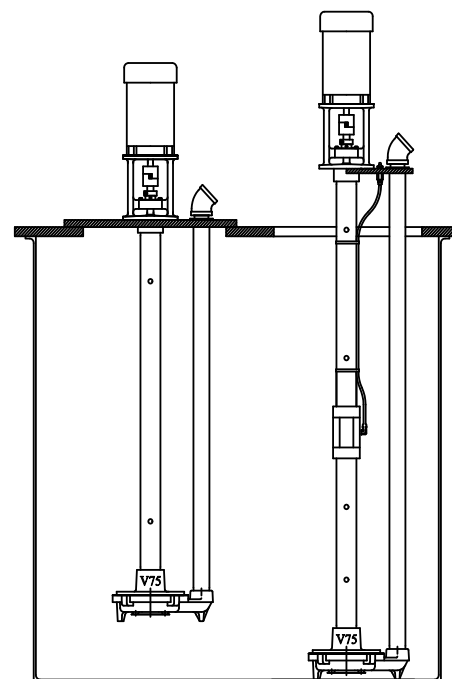


WEIL	VERTICAL WASTEWATER PUMP	1100 1200
	INSTALLATION OPERATION MAINTENANCE	1300 2100
		2200 4500

OWNERS INFORMATION

Manufacturer's Number

Date Code

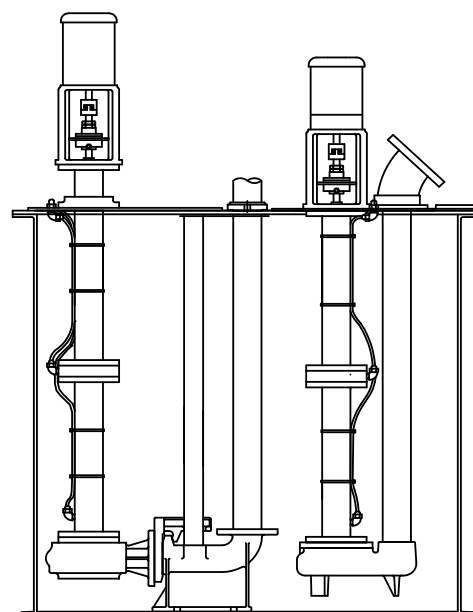


Cover Mount

Floor Mount

Manufacturer's Number

Date Code



2613
Removal Mount

Cover mount

WEIL**VERTICAL WASTEWATER PUMP
INSTALLATION OPERATION MAINTENANCE****INTRODUCTION**

This manual contains instruction for installation, operation and maintenance of your vertical wastewater pump. Read and study this manual before using the equipment. The pump is a well designed and sturdily constructed machine. When properly installed and given reasonable care and maintenance, it will give many years of service.

SAFETY PRECAUTIONS

Always disconnect the electrical power supply to the motor before working on the unit. **Failure to do so can cause severe electrical shock or death.**

If the floor is wet or flooded, do not walk on floor until the electrical power has been disconnected. Exercise caution when working in the exposed areas of rotating parts.

RECEIVING

Immediately upon arrival, the equipment should be checked for any shortages and/or damage. Any shortages or damage should be noted on the bill of lading and freight bill and promptly reported to the transportation company. Claims for shortages or damage must be made in writing to Weil Pump Company Inc., Cedarburg, Wisconsin within 14 days of receipt of equipment.

STORAGE

Pumping equipment should be installed and put into operation as soon as possible. If it is necessary to store the equipment for extended periods, precautions should be taken to prevent corrosion or oxidation. It is recommended that the equipment be stored indoors. The storage area should be dry and have a relatively constant temperature. Exposed machined surfaces should be coated with a rust preventative. The entire unit should be sealed in heavy plastic bag. A desiccant should be placed in the bag before it is sealed.

During storage, the plastic bag should be opened at least once a month, and the rotating assembly of the pump turned several times by hand. This helps prevent point of contact corrosion and maintains rotational integrity. Add desiccant before the bag is resealed. For additional information regarding rust prevention, refer to the American Society for Metals Handbook, under "**Rust Prevention Compounds.**"

INSTALLATION

Clean wet well thoroughly before installing pump. Sand, mud, cinders, etc. are abrasives which will damage the sleeve bearings.

The pump is ready for installation as shipped. Except as noted above, no lubrication or adjustment is required before initial operation.

Raise and lower pump with steel chain or lifting strap connected to the motor pedestal. **Do not use the motor for this purpose.** Set the pump in its final location before installing motor and connecting the electrical power. Provide adequate headroom above the wet well for future maintenance of the pump. Install the associated level controls so that the pump is properly immersed. For **intermittent service**, the minimum liquid level must be at least 1" above the pump case.

