MODELS "J" AND "H" FUEL UNITS

Simplified Field Service

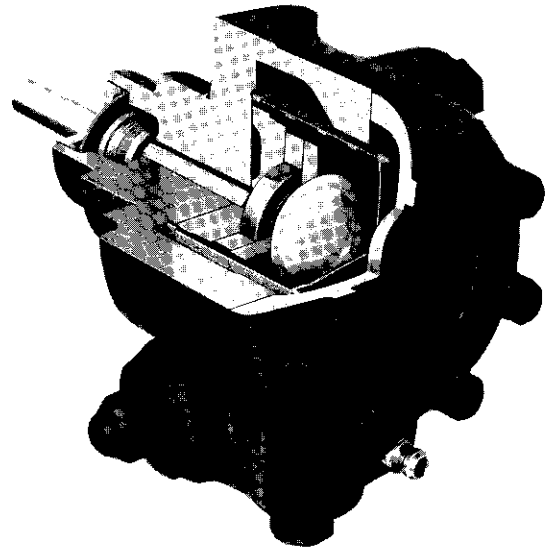
MODEL "J" SINGLE-STAGE • ROTA-ROLL PUMP-MEMBERS

Model J is recommended for single-pipe, gravity feed installations or for two-pipe installations under low-lift conditions up to 10 inches of vacuum. It may be mounted in *any* position.

Model J2XX(F) with Check Valve in piston provides fast purging and fast cutoff with single-pipe Lift. Check Valve keeps air from re-entering the strainer chamber while bleeding with Easy Flow Air Bleed Valve.

Flow of oil through the unit is shown in drawing below. Oil entering the unit, passes through the strainer, becomes trapped between teeth of the Rota-Roll gears and is pumped under pressure to the valve. Pressure forces the piston away from the nozzle cutoff seat, and oil then flows out the nozzle port. Oil in excess of nozzle capacity is bypassed through the valve, back to the strainer chamber in a single-pipe system, or in a two-pipe system is returned to the tank. When the pump motor shuts off, pressure is reduced on the head of the piston. The piston then snaps back, firmly closing the nozzle port opening.

A bleed opening in the piston (Fig. 1) or check valve (Fig. 2) provides for automatic air purging on a two-pipe system, and accelerates piston travel on shutdown, thereby giving fast cutoff.



AIR BLEED PROCEDURE WITH NEW EASY FLOW AIR BLEED VALVE*

• One-Pipe System

Start burner: Loosen Easy Flow Air Bleed Valve CCW just 1/4 turn for fast purging (Fig. 1) (Fig. 2).

For clean bleed in restricted spaces, an easily attached hose can be used to direct bleed oil into a container. A 1/4" I.D. hose can be slipped directly over end of valve.

BLEED UNIT FOR 15 SECONDS AFTER THE LAST AIR BUBBLE IS SEEN.

Optional Procedure: On gravity feed systems, before starting burner, loosen unused intake port plug until there is a flow of oil from the port.

J2XX(F) assembly (Fig. 2) may be used with single-pipe or two-pipe installations.

• Two-Pipe Systems

Air bleeding is automatic. Opening Easy Flow Air Bleed Valve will allow oil to be pulled up faster if desired. By-passed oil or air cannot reenter unit and returns to tank through return line providing return line is run to the bottom of the tank.

