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VE Series VS Series

Wastewater Pumps

Installation & Operating Manual



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Introduction

This manual was prepared to assist the installer and/or operator in understanding the proper method of installing, operating and maintaining the V Series Wastewater Pump. We recommend that you thoroughly understand the proper installation and start-up procedures, prior to starting the pump.

Check the following point upon receipt of your pump:

- 1) Is the pump exactly what you ordered? **Check nameplate.**
- 2) Has and damage occurred during shipment? Are any bolts or nuts loose?
- 3) Have all necessary accessories been supplied?

We recommend that you keep a spare pump on hand in case of emergencies. Keep this instruction manual in a place for future reference.

Specifications

Check the nameplate for your pumps's head (HEAD), discharge volume (CAPACITY), speed (SPEED), motor voltage and current.

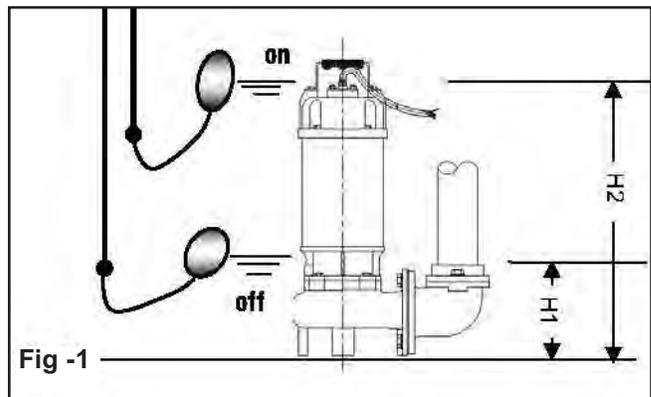
Other specifications are noted in the chart.

Item		Specifications
Liquid handled	Type	Sewage, waste water, miscellaneous drain water.
	Temperature	32-104 Degrees F
Materials	Casing	Cast iron
	Impeller	Cast iron / 316 SS (optional)
	Shaft	410 SS
Motor type		Dry type submersible motor
Shaft seal lubrication oil		Turbine No. 32 ISO VG-32
Maximum water depth		30 Feet

Installation

We recommend that an auxiliary pump be kept on hand in case of emergency.

- 1) **Warning:** *Under no circumstances should cable be pulled* while the pump is being transported or installed. Attach a chain or rope to the grip and install the pump.
- 2) This pump must not be installed on its side or operated a dry condition. Ensure that it is installed upright on a secure base.
- 3) Install the pump at a location in the tank where there is the *least turbulence*.
- 4) If there is a flow of liquid inside the tank, *support the piping* where appropriate.
- 5) Install piping so that air will not be entrapped. If piping must be installed in such a way that air pocket are unavoidable, install an air release valve wherever such air pockets are most likely to develop.
- 6) Do not permit end of discharge piping to be submerged, as backflow will result when the pump is shut down.
- 7) *To avoid dry operation, install an automatic operating system, as shown in Fig-1* and maintain a safe operating water level.
- 8) For *automatic pumps*, install the floats as shown in **Fig-2**. The pump may not start if a float switch touches the wall of the water tank or the piping. Install the floats so that this will not happen.



H1: Lowest water level (Motor flange)

H2: Operating water level.
This must be above the top of the motor.

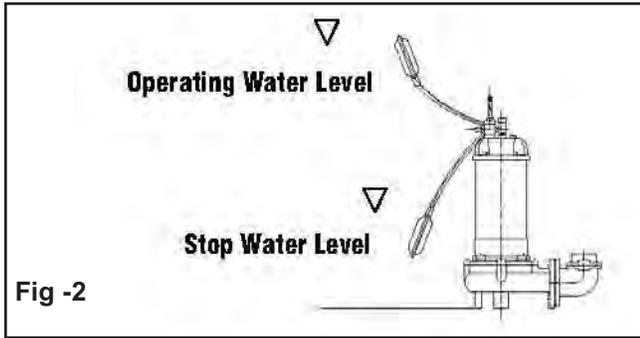


Fig -2

Electrical Wiring

Cable

- 1) **Warning:** Never let the end of the cable contact water.
- 2) If the cable is lengthened, do not immerse the splice in water.
- 3) Fasten the cable to the discharge piping with tape or vinyl strips.
- 4) Install the cable so that it will not overheat. Overheating can be caused by coiling the cable or exposing it to direct sunlight.