MOUNTING MOTOR

(Refer to Figures 1 & 2)

The pump and motor are shipped from the factory with the flexible coupling halves mounted on the pump and motor shafts as shown in figure 1. Before proceeding, make certain that the mounting parts are clean and free of debris and foreign matter.

1. Place the rubber spider between the jaws on the pump coupling half.
2. Set the motor in place on the motor pedestal, ensuring that the motor coupling jaws line up with the slots in the rubber spider. Be sure that the motor male register fits properly into the motor pedestal female register and that the fastening holes are aligned. Bolt the motor to motor pedestal.

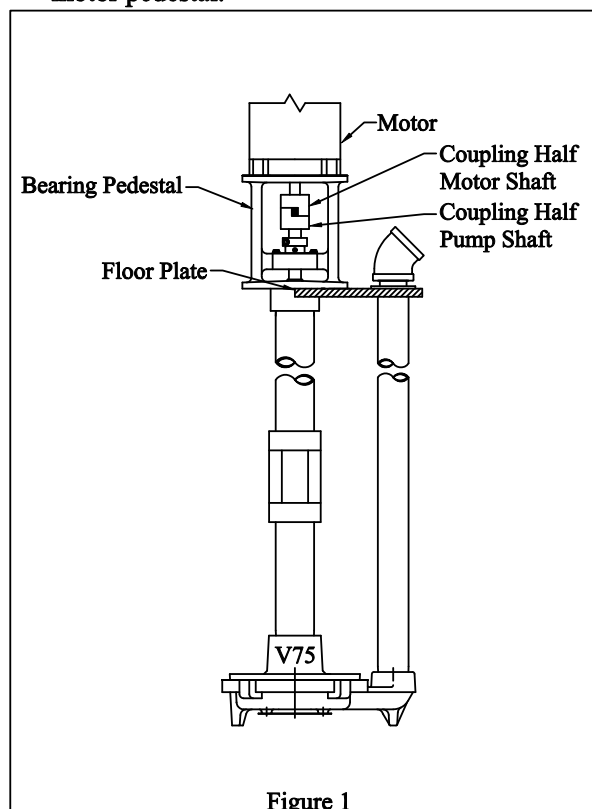


Figure 1

3. Position the coupling bodies equal distance on their respective shafts, leaving 1/16" between each jaw and the body.
4. Check for angular and parallel coupling alignment at 2 points, 90° apart as shown in Figure 2. If misalignment occurs, reposition motor as required.

WARNING

UNDER NO CIRCUMSTANCES SHOULD THE EQUIPMENT BE OPERATED WITH MISALIGNMENT. DAMAGE MAY RESULT TO THE MOTOR AND PUMP BEARINGS. DOING SO WILL VOID THE WARRANTY.

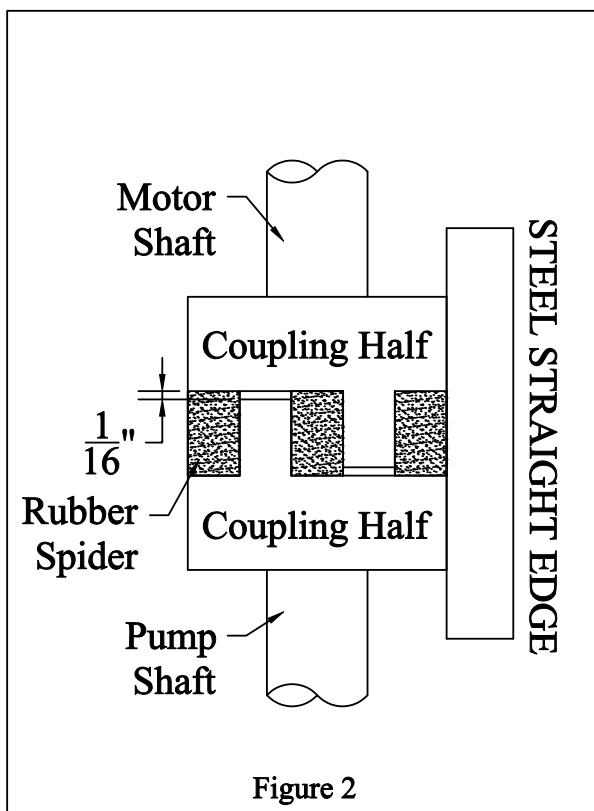


Figure 2

PIPING

(Refer to Figure 1)

1. Piping should be as short as possible using a minimum number of fittings to avoid excessive friction loss.
2. Pipes should line up "naturally" with the pump discharge and should never be forced together.
3. Discharge piping must be supported by appropriate supports.
4. In a duplex installation, each pump must have its own check valve.

