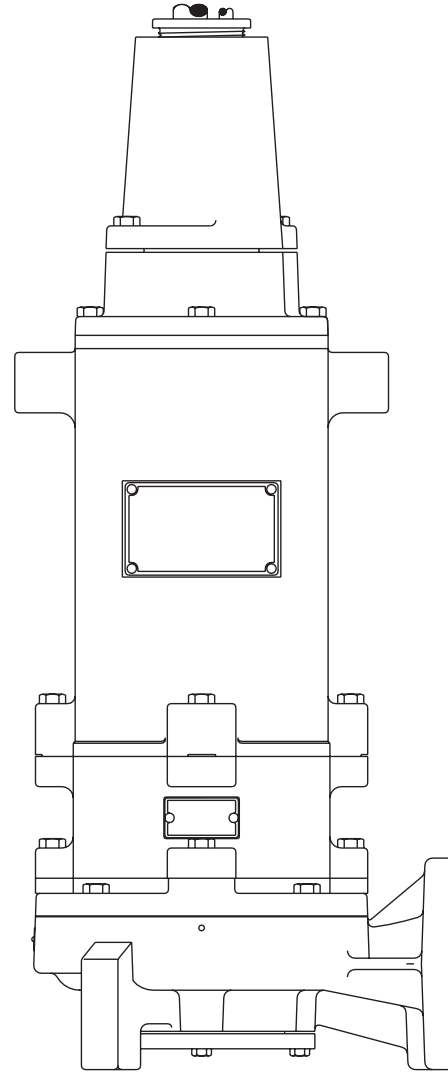




MYERS®



MODELS

WG75HH/100H/150H STANDARD

AND WGX75HH/100H/150H HAZARDOUS LOCATION*

*Used in Hazardous Locations Class 1, Division 1, Groups C & D

SUBMERSIBLE 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.



CAUTION!

Read these safety warnings first before installing, servicing, or operating any pump. Only qualified persons shall conduct services and installations of this pump. The pump must be wired by a qualified electrician, using an approved starter box and switching device.

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.

GENERAL

1. Most accidents can be avoided by using **COMMON SENSE**.
2. Read the operation and maintenance instruction manual supplied with the pump.
3. Do not wear loose clothing that can become entangled in the impeller or other moving parts.
4. This pump is designed to handle materials that could cause illness or disease through direct exposure.

Wear adequate protective clothing when working on the pump or piping.

ELECTRICAL

5. To reduce the risk of electrical shock, pump must be properly grounded in accordance with the National Electric Code and all applicable state and local codes and ordinances.
6. To reduce risk of electrical shock, disconnect the pump from the power source before handling or servicing.
7. Any wiring to be done on pumps should be done by a qualified electrician.
8. Never operate a pump with a power cord that has frayed or brittle insulation.
9. Never let cords or plugs lie in water.
10. Never handle connected power cords with wet hands.

PUMPS

11. Pump builds up heat and pressure during operation; allow time for pump to cool before handling or servicing.
12. Only qualified personnel should install, operate or repair pump.
13. Keep clear of suction and discharge openings. DO NOT insert fingers in pump with power connected.
14. Do not pump hazardous material not recommended for pump (flammable, caustic, etc.).
15. Make sure lifting handles are securely fastened each time before lifting.
16. Do not lift pump by the power cord.
17. Do not exceed manufacturer's recommendation for maximum performance, as this could cause the motor to overheat.
18. Secure the pump in its operating position so it cannot tip over, fall or slide.
19. Keep hands and feet away from impeller when power is connected.

20. 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.
21. Do not operate pump without safety devices in place.

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

GENERAL INFORMATION:

Motor HP & Voltages: These submersible grinder pumps are offered in three phase, 7^{1/2}, 10 and 15 HP. Voltages will vary according to the application. Three phase stators are available with dual voltage configurations that will allow either 230V or 460V internal connection.

Electrical Controls: All of these pump models must be used with a control panel. Myers built control panels are designed to supply the correct electrical controls, motor starting equipment and include the circuitry for moisture and heat sensors. It is recommended that a Myers built control panel be used so that all warranties apply.