Operation

- 1) Check water level.
If the pump is operated continuously for an extended period of time in a dry condition or *at the lowest water level, the motor protector will be activated*. Constant repetition of this action will shorten pump service life. Do not start the pump again in such a situation until after the motor has completely cooled.
- 2) **Test operation**
A) Turn the operating switch on and off a couple of times to check for normal pump start. Float switch must be raised for the pump to start.

Disassembly & Assembly

Disassembly

Before starting contact webtrol sales representative. When disassembling pump, have a piece of cardboard or wooden board ready to place the different parts on as you work. Do not pile parts on top of each other. They should be laid out neatly in rows. The "O" ring and gasket cannot be used again once they are removed. Have replacement parts ready. Disassemble in the following order, referring to the sectional view.

Be sure to cut off power source beginning disassembly.

- 1) Remove pump casing bolts, raise the motor section and remove pump casing.
- 2) Remove shaft head bolt and impeller.
- 3) Remove oil filler plug and drain lubricating oil.
- 4) Remove intermediate casing bolts and intermediate oil chamber. (Remember that any lubricating oil remaining in the mechanical seal chamber will flow out.)
- 5) Carefully remove mechanical seal, taking care not to scratch sliding surface of motor shaft.

Assembly

Re-assemble in reverse order of disassembly. Be careful of the following points.

- 1) During re-assembly, rotate the impeller by hand and check for smooth rotation. If rotation is not smooth, perform steps (3) through (5) again.
- 2) Upon completion of re-assembly step (1) rotate the impeller by hand from the suction inlet and check that it rotates smoothly without touching the suction cover before operating the pump.

System Trouble Shooting

Does not start. Starts, but immediately stops.

Possible Cause Of Trouble	Corrective Action
Power failure	Contact electric power company and devise counter-measures
Large discrepancy between power source and voltage	Contact electric power company and devise counter-measures
Significant drop in voltage	Contact electric power company and devise counter-measures
Motor phase malfunction	Inspect electric circuit
Electric circuit connection faulty	Correct wiring
Faulty connection of control circuit	Inspect connections and magnetic switch
Fuse blown	Replace with correct type of fuse
Faulty magnetic switch	Replace with correct one
Water is not at level indicated by float	Raise water level
Float is not in appropriate level	Adjust the position of float
Float defective	Repair or replace
Short circuit breaker is functioning	Repair location of short circuit
Foreign matter clogging pump	Remove foreign matter
Motor burned out	Repair or replace
Motor bearing broken	Repair or replace

Operates, but stops after a while.

Possible Cause Of Trouble	Corrective Action
Prolonged dry operation has activated motor protector and caused pump to stop	Raise stop water level
High liquid temperature has activated motor protector and caused pump to stop	Lower liquid temperature
Reverse rotation	Correct rotation (see Operation)

Does not pump. Inadequate volume.

Possible Cause Of Trouble	Corrective Action
Reverse rotation	Correct rotation (see Operation)
Significant drop in voltage	Contact electric power company and devise counter-measures
Operating a 60 Hz pump on 50Hz	Check nameplate
Discharge head is high	Recalculate and adjust
Large piping loss	Recalculate and adjust
Low operating water level causes air suction	Raise water level or lower pump
Leaking from discharge piping	Inspect, repair
Clogging of discharge piping	Remove foreign matter
Foreign matter in suction inlet	Remove foreign matter
Foreign matter clogging pump	Remove foreign matter
Worn impeller	Replace impeller

Over current

Possible Cause Of Trouble	Corrective Action
Unbalanced current and voltage	Contact electric power company and devise counter-measure
Significant voltage drop	Contact electric power company and devise counter-measure
Motor phase malfunction	Inspect connections and magnetic switch
Reverse rotation	Correct rotation (see Operation)
Low head. Excessive volume of water	Replace pump with low head pump
Foreign matter clogging pump	Remove foreign matter
Motor bearing is worn or damaged	Replace bearing

Pump vibrates; excessive operating noise.

Possible Cause Of Trouble	Corrective Action
Motor bearing is worn or damaged	Correct rotation
Pump clogged with foreign matter	Disassemble and remove foreign matter
Piping resonates	Improve piping
Gate valve is closed to far	Open gate valve

Thank You for Purchasing a V Series Wastewater Pump

We at Webtrol are constantly working on new products to make your job easier, while making your systems more efficient, reliable and affordable. Your opinion means a lot to us, so please let us know what you think about our V Series Wastewater Pump.

