



INSTALLATION AND OPERATOR'S MANUAL

## **Submersible Solids Handling Pump**

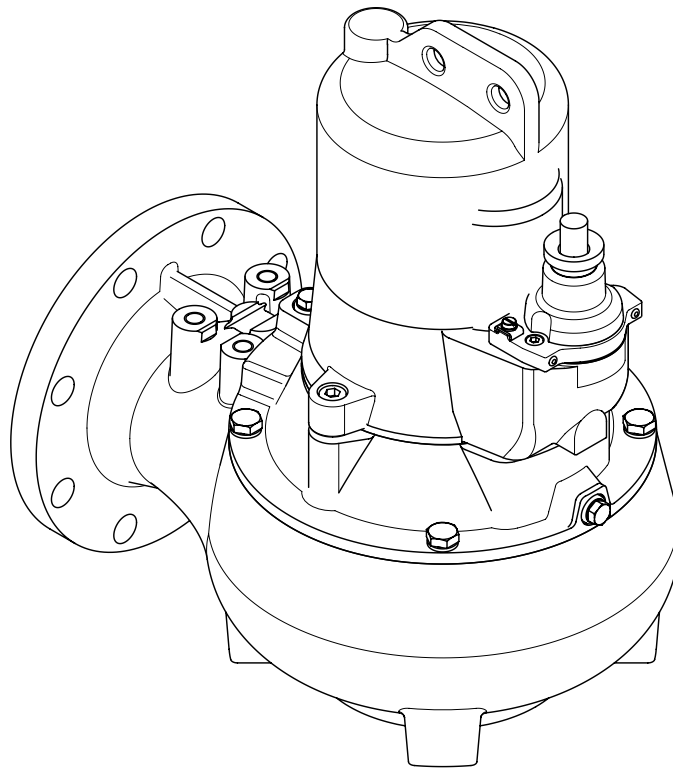
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### **Installation/Operation/Parts**

*For further operating, installation,  
or maintenance assistance:*

**Call 1-800-642-5930**

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Important Safety Instructions

**SAVE THESE INSTRUCTIONS** - This manual contains important instructions that should be followed during installation, operation, and maintenance of the product. Save this manual for future reference.

**⚠** This is the safety alert symbol. When you see this symbol on your pump or in this manual, look for one of the following signal words and be alert to the potential for personal injury!

**⚠ DANGER** indicates a hazard which, if not avoided, *will* result in death or serious injury.

**⚠ WARNING** indicates a hazard which, if not avoided, *could* result in death or serious injury.

**⚠ CAUTION** indicates a hazard which, if not avoided, *could* result in minor or moderate injury.

**NOTICE** addresses practices not related to personal injury.

The manufacturer cannot anticipate every possible circumstance that might involve a hazard. The warnings in this manual, and the tags and decals affixed to the unit are, therefore, not all-inclusive. If you use a procedure or operating technique that the manufacturer does not specifically recommend, you must satisfy yourself that it is safe for you and others. You must also make sure that the procedure or operating technique that you choose does not render the system unsafe.

Electrically powered sewage pumps normally give many years of trouble-free service when correctly installed, maintained, and used. However, unusual circumstances (interruption of power to the pump, large solids in the sump, flooding that exceeds the pump’s capacity, electrical or mechanical failure in the pump, etc.) may

prevent your pump from functioning normally. To prevent possible damage, consult your dealer about installing a secondary sewage pump or a high water alarm. See *Troubleshooting* in this manual for information about common sewage pump problems and remedies. For more information, see your retailer, call Jung Pumpen customer service at 1-800-642-5930 or visit our web site at [jungpumpen-us.com](http://jungpumpen-us.com).

**⚠ WARNING Hazardous voltage - risk of electrical shock.** Shock can cause serious injury or death. Failure to follow the warnings below can result in fatal electric shock.

**⚠ WARNING Hazardous voltage - risk of electrical shock: During operation the pump is in water:**

- Check your local codes before installing. You must comply with their rules. Only qualified personnel should install the pump and associated control equipment.
- Ground the pump according to all applicable codes and ordinances.
- Take care when changing fuses or resetting the circuit breaker. Disconnect power to the pump before servicing. Do not stand in water when working on the control box or with the circuit breaker panel.
- This pump is intended for permanent connection only. Do not connect conduit to pump. Provide a strain relief at the control box for the power supply cord connection to box. All control components must be UL or CSA listed and suitable for end use application.
- Do not remove cord or strain relief. Do not lift the pump by the power cord (See ‘Cord Lift Warning’).

**⚠ WARNING Burn Hazard.** Modern motors can operate at high temperatures. To avoid burns when servicing the pump, allow it to cool for 20 minutes after shut-down before handling it.

**⚠ WARNING Risk of explosion and hazardous gas.** Septic system must be vented in accordance with local plumbing codes.

- Do not smoke or use sparkable electrical devices or flame in a septic (gaseous) or possible septic sump.
- If a septic sump condition exists and if entry into sump is necessary, then (1) provide proper safety precautions per OSHA requirements and (2) do not enter sump until these precautions are strictly adhered to.
- Do not install the pump in any location classified as hazardous by National Electrical Code, ANSI/NFPA 70-1984.

Wear safety glasses at all times when working with the pump.