General Construction: The WGx75HH-150H motor construction is designed to meet Factory Mutual requirements for Class 1, Division 1, Groups C and D sewage applications. These models are certified and nameplated with this approval. The motor chamber and seal chamber are filled with a high dielectric type oil for improved lubrication and heat transfer of the bearings and motor. Since the bearings have been designed for 50,000 hours of life, the oil should never require replacement under normal operating conditions. An air space above the oil level in both the seal and motor chambers is provided to allow for the expansion of the oil when at operating temperature. The power and control lines are sealed and strain relieved on the outside entrance with a standard cord grip, and internally through the use of a dielectric potting resin surrounding the electrical wires. All of the pump fasteners and shafts are made from corrosion resistant stainless steel, while the pump castings are made of ASTM A-48 Class 30 cast iron, and the multivane vortex impellers are made from ductile iron.

General Installation: Various configurations and methods of plumbing this series of solids handling pumps may be used; however, for ease of installation and service a Myers rail lift-out system is recommended.

Note: If the WGx75HH-150H hazardous location pumps are used in conjunction with a rail lift-out system, it must be a Factory Mutual approved non-sparking, hazardous location system.

Note: If these guidelines are not followed, the Factory Mutual hazardous location approval is void.

Hazardous Location Service: These pumps are to be used for handling sewage, wastewater and storm water only. **Only pumps labeled for use in hazardous locations may be used in hazardous locations.** These pumps must be repaired and serviced only at Myers Authorized Service Centers or at the Myers factory. Any unauthorized field repair voids warranty and the hazardous location rating.

Motor: Each motor is provided with heat sensor thermostats attached directly to the motor windings. The thermostats open if the motor windings see excessive heat and, in turn, open the motor contactor in the control panel, breaking the power to the pump.

When the motor is stopped due to an overheat condition, it will not start until the motor has cooled and the heat sensor reset button is manually pushed on the front of the Myers control panel. This circuitry is provided in the Myers control panel designs.

The WG75HH-150H and WGX75HH-150H pumps are equipped with internal thermostats to meet Class H heat rise of 356°F (180°C).

Note: Failure to use proper circuitry and to connect the motor overheat protection in the control panel would negate all warranties and Factory Mutual approval.

Motor Seal Failure Warning: The seal chamber is oil filled and provided with moisture sensing probes to detect water leakage through the lower shaft seal. The probes can also detect moisture present in the upper motor housing.

The presence of water energizes a red seal leak warning light at the control panel. This is a warning light only, and does not stop the motor. It indicates a leak has occurred and the pump must be repaired. Normally, this indicates the outboard seal has leaked. Allowing the unit to operate after the warning may cause upper seal leakage along with motor failure.

The resistance across the moisture sensing (seal failure) probes should be checked after a seal leak warning light has lit. This can be done by disconnecting the red and orange control wires from the control panel and measuring the resistance with an ohmmeter between the wires. If the measured values are below specification, the pump may have a lower seal failure and require service.

On the Myers hazardous location control panels the seal leak test switch tests the seal leak circuit continuity. When pushed the seal leak test bulb should light. If the test bulb does not light it means either the wiring circuitry to the seal leak probes has been broken or the bulb has burned out.

Note: Myers built control panels supply the correct circuitry for moisture and heat sensor connections. Failure to install the correct circuitry with proper connection would negate warranty and Factory Mutual approval.

Motor Power Cord, Control Cord and Cord Cap Assembly: Each motor power cord has four conductors: white, black, red and green. For a three phase motor the red, black and white conductors connect to the three line leads, and the green is connected to a good ground. Interchanging any two line leads will reverse the rotation of the motor.

Note: Rotation should be clockwise when observed from the top of the pump. This can be checked by noting which direction the pump torques upon initial starting. A properly rotating pump will torque counterclockwise upon start.

The control cable has five conductors: black, white, red, orange and green. White and black connect to the heat sensor terminals in the control panels; red and orange connect to the seal failure terminals in the control panel; and the green connects to the ground in the control panel.

