, fall or slide.
6. Do not pump without safety devices in place.

IMPORTANT! Manufacturer is not responsible for losses, injury or death resulting from failure to observe these safety precautions, misuse or abuse of pumps or equipment.

Control Panels: All Myers control panels used on these grinders are UL listed and CSA certified. Control panels mounted directly to the basin used outdoors are UL listed and CSA certified waterproof.

Level Sensing Controls: Intrinsically safe type float controls are recommended for all applications. An intrinsically safe control panel relay will limit the current and voltage to the level controls. A Myers control panel can be supplied with this type circuitry.

The float level controls maintain the basin sewage water level by controlling pump turn-on and turn-off level.

1. The lower turn-off control should be set so that the pump stops at approximately the top of the pump.
2. The upper turn-on control should be set above the lower turn-off control. The exact height between the two controls is determined by the number of pump starts desired and the depth of the basin. A maximum of 10 starts per hour should not be exceeded.
3. The override control is set at a specified height above the upper turn-on control.
4. The alarm control is set about 6" to 12" above the override control.
5. No control should be set above the inlet invert.

Air Venting: Air tends to trap in the pump volute when water rises in the sump or when the pump is lowered into water after service. To vent off this air, a small hole is drilled into the pump volute. Be sure this vent hole is clean after any service work on pump.

Usage: The WGL20 grinder pumps are for pumping domestic sewage. These pumps are not to be used for pumping commercial or industrial sewage such as from motels, schools, apartments, factories, etc.

Pump Models: The WGL20 pumps are equipped with 208 and 230 volt single phase voltages and 208, 230, 460 and 575 volt three-phase voltages; and with or without seal leak detector. WGL20F pumps are high flow pumps and WGL20H pumps are high head pumps.

Caution: Pump is only to be disassembled at Myers factory or an authorized Myers service facility.

Description of Pump: This pump is intended to grind and pump all normal sewage for home use.

Pump is of heavy duty construction and submersible type for long life when pumping ground sewage. Motor is capacitor start, capacitor run for single phase. Capacitors and start relay are mounted in the electrical control box. All single-phase motors must have special electrical control box furnished by Myers.

Installing single-phase motors with controls other than Myers voids warranty.

Pump has two oil-filled chambers: 1) the motor and ball bearings and 2) the seal chamber – for long life and best heat transfer.

The lower seal above the pump impeller acts as a buffer for upper seal that holds oil in the motor chamber. If lower seal leaks for any reason, water enters the seal chamber. If motor has the seal leak detector, the electrode will contact the water and close the circuit to the red seal light in the control panel, indicating motor must be serviced before upper seal fails.

Motor Overload Protection: The single phase motor is provided with an on-winding overload switch. If motor overloads or overheats for any reason, the switch opens, stopping motor. As soon as the motor cools to normal temperature, the switch closes and restarts the motor. Three-phase motors must be protected with an overload in the panel.

Motor Power Cords: Pump models with the seal leak detector use a 5 conductor cord. The three power conductors are black, white and red. The orange conductor connects to the seal leak probe and green conductor connects to the ground screw inside the cord cap.

Single-phase pumps use the black (common) and white (run) as main winding leads and the red for the start winding.

Cord Seal: The lines from the motor chamber are sealed with a rubber sealing grommet that prevents oil from leaking into the cord cap compartment. If necessary to replace power cord, the sealing grommet must not be loosened. This wire seal is removed only for complete motor repair that must be done at an authorized Myers service facility.

IMPORTANT! Ground wires must be connected in the control box to grounding bar, which is connected per NEC requirements. Motor is not safe unless properly grounded.

Three Phase Control Box: Any suitable three phase control equipment can be used for simplex or duplex operation. These control boxes are also available from Myers. If other than Myers box is used, overload heaters must be selected in accordance with full load amp ratings.

If any amp readings are higher than listed, it indicates voltage may be higher or lower than normal, or that pump grinder may be clogged with trash causing extra load on motor.

Resistance of Winding: Every motor winding has a fixed resistance and winding must check close to the specification values. This winding resistance also shows if motor is connected for voltage being used. Use ohmmeter for this test and set on scale to read directly in ohms.