Do not run the pump dry. Dry running can overheat the pump and will void the warranty.

The pump requires periodic maintenance. Check the oil level and for water in the oil, as described in *Maintenance*.

Provide a means of pressure relief for pumps whose discharge line can be shut-off or obstructed.

The pump is frost-resistant to  $-4^{\circ}\text{F}$  ( $-20^{\circ}\text{C}$ ) when stored in dry conditions. It must not be allowed to freeze in water after installation.

## Installation

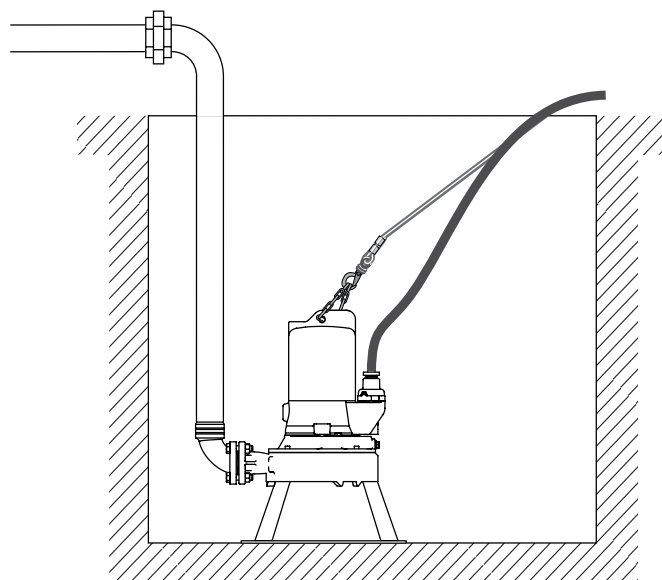
Handle with care. Check the items received against the packing list to be sure that all equipment has been received. Inspect the pump for shipping damage. If any is found, file a claim with the carrier immediately.

Thank you for purchasing this Jung Pumpen product. To help ensure years of trouble-free operation, please read the manual carefully.

This pump may be installed on an optional guide-rail lift-out system for ease of inspection and service. Otherwise, install the pump on a hard, level (cement, asphalt, etc.) surface. Never place the pump directly on earth, clay, sand, or gravel surfaces. An optional leg kit is available.

The basin or pit must be at least 24" (60 cm) in diameter and 30" (76 cm) deep. Reduce the number of bends in the discharge piping to keep the outlet flow as smooth as possible. Full dimensional information is found in *Product Specifications*.

Install the pump as a free-standing unit, with a pipe union in the discharge piping to allow removal for servicing. Figure 1 depicts a typical sewage pump in an ordinary pit.



**Figure 1: Typical free-standing installation**

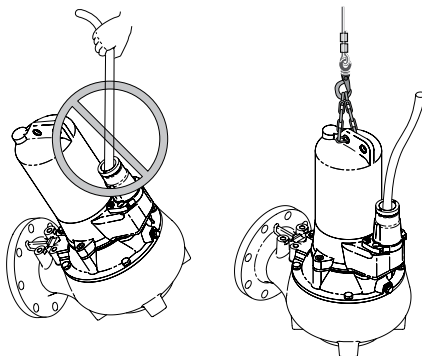
The discharge piping must not be smaller than the pump discharge. The pump must always be lifted by the lift-out chain or cable and never by the power supply cable. See *Cord Lift Warning*.

## Cord Lift Warning

### ⚠ WARNING



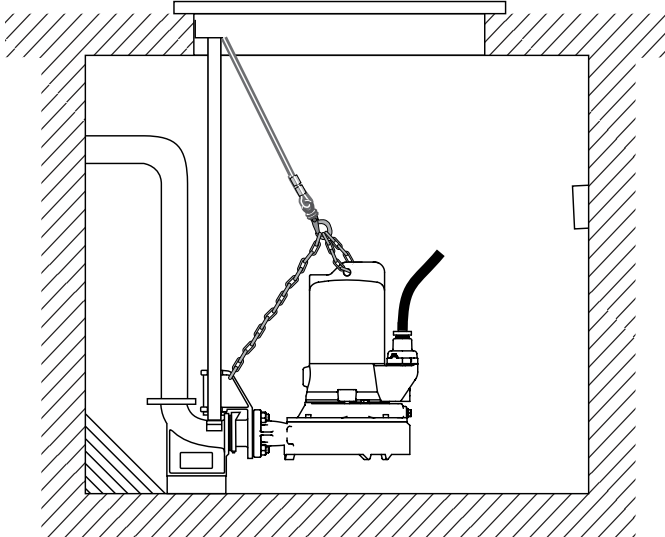
**Risk of electrical shock.  
Can burn or kill.  
Do not lift pump by power  
cord.**



### Risk of electrical shock and fire.

1. Attempting to lift or support the pump by the power cord can damage cord and cord connections, expose bare wires, and cause a fire or electrical shock.
2. Use handle on top of pump for all lifting or lowering of pump. Disconnect the power to the pump before doing any work on it or attempting to remove it from the pit.
3. Lifting or supporting the pump by the power cord will void the warranty.

Mounting the pump on guide rails permits easy inspection and service in permanent installations. Use the installation instructions supplied with the guide rail lift-out system. Place the pump opposite the influent opening to prevent stagnant areas where solids can settle. See Figure 2.