The cord cap is epoxy potted. The cord cap provides for a sealed wire connection with terminals so that connections can be made without breaking the motor seal. This allows the cord cap, with cords, to be removed from the motor. An approved hazardous location junction box is required for hazardous locations. **The control and power cables cannot be spliced!**

Note: Each cable has a green ground wire and must be properly grounded per the National Electric Code and local codes.

Electrical Motor Controls: All electrical controls and motor starting equipment should be as specified in these instructions. Consult factory for any acceptable alternatives. For hazardous locations the controls and control panel must be installed outside the hazardous area, or approved hazardous location controls that are intrinsically safe must be used.

Junction Box: If a junction box is used in a hazardous location, it must be a hazardous location approved type with hazardous location cord connectors. Wires from the junction box must pass through a hazardous location seal connector.

Level Sensing Controls: intrinsically safe type float controls are recommended for all applications and required for hazardous location service. 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 levels.

1. The lower turn-off control should be set so that the pump stops with the water covering the entire motor housing. Consult the factory for any settings below this point.
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.

Electrical Connections: All electrical wiring must be in accordance with local code and only qualified electricians should make the installations. All wires should be checked for shorts to ground with an ohmmeter or megger after the connections are made. This is important, as one grounded wire can cause failure of the pump, control panel or cause personal injury.

Pump: The fluid end of the pump is field serviceable and can be disassembled in case of wear, damage, plugging or outboard seal failure.

CHECK LIST IF PUMP DOES NOT OPERATE PROPERLY

CHECKING FOR MOISTURE IN MOTOR – Use ohmmeter or a megger and set on highest scale. Readings on the large power cord between any of the conductors red, black, or white to green conductor or to the motor housing should be greater than 1,000,000 ohms (1 megohm). Service work should be done only at an authorized service station.

Readings should be taken with line leads disconnected from the control panel.