TROUBLE CHECK LIST

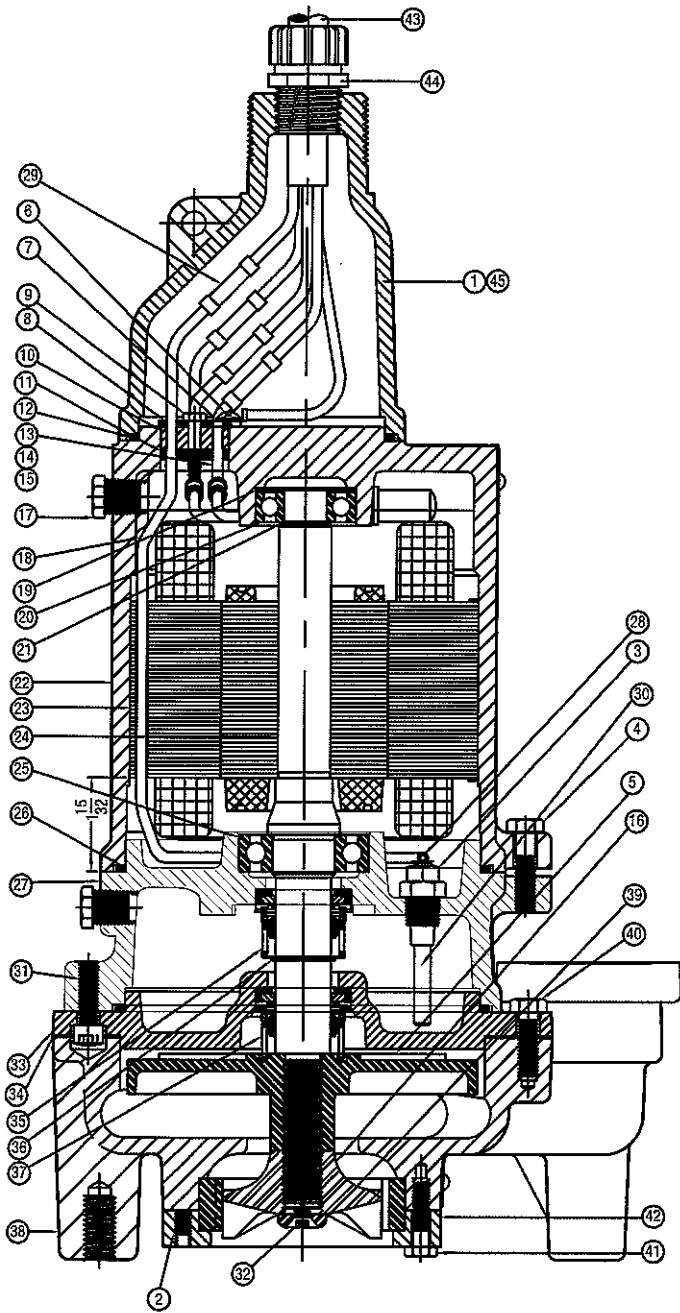
Troubles listed below are generally not caused by the pump. Other trouble can occur from faulty control box operation. These will be listed with the control box instructions.

CONDITION	PROBABLE CAUSE
Pump runs but does not pump liquid from basin	<ol style="list-style-type: none">1. Pump impeller may be air locked; this occasionally occurs on a new installation. Start and stop pump several times to purge air.2. Run additional water into basin so that pump will be submerged deeper to clear air.3. If air does not clear, it may be necessary to lift pump out of sealing elbow and start motor to allow pump to pump for a few seconds. If discharge is piped in with union, slightly break union and start pump to clear air. Air vent hole is provided in pump case, so some water will flow from this hole when pump is operating. If vent hole gets clogged, clean out.4. If pump has been installed for some time and does not pump, it may be clogged at grinder inlet.5. Discharge gate valve may be closed.6. Discharge check valve may be clogged or have a broken clapper.7. Discharge head may be too high. Check elevation. Maximum pump head at zero flow is 70 feet.
Red light comes on at control box.	<ol style="list-style-type: none">1. This indicates some water has leaked past the lower seal and has entered the seal chamber and made contact with the electrode probe. Pump must be removed from basin immediately for replacement of lower seal. This preventive repair will save the motor.
Overload trips and alarm buzzer or flashing red light comes on due to high water level in basin.	<ol style="list-style-type: none">1. Push in red reset button to reset overload. If overload trips again after short run, pump has some damage and must be removed from basin for checking.2. Trouble may be from clogged grinder causing motor to overload or could be from failed motor.3. Trouble may be from faulty component in control box. Always check control box before removing pump.
Yellow run light stays on continuously.	<ol style="list-style-type: none">1. Indicates H-O-A switch be in the Hand position.2. Level control switch may have failed causing pump to continue to operate when water is below lower float.3. Grinder assembly may be partially clogged causing pump to operate at very reduced capacity.4. Check valve may be clogged causing low pump flow. Gate valve may be in Off position.5. Pump may be air locked.

