

Shallow Well Jet Pumps

General Instructions

Before You Start

Check national and local sanitary regulations and electrical codes. Their guidelines are provided for your protection. Follow all applicable recommendations.

Inspect Your Pump

Check the contents of your pump carton to ensure all parts illustrated on the carton are included and undamaged. To complete the installation, you will also need a pressure tank, piping of appropriate length and size, a foot valve or check valve, an electrical fused disconnect switch, wiring supplies, plus any adapters, fittings and clamps necessary for pipe connections. For driven well point installations, a check valve will be needed in place of a foot valve. A well seal may also be required.

Inspect Your Well

Check that the depth of your well, well capacity and pumping level are adequate for this pump. Note that "pumping level" refers to the level to which the well's standing water level drops when water is being pumped.

Use the well's pumping level when measuring both suction lift and well depth. The depth of your well should be sufficient to submerge the foot valve at least 10 feet below the pumping level.

NOTE: Impeller could be damaged by running the pump dry. Also check that the well diameter is large enough for installation of the foot valve and piping.

Select a location

Choose a location for your pump that is clean, well ventilated and offers protection from weather, flooding and physical damage. Sufficient space should be available for your pressure tank and to allow easy inspection and adjustment. Suitable locations may include a dry basement or an insulated pump house over the well head. Ideally, the pump should be as close as possible to both the well and the power source. A solid, level foundation should be available for mounting the pump.

Finally

Ensure that your well is clear of all dirt and grit before installing your new pump.

Installation Instructions

1. Fasten your pump down securely in its permanent location to minimize pump vibration when operating.
2. Suction Piping - connect suction piping to the 1" tapping in the side of the pump body. Gradually slope horizontal piping down to the well, eliminating all dips and high spots and using as few elbow connections as possible. All pipe connections should be absolutely air-tight. See Pipe Size Chart for selecting appropriate pipe sizes.
3. Well Assembly: Install a foot valve at the bottom of the 1" suction pipe and complete pipe connections so the foot valve is submerged at least 10' below pumping level. As an alternative for systems using sand points, install a check valve in the suction line. See illustrations on next page.

Pipe Size

Distance Well to Pump	Motor Size	
	1/3 hp	1/2 hp
0 - 20 feet	1"	1"
20 - 100 feet	1-1/4"	1-1/4"

Use 1" pipe for all vertical suction line. For offsets greater than 100 feet, contact WaterGroup for pipe sizing.

Final Connections

Pressure Tank

Install pipe from discharge opening and connect to the pressure tank.

Power Supply

All pumps should be wired to a 115V power supply with a 15 amp fuse. The 1/2 hp or 3/4 hp model may be connected to a 115V supply with a 20 amp fuse or to a 230V supply with a 15 amp fuse. Instructions for wiring 1/2 pumps to the power supply can be found on the motor name plate. "Slow blow" fuses are recommended in all installations.

All motors supplied with pumps have built-in thermal overload protection with automatic reset.

Typical Installation

Priming Pumps

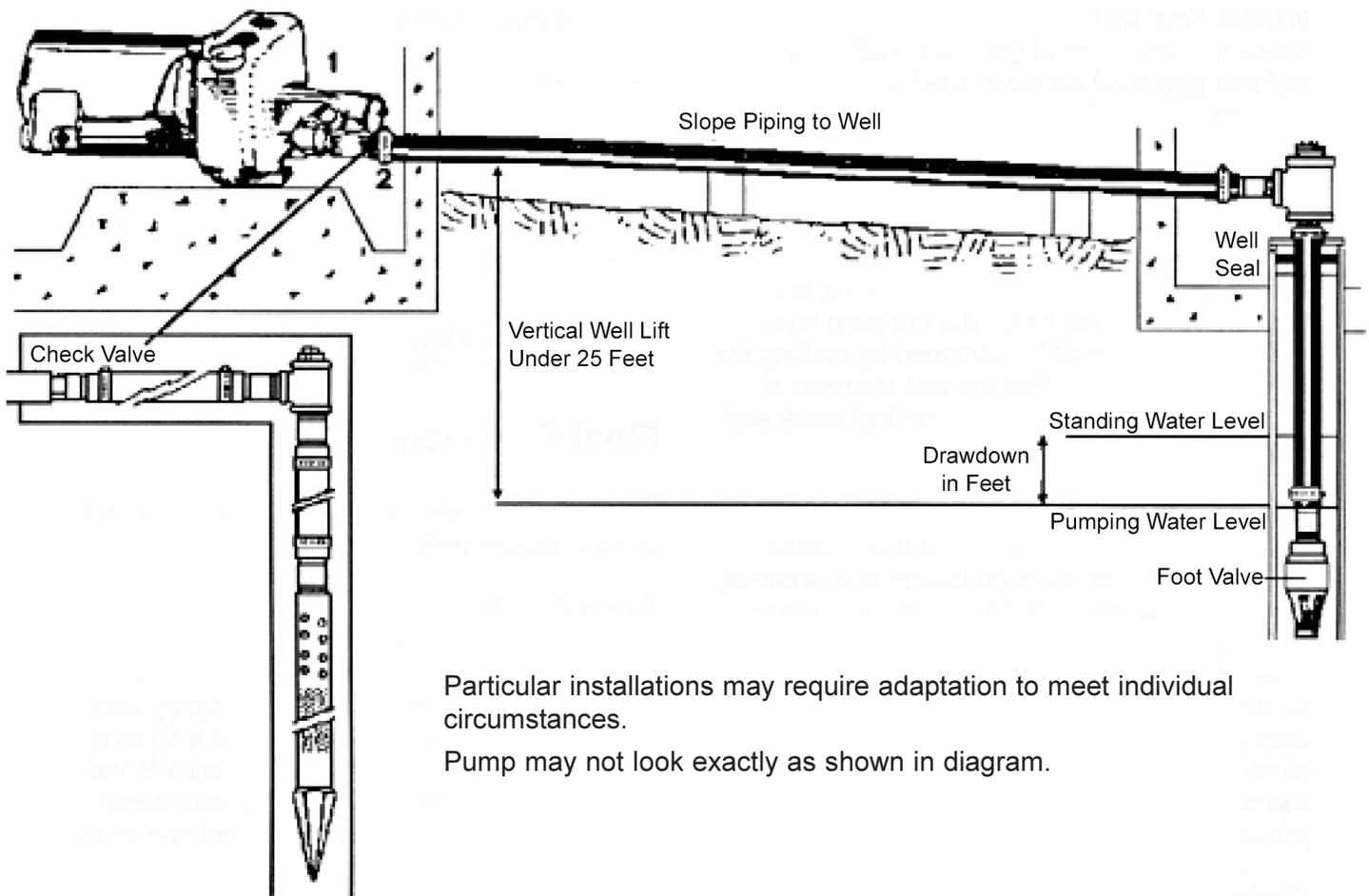
Remove the priming plug from the top of the pump body. Completely fill the suction piping and pump with water.

