



There when you need us most


MVP
Grinder Series
MVPS Grinder Pump

Installation & Operating Manual



Congratulations on Your Choice in Purchasing this Webtrol Pump!

Its Quality is unsurpassed in material and workmanship and has been factory tested.
If properly installed, it will give many years of trouble free service.

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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 MVPS grinder pump. We recommend that you thoroughly understand the proper installation and start-up procedures, prior to starting the pump.

Check the following upon receipt of your pump:

- 1) Is the pump exactly what you ordered? **Check nameplate.**
- 2) Has any 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 | Type | Sewage, waste water |
| | Temperature | 32-104 Degrees F |
| Materials | Casing | Cast iron |
| | Cutter | 304 SS |
| | Cutter ring | 440 SS |
| | Shaft | 410 SS |
| Motor type | | Oil filled submersible motor |
| Shaft seal lubrication oil | | Turbine No. 32 ISO VG-32 |
| Maximum water depth | | 30 Feet |

Specifications

| Model | HP | Volt | AMP | Phase | Dimensions (L X W X H) | Weight |
|------------|-----|------|------|-------|---------------------------|---------|
| MVPS15CE/R | 1.5 | 230 | 10.5 | 1 | 16"x12.5"x28.5" | 88 Lbs. |

Installation

Grinder pumps must be installed in a tank that is vented in accordance with local plumbing codes. Installation should be at sufficient depth to ensure that all plumbing is below frost line. Installation and piping instruction are included with control panel, rail system and basin instructions. If pump is being retro-fitted to an existing rail system, accessory parts may be required. Consult the factory and advise make and model of rail system being used.

- 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 in dry condition. Ensure that it is installed upright on a secure base.
- 3) Install the pump in a location inside of the tank where there is the *least amount of 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, similar to typical installation in Fig 1.*

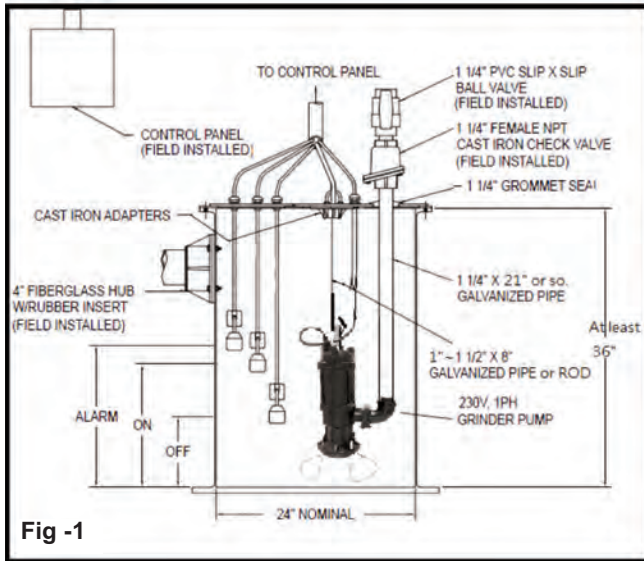


Fig -1

Electrical

Caution

- 1) Check your local electrical and plumbing codes to ensure you comply with regulations. These codes have been design with your safety in mind. Be sure to comply with them.
- 2) We recommend that separate circuit be run from home electrical distribution panel that is properly protected with a fuse or circuit breaker. We also recommend that GFCI be used. Consult local electrician for wiring.
- 3) The ground terminal on three prong plugs should never be removed.
- 4) Never make adjustment, with power connected. Do not only unscrew the fuse or trip the breaker, remove the power plug from receptacle.

Supply voltage

- 1) Ensure that the electrical power supplying panel is "OFF".
- 2) Ensure that grinder pump (double) and alarm (single) circuit breakers in the panel are in "OFF" position.
- 3) Turn power "ON" to the panel from the building service panel.
- 4) Using test (volt) meter verify that the incoming panel voltage is within 10% of pump nameplate voltage (for 230V pump, voltage at he panel must be 207V - 253V) If the voltage is outside this range, do not continue with station start-up. The voltage problem must be corrected prior to proceeding.

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

Warning: Severe injury may result from accidental contact with moving cutters. Keep clothing, hands and feet away from cutters any time power is connected to the pump.

- 1) The MVPS grinder pump is a semi-positive displacement pump that is designed for grinding/pumping of residential sewage.
- 2) The MVPS grinder pump is single phase so rotation check is not necessary.
- 3) Run water into pit/basin until motor is covered.
- 4) Make sure discharge line is open.
- 5) Turn pump on. If pump runs and sump liquid does not pump down, stop pump and close discharge valve. If on guide rail system, lift pump until sealing flange is open to vent off trapped air. Lower pump, open discharge valve, start pump again.
- 6) Level control should be set so that pump turns off when level is at least 2 inches above inlet of pump suction and turns on when level is minimum 2 inches above motor.
- 7) The MVPS comes with thermal overload protection that shuts the motor off when it overheats because of low voltage, trash in the pump or other problems. Normally, motor cools in 10 minutes and restarts automatically.