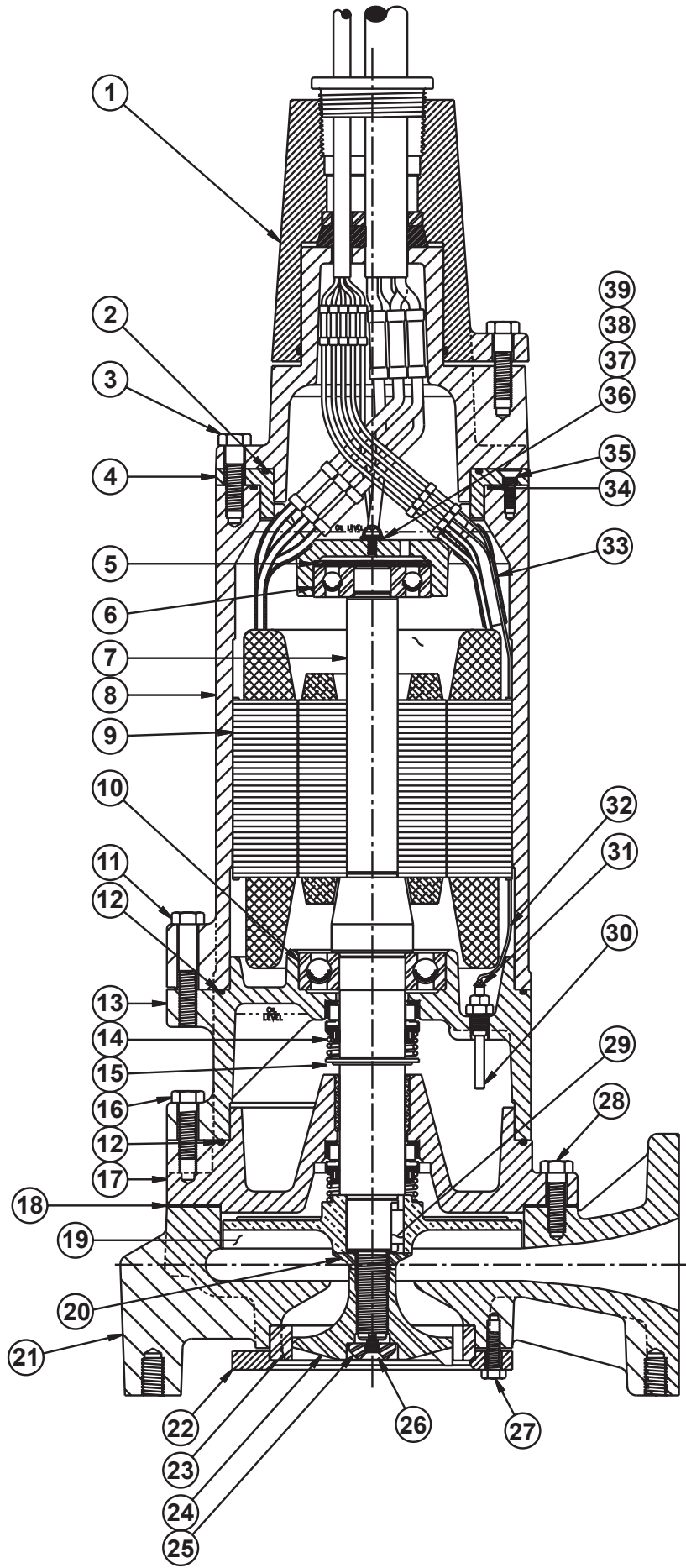
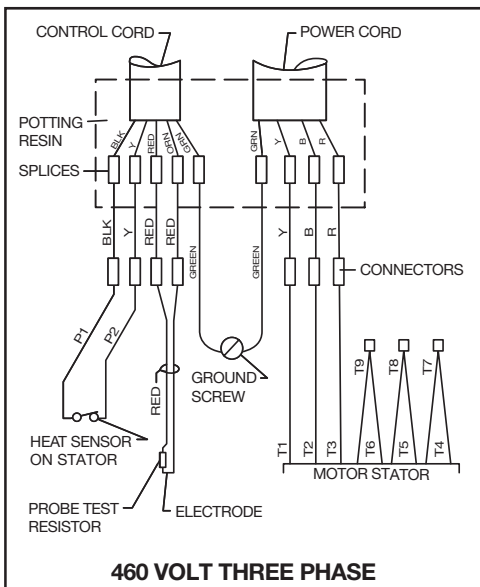
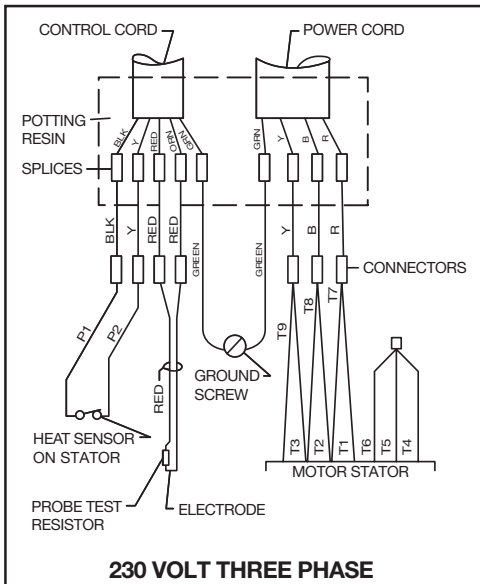
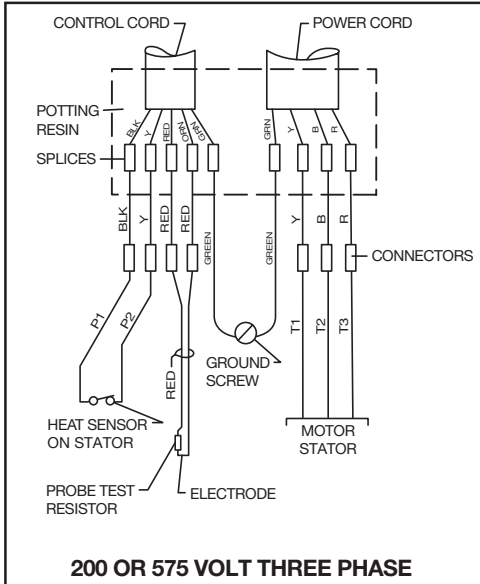
RESISTANCE OF WINDINGS – Every motor winding has a fixed resistance and winding must check close to specification values. Verification of the proper wiring of a dual voltage motor can also be checked by measuring the motor winding resistance.

