



Model # MD500T
MD500T-G
MD500T-V

USE AND CARE GUIDE

SUBMERSIBLE SEWAGE PUMP



MD500T-G SHOWN

DESCRIPTION

This submersible sewage pump is designed for pumping sewage, effluent, wastewater or flooded water with up to two-inch solids. The pump is built with overload thermal protections and auto reset. Ball bearings on motor shafts never need lubrication.

The MD500T is equipped with a 10' 3-prong grounding-type power cord pump is a manual pump, a switching device is required.

The MD500T-G is equipped with a 10' 3-prong grounding-type power cord and tethered float switch.

The MD500T-V is equipped with a 10' 3-prong grounding-type power cord and vertical float switch.

The MD500T-G and MD500T-V pumps operate automatically.

This pump has not been tested or approved for use in swimming pools or in salt-water marine areas. It is also not engineered to be run continuously as a "fountain" or "waterfall" pump.

Warning

Do not pump flammable or explosive liquids such as oil, gasoline, kerosene, ethanol, etc. Do not use in the presence of flammable or explosive vapors. Using this pump with or near flammable liquids can cause explosion or fire, resulting in serious personal injury or death and/or property damage.

SPECIFICATIONS

- Power supply required 115V, 60 HZ
- Water temperature range Max.190°F (88°C)
- Individual branch circuit required 15 Amp minimum
- Discharge Connection 2" FNPT
- Motor duty Continuous
- Power cord SJTW 18AWG/3C, 10ft

NOTICE: This unit is not designed to be used to pump salt water or brine! Use with salt water or brine will void warranty.

CONSTRUCTION

- Motor housing Cast Iron
- Motor cap Cast Iron
- Volute Cast Iron
- Impeller Reinforced thermoplastic vortex

SAFETY INSTRUCTIONS

Please read and understand this entire manual before attempting to assemble, operate or install the product. Failure to comply with instructions and designed operation of this system may void warranty. **ATTEMPTING TO USE A DAMAGED PUMP** can result in personal injury or death!

