BOOST PUMP

INOV8 supplies two different boost pumps: 1) an electric gear pump manufactured by Suntec Industries, and 2) a Husky diaphragm pump manufactured by Graco Industries. Both do a fine job moving waste oil from a storage tank to the burner. The installations are different in that the Suntec pump requires an electrical connection to power the pump, while the Graco pump requires air pressure to drive the pump.

Suntec pump: The pump MUST be mounted so the motor / pump shaft line are horizontal and the pressure relief valve in the boost pump must be set to 20 PSI. The pump will not work if mounted upside down. See the electrical hookup for the boost pump on the electrical diagram.

Graco Diaphragm pump: an air pressure regulator and gauge assembly must be installed in the air line prior to the pump. The air regulator controls the pumping pressure and is usually set at 30 - 40 psi. This may be varied to accommodate your installation. Instructions accompany the pump and must be followed for the installation.

Follow these guidelines for either pump:

1. Install the boost pump as close to the oil tank as local code allows, but always inside the building. Keep the suction line and suction lift as short as possible. The maximum horizontal suction run is 30 feet and the maximum suction lift is 4 feet.
2. Make sure the boost pump can be easily primed and serviced and it is protected from water and combustible fumes. The strainer (supplied by INOV8) must be installed at the end of the oil suction line within the tan protects the pump from debris.
3. Locate the filter/check valve assembly at a convenient location between the boost pump and the oil pressure regulator assembly. Connect to the outlet side of the boost pump with 1/2 inch copper tubing.
4. After the proper piping/tubing has been installed the pump may be turned on for priming. For the Suntec Pump, leave the bleeder port of the boost pump fully open until all entrapped air is purged from the suction line (at least one-gallon of oil). When a steady stream of oil is flowing, close the bleeder port and snug it tight with a 3/8” wrench. If the oil stream fluctuates and sputters, check for air leaks in the suction line.
5. The oil pressure regulator and gauge assembly must be installed near the burner.
6. The oil line between the tank and the boost pump must be absolutely airtight so the pump does not suck air. It is very important that pipe compound be used on all fittings and that they are tight. Pressure test the line prior to use. Follow the recommendations in the following section for installing the piping.
7. If multiple furnaces are installed, one boost pump will supply a maximum of three burners; however, a separate filter and regulator must be used for each furnace.

See additional details on the following page.

Note: The boost pump can be mounted at or below the level of the oil tank BUT MUST NOT be mounted more than 4 feet above.

Note: The (+) (-) gauge on the outlet of the regulator shows positive (+) pressure in pounds per square inch (PSI) and negative pressure in inches of mercury (in. Hg). One PSI is equal to two inches of mercury and, with earth’s air pressure being around 15 PSI, a reading of –30 inches of mercury is equal to a complete vacuum. A setting of –4 on this gauge should be adequate. If the pressure falls below –10 there is an increased chance that you will start sucking air through the pump seal or fail to get adequate firing pressure due to normal pump wear. Positive pressure on this gauge means you are shoving oil into the burner pump. The internal regulator in this pump will regulate properly only when the pump is sucking on the inlet line – so don’t run with a positive pressure on this gauge. A good rule of thumb for setting the pressure is to first set the regulating screw in the burner port at mid range and then adjust the external regulator for a proper flame length. This allows you to make future flame length adjustments using the burner pump pressure regulator screw – which is the correct procedure.

FIGURE - DIAGRAM SHOWING INSTALLATION OF BOOST PUMP, FILTER, CHECK VALVE, REGULATOR & GAUGES

BOOST PUMP INSTALLATION DIAGRAMS