TROUBLE CHECK LIST

Troubles listed are generally caused by the pump. Other trouble can occur from faulty control box operation.

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 pump is three phase, rotation may be wrong. See instructions for checking proper rotation. 4. 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. 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. 5. If pump has been installed for some time and does not pump, it may be clogged at grinder inlet. 6. Discharge gate valve may be closed. 7. Discharge check valve may be clogged or have a broken clapper. 8. Discharge head may be too high. Check elevation. 9. If above checks do not locate trouble, motor rotor may be loose on shaft which allows motor to run but will not turn impeller or only at low RPM.
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 immediately from basin for replacement of lower seal. This preventive repair will save an expensive motor.
Overload trips at control box 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 on 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 may be in the Hand position. 2. Level control switch may have failed causing pump to continue to operate when water is below lower weight, or lower weight may have dropped off. 3. Grinder assembly may be partially clogged causing pump to operate at very reduced capacity. 4. Gate valve or check valve may be clogged causing low pump flow. 5. Pump may be air logged.
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 a few seconds it indicates excessive load probably caused by a short in the motor or control box. Check 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. Lower weight of level switch may be set too high. Set bottom of lower weight even with bottom of inlet flange to grinder. 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. If level switch lower weight is set properly this condition generally will not occur. 3. Trash may have accumulated around lower weight causing pump to turn off too soon. Clean trash from weight and suspension cable.

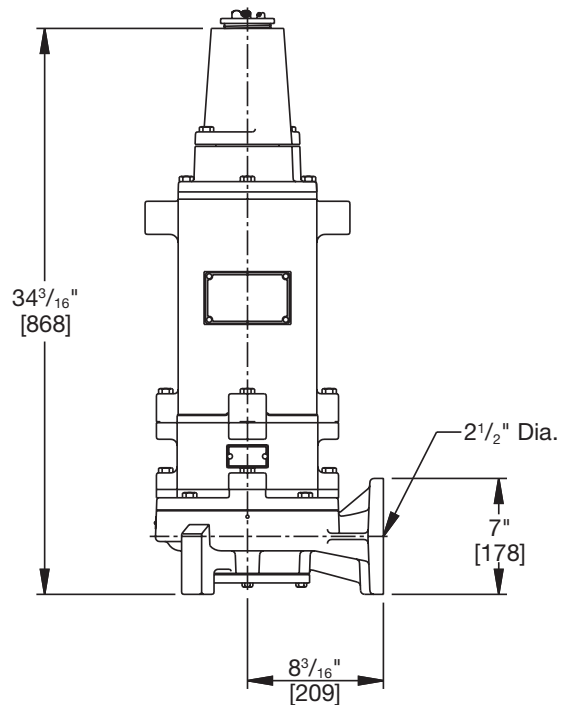
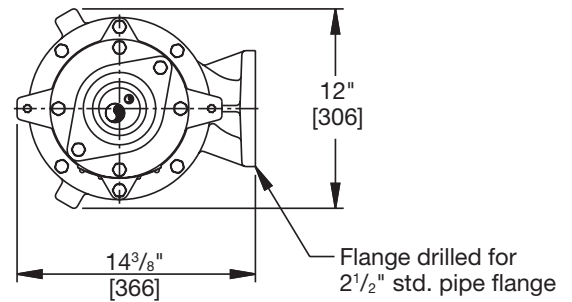
MOTOR INTERNAL CONNECTION DIAGRAMS



PARTS LIST FOR NONHAZARDOUS LOCATIONS

PUMP DIMENSIONS [dimensions in mm]

