

Installation and Servicing Instructions for Submersible Motors Used in Hazardous Locations

CLASS I GROUP D

**Plumbing Accessories
(Including Lift-Out Rail System)
For Series WGX, WGXH,
4RX, 4VX, 4VHX, and 6VHX**

Myers®

WARNING:

MOTORS TO BE USED WITH PUMPS HANDLING SEWAGE AND WASTE WATER ONLY. DO NOT USE IN OTHER HAZARDOUS LIQUIDS.

MOTOR REPAIR

MOTORS MUST BE REPAIRED AND SERVICED ONLY AT MYERS AUTHORIZED SERVICE CENTERS OR AT THE MYERS FACTORY. ANY UNAUTHORIZED FIELD REPAIR ON MOTORS VOIDS WARRANTY AND LIABILITY.

NOTE — For complete information pertaining to the specific pump installed, refer to the instructions received with the pump.

GENERAL — Motor construction and all other electrical components in the wet well must be U.L. listed for Class 1, Group D, hazardous locations for handling sewage and waste water only. **NOT TO BE USED FOR PUMPING OTHER HAZARDOUS LIQUIDS.**

As pump and motor unit is removable from the sump on guide rails, the U.L. requirements for a portable unit must be met. The portable unit allows the use of extra heavy duty approved power cords for connecting motor power lines and control lines to junction box. To meet the portable unit requirements, the rail guide parts for pump and motor must be of a non-sparking material.

POWER AND CONTROL CORDS — All cords must be U.L. listed for extra hard usage and have Type S, SO, SOW-A, ST or STO insulation. A green ground conductor must be carried in each cord.

CORD CONNECTORS — All connector or cord grips to connect cords to junction box must be of a U.L. listed type for Class 1, Group D application. Use Crouse Hinds or approved equal.

JUNCTION BOX IN WET WELL — Junction box must be a U.L. listed type for Class 1, Group D, Hazardous location. Conduit sizes to be in accordance with the National Electrical Code. Complete connection diagrams are included with these instructions.

SEAL FITTINGS — An approved U.L. listed seal fitting or approved built-in seal fitting must be used in the conduit leaving the Hazardous location. Complete sealing material and sealing instructions are included with the junction box.

LEVEL CONTROL SWITCHES — All level sensing and alarm controls must be for Class 1, Group D locations and be U.L. listed. Intrinsically safe ball type controls with sealed mercury switch can be used with proper approved intrinsically safe relays installed in control box. Intrinsically safe controls limit voltage and current to a point where a spark cannot occur even if cord is cut.

MOTOR OVERHEAT PROTECTION — The motor is provided with heat sensor thermostats that are attached directly to motor winding. Three phase units have two thermostats in series and single phase units use a single thermostat. The thermostats are set to trip at 221°F (105°C) on the Model WGX20 pumps and 230°F (110°C) on all the other pumps.

The thermostats are connected in series with the coil circuit of the magnetic starter to stop motor if overheating causes thermostat to trip. The thermostat resets automatically when motor cools to safe operating temperature.

CAUTION — As thermostat can reset and automatically start the motor, all power and control cord wires must be disconnected at control panel before pump is lifted from sump.

SEAL FAILURE — A seal failure probe is installed in the motor seal chamber to detect any water leakage through lower shaft seal. Power to this sensing probe is through an isolation transformer and high resistance neon light.

Water in the seal chamber energizes a red warning light at the control panel. This does not stop motor but indicates leakage only. Pump should be removed from wet well and seal should be checked and replaced if necessary at authorized service center or at Myers factory. Complete wiring diagrams are included with these instructions.

ELECTRICAL CONTROL PANEL — All starting and control equipment is to be installed outside the Hazardous area. Myers control panels or any other panels may be used for service as long as heat sensor and seal failure circuits are connected in accordance with wiring diagrams included with pump instructions.

NOTE — For single phase panels, starting components must be purchased from Myers.

INSTALLATION

Pump-motor unit must be installed with guide rail and lift-out seal fitting. Rail guides, seal fitting and hold down guide bars are made of bronze to be non-sparking.

JUNCTION BOX — Myers junction connection box is U.L. listed for Class 1, Group D areas and has the proper explosion proof connectors for connecting cords. A built-in integral seal fitting provides for sealing incoming wires. No other seal fitting is required in conduit leaving the Hazardous area.