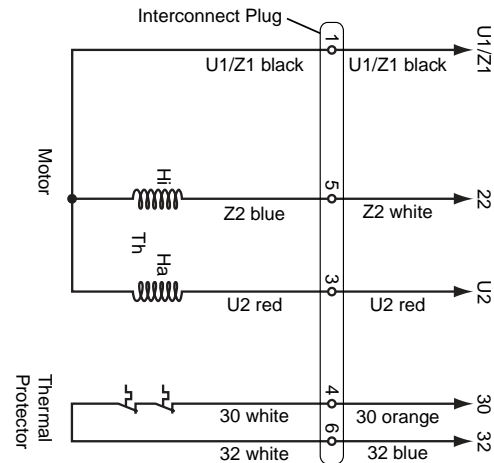
**Figure 2: Typical installation with guide rail system for permanent locations.**

## Electrical

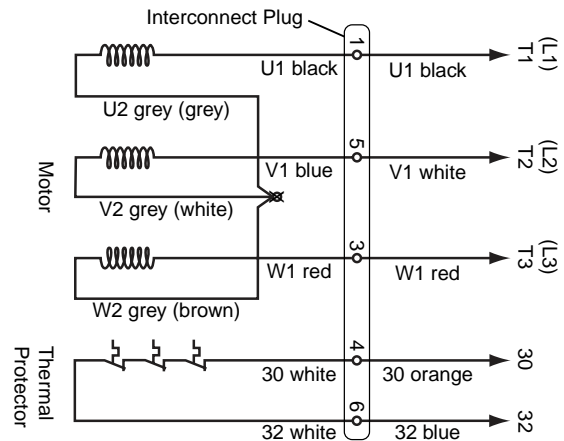
**⚠ WARNING Hazardous voltage. Can shock, burn, start a fire, or kill.** When installing, operating, or servicing this pump, follow electrical safety instructions. Only trained service personnel should install or service this pump.

1. DO NOT splice the power cord and never lay the cable ends in water.
2. DO NOT handle or service the pump while it is connected to the power supply.
3. DO NOT operate the pump unless it is properly grounded. Wire the pump directly into a grounded terminal block in an automatic float or pump controller box for automatic operation. Connect the pump according to all applicable codes. For continuous operation, wire the pump directly into the switch box.
4. Incorrect voltage can cause a fire or seriously damage the motor and voids the warranty. Make sure that the frequency and voltage shown on the nameplate corresponds to the frequency and voltage of the electrical supply. The supply voltage must be within + 10% of the nameplate voltage. If in doubt consult a licensed electrician.

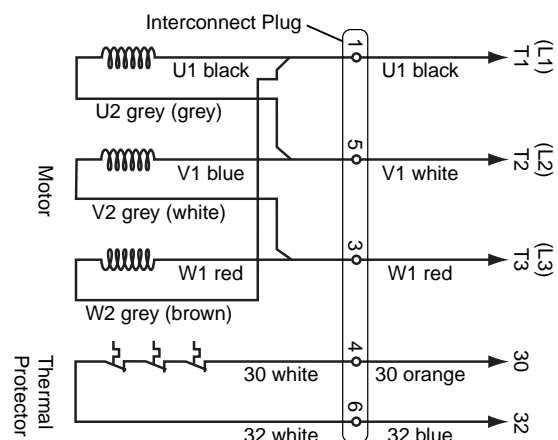
5. Connect the pump to its own dedicated circuit with no other load on the circuit. Figures 3, 4 & 5 show single and three phase wiring schemes.



**Figure 3: Single phase wiring diagram**



**Figure 4: Three phase star configuration wiring diagram**



**Figure 5: Three phase delta configuration wiring diagram**

6. Use a control panel sized to match the pump. Refer to control panel installation instructions for wiring connection information.
7. Install the pump in accordance with all electrical codes that apply. Install a fused disconnect switch or circuit breaker in accordance with local codes.
8. Any alterations to internal pump circuitry must be made using crimp connectors and professional tools.
9. The pump rotation must be clockwise (↻ – viewed from the top of the pump). NEVER operate it in reverse.

If a three phase unit runs backwards, interchange two of the three power supply wires to reverse the motor's direction of rotation.

## Control Panels

**⚠ WARNING** Risk of electric shock. Ground pump and motor before connecting controls or power supply. Adhere to local electrical codes governing pump and control installations.

A control panel is not included with the pump. Install a simplex or duplex control panel (purchase separately) for proper pump operation. Single phase pumps require a start package, as shown in *Product Specifications*. A full range of controls and switches are available from your dealer.

If a Jung Pumpen control panel is not used, install a control panel with circuit breaker or fused disconnect as required by local code. Use magnetic starters with ambient compensated overload protection. Three phase units require three line protection; single phase units require only one line protection. Inadequate protection voids the warranty.

## Control Panel Overload Adjustment – Three Phase

**NOTICE:** See your control panel installation and operating instructions before adjusting overload setting. Set the overload protective device to the nameplate full load current.

Size the overload protective device so that the trip current is 115% of the nameplate full load current.