Ref. No.	Part No.	Description	Qty.
1	see chart below	CORD CAP ASSEMBLY	1
2	05876A119	O-RING, 5-7/8" x 5-5/8" x 1/8"	1
3	19103A043	SCREW, CAP HEX. HD. 1/2"-13 x 1-1/2"	4
4	22873C000	CAP, UPPER BEARING	1
5	19331A007	WASHER, WAVE SPRING	2
6	08565A032	BEARING, UPPER BALL	1
7	27098D100	ROTOR W/SHAFT	1
	27097D100	SHAFT (ONLY)	
8	22874D001	HOUSING, MOTOR	1
9	see chart below	STATOR	1
10	08565A026	BEARING, LOWER BALL	1
11	19103A048	SCREW, CAP HEX. HD. 1/2"-13 x 2-1/2"	4
12	05876A121	O-RING, 8-1/4" x 8" x 1/8"	2
13	22882D010	HOUSING, UPPER SEAL	1
14	22883A000	SEAL, SHAFT	2
15	12558A017	RING, RETAINING	1
16	19103A043	SCREW, CAP HEX. HD. 1/2"-13 x 1-1/2"	4
17	25991D010	HOUSING, LOWER SEAL	1
18	05231A084	GASKET, VELLUMOID	1
19	see chart below	IMPELLER, PUMP	1
20	27099A000	WASHER, IMPELLER	1
21	27095E000	CASE, VOLUTE	1
22	22587C000	CLAMP, SHREDDING RING	1
23	22586B010	SHREDDING RING	1
24	22584C000	IMPELLER, GRINDING	1
25	22585A000	RETAINER, IMPELLER	1
26	07597A021	SCREW, IMPELLER RETAINING	1
27	19101A010	SCREW, CAP HEX. HD. 3/8"-16 x 1"	4
28	19103A045	SCREW, CAP HEX. HD. 1/2"-13 x 1-1/2"	4
29	05818A067	KEY, 5/16" SQUARE x 25/32" LG.	1
30	25343A100	PROBE, SEAL LEAK	2
31	05434A025	SCREW, MACH. #6	2
32	22578A100	WIRE, ELECTRODE	2
33	10649A116	TUBE, PLASTIC	2
34	05876A120	O-RING, 6-1/2" x 6-1/4" x 1/8"	1
35	07597A017	SCREW, MACH., 5/16"-18 x 1"	2
36	06107A016	LOCKWASHER	1
37	05030A241	WASHER	1
38	05028A002	SCREW, MACH., 1/4"-20 x 1/2"	1
39	05022A092	PLUG, PIPE 1/4" NPT (NOT SHOWN)	2



Part No.	Description
27096D000	IMPELLER; 8" O.D.
27096D001	IMPELLER; 7.375" O.D.
27096D002	IMPELLER; 6.50" O.D.
27096D004	IMPELLER; 7.75" O.D.
27096D006	IMPELLER; 7.50" O.D.
27096D007	IMPELLER; 7.25" O.D.
27096D009	IMPELLER; 7.00" O.D.
27096D011	IMPELLER; 6.75" O.D.
27096D014	IMPELLER; 6.25" O.D.
27096D016	IMPELLER; 6.00" O.D.