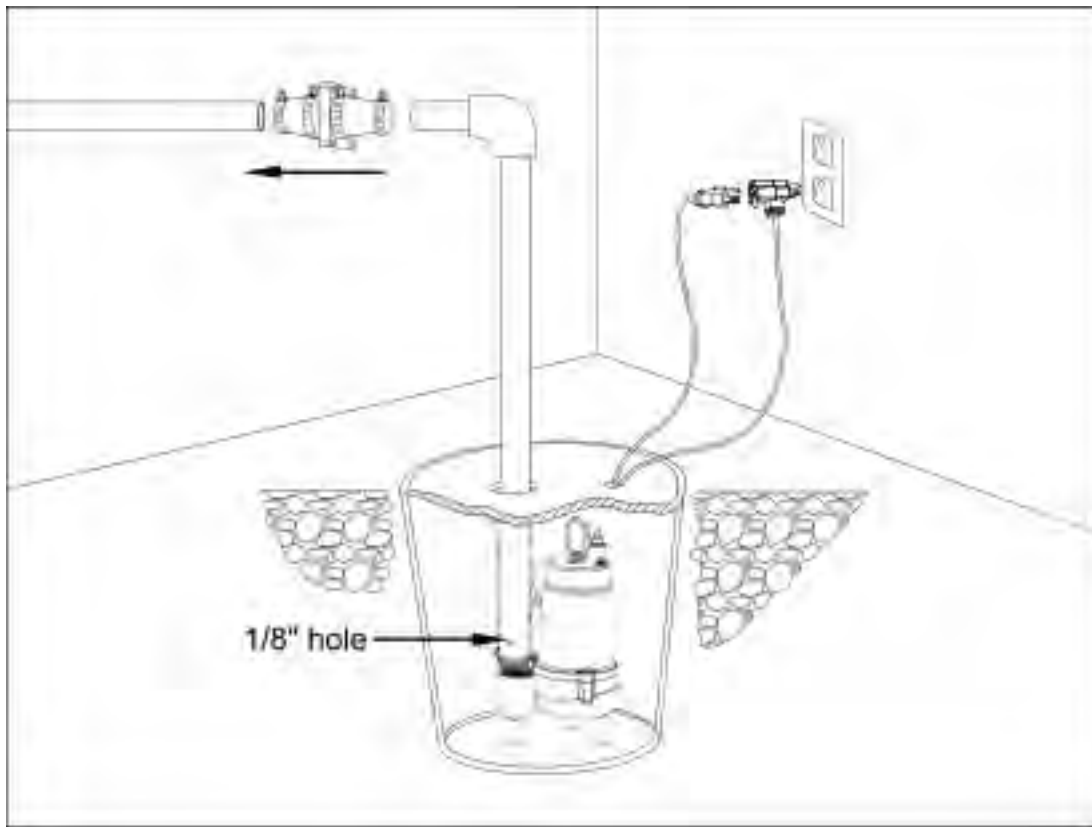
Safety Precautions

1. Know the pump applications, limitations, and potential hazards.
2. Do not lift pump by power cord or switch cord.
3. Do not touch an operating motor housing. The motor is designed to operate at high temperatures.
4. Do not disassemble the motor housing. Motor has been filled at the factory with special oil. In normal service, motor should not need oiling. The motor has NO repairable internal parts, and disassembling it may cause oil leakage or dangerous electrical wiring issues.
5. Make certain the electrical power source is adequate for the requirements of the pump.
6. ALWAYS disconnect the power to the pump before servicing.
7. Release all pressure within system before servicing any component.
8. Drain all water from system before servicing.
9. Secure discharge line before starting pump. An unsecured discharge line will whip, possibly causing personal injury and/or property damage.
10. Secure the pump on a solid base to keep the pump vertical and above mud and sand during operation to maximize pumping efficiency and prevent clogging and premature pump failure.
11. Check that all pipe connections are tight to minimize leaks.
12. Connect the pump DIRECTLY to a grounded, GFCI outlet.
13. Extension cords may not deliver sufficient voltage to the pump motor. Extension cords present a life threatening safety hazard if the insulation becomes damaged or the connection ends fall into water.
14. Make certain the electrical circuit to the pump is protected by a 15 Amp or larger fuse or circuit breaker.
15. Periodically inspect the pump and system components. Perform routine maintenance as required. Do not handle pump or pump motor with wet hands or when standing on wet or damp surface, or in water.
16. Wear safety glasses at all times when working with pumps.
17. Follow all electrical and safety codes, particularly the Canadian Electrical Code, and local codes and ordinances.
18. This unit is designed only for use on 115 volts (single phase), 60 Hz, and is equipped with an approved 3-conductor cord and 3-prong grounded plug. DO NOT REMOVE THE GROUND PIN UNDER ANY CIRCUMSTANCES. The 3-prong plug must be directly inserted into a properly installed and grounded 3-prong, grounding-type receptacle. **Do not use this pump with a 2-prong wall outlet.** Replace the 2-prong outlet with a properly grounded 3-prong receptacle (**a GFCI outlet**) installed in accordance with the Canadian Electrical Code and local codes and ordinances. All wiring should be performed by a qualified electrician.
19. Protect the electrical cord from sharp objects, hot surfaces, oil, and chemicals. Avoid kinking the cord. **Do not use damaged or worn cords.**

INSTALLATION

Materials required: 2" PVC pipe with cement to match and in-line check valve. Be sure to install the check valve so that the flow will be away from the pump.

1. Install the pump on a solid, level foundation, or in a sump pit constructed of tile, concrete, steel, or plastic. The recommended minimum diameter of the sump pit is 18" (46 cm) diameter and the minimum recommended depth is 30" (76 cm). Check local codes for approved materials.
NOTICE: Pump should not be installed on clay, earth, or sand surfaces.
2. Clean the area around the pump of small stones and gravel which could clog the pump. Keep the pump inlet screen clear.
3. Secure the pump on a level, solid base. Do not suspend the pump by the discharge pipe, hose, or power cord.
4. Install 2" discharge pipe into the 2" NPT discharge port. Use rigid plastic pipe and wrap threads with Teflon tape, **NOT pipe joint compound**. Screw pipe into pump hand tight plus 1-1/2 turns.
5. To reduce motor noise and vibrations, a short length of rubber hose can be connected into discharge line near pump using suitable clamps.
6. If the pump discharge line is exposed to outside subfreezing atmosphere, then the portion of line exposed must be installed so any water remaining in pipe will drain to outfall by gravity. Failure to do this can cause water trapped in discharge to freeze, which could result in damage to pump.
7. Install a check valve in the pipe to prevent flow backwards through the pump when it shuts off. Make certain the flow indicating arrow points away from the pump. This check valve will keep the water from either running back into the basin or into the area being pumped out when the pump is not running. Check valve should be a free flow valve that will easily pass solids.
NOTICE: For best performance of check valve when handling solids, do not install it with discharge angled more than 45° above the horizontal. Do not install check valve in a vertical position as solids may settle in valve and prevent opening on startup.
8. Drill a 1/8" (3.1 mm) hole in discharge pipe about 1"-2" (2.5 - 5.1 cm) above pump discharge connection to prevent air-locking the pump.
9. For tethered piggyback float switch mounting. The length of the tether (distance of cord from float to clamp) should be set around 3.5 inches (pre-set on the MD500T-G and MD500T-V) and should not be used in a basin smaller than 18 inches in diameter. If using a differential other than the factory setting, be sure when the pump shuts off at least 4.5" of fluid is left in the basin so the impeller remains submerged. Insert the float switch piggy-back plug into a properly grounded outlet and the pump plug into the piggyback plug.
10. After the installation of the necessary plumbing, check valve, and rubber hose, follow the glue manufacturer's instructions for safety precautions and curing time. The pump is ready for operation.
11. Pump is designed for 115 V, 60 Hz, operation and requires a minimum 15-amp individual branch circuit.
12. Check the pump by filling the sump pit with water and observe the pump's operation through one complete cycle. Make sure the pump cannot move in the sump and float switch moves freely up and down.



