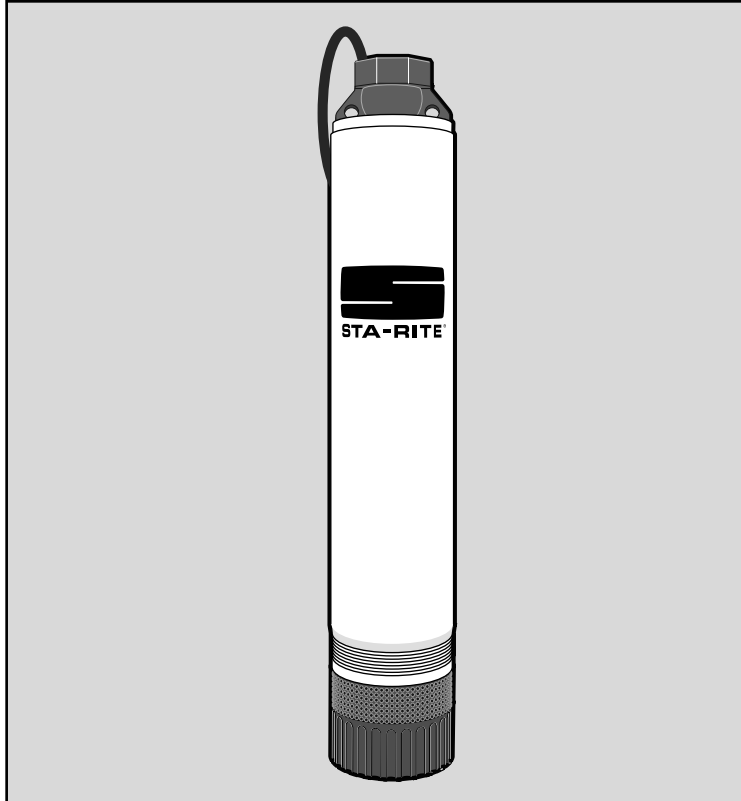




293 Wright Street, Delavan, WI 53115

OWNER'S MANUAL  
**S.T.E.P. Plus D Series**  
**Submersible Pump**

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**Models: 10DOM05121, 10DOM05221,  
20DOM05121, 20DOM05221, 20DOM05221+1,  
20DOM05121+1, 30DOM05121, 30DOM05221**

**Installation/Operation/Parts**

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

**Call 1-262-728-5551**

## READ AND FOLLOW SAFETY INSTRUCTIONS!

**⚠** 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** warns about hazards that **will** cause serious personal injury, death or major property damage if ignored.

**⚠ WARNING** warns about hazards that **can** cause serious personal injury, death or major property damage if ignored.

**⚠ CAUTION** warns about hazards that **will** or **can** cause minor personal injury or property damage if ignored.

The label **NOTICE** indicates special instructions which are important but not related to hazards.

**Carefully read and follow all safety instructions in this manual and on pump.**

**⚠ WARNING** Hazardous pressure. Under certain conditions, submersible pumps can develop extremely high pressure. Install a pressure relief valve capable of passing entire pump flow at 75 PSI.

**⚠** Do not allow pump, piping, or any other system component containing water to freeze. Freezing may damage system, leading to injury or flooding. Allowing pump or system components to freeze will void warranty.

**⚠ WARNING** Hazardous voltage. Can shock, burn or cause death. To avoid dangerous or fatal electric shock hazard, use pump only in an effluent system. **DO NOT** install pump in an open body of water ( a lake, swimming pool, etc.).

**⚠** Install, ground and wire pump according to local and Canadian Electrical Code or National Electrical Code requirements that apply.

**⚠** Disconnect electrical power supply before installing or servicing pump.

**⚠** Make sure pump nameplate voltage and frequency match line voltage and frequency of power supply.

1. Install pump according to all plumbing, pump and well code requirements.
2. Install an all leg disconnect switch in the power supply near the pump.
3. Two-wire motors are equipped with automatic thermal overload protection which will open the circuit and stop the motor when a thermal overload (excessive heating) exists. When motor cools, overload will rest and motor will restart automatically. *This can cause the pump to start unexpectedly and without warning.*

### GENERAL

Inspect pump for delivery damage. Report any damage to shipping carrier or to Sta-Rite immediately.

Have any installation, repair, or service work done by your Sta-Rite dealer.

Never run pump dry.

## LIMITED WARRANTY

Sta-Rite warrants to the original consumer of the products listed below, that they will be free from defects in material and workmanship for the Warranty Period from the date of original installation or manufacture as noted.