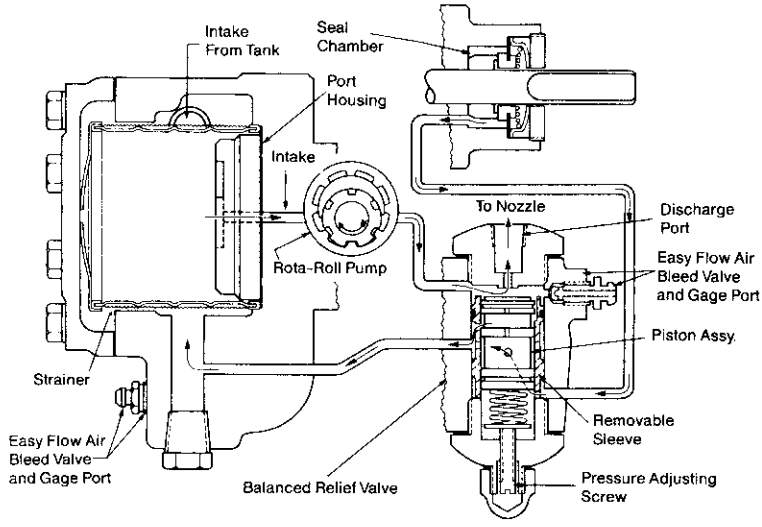


FIGURE 1

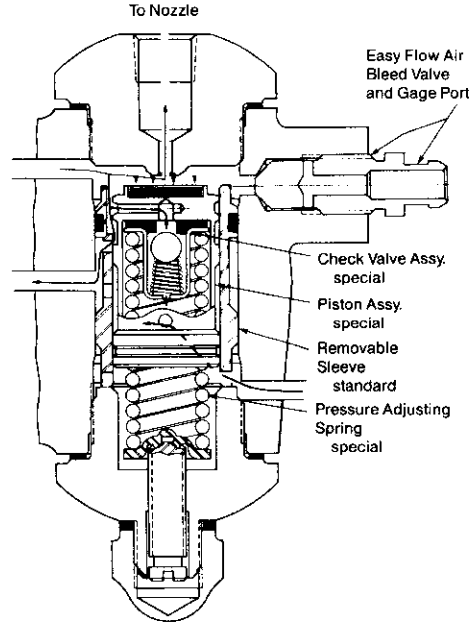


FIGURE 2

MODELS H-4 AND H-5 TWO-STAGE • 2 ROTA-ROLL PUMP-MEMBERS

This new fast-priming fuel unit has been designed to give the ultimate in 2-stage performance when mounted in *any* of the three recommended mounting positions. An exclusive circuit makes it ideal for long line high lift installations.

When starting dry *both sets* of gears draw on the suction line. Air pumped by both the first and second stage gears then is discharged into the return line. Extremely fast priming therefore occurs.

Once prime is established, the first stage continues to discharge to tank. The second stage then builds pressure causing the regulating valve to bypass excess oil back into the strainer chamber. Consequently, flow through the suction and return lines is greatly reduced, and friction losses are minimized, thus permitting use of longer or smaller diameter lines.

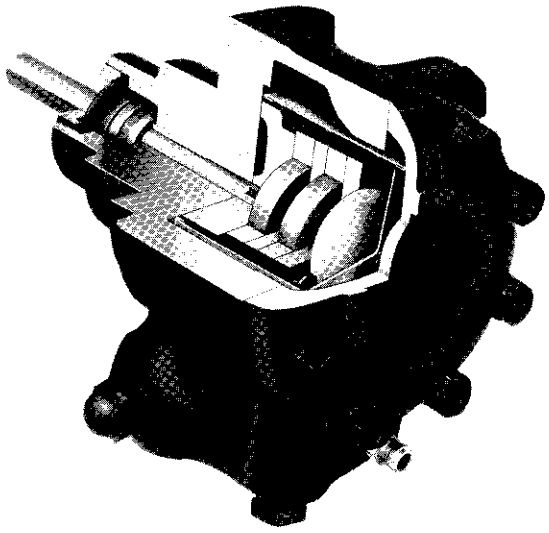
Furthermore, because the first stage has an inlet above that of the second stage, any air drawn into the unit after priming is immediately picked up by the first stage and discharged to tank. Also, the second stage can only draw in solid air-free oil. Thus, there is no air in the oil delivered to the nozzle, and sharp cutoff is assured.

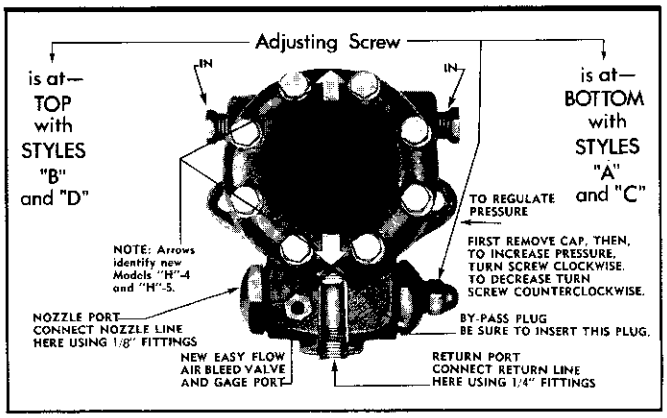
Valve action is similar to that in Model J. Oil flow is as indicated in the drawing below.