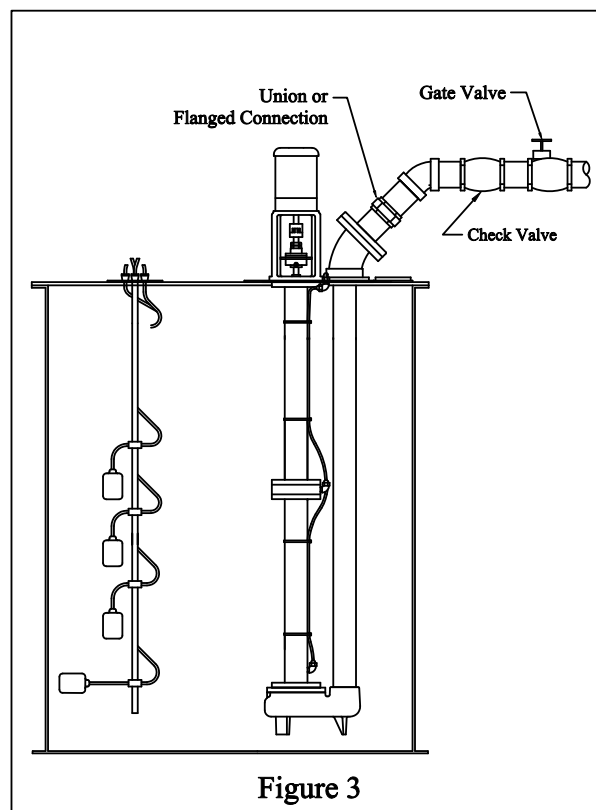


Figure 3

CAUTION

Piping not properly aligned and supported can cause the shaft to bind, resulting in bearing wear, vibration and can cause damage to the impeller and casing.

After piping is completed, turn shaft by hand to check that shaft turns freely. If shaft binds, recheck coupling alignment and piping connections.

START-UP PROCEDURE

Before placing pump into general operation, check the following items to insure that no damage will occur to pump motor.

1. Turn shaft manually to ensure it is turning freely.
2. Check voltage, phase, and frequency of the motor, making sure that the same is supplied to unit.
3. Make sure there is proper motor circuit protection.
4. Review piping installation, per "Piping" instructions.
5. Recheck basin to make sure it is free of debris.
6. With pump laying down on its side, apply momentary power to confirm proper impeller rotation.

7. Verify proper operation in a "wet" test startup: check GPM, pressure, amps, volts, audible noise and vibration.
8. Check measured parameters to design conditions.

SAFETY PRECAUTIONS

1. Disconnect and lockout the electrical supply to the motor before working on the unit, or if maintenance is to be performed on the pump in a flooded area.
2. Exercise caution when working in the exposed areas of the rotating parts.
3. In case of severe vibration or unusual noise, shut off pump at once and determine the cause.
4. If frequent tripping of the overload protection occurs, troubleshoot the pump to correct the problem.

TROUBLESHOOTING PUMP

<u>Problem</u>	<u>Probable Cause</u>
Insufficient or No Water Flow	1. Blown fuses or open circuit breakers 2. Poor switch contact 3. Discharge head too high 4. Clogged or damaged impeller 5. Binding shaft 6. Check or gate valve closed 7. Water level below casing
Insufficient Pressure	1. Low voltage 2. Clogged or damaged impeller 3. Motor incorrectly wired 4. Pump may be air-bound
Noisy or Vibrating Pump	1. Misaligned or bent shaft 2. Worn bearings 3. Lack of lubrication 4. Water level below casing 5. Impeller rubbing or damaged 6. Clogged impeller

LUBRICATION

Proper pump lubrication is a primary factor in satisfactory pump operation. Follow lubrication instructions carefully.

The sleeve bearings are lubricated by means of alemite grease fittings. These bearings should be serviced once per month or as needed, depending on operational conditions.

The motor has sealed bearings and requires no lubrication unless otherwise specified on the nameplate.

Recommended Lubricants - The use of a high grade multipurpose lithium No. 1 or a calcium complex No.1 soap grease is recommended. Both greases mentioned have excellent water resistant qualities, and have good mechanical and chemical stability.