Product	Warranty Period
Submersible Pump Products	1 year

Our warranty will not apply to any product that has been subject to negligence, misapplication, improper installation or maintenance. In the event a three phase submersible motor is operated with single phase power through a phase converter, or if three-leg ambient compensated, extra-quick trip overload relays of recommended size are not used, our warranty is void.

Buyer's only remedy and Sta-Rite's only duty is to repair or replace defective products (at Sta-Rite's choice). Buyer agrees to pay all labor and shipping charges associated with this warranty and to request warranty service through the installing dealer as soon as a problem is discovered. If warranty service is requested more than 30 days after the Warranty Period has ended, it will not be honored.

STA-RITE SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, OR CONTINGENT DAMAGES WHATSOEVER. THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXTEND BEYOND THE WARRANTY PERIOD PROVIDED HEREIN.

Certain states do not permit the exclusion or limitation of incidental or consequential damages or the placing of limitations on the duration of an implied warranty, therefore, the limitations or exclusions herein may not apply. This warranty sets forth specific legal rights and obligations, however, additional rights may exist, which may vary from state to state.

Supersedes all previous publications.

**Sta-Rite Industries, 293 Wright St., Delavan, WI 53115**

During system operation, pump must be submerged at all times. Pipe joint compound can cause cracking in plastics. Use only teflon tape when sealing joints in plastic pipe or connecting pipe to thermoplastic pumps.

Warranty is void in the following conditions:

- Water is highly corrosive.
- If entrained gas or air present in water being pumped reduce the flow and cause cavitation (which can damage the pump).
- Pump has been operated with discharge valve closed (severe internal damage will result).

## ELECTRICAL

### Wiring/Grounding

**⚠ WARNING** Hazardous voltage. Can shock, burn, or cause death. Permanently ground pump, motor and control box before connecting power supply to motor.

Ground pump and motor in accordance with all codes and ordinances that apply. All wiring must meet National Electrical Code and Canadian Electrical Code (whichever applies). Use copper ground wire at least as large as wires carrying current to pump.

Pump is supplied with copper ground wire. Use only copper wire for connections to pump.

Permanently ground pump before connecting power cable to power supply. Connect ground wire to approved ground first, then connect to equipment being installed.

**Do not ground to a gas supply line.**

Float switches or any other approved motor control must match motor input in full load amperes.

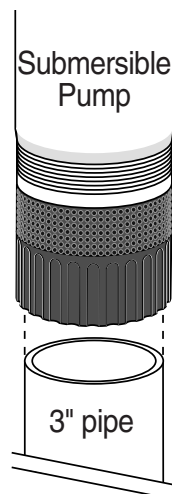
For more information, contact your local code officials.

### Installation Wiring Instructions

Pump has two power supply wires (Red/Black) and one ground wire (Green).

Fasten power supply wire leads securely to control panel; leave 4-5" of slack in leads at this point. Securely fasten leads to plastic pipe within 6" of the pump discharge section.

**NOTICE:** To avoid dropping pump or damaging wires or splices, **NEVER** allow pump wires to support weight of pump.



**Figure 1:** Insert a 3" PVC pipe in the bottom of the motor to raise the pump in the tank.

## PUMP INSTALLATION

**⚠ WARNING** Risk of electrical shock. Do not remove or alter cord. Do not connect conduit to pump.

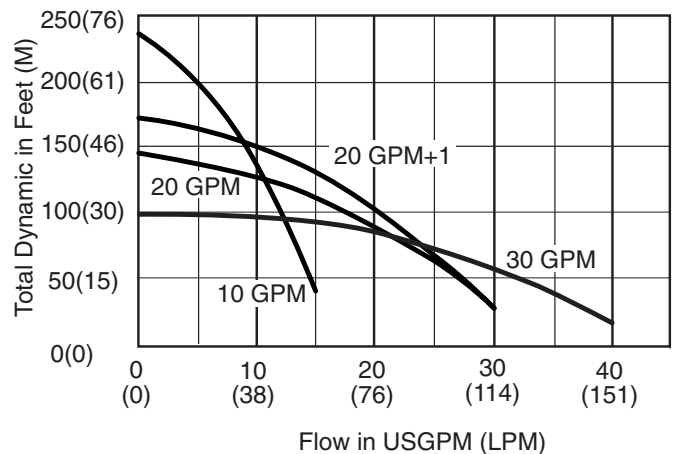
1. Only qualified personnel should install the pump and associated control equipment.
2. Vent sewage tank according to local code.
3. Do not install pump in any location classified as hazardous by National Electrical Code, ANSI/NFPA 70-1984.
4. These pumps are intended for permanent connection only. Provide strain relief at control panel for power supply cord connection to box. All control components must be UL listed and suitable for end use application.
5. Do not pump flammable liquids, strong caustics, or strong acids with this pump.
6. To prevent dropping pump, lower it by the drop pipe, not by the cables. The electrical cables will not hold the pump weight.
7. Discharge outlet is 1-1/4" NPT threaded.