## Operation

**⚠ WARNING** Hazardous cutter and possible unexpected starts. Rotation of the cutter with hands in the cutter area can cause loss of fingers. Disconnect the electrical power and keep your hands away from the pump inlet opening when working on or handling the pump for any reason. Do not use automatic reset controls with this pump. Single phase units have an automatic overload protector in the motor which will protect the motor from burning out due to overheating/overloading. When the motor cools down, the overload protector will automatically reset and start the motor. This can happen at any time. Three phase units require external overload protection. If the overload trips frequently, check for the cause. It could be:

- stuck impeller
- wrong/low voltage
- bad thermal overload protector
- electrical failure in the motor. If the motor has electrically failed, replace the pump.

**NOTICE:** Normal domestic sewage will cause very little dulling or wear of the pump parts. However, pumping abrasives (such as fine sand) will increase wear and tear and may make it necessary to replace certain pump components.

The pump is not equipped with thermostats or a leak sensor probe. Check the oil condition in the seal chamber quarterly in heavy duty service or annually in light duty service.

**NOTICE:** Failure to monitor the oil condition voids the warranty. Motors damaged by flooding of the motor cavity due to seal or O-Ring failure may not be covered under warranty.

Verify the capacity of the pump by checking the discharge. Verify that the pump is free from any vibration and noise.

To avoid overheating the motor for continuous operation, the pump must be completely submerged in liquid. Set the level switches to maintain this submerged condition. Do not allow the pump to run in a dry sump. It will void the warranty and may damage the pump.

## Maintenance

**Only qualified mechanics with proper tools and knowledge should attempt to service this pump.**

**⚠ WARNING Heavy parts.** Use lifting gear of appropriate capacity positioned directly over lift point(s).

### Seal Lubrication

Oil in the seal chamber should be changed after the first 300 operating hours, then each 1000 hours thereafter or annually. The oil fill/oil drain opening is labeled "OHL". After cleaning and sanitizing the pump, drain all oil and residue into a clean measuring container.

- If the oil is milky in appearance, it is contaminated with water. Refill pump with clean, fresh oil, using amounts and type shown in *Maintenance*. Check oil condition again after 300 operating hours.
- If the oil is contaminated with both water and pollutants, the main seal must be replaced and the oil changed. Recheck oil condition after 300 operating hours.

**NOTICE:** Whenever the main seal is being serviced, remove oil and replace with new oil at reassembly. Use only HLP hydraulic mineral oil, viscosity class 22 to 46 (Spinesso or Nuto, from ESSO).

The filling quantity is shown in *Product Specifications*.

**NOTICE:** Fill oil reservoir with the exact quantity of oil specified. The pump will become inoperable if overfilled.

### Cleaning the Impeller

**⚠ WARNING Hazardous voltage, hazardous cutter, and possible unexpected starts.** Disconnect the electrical power and keep your hands away from the pump inlet opening when working on or handling the pump for any reason. Do not use automatic reset controls with this pump.

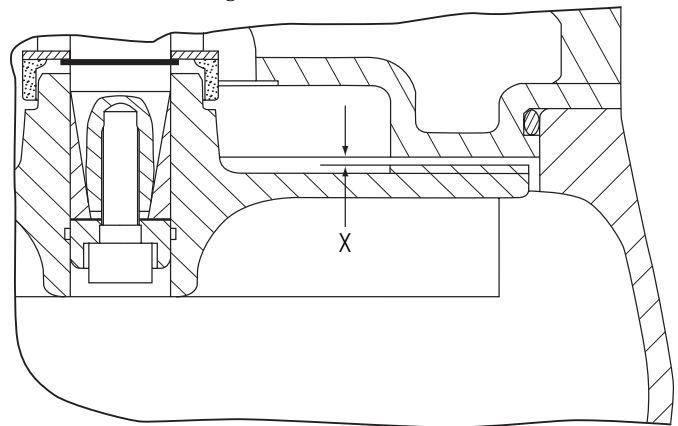
1. Disconnect the electrical power supply.
2. Disconnect the discharge piping (this step is not necessary if you have a guide-rail lift-out system).
3. Hoist the pump out of the pit using the lift-out system or the lifting chain (not the cord) and place the pump in a suitable area where it can be cleaned.
4. Remove all scale and deposits from the pump. Check visual appearance of all pump housing screws and mating surfaces. Tighten any loose fasteners.

**⚠ WARNING Risk of infection from pathogens** (such as hepatitis) which can collect on pump during normal operation. Submerge the complete pump in a disinfectant solution (dilute chlorine bleach) for at least one hour before disassembly.

5. Unscrew four 5 mm Allen screws attaching the volute and remove the volute casing. It may be necessary to tap around the parting line with a lead or rawhide hammer to loosen the casing.
- ⚠ CAUTION** Wear protective gloves. Worn impellers can have sharp edges that could cut or scratch.
6. Carefully clean the impeller and volute surfaces. Inspect for obvious cracks or damage.
7. Reverse step 5 to reassemble the pump.