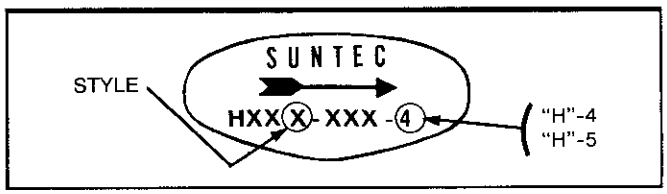
Model H is recommended for two-pipe, high-lift installations under vacuums to 20 inches. It may also be used on single-pipe gravity feed installations, but then functions as a single-stage unit.

All Model H units described herein are designed to be mounted with the valve horizontal — at either the top or bottom. They may also be mounted with the valve vertical providing the adjusting screw is at the top with styles B and D, or at the bottom with styles A and C. Flexibility of mounting position and interchangeability with single-stage models are therefore afforded.

NOTE: Earlier "H" models having a designation ending in -1, -2, and -3, were only intended for mounting with the valve underneath.







Seal Chamber connected to Strainer Chamber in all H7 and H8XX-XXX-5 Models. (Fig. 4).

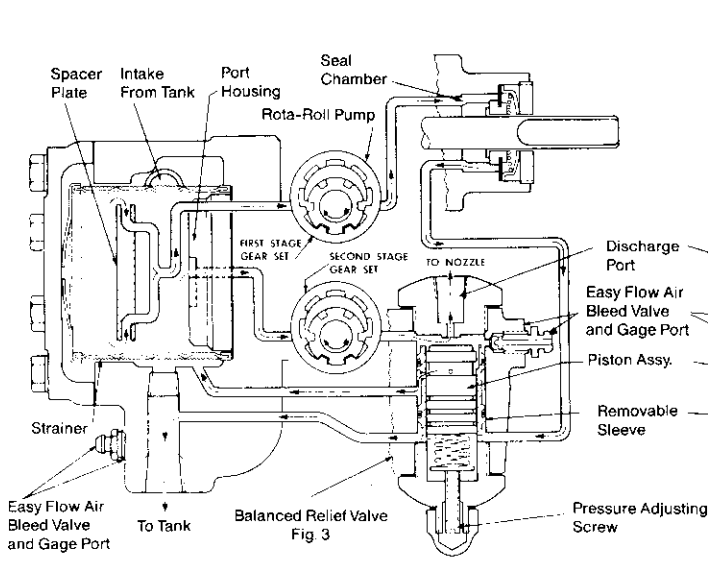


FIGURE 3: ALL MODELS H1, 2, 3, 4, 5 AND 6 DASH — ④

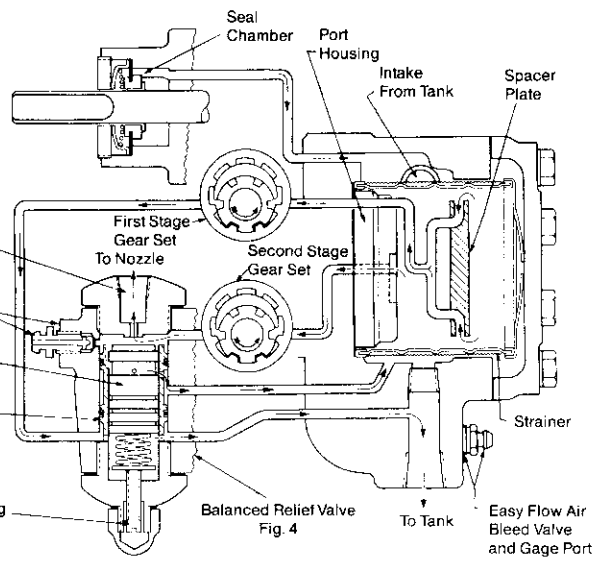
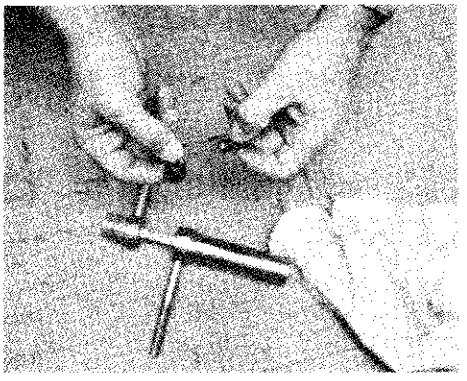