**NOTICE:** If installing external check valve, hold discharge with pipe wrench to prevent loosening discharge in shell.

8. If pump is to be operated with an open discharge, a discharge valve *must be installed*. Before startup, open this valve about 1/3 open. Start pump. *Slowly* open valve until the desired flow rate is reached. Final setting must be within pump's recommended operating range.

## OPERATION

1. The pump must be submerged at all times during normal operation. **Do not run pump dry.**
2. Make sure that the float switches are set so that the pump stops before the pump runs dry or breaks suction. If necessary, adjust float switches to achieve this.
3. The motor bearings are lubricated internally. No maintenance is required or possible on the pump.



**Figure 2:** Performance in Feet of Head at Gallons per Minute (M@LPM).

**Table 1: Recommended Fusing Data  
60 Hz/1 Phase 2-Wire Cable**

Model	HP	Voltz/Hz/ Phase	Max Load Amps	Locked Rotor Amps	Fuse Size Standard/ Dual Element
10DOM05121	1/2	115/60/1	11.0	30.0	15
20DOM05121	1/2	115/60/1	9.5	30.0	15
30DOM05121	1/2	115/60/1	9.5	30.0	15
10DOM05221	1/2	230/60/1	5.5	14.5	10
20DOM05221	1/2	230/60/1	4.6	14.5	10
30DOM05221	1/2	230/60/1	4.6	14.5	10
20DOM05121+1	1/2	115/60/1	10.6	30.0	15
20DOM05221+1	1/2	230/60/1	5.3	14.5	10

## TROUBLESHOOTING GUIDE

PROBLEM	CHECK	CORRECTIVE ACTION
<b>Pump will not start but fuses do not blow</b>		
No voltage.	No voltage at control panel. Electrical cable bad. Control panel incorrectly wired.	Replace blown fuses or bad cable. Consult licensed electrician or serviceman. Reconnect control panel correctly.
<b>Fuses blow or overload protector trips when motor starts</b>		
Wrong size fuse or wrong size time delay fuse.	Check fuse size against chart, above.	Install correct fuse or time delay fuse.
Low or high voltage.	Check that line voltage is within $\pm 10\%$ of nameplate rated voltage while motor is running.	If voltage variation is greater than $\pm 10\%$ , call power company or local hydro authority to adjust voltage.
Power supply wire leads not correctly connected to control panel.	Check control panel wiring diagram against incoming power hookup. Check power supply wire color coding.	Reconnect leads to match wiring diagram in control panel cover. Reconnect power supply wires so wire color code matches motor lead color code.
Broken wire in control panel.	Examine all connections and wiring in control panel.	Disconnect power and repair or replace faulty wire.
Pump stuck or binding.	Check for locked shaft in pump.	If necessary, pull pump (make all possible above ground checks first). If pump is locked, replace it. Clean tank of all sand or lime, or solids before reinstalling pump.
Power supply wires or pump leads grounded, shorted, or open.	Consult licensed electrician or qualified serviceman.	Have a qualified serviceman or electrician make necessary cable repairs..
<b>Fuses blow or overload protector trips when motor is running</b>		
Low or high voltage.	Check that line voltage is within $\pm 10\%$ of rated nameplate voltage while motor is running.	If voltage variation is more than $\pm 10\%$ , call power company to adjust voltage.
High ambient (atmospheric) temperature.	Check temperature of tank	Protect tank from direct sunlight.
<b>Pump starts too frequently</b>		
Leaks in system.	Check plumbing for leaks.	
Level switch.	Check for defective switch or switch out of adjustment.	Re-adjust or replace level switch.
Check valves leaking.	Make sure check valves are not leaking back.	Replace check valves if necessary.
<b>Little or no water delivered</b>		
Check valve stuck or installed backwards	Examine valve.	If stuck, free valve; if installed backwards, reverse it.
Low voltage.	Check voltage at control panel with pump running.	Install larger wire from meter to control panel. If necessary, have power company raise supply voltage.
Plugged intake screen.	Pull pump and check condition of screen.	Clean or replace as necessary.
Check valve at pump discharge stuck.	Pull pump and examine check valve.	Free check valve.
Pump doesn't develop enough pressure ("head").	Check pump curve against operating conditions.	Replace pump with "higher head" pump.