### Impeller Replacement

1. Remove four 5 mm Allen screws that attach the volute and remove the volute casing. It may be necessary to tap around the parting line with a lead or rawhide hammer to loosen the casing.
- ⚠ CAUTION** Wear protective gloves. Worn impellers can have sharp edges that could cut or scratch.
2. Wedge the impeller with a piece of wood and loosen the central impeller screw located in the impeller hub.
3. Loosen the impeller by striking it gently with a lead or rawhide hammer, then slide it off the motor shaft.
4. Clean all exposed surfaces, including motor shaft.
5. Grease the shaft cover on the inside. **DO NOT** use grease containing graphite (like Molykote).
6. Assemble all impeller-mounting components and tighten finger tight.
7. Slide a new impeller over impeller mount.
8. Set impeller-to-motor housing gap (X) to .007" (2 mm). See Figure 6.



**Figure 6: Impeller clearance**

9. Block impeller with a piece of wood and tighten central impeller screw to 48 ft-lb (65 Nm).
10. Attach motor unit to volute casing. Finger tighten four 5 mm Allen screws, then torque each to 5.9 ft-lb (8 Nm). The cable entry point is opposite the discharge opening.



## Main Seal Replacement

1. Follow steps 1 through 4 under "Cleaning the Impeller".
2. Follow steps 1 through 4 under "Impeller Replacement".
3. Lay the pump on its side and remove the oil plug from the bracket. Drain oil into a clean container and check for water in the oil and for pollutants in the oil.

**NOTICE:** Water is heavier than oil. Look for water at the bottom of the oil. It will appear as tiny bubbles. If there is water present in the oil, the shaft seal or the O-Ring will need to be replaced. If there is no water present in the oil, the shaft seal and O-Ring do not need replacing.

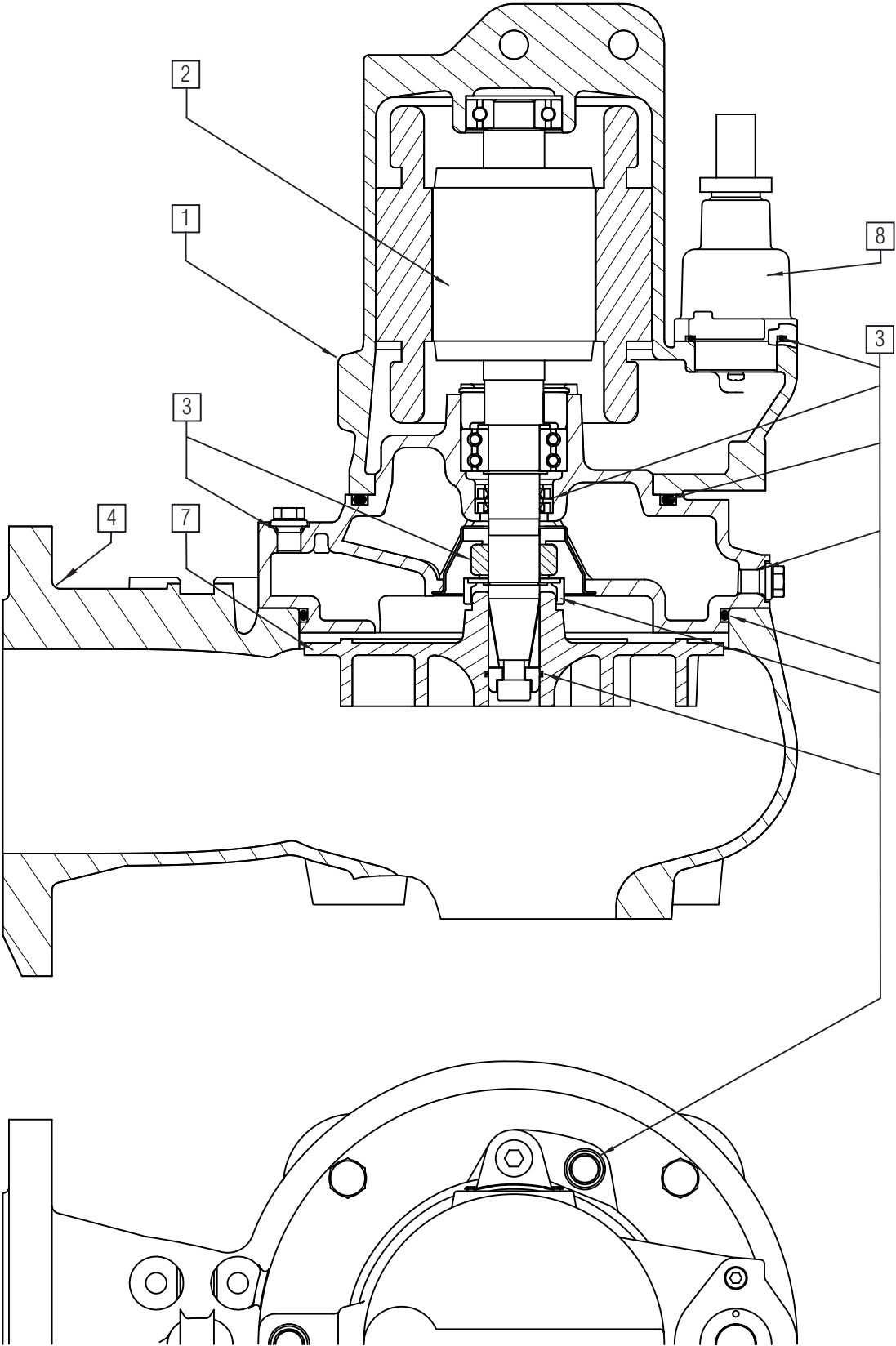
4. Remove the two 8 mm capscrews that hold the motor housing to the bracket. Tap around the parting line with a lead hammer or rawhide mallet to loosen the motor housing. Remove the motor housing from the bracket.
  5. Remove the oil seal and oil seal bushing from the motor housing.
  6. Remove the motor housing O-Ring and clean the O-Ring groove.
  7. Remove the seal retaining ring from the motor housing.
- NOTICE:** The shaft seal consists of 5 parts - the upper and lower silicon carbide seals, two rotating silicon carbide seals, and the spring. Be sure that you do not scratch or mar the shaft when removing the seals. If the shaft is marred, it must be dressed smooth with fine emery or crocus cloth before installing new seal. Do not reduce the shaft diameter.
8. Pull and turn the rotating seal halves to remove them from the motor shaft. If necessary, use a flat blade screwdriver to help pry the seals from the shaft.
  9. Unscrew four capscrews and remove the bracket from the motor housing.
  10. Use a flat blade screwdriver and very carefully pry the lower seal half from the cavity.
  11. Use a flat blade screwdriver and very carefully pry the upper seal half from the bracket cavity.