PERIODIC INSPECTION

Periodic inspection of the pump should be performed at six month intervals. The pump should be cleaned of accumulated abrasive particles and debris. The wet well should also be cleaned of accumulated abrasive particles.

Check the motor housing and the seal chamber for moisture in the following manner:

1. Loosen set screws in pump or motor couplings.
2. Check voltage, phase, and frequency of the motor, making sure that the same is supplied to the unit.

Also check the following items:

1. See that the motor comes up to speed and maintains a constant rotation rate.
2. If pump has been idle for a long time, momentarily actuate motor manually to insure pump is running satisfactorily.
3. Wipe off any moisture, dirt or oil from motor and switch.
4. See that pump empties basin to predetermined level.

IMPORTANT NOTICE

For warranty consideration contact your local Weil representative before disassembly or repair.

NOTE

See separate instructions for pump assembly and disassembly.

WEIL PUMP COMPANY INC

EM-1300-4-A

WEIL**Vertical Wastewater Pump**

1371 2219

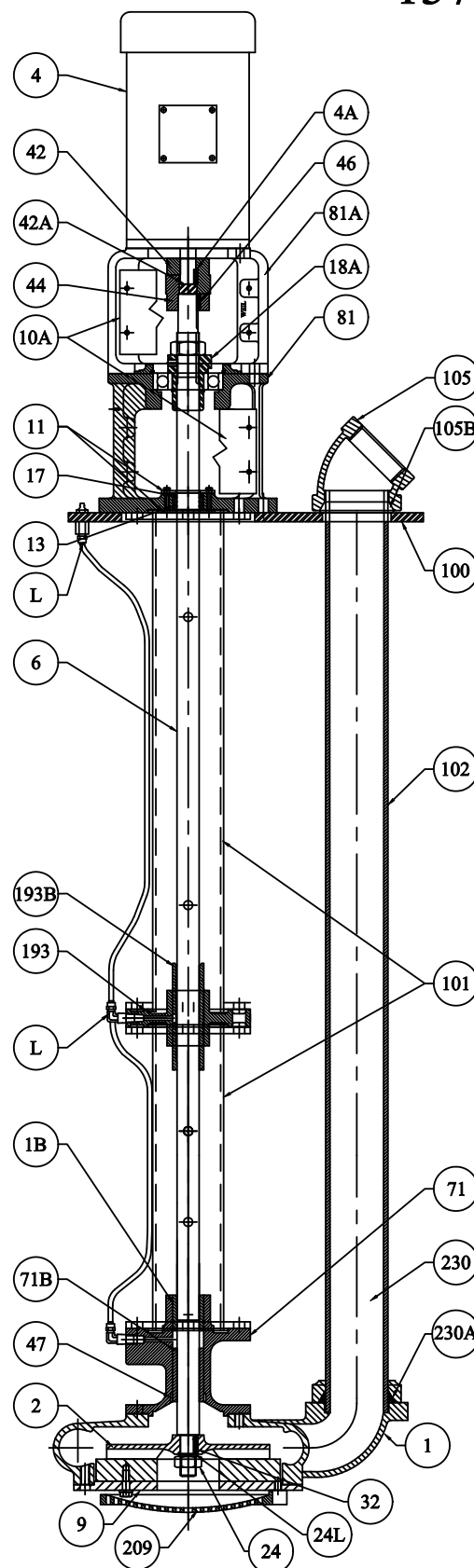
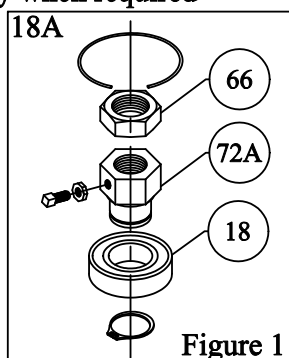
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**INSTALLATION
OPERATION
MAINTENANCE****PARTS BREAKDOWN****KEY NO. DESCRIPTION**

1	Case
1B ●	Sleeve Bearing (2 pc)
2	Impeller
4	Motor
4A	Key, Motor Shaft
6	Shaft
9	Suction Cover
10A	Coupling Guard
11 ●	Stuffing Box Cover
13 ●	Square Packing
17 ●	Packing Gland
18 ●	Ball Bearing
18A ●	Ball Bearing Thrust Assy. (See Fig. 1)
24 ●	Impeller Locknut
24L ●	Lock Washer
32 ●	Key, Impeller
42	Coupling Half, Motor Shaft
42A	Spider Coupling
44	Coupling Half, Pump Shaft
46 ●	Key, Pump Shaft Coupling
47 ●	Lip Seal
66 ●	Locking Nut
71	Lower Bearing Pedastal
71B ●	Sleeve Bearing
72A ●	Thrust Collar
81	Bearing Pedestal
81A	Motor Pedestal
100	Floor Plate
101	Pump Leg
102	Discharge Pipe
105	Discharge Elbow
105B	Weil Oval Gasket
193*	Intermediate Bearing Housing
193B*	Sleeve Bearing
209	Strainer (1300 Model's Only)
230	Case Discharge Flange
230A	O-Ring, Case Disch. Flange
L*	Grease Line Kit

* Only when required



Items marked with (●) are included in repair kit 201.396.101 for standard construction pumps.

