



Installation Instructions

1500 Series Horizontal Multi-Stage Pump

IMPORTANT - Read both sides of instructions before installing and operating your A.Y. McDonald Multi-Stage Pump. Proper installation will provide years of satisfactory service.

NOTE: Use pipe joint compound on male threads only.

Model Numbers	
Deep Well	Shallow Well
1575 - 3/4 HP	1575SW - 3/4 HP
1510 - 1 HP	1510SW - 1 HP
	1515SW - 1 1/2 HP

Select the type of well application: DEEP WELL INSTALLATIONS

Double pipe, using standard well seal (4" or larger wells)

1. Wrench tighten venturi into jet body. Place jet ejector, foot valve and piping in the well using plastic or galvanized pipe.
2. Install well seal and tighten packer bolts making sure well is tightly sealed.
3. Connect the suction pipe to the upper/larger tapping in the pump body. Screw a short nipple into the other threaded opening (drive pipe) of the pump body and connect to the drive pipe line coming from the well by means of a compression coupling.

Single pipe (2" or 3" wells), using 101 casing adapter

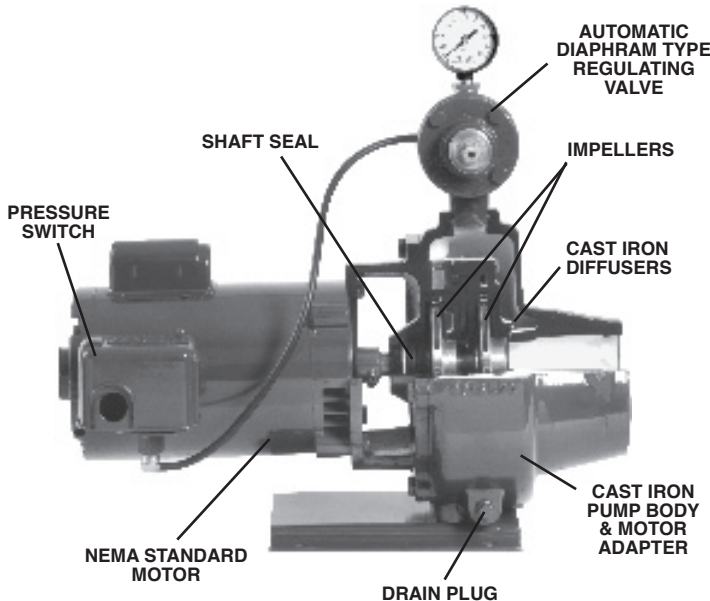
1. Wrench tighten venturi into jet body. Place jet ejector, foot valve and piping in the well. On 2" single pipe installations a special 1 1/4" x 1" reducing nipple and turned coupling should be connected to the top of the packer ejector and the 1" suction pipe connected to this nipple. On 3" single pipe installations the 1 1/4" suction pipe connects directly to the top of the jet fitting using a turned coupling.
2. Screw suction piping into threaded portion of casing adapter. Adapter should be located with flanged side located vertically and packer side down. A 1 1/4" x 1" bushing will be needed if 1" suction pipe is used.
3. Fasten casing adapter to well casing, and tighten bolts evenly and securely.
4. Place gasket between the casing adapter and place pump on casing adapter making sure that the larger HOLE IN THE GASKET AND IN THE CENTER OF PUMP IS LOCATED IN LINE WITH THE LARGER HOLE IN THE CASING ADAPTER.
5. Bolt pump to casing adapter flange using capscrews provided in jet fitting package. A platform to support the pump next to the well is usually recommended.

NOTE: If installation conditions require that the pump be off-set some distance from the well, the casing adapter is tapped to allow the horizontal two pipe installation as described in (3) from double pipe instructions above.

SHALLOW WELL INSTALLATIONS (For example, 1510SW)

1. Install suction piping in well or attach to well point. Use foot valve at end of suction pipe or check valve in suction line as far from pump as possible. Tighten well seal (if used) to create a seal and secure suction pipe.
2. Connect suction piping directly into 1 1/4" tapped opening in face of pump body and plug the 1" NPT opening (below the suction) with a standard pipe plug.
3. If a jet package will be used with this application, place the gasket (provided) between the jet body flange and the pump face making sure the large hole in the gasket is in line with the larger holes in the two faces. Install and wrench tighten the two capscrews (provided) to secure the "jet" against the face to the pump body. Then, connect the suction piping to the jet body (1 1/4") tapping.