## Installing the New Shaft Seal

**NOTICE:** Install all new O-Rings, seals, and gaskets during reassembly. It is good practice to replace the O-Rings each time the pump is serviced.

1. Clean the seal cavities in the bracket and motor housing.
  2. Lubricate the seals with a very small amount of clean oil.
  3. Inspect the shaft for nicks and scratches.
  4. With finger pressure only, press the stationary seal halves firmly and squarely into the seal cavities in the bracket and motor housing.
- NOTICE:** Be sure you do not scratch the seal surface.
5. Reinstall the lower seal retaining ring.
  6. Reinstall the bracket on the motor. Use a new O-Ring. Torque 8 mm capscrews to 48 ft-lb (65 Nm).
  7. Slide the rotating seals and the spring onto the shaft.
- NOTICE:** Be sure you do not scratch the seal surface. Be careful that the shaft shoulder does not damage the seal faces when they are passing over the shaft. Make certain the polished surfaces of the rotating seals face the mating surfaces of the stationary seal halves.
8. Clean the O-Ring groove in the bracket and install a new O-Ring.
- NOTICE:** It is good practice to replace the O-Rings each time the pump is serviced.
9. Reinstall the volute casing on the bracket. Torque four Allen screws to 5.9 ft-lb (8 Nm).
  10. Grease the shaft cover on the inside. DO NOT use grease containing graphite
  11. Assemble all impeller-mounting components and tighten finger tight.
  12. Slide impeller over impeller mount.
  13. Set impeller-to-motor housing gap to .007" (2 mm). See Figure 6.
  14. Block impeller with a piece of wood and torque central impeller screw to 48 ft-lb (65 Nm).
  15. Attach motor unit to volute casing. Torque four Allen screws to 5.9 ft-lb (8 Nm).
  16. Refill pump with specified amount of fresh, clean oil. Do not overfill.
  17. Position pump vertically and check for free impeller rotation.

The pump is ready to return to service.





Item # ->	1	2	3	4	7	8		
Model	Housing with stator	Rotor	Seal Set*	Volute Casing	Impeller	Cord & Cord Entry		
						25'	50'	100'
V1D-01	RP-JP43648	RP-JP44220	RP-JP22032	RP-JP43055	RP-JP43091	RP-JP43063	RP-JP43701	RP-JP43702
V1D-21								
V1D-03	RP-JP21754							
V1D-23								
V1D-43								
V15D-01	RP-JP43649	RP-JP43654						
V15D-21								
V15D-03	RP-JP21754							
V15D-23								
V15D-43								
V2D-01	RP-JP43649	RP-JP43654						
V2D-21								
V2D-03	RP-JP21754							
V2D-23								
V2D-43								
V3D-01	RP-JP43650	RP-JP43363						
V3D-21								
V3D-03	RP-JP21757							
V3D-23								
V3D-43								
V5D-43	RP-JP43902	RP-JP22733	RP-JP22851	RP-JP43937	RP-JP43873	RP-JP43061	RP-JP43701	RP-JP43702
V7D-43	RP-JP43903	RP-JP22734			RP-JP43875			

\* Seal Set includes all O-rings, shaft cover, supporting washer, rotary shaft seal and mechanical seal to service entire pump.

**⚠ WARNING** **Hazardous voltage.** Can shock, burn, or kill. Disconnect power before attempting any service or repair work on pump.

**⚠ WARNING** **Hazardous impellers and unexpected starts which can cause loss of fingers.** Keep hands away from pump suction inlet when working on or servicing pump.