Replace the priming plug.

Open one faucet on the system and start your pump. A short time may be required for all air to escape from the suction. When water appears at the faucet, turn the faucet off. Pressure will rise to close the pressure switch and the pump will stop automatically.

Draining Pumps

To drain the shallow well pump, remove the 1/4" plug on the bottom of the pump body. If a sand-point is used, the check valve should be unseated.



Particular installations may require adaptation to meet individual circumstances.

Pump may not look exactly as shown in diagram.

Trouble Shooting

Problem	Cause	Solution
1. Motor will not run	a. Power supply failure b. Burned out motor	- Make sure power is turned on. Check for blown fuses, loose or broken wires, low voltage supply, malfunctioning pressure switch. - Replace. Check with dealer for warranty coverage.
2. No water supply	a. Motor not running b. Improper priming. c. Air leak in suction line d. Foot valve not submerged	- See No. 1 above. - Stop motor and reprime pump. Repeat until all air is removed. A leaky foot valve could prevent proper priming in deep well pumps. - Check by plugging pump discharge and screw Schrader valve into tapping on right hand side of pump. Raise pressure to about 80 lbs. with tire pump. If pressure falls off quickly, leak is present. Inspect all connections and pipe sections. Check with soapsuds. - Check vertical distance to water level in well. Replace piping with longer length if necessary.
3. Motor overload - kicks out	a. Improper wiring b. Voltage too low c. Inadequate ventilation d. Pump cycling too often	- Check wiring diagram to make sure connections are properly matched to voltage. - Check at pump with voltmeter. Make sure wiring is heavy enough for long runs from power supply. - Take steps to increase air flow through pump location or air circulation around motor. - See No. 6 below.
4. Water supplied is below rated amount	a. Nozzle or impeller clogged b. Well lift too high c. Leak in piping d. Pressure control set too high e. Offset piping too small f. Failure in impeller or diffuser vanes	- Disassemble pump and check nozzle, tube and impeller. - Check water level in well to see actual pumping level. Measure vertical distance to pump and compare to tolerance for pump type. - See No. 2c above. - Compare minimum pressure on which capacity is based with operating pressure shown on gauge. - Replace suction and drive lines with larger diameter pipe. - Inspect for wear on impeller nose or internal blockage.
5. Pressure too low to shut off switch	a. Plugged ejector nozzle b. Switch out of adjustment c. Well lift too high d. Offset piping too small e. Foot valve partially plugged	- Remove plug and clean out nozzle. - Check cut-in and cut-out pressures with accurate gauge. Switch may have to be reset to lower pressure. - See No. 4b above. - Replace suction and drive lines with larger diameter pipe. - Inspect foot valve screen and clear if necessary.
6. Pump cycling too often	a. Waterlogged pressure tank b. Hidden water loss	- Check for faulty AVC or low pressure in pre-charged tank. - Check for leaky faucets and pipes drawing from tank. Also check for leaks in foot valve bleeding water back to well.
7. Air delivered through faucet at low pressure	a. Air in pressure tank b. Leak in suction line	- Check AVC tubing for loose fittings. - See No. 2c above.
8. Pump is noisy	a. Suction line is plugged	- Clear blockages from foot valve, ejector or piping.

GUARANTEE

This package is guaranteed to do the work for which it is intended when properly installed and operated. It is warranted to be free of defects in material and workmanship for a period of two years from date of manufacture.

How To Claim This Warranty

The dealer from whom you purchased your unit has a thorough knowledge of its operation and maintenance. If trouble develops, please consult the dealer.

If a unit or part should prove defective within 24 months, return it to your dealer, transportation charges prepaid. The repair will be made or a replacement unit or part will be supplied free of charge. The serial number of the unit, or unit from which the defective part is taken, must be supplied.

This warranty does not obligate the manufacturer to bear the cost of field labor or transportation in connection with the replacement or repair of defective parts or units, nor shall it apply to any product upon which repairs or alterations have been made, unless authorized by the manufacturer.

The manufacturer shall in no event be liable for consequential damages or contingent liabilities arising out of the failure of any product, its power unit or its accessories to operate properly. No express, implied or statutory warranty other than herein set forth is made authorized to be made by the manufacturer.

All products not manufactured by WaterGroup Inc. are subject to the warranties of their respective manufacturers.