Installation Instructions
McDonald Bottom Suction Cistern Pumps

INSTALLATION RECORD

Date of Installation _____

Model Number _____ Serial Number _____

Depth of Well (Feet) _____ Depth of Water (Feet) _____

Pump Setting (Feet) _____ Riser Pipe Size _____

Wire Size (From Pump to Control Box) _____

Wire Size (From Control to Power) _____

Motor _____ Amps _____ H.P. _____ Volts _____

1. PRE-INSTALLATION CHECKLIST

ATTENTION! Important information for installers of this equipment!

This equipment is intended for installation by technically qualified personnel. Failure to install it in compliance with national and local electrical codes may result in electrical shock or fire hazard, unsatisfactory performance, and equipment failure. Retain this information sheet with the equipment for future reference.

WARNING - Serious or fatal electrical shock may result from failure to connect the motor, control enclosures, metal plumbing, and all other metal near the motor or cable, to the power supply ground terminal using wire no smaller than motor cable wires. To reduce risk of electrical shock, disconnect power before working on or around the water system. Do not use in swimming areas.

2. INSPECT THE EQUIPMENT

Before going on the job, open all packages and check all equipment to be certain everything is included and that no parts have been damaged during shipment. The pump name plate should be inspected to be sure it is the correct horsepower, voltage, and phase. If shipping damage is evident, report this to the shipping carrier and local product dealer. Claims for shipping damage must be made through the shipping carrier.

3. WATER SUPPLY

This pump is designed to pump clean water or effluent only. Continuously pumping water with large amounts of sand or abrasive material can shorten the life of the pump.

Do not allow the pump or associated pump plumbing to freeze, as this may void the warranty. Do not use pump where water temperature exceed 105ºF.

If pumping from a holding tank or cistern, ensure water level never falls below the intake. Running the pump dry for even short amounts of time can cause damage to the pumping unit. A float system may be required to ensure adequate water supply.

4. ELECTRICAL INSTALLATION

WARNING – Disconnect power from electrical panel before making any electrical connections. All wiring must be performed by a licensed electrician in accordance with all national, state, and local electrical codes.

WARNING – Failure to ground electronically operated equipment may result in serious shock. Refer to all applicable code requirements.

Supply voltage must be within ±10% of pump rated voltage as listed on the pump label. High or low voltage can damage the motor and cause undesired pump performance. The pump should have a fused disconnect or circuit breaker at or near the pump, connected to a dedicated branch circuit with no other appliance on it. Use an ohmmeter to check connections for continuity and breaks in insulation.

5. PUMP INSTALLATION

Follow all national, state, and local plumbing codes when installing this product. The maximum installation submergence of this pump is 85 feet. Installing at greater depths can damage the pump. Do not use the factory supplied electrical cord to carry or install the pump.

Before starting the pump for the first time, a valve should be installed in the discharge line and closed to 80%. The pump should then be started and the entire system primed. Once the pump is running and the system is primed, the discharge valve can be fully opened. If the pump fails to initially deliver water, the pump may be airlocked. Turn off system and restart after a few minutes.

If the pump is making a loud noise when running (like debris is in the pump), cavitation may be occurring. Slowly close the discharge line valve until this noise goes away.

WARNING: It is unlawful in **CALIFORNIA & VERMONT (effective 1/1/2010); MARYLAND (effective 1/1/2012); LOUISIANA (effective 1/1/2013) and the UNITED STATES OF AMERICA (effective 1/4/2014)** to use any product in the installation or repair of any public water system or any plumbing in a facility or system that provides water for human consumption if the wetted surface area of the product has a weighted average lead content greater than 0.25%. This prohibition does not extend to service saddles used in California, Louisiana or under USA Public Law 111-380. ⚠ **WARNING:** This product can expose you to chemicals including lead, which is known to the State of **CALIFORNIA** to cause cancer and birth defects or other reproductive harm. For more information go to: www.P65Warnings.ca.gov.

TABLE A - CABLE SELECTION

SINGLE PHASE MOTOR MAXIMUM CABLE LENGTH (Motor to Service Entrance) (2)															
Motor Rating			60ºC Insulation - AWG Copper Wire Size												
VOLTS	HP	KW	14	12	10	8	6	4	3	2	1	0	00	000	0000
115	1/2	.37	100	160	250	390	620	960	1190	1780	2160	2630	3140	3770	
230	1/2	.37	400	650	1020	1610	2510	3880	4810	5880	7170	8720			
	3/4	.55	300	480	760	1200	1870	2890	3580	4370	5330	6470	7870		
	1	.75	250	400	630	990	1540	2380	2960	3610	4410	5360	6520		
	1 1/2	1.1	190	310	480	770	1200	1870	2320	2850	3500	4280	5240		
	2	1.5	150	250	390	620	970	1530	1910	2360	2930	3620	4480		
	3	2.2	120	190	300	470	750	1190	1490	1850	2320	2890	3610		
	5	3.7			180	280	450	710	890	1110	1390	1740	2170	2680	

CAUTION: Use of wire size smaller than listed will void warranty.

FOOTNOTES:

1. If aluminum conductor is used, multiply lengths by 0.5. Maximum allowable length of aluminum is considerably shorter than copper wire of same size.

2. Ground wire should be of similar size as the power wire.

TABLE B - ELECTRICAL INFORMATION

		SINGLE PHASE				
		2 Wire				
MOTOR	H.P.	1/2	1/2	3/4	1	1 1/2
	VOLTAGE	115	230	230	230	230
Standard Fuse Size (Amps)		30	15	20	25	35
Dual Element Fuse Size		15	8	10	11	15
Minimum Voltage (volts)		105	210	210	210	210
Maximum Voltage (volts)		125	250	250	250	250
Maximum Current (amps)-Motor Running Under		12	6	8.0	9.8	11.5