Symptom	Possible Cause(s)	Corrective Action
Motor not running	Motor protector tripped.	Allow motor to cool. Make sure pump is completely submerged. Clear debris from volute and impeller. Check for high amp draw.
	Open circuit breaker or blown fuse.	Replace fuse or reset breaker. If circuit breaker opens repeatedly, don't reset it - call a licensed electrician.
	Impeller clogged or binding.	Check amp draw. If it is more than twice the nameplate amps, the impeller is locked. Bearings and shaft may be damaged. DISCONNECT POWER, clear debris from volute, impeller, and cutter as needed.
	Power cable damaged.	Resistance between power cable and ground should be infinity. If any reading is less than infinity, call a licensed electrician.
	Bad control panel.	Inspect control panel wiring. Call a licensed electrician.
	Defective liquid level switch.	With switch disconnected from power, check continuity through switch while activating liquid level switch. Replace switch if necessary.
	Not enough liquid in wet well to activate controls.	Allow the liquid to rise several inches above the switch-on level.
	Liquid level cords tangled	Untangle cords for free operation.
	Automatic controls defective	Try running pump in manual mode. If it runs, the automatic control is at fault.
Pump runs continuously	Liquid level control cords tangled	Untangle cords for free operation.
	Pump is airlocked.	Stop pump for about one minute, then restart. Repeat stopping and starting until the airlock clears. If the airlock persists, DISCONNECT POWER, pull the pump and drill a 1/8" hole in the discharge pipe between the pump discharge and the check valve.
	Flow in matches or exceeds the pump's capacity.	A larger pump or more pumps may be needed.
Little or no effluent delivered from pump	Check valve plugged, stuck shut, or installed backwards.	Make sure check valve is installed correctly (flow arrow should point away from pump) and functioning correctly.
	System head excessive.	Consult dealer.
	Pump suction plugged.	DISCONNECT POWER, pull pump, inspect, and clear as needed.
	Wrong voltage or not wired correctly.	Check pump's rotation; check nameplate voltage against supply voltage (they must match); consult a licensed electrician.
	Pump is air locked.	Stop pump for about one minute, then restart. Repeat stopping and starting until the airlock clears. If the airlock persists, DISCONNECT POWER, pull the pump and drill a 1/8" hole in the discharge pipe between the pump discharge and the check valve.
	Worn or damaged impeller.	DISCONNECT POWER, pull pump and inspect impeller. Replace if necessary.
	Liquid level controls incorrectly installed or defective.	Reposition or replace as necessary.
Pump cycles constantly	No discharge check valve installed.	Install discharge check valve.
	Discharge check valve stuck open.	Repair or replace check valve as necessary.
	Sewage wetwell too small.	Consult dealer.
	Liquid level controls incorrectly installed or defective.	Reposition or replace as necessary.
	Pump too small for inlet flow.	Consult dealer about larger pump or second pump.

## Limited Warranty

Jung Pumpen warrants to the original consumer purchaser ("Purchaser" or "You") of Jung Pumpen Effluent Pumps, Sewage Pumps, and Package Systems, that they will be free from defects in material and workmanship for the Warranty Period of 12 months from date of manufacture.

Our warranty will not apply to any product that, in our sole judgement, has been subject to negligence, misapplication, improper installation, or improper maintenance. Without limiting the foregoing, operating a three phase motor with single phase power through a phase converter will void the warranty. Note also that three phase motors must be protected by three-leg, ambient compensated, extra-quick trip overload relays of the recommended size or the warranty is void.

Your only remedy, and Jung Pumpen's only duty, is that Jung Pumpen repair or replace defective products (at Jung Pumpen's choice). You must pay all labor and shipping charges associated with this warranty and must request warranty service through the installing dealer or selling distributor as soon as a problem is discovered. No request for service will be accepted if received after the Warranty Period has expired. This warranty is not transferable.

EXCEPTIONS: Special Application Pumps, Filtered Effluent Pumps, Grinder Pumps, 2-1/2" Sewage Pumps, and Lift Systems are warranted for a period of 12 months from date of purchase or 18 months from date of manufacture, whichever comes first.

Jung Pumpen SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, OR CONTINGENT DAMAGES WHATSOEVER.

THE FOREGOING LIMITED WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE FOREGOING WARRANTIES SHALL NOT EXTEND BEYOND THE DURATION EXPRESSLY PROVIDED HEREIN.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on the duration of an implied warranty, so the above limitations or exclusions may not apply to You. This warranty gives You specific legal rights and You may also have other rights which vary from state to state.

This limited warranty supersedes and replaces all previous warranty publications.

**Jung Pumpen**  
**293 Wright Street, Delavan, WI 53115**  
**Phone: 800-642-5930 • jungpumpen-us.com**

Model	HP	PHASE	Frequency	Voltage*	F.L.C.	R.P.M.	Max. head		Max. flow rate		Weight †		Cable SOOW	START PAK				
			Hz	Volts	Amp	1/min	ft	m	GPM	LPM	lbs	kg						
V1D-01	1	1	60	200	9	1680	16	5	264	999	108	49	12/6 AWG 12	SPGV-7				
V1D-03		3				1685								Not Required				
V1D-21		1		230	8	1680								SPGV-8				
V1D-23		3				1685								Not Required				
V1D-43		460				3.5												
V15D-01	1.5	1		200	13.3	1675	23	7	352	1332				SPGV-9				
V15D-03		3												9.7	Not Required			
V15D-21		1		230	11.6									SPGV-10				
V15D-23		3												7.4	Not Required			
V15D-43		460												4				
V2D-01	2	1		200	17.2	1650	31	9	396	1499				SPGV-11				
V2D-03		3												10.7	Not Required			
V2D-21		1		230	15.5	1675								SPGV-12				
V2D-23		3				8.7								Not Required				
V2D-43		460				4.6												
V3D-01	3	1		200	20.5	1720	36	11	484	1832	117	53	10/6 AWG 10	SPGV-13				
V3D-03		3					39	12					12/6 AWG 12	Not Required				
V3D-21		1		230	18.5	1720	36	11					10/6 AWG 10	SPGV-14				
V3D-23		3					1670	39					12	12/6 AWG 12	Not Required			
V3D-43		7																
V5D-43*	5	3		460	10.2	1680	44	13	660	2498	249	113						
V7D-43*	7.5					12.3	1670	52	16	748	2831	258	117					