Impeller Adjustment

The impeller has been adjusted at the factory to provide a 0.040" to 0.060" clearance between it and the case. Do not change this clearance unless rubbing takes place or a drop in pump performance is observed. To make adjustments, proceed as follows:

1. Remove coupling guard.
2. Hold thrust collar (72A) stationary while loosening locking nut (66).
3. Loosen set screw in thrust collar and in lower half of coupling (44).
4. While holding the shaft (6) stationary with the coupling, turn the thrust collar clockwise to raise and counter clockwise to lower the rotating assembly. One quarter turn equals approximately 0.020". One of the set screw holes in the thrust collar must line up with the slot in the shaft.
5. Tighten set screw in thrust collar and in lower coupling half (44) when proper clearance has been set.
6. Rotate shaft by hand after tightening set screws to make sure that rotating parts are running free.
7. Tighten locking nut while holding thrust collar stationary.
8. Reinstall coupling guard.

Disassembly

Disassemble only what is required for inspection or maintenance of pump. When ordering replacement parts, give the Weil representative in your area the pump model number and the manufactures number found under "OWNER'S INFORMATION" on page 1 of this manual or on the pump name plate. To disassemble, proceed as follows:

1. Pump down liquid level in basin and close gate valve in discharge line of pump.
2. Disconnect and lockout electrical supply to motor.

Caution

Make certain that electrical power supply cannot be accidentally turned on while pump is being serviced.

3. Remove coupling guard.
4. Remove motor (4) but do not remove motor half coupling (42). Remove spider coupling (42A). Loosen set screws in pump half of coupling (44) and remove coupling and key (46).
5. Disconnect piping at flange nearest to pump discharge elbow (105).
6. Remove floor plate mounting screws and lift pump out of basin. Lay pump across saw horses or similar support to facilitate dismantling.
7. Loosen and remove lubrication tubing (L) from case (1) and intermediate bearing housing(s) (193). DO NOT disconnect tubing at upper fitting or remove cable tie. If pump has intermediate bearings, mark legs (101) at intermediate bearing housing to assure proper alignment of lubrication lines (L) during re-assembly.

8. Remove locking nut (66) (this thread is right hand) and snap ring holding ball bearing (18). Loosen set screw and remove thrust collar and ball bearing.
9. Remove screws holding suction cover (9) to case (1).
10. Remove shaft (6) and impeller (2) from bottom of pump.
11. Remove impeller locknut (24). Place a wooden block on back shroud of impeller and tap gently until impeller is free.

Important

Protect threads if shaft is to be reused. Also file off all burrs on shaft made by set screws.

12. Remove screws holding case to lower leg.
13. Remove Packing Gland (17) and Packing (13).
14. If pump has intermediate bearing housing, remove screws and disassemble lower bearing housing.
15. Press sleeve bearing (193B) out of intermediate bearing housing. Press sleeve bearing (1B) out of case.

Reassembly

Reverse the above procedure with the following additions:

1. Flush out bearing bore with an EPA approved degreaser removing old grease and any abrasives.
2. Be certain that all parts that have been removed are clean and that all burrs are removed.
3. Replace O-rings (47).
4. Assemble sleeve bearings as follows:
 - a. Thoroughly clean bores of bearing housings (71) & (193). Avoid abrasives.
 - b. Remove all burrs from bearing bores and registers for tongue and groove connections.
 - c. Press sleeve bearings (71B) & (193B) into their respective housings (71) & (193). Lubrication grooves must face up and holes in sleeve bearings must line up with lubrication holes in intermediate bearing housing (193) and lower bearing housing (71).
5. When assembly is complete, rotate shaft (6) manually to check for binding and check impeller to suction cover clearance. If adjustment is needed, refer to paragraph entitled "IMPELLER ADJUSTMENT".
6. Locate all grease fittings and lubricate per lubrication paragraph before placing pump into service.

Note

See separate Vertical Sump Pump instructions for general Installation Operation and Maintenance.