

# P239-1 Supply Pumper Instructions



STOP!  
READ THIS SECTION NOW.  
**The following information is critical to the proper installation and operation of this Oil Supply System!**  
**Read it carefully before starting anything else!**

- This oil supply pumper system must be installed by a qualified technician familiar with oil supply systems, equipped with the proper tools and test equipment, familiar with all governing codes and ordinances, and licensed by the proper authority where applicable.
- Installation and repairs made by unqualified persons can result in hazards to that person and others. These hazards may include leakage or spillage of flammable fuel products, electrical shock and fires, damage to system components, and other hazards.
- Never alter nor modify this oil supply system, nor any of its components. Modification or alteration can adversely affect its proper, safe operation.
- Installation must conform to all governing codes and ordinances.
- Installation must be **exactly** as outlined in these instructions and conform to the diagrams shown. **No other system configuration is approved nor sanctioned by the manufacturer.** Failure to comply with the instructions provided might result in hazards that include leakage or spillage of flammable fuel products, electrical shock and fire, damage to system components, and other hazards.
- These instructions must be left at the installation site with a responsible person for future reference.

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## PART 1. Safety Statements

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For your safety, these instructions contain the following types of safety elements:

CAUTION: (message)

*This statement indicates that equipment damage may occur.*

DANGER: (message)

*This strongest safety statement indicates that the highest level of safety must be observed! Equipment and/or environmental damage, as well as possible personal injury will occur if the danger statement is not heeded.*

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## PART 2. System Description

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The Supply Pumper system is used to supply fuel oil to one or more burners where high lift or remote conditions preclude the burners drawing directly from the main storage tank. It uses a special high lifting Motorized Transfer Pump (MTP) to move the oil from the main storage tank to a small supply tank located near the burner(s). A diaphragm pressure switch that senses the quantity of oil in the supply tank controls the MTP. Any foam created by subjecting oil to high vacuum is separated in the supply tank. The burners are fed by gravity from the bottom of the supply tank thereby insuring a constant supply of clear, foam free oil.

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## PART 3. Installation

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System installation **must be exactly** as outlined in this section. **No other system configuration is approved nor sanctioned by the manufacturer.** Failure to comply with the instructions and diagrams exactly as presented will result in an unapproved installation, which may cause system, component, electrical, fire, and environmental damage.

## MOTORIZED TRANSFER PUMP (MTP)

Mount the MTP under cover and protected from water and the weather (i.e. inside a building or pump house). Choose a location that facilitates priming and service, and is as close to the main storage tank as possible. Vertical lift should not be more than 25 feet above the bottom of the main storage tank.

Install a No. 264 filter (purchased separately) in the suction line on installations with new storage tanks. On existing storage tank installation, a No. 265 filter is recommended because of its higher capacity. The pump has no internal strainer so installation of a quality line filter is essential. *Do not attempt to install a strainer in the pump!*

Install a hand shutoff valve (purchased separately) in the suction line as shown in Diagram 1 to allow servicing of a filter without losing the prime. **Do not** install a check valve in the suction line.

Install the supplied check valve and fittings in the outlet port of the pump using a good quality, non-hardening thread compound (see Diagram 2).

## SUPPLY TANK

Install the diaphragm switch in the branch of the supply tank return tee using the ¼" NPT street elbow and ¼" NPT x 5" nipple supplied (see Diagram 1). These fittings must be used and the switch positioned with the diaphragm horizontal, electrical connections on top. **The switch settings are sealed and no adjustment should ever be made.**

Mount the supply tank inside the building above the MTP. For supply tank heights of more than 25 feet above the MTP, consult the factory. Oil is fed to the burners by gravity so the supply tank must be installed **above** all burners to be fed. It must be securely fastened and mounted reasonably level with the vent installed on top. Use the mounting straps provided.

**DANGER:** The supply tank **must** be located above the main storage tank, the MTP, all burners, and all piping! System layout **must** correspond to Diagram 1.

## SYSTEM PIPING

All system piping must be ½" OD copper tubing using flare fittings. *Compression fittings are not to be used anywhere in the system.*

## SUPPLY LINE

Connect one end of the supply line to the MTP outlet port. Connect the other end to the ½” flare fitting in the supply line fitting at the bottom of the supply tank (marked “INLET”).

<b>CAUTION:</b> Do not install any valves in the supply line between the MTP and the supply tank. Follow Diagram 1 exactly!
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## RETURN LINE

**The return line is a very important component of this system!** It must run directly between the return line fitting in the bottom of the supply tank and the main storage tank. It must be pitched down toward the main storage tank to allow any return oil to flow back to the storage tank by gravity and must terminate at the top of the main storage tank. It must have no “traps” in it and be run such that any condensation collecting in it will not freeze during cold weather (see Diagram 1).

Under normal circumstances the return line carries no oil. It is connected to a standpipe inside the supply tank and provides the overflow path for oil should a component failure or wiring defect cause continuous MTP operation. **Therefore, for safety reasons the return line must be clear, leak tight, properly pitched, and in perfect condition to provide this overflow path for the surplus oil.**

<b>DANGER:</b> The pump used in the MTP is a positive displacement gear pump with <b>no internal pressure-regulating valve!</b> It is capable of producing over 300 psi if its output is restricted (i.e. a plugged, restricted, or frozen return line).
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Do not install **any** valves in the return line between the supply tank and the main storage tank. It must be impossible to close off or restrict the return line. Follow Diagram 1 exactly!