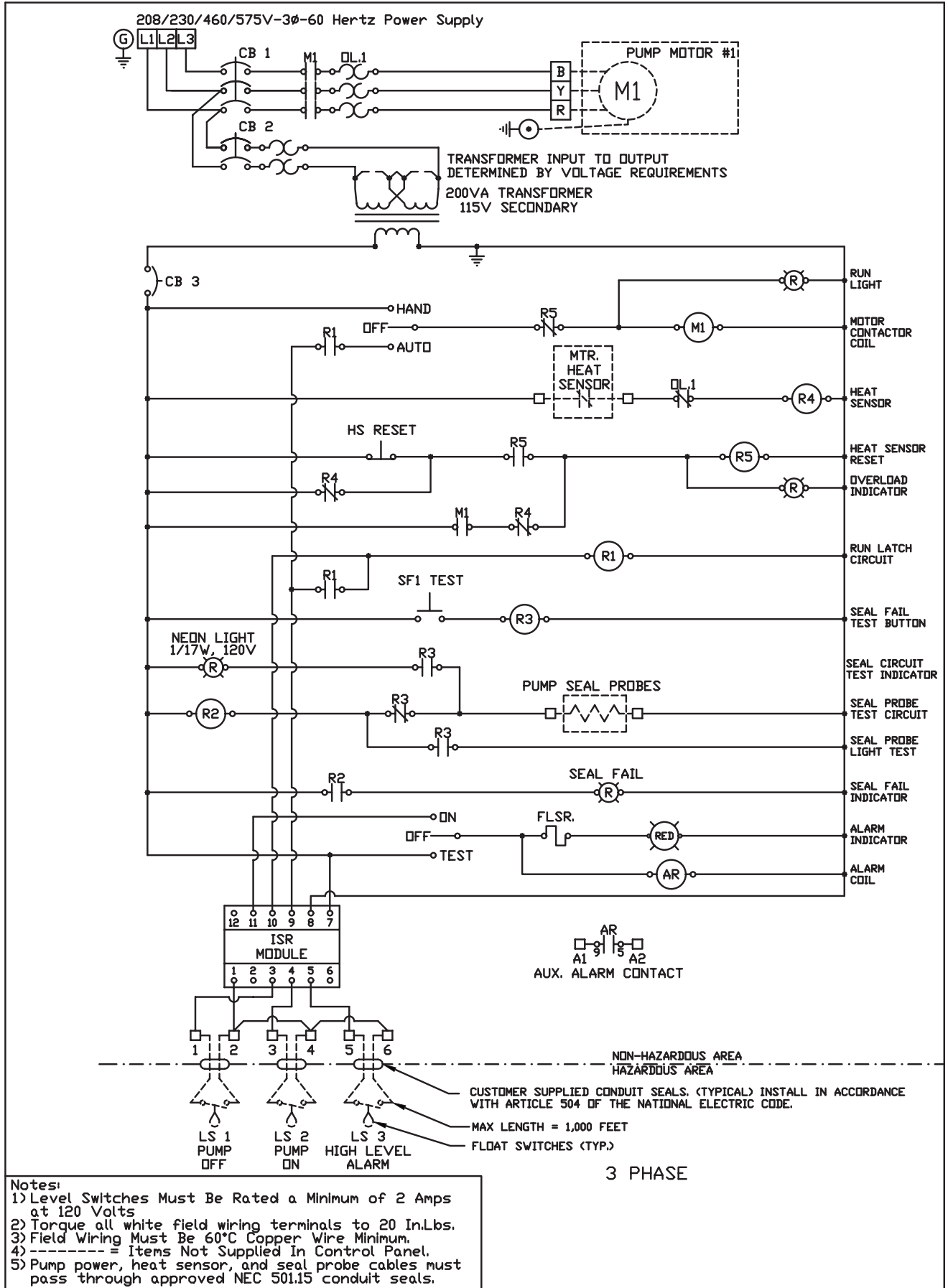
Catalog No.	Stator No.	Cord Cap Assembly	Housing w/Stator
WG/WGX75HH-03	141452031	22872C036	22875D357K
WG/WGX75HH-23	141450031	22872C036	22874D362K
WG/WGX75HH-43	141450031	22872C032	22874D362K
WG/WGX75HH-53	141456031	22872C032	22874D367K
WG/WGX100H-03	141452031	22872C034	22874D358K
WG/WGX100H-23	141450031	22872C036	22874D363K
WG/WGX100H-43	141450031	22872C035	22874D363K
WG/WGX100H-53	141456031	22872C032	22874D368K
WG/WGX150H-03	141462031	22872C034	22874D372K
WG/WGX150H-23	141460031	22872C034	22874D377K
WG/WGX150H-43	141460031	22872C036	22874D377K
WG/WGX150H-53	141466031	22872C035	22874D382K

For Hazardous Location
22872C6***

For Hazardous Location
22874D7***

*** To retain hazardous location rating, most repairs must be completed at a factory location. Consult factory for details.

WIRING DIAGRAM



- Notes:
- 1) Level Switches Must Be Rated a Minimum of 2 Amps at 120 Volts
 - 2) Torque all white field wiring terminals to 20 In.Lbs.
 - 3) Field Wiring Must Be 60°C Copper Wire Minimum.
 - 4) ----- = Items Not Supplied In Control Panel.
 - 5) Pump power, heat sensor, and seal probe cables must pass through approved NEC 501.15 conduit seals.

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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