TROUBLE CHECK LIST (Cont'd)

CONDITION	PROBABLE CAUSE
Circuit breaker trips.	<ol style="list-style-type: none">1. Reset breaker by pushing clear down on handle, then back to On position. If breaker trips again in few seconds it indicates excessive load, probably caused by a short in the motor or control box. Check out instructions given with control box before pulling pump.2. If this condition happens after an electrical storm, motor or control box may be damaged by lightning.3. Resistance reading of the motor with lead wires disconnected from the control box can determine if trouble is in motor or control box.
Pump is noisy and pump rate is low.	<ol style="list-style-type: none">1. Grinder assembly may be partially clogged with some foreign objects causing noise and overload on the motor.2. Grinder impeller may be rubbing on grinder ring due to bent shaft or misalignment.
Grease and solids have accumulated around pump and will not pump out of basin.	<ol style="list-style-type: none">1. Pump On switch may be set too high.2. Run pump on Hand operation for several minutes with small amount of water running into basin to clean out solids and grease. This allows pump to break suction and surge which will break up the solids.3. Trash may have accumulated around lower weight causing pump to turn off too soon. Clean trash from weight and suspension cable.

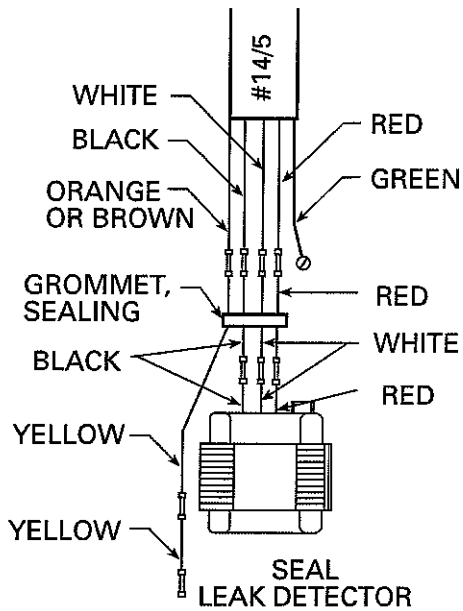
COMMON PARTS LIST



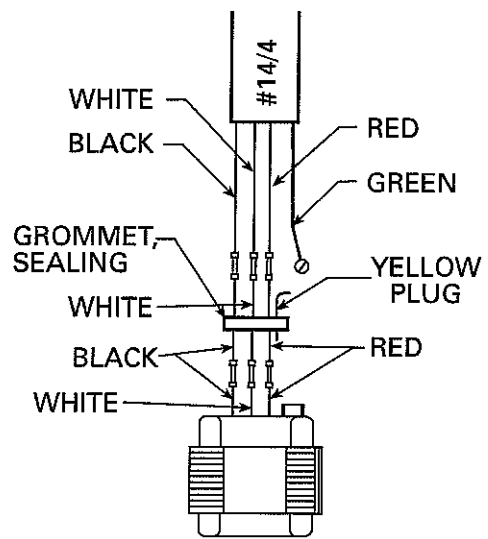
Item No.	Eng. No.	Description	Qty.
1	28184B020	CAP, CORD ASSEMBLY	1
	28184B022	CAP, CORD WITHOUT SEAL DETECTOR ASSEMBLY	1
2	05013A039	SCREW, SET, 1/4" x 3/8" LG.	2
3	05434A025	SCREW, MACHINE	1
4	19100A012	SCREW, CAP, 5/16" x 1-1/4" LG.	4
5	21581C310	IMPELLER, PUMP, 5-1/2" O.D.	1
	22640C014	IMPELLER, HIGH HEAD DUCTILE IRON (WGL20H)	1
	21581C314	IMPELLER, HIGH FLOW (WGL20F)	1
6	05434A043	SCREW, MACH., #10 x 3/8" LG.	2
7	06107A015	LOCK WASHER	1
8	24321A000	PLATE, UPPER	1