FIGURE 4: ALL MODELS H7 AND H8 DASH — ⑤

SCHEMATIC FUEL OIL CIRCUITS

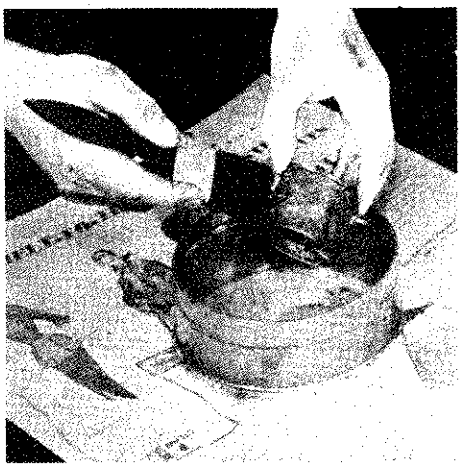
ROUTINE PERFORMANCE CHECKS

1. Check Shut-Off Valve and Line Filter. Replace or clean cartridge in line filter if dirty. Be sure to open shut-off valve.



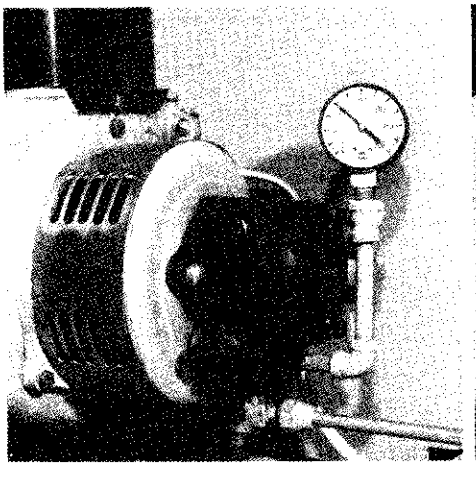
2. Check Nozzle Assembly. Replace the nozzle according to manufacturer's recommendations when needed.

Important: *Use proper designed tools for removal of nozzle from firing head.*

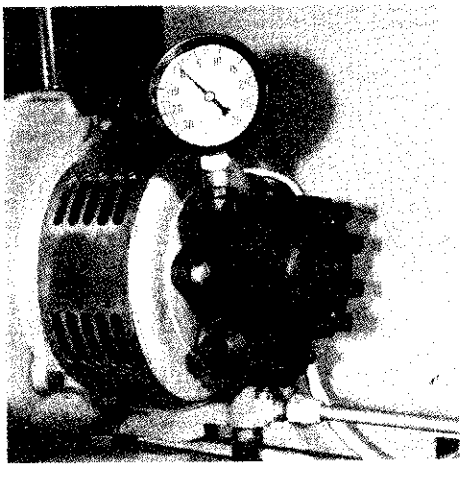


3. Check Strainer. Clean strainer using clean fuel oil or kerosene. Install new cover gasket. Replace strainer if necessary.

4. Check Connections. Tighten all connections and fittings in the intake line and unused intake port plugs.



5. Pressure Setting. Insert pressure gage in gage port. normal pressure setting should be at 100 PSI. Check manufacturer's pressure setting recommendation on each installation being serviced.