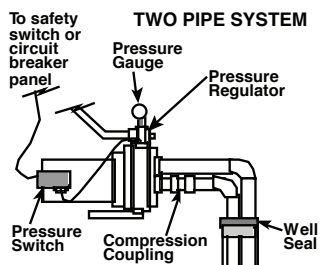
See next page for priming instructions



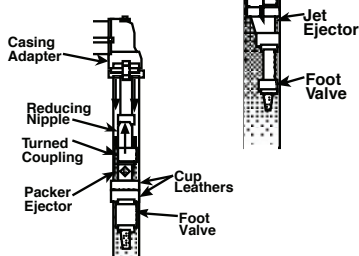
Typical Jet Pump Installations

Deep Well

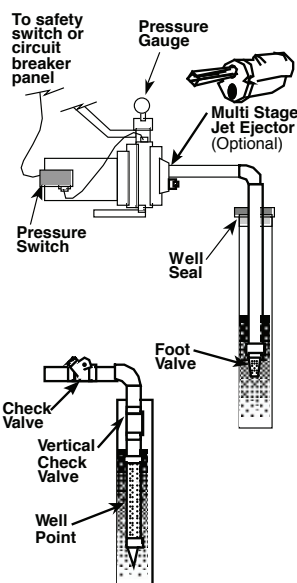
TWO PIPE SYSTEM



SINGLE PIPE SYSTEM



Shallow Well



Priming the Pump

Deep Well

1. Prime the pump by filling with water through the 1/2" NPT thread in regulating valve. Stop filling when water stays level with top of 1/2" opening.
2. Set the regulating valve as follows: with pump disconnected from tank or with zero pressure in tank, screw the adjusting screw as far in as it will go. Prime and start pump. Keep turning adjusting screw out until pump loses its prime (gets noisy or no water discharged). Turn screw in one turn, reprime and start pump. If pump will not deliver water, prime again, and turn screw in another turn before starting pump. Proper valve adjustment results in maximum capacity.
3. After the pump is primed, secure the piping to eliminate leaks.

Shallow Well

1. A regulating valve or street tee sub-assembly is provided with shallow well pumps as a convenience with inventory and to provide a place for the pressure switch tubing to connect. If a valve is provided, no adjustment is required for shallow well use except that it be open far enough to not restrict flow. Fill the pump through the 1/2" NPT thread in regulating valve or 1" tee until water stays level with top.
2. After priming as described in 1, replace the 1/2" plug or bushing only loosely (yet securely) to let air escape, start the pump and wait for it to prime. If it fails to prime in several minutes, repeat the priming procedure.
3. After the pump primes, turn it off and secure the piping to eliminate leaks.

Average Regulating Valve Settings

3/4 HP..... 42 lbs.
 1 HP..... 56 lbs.

NOTE: These pressures will vary considerably, depending on depth to water.

Wiring

Be certain that wire and fuses of correct size are installed. Be certain the phase, voltage, and cycles of the supply circuit are the same as that shown on the motor name plate.

It is strongly recommended that a separate electric line, well protected against fire, be run from electrical service to the pump, with a fused switch box at the pump. In the event of fire, this precaution will permit continuous operation of your pumping system. For added safety, the pump and motor should be properly grounded to the well casing or to a separate ground rod driven eight feet into the ground.

Wire Selection and Fusing Chart (Use copper conductors only)

Wire Gage and Standard Fuse Sizes

MOTOR SIZE	WIRE SIZE		FUSETRON SIZE	
	110V	220V	110V	220V
3/4 HP	8	12	30 amps	20 amps
1 HP	6	12	35 amps	20 amps
1 1/2 HP	4	10	40 amps	30 amps

For distances of 200 feet and over from meter to motor, larger wire than shown may be required.

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, and with motor suppliers recommendations, may result in electrical shock or fire hazard, unsatisfactory performance, and equipment failure. Installation information is available from pump manufacturers and directly from motor suppliers. 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.

Troubleshooting

Always do this

1. After the pump is properly primed, permit pump to discharge on open flow long enough to determine if well supply is adequate. This allows for correct setting of regulating valve and prevents dirty water from entering pressure tank.
2. After pump is connected to pressure tank, allow the system to cycle several times to check pressure switch setting and operation.

If motor will not run

1. Safely check to be sure you have voltage at the disconnect fuse box and pressure switch.
2. Check fused disconnect switch for blown fuse or loose wire.
3. After opening disconnect switch, check for loose wire in pump switch.
4. Check for free rotation of pump shaft, using the screwdriver slot or wrench flats under the cover on the end of motor.

If motor runs but no water is delivered

1. Be sure there are no leaks in suction piping.
2. Be sure that foot valve is submerged when pump is running.
3. Open disconnect switch and reprime pump.
4. If a deep well pump, be sure that regulating valve is set at correct pressure for proper operation. See chart (upper right) on this page for approximate settings. (These vary with depth to water).
5. Impeller, jet fitting or foot valve may be plugged with sand or other obstruction.



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.