9	24322A000	SCREW, CAP, #10 SPECIAL	1
10	24323A000	GROMMET	1
11	24324A000	PLATE, LOWER	1
12	05014A169	GASKET, TETRASEAL, 3-7/8" I.D. x 1/8"	1
13	22500A118	WIRE, RED	1
14	22500A119	WIRE, WHITE	1
15	22500A120	WIRE, BLACK	1
16	21582B000K	IMPELLER, GRINDING	1
17	05022A092	PLUG, 1/4 PIPE	2
18	22500A117	WIRE, YELLOW	1
19	19331A005	WASHER, SPRING	2
20	08565A013K	BEARING, UPPER	1
21	11816A006	RING, RETAINING	1
22	24325D002	HOUSING, MOTOR	1
23	See Chart	STATOR	1
24	See Chart	ROTOR W/SHAFT	1
	24331C000	SHAFT ONLY	1
	See Chart	HOUSING W/STATOR	1
25	08565A018K	BEARING, LOWER	1
26	05014A171	GASKET, 5-1/2" I.D. x 1/8"	2
27	24328D000	HOUSING, UPPER SEAL	1
28	12074A017	RING TERMINAL	1
29	12672A880	DOUBLE LEVER NUT	6-8
30	25343A100	ELECTRODE	1
31	06106A008	SCREW, SOCKET HD., 5/16" x 1"	4
32	07597A018	SCREW, FLAT HD., 1/4" x 3/4"	1
33	24329C000	HOUSING, LOWER SEAL	1
34	22581A001	GASKET	1
35	21576A011	SEAL, 7/8" SHAFT, UPPER	1
36	12558A006	RING, RETAINING	1
37	21576A010K	SEAL, 7/8" LOWER	1
38	21580D102P	CASE, VOLUTE	1
39	21583A000	RETAINER, IMPELLER	1
40	19100A029	SCREW, CAP, 5/16" x 1" LG.	4
	19099A012	SCREW, CAP, 1/4" x 1" LG.	3
	21584B002	FLANGE W/SHREDDING RING (WGL20H)	1
42	21584B000K	FLANGE W/SHREDDING RING (WGL20)	1
	21584B004	FLANGE W/SHREDDING RING (WGL20F)	1
	20-01-497-4400	CABLE, 4 COND. (LENGTH AS SPECIFIED, LESS DETECTOR)	as spec.
43	20-01-497-4750	CABLE, 5 COND. (LENGTH AS SPECIFIED, LESS DETECTOR)	as spec.
	18696A012	CONNECTOR, 4 COND. CABLE	1
44	18696A001	CONNECTOR, 5 COND. CABLE	1
	24320C000	CAP, CORD (CASTING ONLY)	1

PUMP CAT. NO.	(24) ROTOR W/SHAFT	ROTOR ONLY	HOUSING W/STATOR	(23) STATOR ONLY
WGL20-01 Series	24327C000	21572C200B	24325D035K	24326C100
WGL20-21 Series	24327C000	21572C200B	24325D020K	24326C101
WGL20-03 Series	24327C001	21572C201B	24325D040K	24326C104
WGL20-23 Series	24327C001	21572C201B	24325D025K	24326C103
WGL20-43 Series	24327C001	21572C201B	24325D031K	24326C102
WGL20-53 Series	24327C001	21572C201B	24325D045K	24326C105