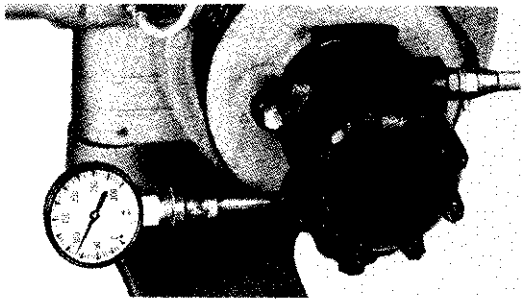
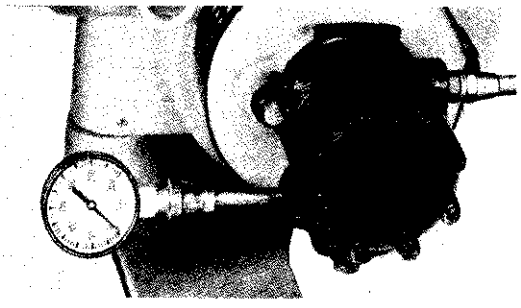


6. Insert Vacuum gage in unused intake port. Check for abnormally high intake vacuum.

TROUBLE SHOOTING

Problem:	Cause:	Solution:
No Oil Flow At Nozzle	Oil level below intake line in supply tank	Fill tank with oil.
	Clogged strainer or filter	Remove and clean strainer. Repack filter element.
	Clogged nozzle	Replace nozzle.
	Air leak in intake line	Tighten all fittings in intake line. Tighten unused intake port plug. Tighten in-line valve stem packing gland. Check filter cover and gasket.
	Restricted intake line (High vacuum reading)	Replace any kinked tubing and check any valves in intake line. Check Form 440041 for line sizes.
	A two pipe system that becomes airbound	Check and insert by-pass plug.
	A single-pipe system that becomes airbound (Model J unit only)	Loosen gage port plug or easy flow valve and drain oil until foam is gone in bleed hose.
	Slipping or broken coupling	Tighten or replace coupling.
	Rotation of motor and fuel unit is not the same as indicated by arrow on pad at top of unit	Install fuel unit with correct rotation. See Form No. 450016.
	Frozen pump shaft	Return unit to approved service station or Suntec factory for repair. Check for water and dirt in tank.

TROUBLE SHOOTING (continued)

Problem:	Cause:	Solution:
Oil Leak	Loose plugs or fittings	Dope with good quality thread sealer.
	Leak at pressure adjusting end cap nut	Fibre washer may have been left out after adjustment of valve spring. Replace the washer.
	Blown seal (single pipe system)	Check to see if by-pass plug has been left in unit. Replace fuel unit.
	Blown seal (two pipe system)	Check for kinked tubing or other obstructions in return line. Replace fuel unit.
	Seal leaking	Replace fuel unit.
Noisy Operation	Bad coupling alignment	Loosen fuel unit mounting screws slightly and shift fuel unit in different positions until noise is eliminated. Retighten mounting screws.
	Air in inlet line	Check all connections.
	Tank hum on two-pipe system and inside tank	Install return line hum eliminator, in return line.
Pulsating Pressure	Partially clogged strainer or filter	Remove and clean strainer. Replace filter element.
	Air leak in intake line	Tighten all fittings and valve packing in intake line.
	Air leaking around cover	Be sure strainer cover screws are tightened securely.
Low Oil Pressure	Defective gage	Check gage against master gage, or other gage.
	Nozzle capacity is greater than fuel unit capacity	Replace fuel unit with unit of correct capacity. See Form No. 400226, for GPH, P.S.I. and R.P.M.
Improper Nozzle Cut-Off	  To determine the cause of improper cut-off, insert a pressure gage in the nozzle port of the fuel unit. After a minute of operation shut burner down. If the pressure drops and stabilizes above 0 P.S.I., the fuel unit is operating properly and air is the cause of improper cut-off. If, however, the pressure drops to 0 P.S.I., fuel unit should be replaced.	
	Filter leaks	Check face of cover and gasket for damage.
	Strainer cover loose	Tighten 8 screws on cover.
	Air pocket between cut-off valve and nozzle	Run burner, stopping and starting unit, until smoke and after-fire disappears.
	Air leak in intake line	Tighten intake fittings and packing nut on shut-off valve. Tighten unused intake port plug.
	Partially clogged nozzle strainer	Clean strainer or change nozzle.

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