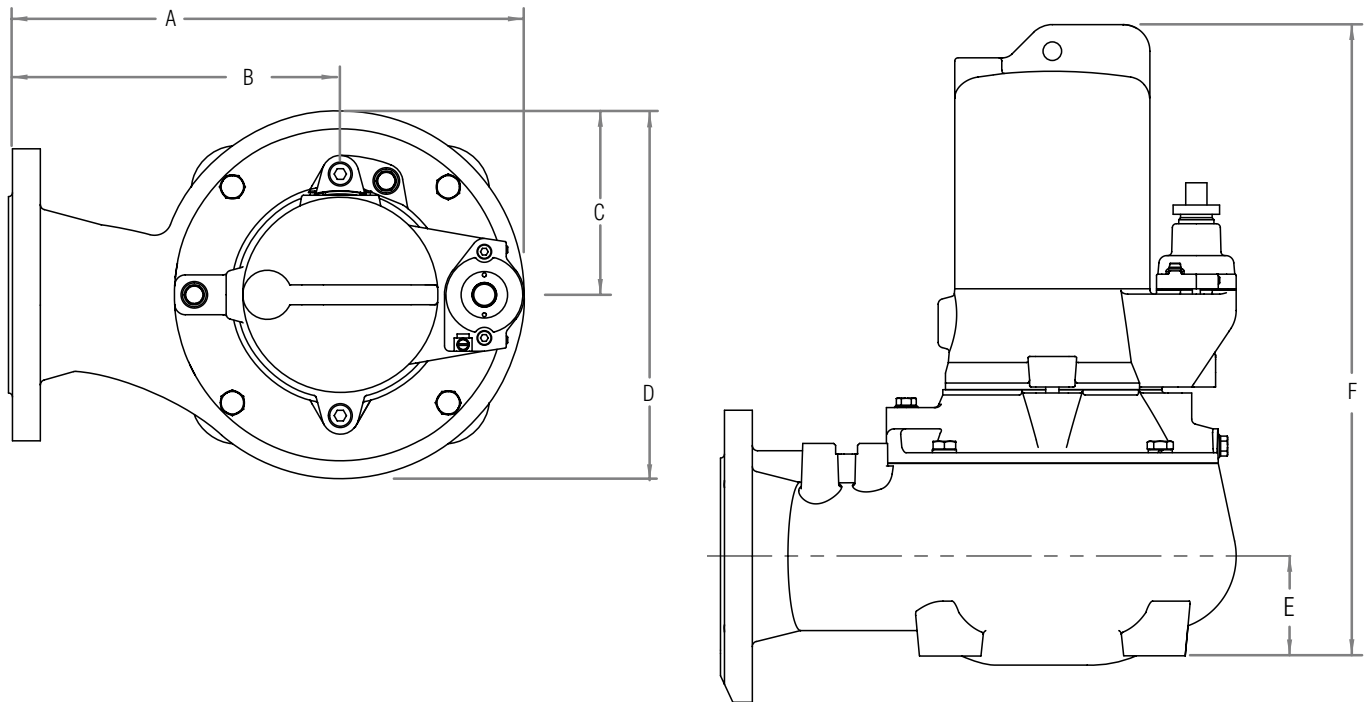
\* Input voltage  $\pm 10\%$

† Weight with 25 ft (7.6 m) cable. Add 7 lb (3.2 kg) for each additional 25 ft (7.6 m).

‡ Oil chamber capacity is 61 in<sup>3</sup> (1000 cc) except for V5D and V7D, which is 103.7 in<sup>3</sup> (1700 cc)

**For parts or assistance, call Jung Pumpen Customer Service at 1-800-642-5930**

**Table I: Dimensional specifications**



Model	A		B		C		D		E		F									
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in								
V1D-01	385.5	15.18	247	9.72	138.6	5.46	277	10.91	75	2.95	440.5	17.34								
V1D-21																				
V1D-03																				
V1D-23																				
V1D-43																				
V15D-01											475.5	18.72								
V15D-21																				
V15D-03											440.5	17.34								
V15D-23																				
V15D-43																				
V2D-01											475.5	18.72								
V2D-21																				
V2D-03											440.5	17.34								
V2D-23																				
V2D-43											525.5	20.69								
V3D-01	402.5	15.85																		
V3D-21		15.85																		
V3D-03	385.5	15.18	247	9.72	138.6	5.46	277	10.91	75	2.95	475.5	18.72								
V3D-23		15.18																		
V3D-43		15.18																		
V5D-43	486.5	19.15									638	25.12								
V7D-43																				