DO NOT SEAL WIRES UNTIL ALL WIRING IS COMPLETE AND UNIT HAS BEEN TESTED. SEALING COMPOUND AND COMPLETE INSTRUCTIONS ARE INCLUDED WITH CONNECTION BOX.

WIRING — Intrinsic safe wiring must be kept separate from non-intrinsic safe wiring. If a junction box is required, it must have provisions to keep the intrinsic safe wiring separate from the non-intrinsic safe wiring. Alternately, two junction boxes can be used, one for intrinsic safe wiring, one for non-intrinsic safe wiring. Separate conduits must be run, for intrinsic safe wiring and non-intrinsic safe wiring.

Wiring diagrams for the connection box are included with these instructions.

INTRINSICALLY SAFE CONTROLS — Where the ball type intrinsically safe controls are used, cord can be used to connect controls to junction box. Type SO cord is used. Explosion proof cord grips must be used to connect the control cords to junction box.

CLASS 1, GROUP D CONTROLS — Level controls that are Class 1, Group D, U.L. listed can be used to control level and alarm level.

These controls operate with displacement weights that are set at the draw off levels required. Seal fittings must be used between the controls and the junction box as shown on the installation drawing.

PUMP OFF AND ALARM LEVELS — The pump off and alarm levels are determined by the setting of the balls for intrinsically safe controls and by the setting of the displacement weights on the explosion proof controls.

ROTATION 3 PHASE MOTORS — Rotation for 3 phase motors must be checked. The pump impeller should rotate counterclockwise when looking at the suction end of pump. To reverse rotation, interchange any two line leads to motor.

MOTOR INSPECTION & SERVICE — Motor chamber and seal chamber are oil-filled for life and do not require attention unless a seal fails.

Motor should be checked 3 times a year for ground leakage and maximum amp draw.

To check motor for grounds, disconnect all line and control wires from control box terminal strip.

Use Megger to check ground leakage.

If resistance to ground is less than one Megohm, unit should be removed for service at authorized Myers Service Center.

Use clamp-on ammeter to check power draw. Maximum amps should be within the values shown in table.

WGX SERIES MAXIMUM AMP & WINDING RESISTANCE VALUES

MODEL	HP	SPEED	VOLTS	PHASE	WINDING RESISTANCE IN OHMS			MAX. AMPS
					BLACK TO YELLOW	BLACK TO RED	RED TO YELLOW	
WGX SERIES	2	3450	230	1	1.56	7.84	9.4	12.0
	2	3450	200	3	2.91	2.91	2.91	8.5
	2	3450	230	3	3.15	3.15	3.15	7.5
	2	3450	460	3	12.6	12.6	12.6	3.8
	2	3450	575	3	19.6	19.6	19.6	3.0

WGX SERIES MAXIMUM AMP & WINDING RESISTANCE VALUES

MODEL	HP	SPEED	VOLTS	PHASE	WINDING RESISTANCE IN OHMS			MAX. AMPS
					BLACK TO BLUE	BLACK TO RED	RED TO BLUE	
WGX SERIES	3	3450	230	1	.47	3.14	3.61	36.0
	3	3450	200	3	.72	.72	.72	20.5
	3	3450	230	3	.72	.72	.72	17.8
	3	3450	460	3	2.9	2.9	2.9	8.9
	3	3450	575	3	6.5	6.5	6.5	7.0
	5	3450	230	1	.47	3.14	3.61	43.0
	5	3450	200	3	.72	.72	.72	28.5
	5	3450	230	3	.72	.72	.72	24.8
	5	3450	460	3	2.9	2.9	2.9	12.4
	5	3450	575	3	6.5	6.5	6.5	9.9

WGXH SERIES MAXIMUM AMP & WINDING RESISTANCE VALUES

MODEL	HP	SPEED	VOLTS	PHASE	WINDING RESISTANCE IN OHMS			MAX. AMPS
					BLACK TO BLUE	BLACK TO RED	RED TO BLUE	
WGXH SERIES	3	3450	230	1	.76	5.15	5.91	21.0
	3	3450	200	3	1.48	1.48	1.48	15.0
	3	3450	230	3	.98	.98	.98	13.0
	3	3450	460	3	3.9	3.9	3.9	6.5
	3	3450	575	3	11.4	11.4	11.4	5.2
	5	3450	230	1	.47	3.14	3.61	32.0
	5	3450	200	3	.72	.72	.72	21.6
	5	3450	230	3	.72	.72	.72	18.8
	5	3450	460	3	2.9	2.9	2.9	9.4
	5	3450	575	3	6.5	6.5	6.5	7.5
	7½	3450	200	3	.72	.72	.72	25.8
	7½	3450	230	3	.72	.72	.72	22.4
	7½	3450	460	3	2.9	2.9	2.9	11.2
	7½	3450	575	3	6.5	6.5	6.5	9.0