Failure to insure an unrestricted, clear, free flowing, properly pitched return line can cause severe hazards should a malfunction occur. These hazards include among others:

- Tank and system component rupture.
- Fuel leakage at burner(s).
- Fuel leakage from supply tank vent.

**It is the installer’s responsibility to ensure that the return line is installed in accordance with Diagram 1.**

## BURNER FEED LINE

Burners are gravity fed so all burners and associated piping must be below the storage tank (see Diagram 1). Connect one end of the burner feed line to the hand valve mounted in the tee at the bottom of the supply tank on the inlet side.

Connect the other of the burner feed line to the burners. Local jurisdictions may require fusible valves, oil safety valves (OSV), shutoff valves, etc. at the burner connection. The use of these devices is recommended even if not required. Set up burner pump(s) for *single pipe* operation.

## ELECTRICAL WIRING

**DANGER: ELECTRICAL SHOCK HAZARD!**

Turn off all power before wiring system!

**CAUTION:** The Supply Pumper system must be installed in accordance with all national, state, and local codes and ordinances by a qualified, properly licensed, experienced person.

Provide an overload protected electrical service with a disconnect switch within sight of the MTP. Wire as shown in Diagram 3 in accordance with local code requirements.

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## PART 4. System Start-Up and Test

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*Use this procedure on initial start-up, after periodic maintenance, and if the system runs out of oil.*

### START UP TEST PROCEDURE CHECKLIST (check-off each as completed)

1.	<input type="checkbox"/>	Make sure power is off to the Supply Pumper system and all burner circuits.
2.	<input type="checkbox"/>	Close the shutoff valve to the burner(s).
3.	<input type="checkbox"/>	Prime the MTP by filling the pump with oil through the MTP's inlet port (see Diagram 2). Filling the suction line filter with oil will also aid in picking up the oil from the main storage tank more quickly.

4.	<input type="checkbox"/>	Jumper the switch terminals on the pressure switch.
5	<input type="checkbox"/>	Open the hand shutoff valve in the suction line of the MTP.
6	<input type="checkbox"/>	Turn on power to the Supply Pumper system. The MTP should start and begin to fill the tank.
7	<input type="checkbox"/>	As the supply tank and piping fill, check for oil leaks. <b>No seeping or leakage is acceptable!</b> If evidence of leakage exists, <b>IMMEDIATELY shut-off the system and correct the leak!</b>
8	<input type="checkbox"/>	While constantly observing the system, allow the MTP to operate at <b>least ½ hour</b> to ensure that: A. The supply tank is completely filled. (Tank is filled when oil can be heard running down the return line, or the return line becomes cold from oil pumped from the ground.) B. The installation of the return line is correct and it can carry the entire overflow capacity of the MTP back to the main storage tank without oil overflowing out the vent in the supply tank.

**DANGER:** The ability of the return line to carry the entire capacity of the MTP **must be verified** before the system is placed in service! The return line is the safety overflow for the system. **Failure to carry the overflow will cause component damage and result in possible electrical, fire, and environmental hazard.**

9.	<input type="checkbox"/>	When the tank has filled, turn off the power to the Supply Pumper system and remove the jumper from the pressure switch.
10.	<input type="checkbox"/>	Restore power to the Supply Pumper system.
11.	<input type="checkbox"/>	Open the shutoff valve to the burner(s). Starting with the burner nearest the supply tank, bleed each burner.
12.	<input type="checkbox"/>	Before leaving the installation, review these instructions and the Supply Pumper's operation with responsible person on site charged with supervising the system's operation. Leave these instructions with that person.

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## PART 5. Maintenance and Service

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### MAINTENANCE

**DANGER:** System components and conditions may change over time mandating the necessity for periodic maintenance. **Failure to maintain and test the Supply Pumper system will cause component damage and may result in possible electrical, fire, and environmental hazard.**

The following must be done periodically (at least yearly is recommended) by a qualified technician.

1. Check for leaks. Oil wet fittings or piping indicate a situation that warrants immediate correction.
2. Change the element in the MTP suction line filter.
3. Lubricate the electric motor on the MTP following the motor manufacturer's instructions on the motor label.
4. Inspect the MTP's coupling. Replace if needed.
5. Drain the supply tank to remove any accumulated sludge or contamination from the bottom of the tank. Because there are standpipes on both the inlet and return of the supply tank, it is necessary to remove those fittings to drain the supply tank. Use a suitable container large enough to hold the tank's capacity to catch the supply tank's contents. Reinstall the inlet and return line fittings using a good quality, non-hardening thread compound.
6. Inspect the date stamp on the pressure switch. **Replace the switch if it has been in service for three (3) years.**

**DANGER:** Due to the exposure of pressure switch parts to fuel additives and contaminants, a **reliable service life of three (3) years is considered maximum.** Use of a pressure switch beyond this time limit exposes the system to risk of component failure leading to fuel leakage, fire hazard, and environmental damage.

7. Use the start-up and test procedures listed in Part 4 before putting the system back in service.

**SERVICE**

A qualified technician should replace components of the system that become defective, worn, or otherwise unserviceable as soon as they are identified.

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**PART 6.      Installation Record**

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Installed at: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Installation Date: \_\_\_\_\_

Installed by: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Tested by: \_\_\_\_\_

Maintenance Record:

(Continue Maintenance Record on separate sheet and attach.)