OPERATION

WARNING: Do not handle this pump or plug in or unplug this pump with wet hands or while standing in water, unless you are certain all power has been turned off to the pump. Remember, the pump should be connected only to a properly grounded, GFCI outlet.

1. Make certain the pump is submerged in water. Running the pump dry can damage the shaft seal.
2. Plug the pump into a 115V GFCI power outlet. The pump will start operating when the float switch moves up over the pump top. The water will be pumped out. When the water lowers to certain level, the float switch will turn off the pump.
3. The motor is equipped with an automatically resetting thermal overload protector. If the motor gets too hot, the overload protector will shut off the pump before it is damaged. When the motor has cooled sufficiently, the overload protector will reset, and the motor will restart.

NOTICE: If the overload protector stops the pump repeatedly, disconnect the power from the pump and check to find the problem. Low voltage, a long extension cord, clogged impeller, screen blocked by debris, or water that is too hot can cause motor overheating.

TROUBLESHOOTING GUIDE CHECKLIST

Do not disassemble the motor housing. This motor has NO repairable internal parts, and disassembly may cause an oil leak or dangerous electrical wiring issues. DO NOT lift up the pump by power cord.

Problem	Possible Cause	Corrective Action
Pump does not start or run	1. Blown fuse 2. Tripped breaker 3. Plug disconnected 4. Corroded plug 5. Thermal overload 6. Clogged impeller 7. Motor failed 8. Float failed 9. Water level too low 10. Tangled switch	1. Replace fuse 2. Reset breaker 3. Secure plug 4. Clean plug prongs 5. Unplug for 30 minutes, then plug in 6. Remove clog 7. Replace pump 8. Replace switch 9. Pump will not turn on unless water level is over the pump cover and the float switch turns upside down 10. Reposition the pump and make sure switch moves freely
Pump operates but pumps little or no water	1. Debris caught in impeller or pipe 2. Check valve stuck or installed backward 3. Anti-airlock hole blocked 4. Impeller loose on shaft 5. Impeller broken	1. Clean out debris 2. Inspect check valve and make sure it's properly installed 3. Remove the blockage 4. Reassemble impeller 5. Replace impeller
Pump starts and stops too often	1. Back-flow of water from piping, check valve leaking 2. Float switch failed	1. Replace check valve 2. Replace switch
Pump will not shut off	1. Defective float switch 2. Float obstructed	1. Replace switch 2. Remove obstruction

LIMITED WARRANTY

This Limited Warranty applies to residential pumps sold under only the MDI brand.

MDI warrants to the original purchaser ("Purchaser" or "You") of MDI series pumps that they will be free from defects in material and workmanship for the Warranty Period of 36 months from date of purchase. The date of purchase shall be determined by the original dated sales receipt noting the model and serial number of the pump. The original sales receipt must accompany the returned pump.

MDI shall not be liable under this Warranty for any product that, in our sole judgment, has been subject to negligence, misapplication, improper installation, or improper maintenance. Also, MDI shall not be liable under this Warranty if the product has been disassembled, modified, abused or tampered with; if the electrical cord has been cut, damaged or spliced; if the pump discharge has been reduced in size; if the pump has been used in water temperatures above the advertised rating, or water containing sand, lime, cement, gravel or other abrasives; if the product has been used to pump chemicals or hydrocarbons; or if the label bearing the pump model and serial numbers has been removed.

Your sole remedy and MDI's only duty is that MDI repair or replaces defective pumps (at MDI's choice). You must pay all labor and shipping charges associated with this warranty and must request warranty service through the installing dealer as soon as the problem is discovered. No request for service will be accepted if received after the Warranty Period has expired. This warranty is non-transferable.

MDI shall not be liable for any consequential, incidental, or contingent damages whatsoever. MDI recommends using a professional plumber for all installation and repair and periodic inspection of MDI pumps. MDI makes no warranty regarding the suitability of a product for a particular installation. Purchasers are responsible for determining whether a pump is suitable for a specific application.

The foregoing 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 the 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 may vary from state to state. This warranty applies to only MDI pumps installed in the United States of America and Canada.

This warranty supersedes and replaces all previous warranty publications.

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