MAXIMUM AMP & WINDING RESISTANCE VALUES

MODEL	HP	SPEED	VOLTS	WINDING RESISTANCE IN OHMS				AMPS
				BLACK PHASE	BLACK TO BLUE	RED TO TO RED	MAX. BLUE	
4RX & 4VX SERIES	3	1750	230	1	.83	2.38	3.21	17.5
	3	1750	200	3	1.29	1.29	1.29	15.5
	3	1750	230	3	1.45	1.45	1.45	13.0
	3	1750	460	3	5.8	5.8	5.8	6.5
	3	1750	575	3	11.15	11.15	11.15	5.2
	5	1750	230	1	.83	2.38	3.21	34.0
	5	1750	200	3	.74	.74	.74	21.6
	5	1750	230	3	.88	.88	.88	18.0
	5	1750	460	3	3.45	3.45	3.45	9.0
	5	1750	575	3	5.69	5.69	5.69	7.2
	7 1/2	1750	200	3	.45	.45	.45	32.2
	7 1/2	1750	230	3	.58	.58	.58	28.0
	7 1/2	1750	460	3	2.34	2.34	2.34	14.0
	7 1/2	1750	575	3	3.68	3.68	3.68	11.2
	1	1150	230	1	2.12	10.1	12.22	9.0
	1	1150	200	3	4.31	4.31	4.31	7.4
	1	1150	230	3	5.36	5.36	5.36	6.4
	1	1150	460	3	21.45	21.45	21.45	3.2
	1	1150	575	3	33.8	33.8	33.8	2.6
	1 1/2	1150	230	1	1.84	8.8	10.64	11.0
	1 1/2	1150	200	3	3.02	3.02	3.02	9.8
	1 1/2	1150	230	3	3.69	3.69	3.69	8.5
	1 1/2	1150	460	3	14.75	14.75	14.75	4.2
	1 1/2	1150	575	3	23.7	23.7	23.7	3.3
	2	1150	230	1	1.17	5.47	6.64	18.0
	2	1150	200	3	2.24	2.24	2.24	12.0
	2	1150	230	3	2.44	2.44	2.44	10.5
	2	1150	460	3	9.75	9.75	9.75	5.2
	2	1150	575	3	18.35	18.35	18.35	4.2
4VHX & 4VHX SERIES	5	1750	200	3	.77	.77	.77	21.0
	5	1750	230	3	1.0	1.0	1.0	18.0
	5	1750	460	3	4.0	4.0	4.0	9.0
	5	1750	575	3	6.28	6.28	6.28	7.2
	7 1/2	1750	200	3	.379	.379	.379	30.0
	7 1/2	1750	230	3	.44	.44	.44	26.0
	7 1/2	1750	460	3	1.95	1.95	1.95	13.0
	7 1/2	1750	575	3	3.08	3.08	3.08	10.0
	10	1750	200	3	.302	.302	.302	40.0
	10	1750	230	3	.4	.4	.4	35.0
	10	1750	460	3	1.6	1.6	1.6	17.5
	10	1750	575	3	2.48	2.48	2.48	14.0
	15	1750	200	3	.241	.241	.241	60.0
	15	1750	230	3	.31	.31	.31	52.0
	15	1750	460	3	1.25	1.25	1.25	26.0
	15	1750	575	3	1.94	1.94	1.94	21.0
	3	1150	200	3	.98	.98	.98	15.9
	3	1150	230	3	1.25	1.25	1.25	13.8
	3	1150	460	3	5.02	5.02	5.02	7.0
	3	1150	575	3	7.64	7.64	7.64	5.5
	5	1150	200	3	.59	.59	.59	24.0
	5	1150	230	3	.82	.82	.82	21.0
	5	1150	460	3	3.27	3.27	3.27	10.5
	5	1150	575	3	5.11	5.11	5.11	8.4

Myers

PENTAIR PUMP GROUP

F. E. Myers, 1101 Myers Parkway, Ashland, Ohio 44805-1969
419/289-1144, FAX: 419/289-6658; www.femyers.com

Myers (Canada), 269 Trillium Drive, Kitchener, Ontario N2G 4W5
519/748-5470, FAX: 519-748-2553