Disassembly of Cutter

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.

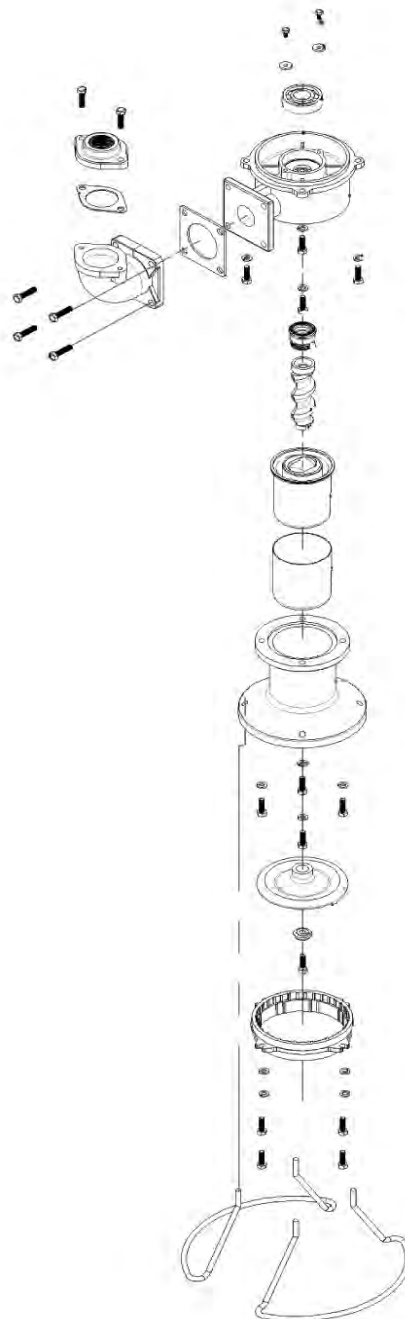
Warning: Let pump cool for at least 20 minutes before attempting to service. Motor may be extremely hot. Personal injury may result. Always disconnect the electrical supply before attempting to install, service, or perform any maintenance. If the power source is out of sight, lock and tag in the open (off) position to prevent unexpected power applications. Disconnect electrical cord from power supply. Failure to do so can result in fatal electrical shock. Only qualified electrician should repair this unit. Improper repair could result in fatal electrical shock.

- 1) Remove the 4 bolts from cutter ring seat with socket wrench/spanner, then remove cutter ring.
- 2) Unscrew the nut off the shaft end with spanner or wrench. You should hold the cutter with pliers. Make sure to be careful as the cutter will slide down from the shaft.
- 3) Hold cutter seat and clean each slot on the inside diameter using a small diameter file.
- 4) Never remove the plastic stator without consulting factory first.
- 5) Always beware of cutter vanes, as well as the cutter ring as they are extremely sharp.
- 6) Clean the cutter ring with wire brush and file smooth any nicked slots.
- 7) Before replacing grinder cutter, make sure cap screw on the bottom of the pump shaft is tight.
- 8) Make sure the cutter and the shaft turns freely by hand after reassembly. There should not be any binding or tight spots after the cutter is fastened.
- 9) If there is any rub or drag on the cutter ring, loosen the 4 bolts on the cutter ring seat and tap lightly with the hammer to loosen. Then retighten the bolts. Be sure to tighten the bolts evenly, by diagonally alternating tightening. **DO NOT COMPLETELY TIGHTEN ONE BOLT BEFORE TIGHTENING THE OTHER ONES. THIS WILL CAUSE MISALIGNMENT AND LOCKING OF SHREDDING RING AND CUTTER.**

Maintenance

- 1) Check pressure, flow, voltage, current and other specifications on an annual basis. Unusual readings may indicate a problem. Refer to Trouble shooting and correct as soon as possible.
- 2) Conduct an overhaul of the pump every 3-5 years. These overhauls will prevent the possibility of future trouble.

Cutter/Screw Assembly



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 |
|--|--|
| 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 |

Owners Information

Name Of Dealer: _____ Phone: _____

Address: _____

Installed By: _____ Date: _____

Pump Model No: _____ HP: _____ Date Code: _____

Power Supply: _____ Volts: _____ Service Factor Amps: _____

Cable Size: _____ AWG: _____ Ft.: _____

Riser Pipe Size: _____ Material: _____ Length (Inches): _____

Septic Tank Size Gallons: _____

Float Height (Inches): Pump _____ On, _____ Off, Timer Override (Inches): _____ On, _____ Off

Low Level Cutoff (Inches): _____ Redundant Off (Inches): _____

Timer Settings (Minutes/Hours): On _____ Off _____ High Level Alarm (Inches): _____

Note! Float location to be measured from the bottom of the tank.

Other Information: _____

Thank You for Purchasing an MVPS Grinder 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 MVPS Grinder Pump.



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