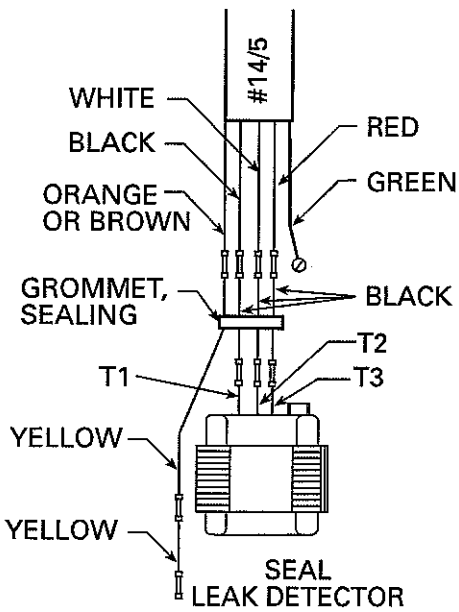
MOTOR WIRING DIAGRAM



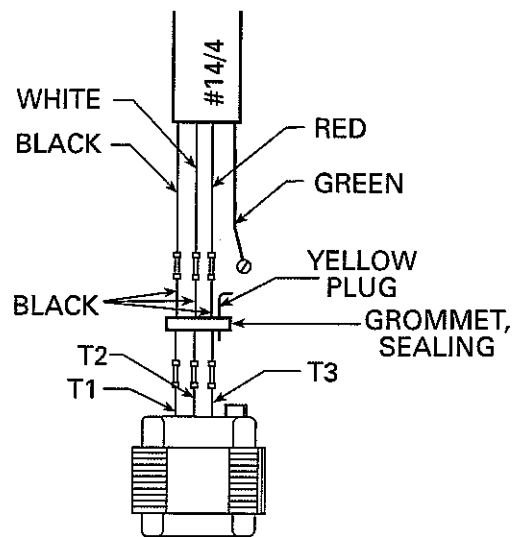
2 HP, 1 PH WITH
SEAL LEAK DETECTOR
& 14/5 COND. CORD



2 HP, 1 PH WITHOUT
SEAL LEAK DETECTOR
& 14/4 COND. CORD
(L/D SERIES)



2 HP, 3 PH WITH
SEAL LEAK DETECTOR
& 14/5 COND. CORD



2 HP, 3 PH WITHOUT
SEAL LEAK DETECTOR
& 14/4 COND. CORD
(L/D SERIES)

STANDARD LIMITED WARRANTY

Pentair Myers® warrants its products against defects in material and workmanship for a period of 12 months from the date of shipment from Pentair Myers or 18 months from the manufacturing date, whichever occurs first – provided that such products are used in compliance with the requirements of the Pentair Myers catalog and technical manuals for use in pumping raw sewage, municipal wastewater or similar, abrasive-free, noncorrosive liquids.

During the warranty period and subject to the conditions set forth, Pentair Myers, at its discretion, will repair or replace to the original user, the parts that prove defective in materials and workmanship. Pentair Myers reserves the right to change or improve its products or any portions thereof without being obligated to provide such a change or improvement for prior sold and/or shipped units.

Start-up reports and electrical schematics may be required to support warranty claims. Submit at the time of start-up through the Pentair Myers website: <http://forms.pentairliterature.com/startupform/startupform.asp?type=m>. Warranty is effective only if Pentair Myers authorized control panels are used. All seal fail and heat sensing devices must be hooked up, functional and monitored or this warranty will be void. Pentair Myers will cover only the lower seal and labor thereof for all dual seal pumps. Under no circumstance will Pentair Myers be responsible for the cost of field labor, travel expenses, rented equipment, removal/reinstallation costs or freight expenses to and from the factory or an authorized Pentair Myers service facility.

This limited warranty will not apply: (a) to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with the printed instructions provided; (b) to failures resulting from abuse, accident or negligence; (c) to normal maintenance services and parts used in connection with such service; (d) to units that are not installed in accordance with applicable local codes, ordinances and good trade practices; (e) if the unit is moved from its original installation location; (f) if unit is used for purposes other than for what it is designed and manufactured; (g) to any unit that has been repaired or altered by anyone other than Pentair Myers or an authorized Pentair Myers service provider; (h) to any unit that has been repaired using non factory specified/OEM parts.

Warranty Exclusions: PENTAIR MYERS MAKES NO EXPRESS OR IMPLIED WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. PENTAIR MYERS SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE.

Liability Limitation: IN NO EVENT SHALL PENTAIR MYERS BE LIABLE OR RESPONSIBLE FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES RESULTING FROM OR RELATED IN ANY MANNER TO ANY PENTAIR MYERS PRODUCT OR PARTS THEREOF. PERSONAL INJURY AND/OR PROPERTY DAMAGE MAY RESULT FROM IMPROPER INSTALLATION. PENTAIR MYERS DISCLAIMS ALL LIABILITY, INCLUDING LIABILITY UNDER THIS WARRANTY, FOR IMPROPER INSTALLATION. PENTAIR MYERS RECOMMENDS INSTALLATION BY PROFESSIONALS.

Some states do not permit some or all of the above warranty limitations or the exclusion or limitation of incidental or consequential damages and therefore such limitations may not apply to you. No warranties or representations at any time made by any representatives of Pentair Myers shall vary or expand the provision hereof.



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Warranty Rev. 12/13