

DESCRIPTION

RESERVOIR

These sturdy, compact units are designed with either a 5 qt. or a 3 gal. capacity. They are equipped with a mist outlet, a pressure relief valve, filler plug and drain plug. Optional accessories are available to augment a basic mist system. An oil fill sight tube, located on the front of the reservoir, provides an easy, accessible reading of lubricant supply. See Table 1 for these basic components associated with each reservoir.

MIST GENERATING HEAD

The Mist Generating Head atomizes lubricant into microscopic particles which are then piped to lubrication points such as bearings, cams, gears, etc. This assembly incorporates an oil adjustment screw, a tube and filter assembly and a screen and nozzle assembly. See Table 1 for the mist head capacity.

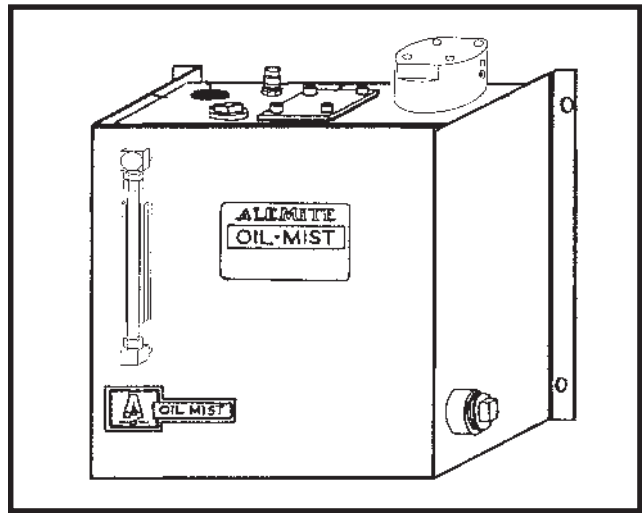


Figure 1: Model 383802-B4 Reservoir

ACCESSORIES

The following accessory models may be **PURCHASED SEPARATELY**:

NOTE: Refer to Figure 3 for schematic diagram of accessory installation.

Model 5644-1 Air Filter/Moisture Separator

removes entrained water from the air supply, at a flow rate of up to 50 CFM at 100 psi air pressure, thus assuring clean, dry air for oil atomization.

Model 7608-B Air Pressure Regulator assures a constant air flow with a maximum regulated discharge pressure of 150 psi. A built-in relief valve reduces regulated air pressure when unit is set to a lower pressure.

Model 383807-A4 or 383807-B4 Oil Heater Kit automatically maintains oil at the optimum temperature for atomization under varying ambient temperatures. Model 383807-A4 operates on 120 VAC; 383807-B4 operates on 240 VAC.

Model 383808-A4 or 383808-B4 Thermo Aire Kit is available for heating incoming air for misting of high viscosity oils if heavier viscosity ranges are required or if lubricant output of lower viscosity oils has to be increased. Model 383808-A4 operates on 115 VAC; 383808-B4 operates on 230 VAC.

Model 385033 Mist Pressure Switch is a safety switch which responds to either a drop or rise in mist pressure. It operates on either 115 or 230 VAC.

Model 382064 Mist-Pressure Gauge provides a visual reading of the Oil-Mist distribution system pressure, thus permitting adjustment of air input pressure to obtain the correct system pressure. Model 382064 reads 0 to 100 inches of water.

Model 384880-A4 or 384880-B4 Solenoid Air Valve acts as an "off" and "on" air flow valve for the Oil-Mist Unit. It synchronizes lubrication with machine operation when wired in parallel with the load

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controlled by the machine starting switch. Model 384880-A4 operates on 120 VAC; 384880-B4 operates on 240 VAC.

Model 385810 Low Level Switch energizes a warning signal if oil level drops below minimum requirements.

Model 380745-A4 is a Visible Signal that operates on 115 VAC. This device gives immediate warning by a red light when a malfunction occurs in the oil mist system. A green light indicates normal operation of the system.

Model 380732-A4 is an Industrial Audible Signal that operates on 115 VAC. This device gives immediate warning by a howler when a malfunction occurs in the oil mist system.

NOTE: The audible howler can only be used in conjunction with the Model 380745-A4 Visible Signal Unit.

NOTE: For additional detailed accessory information, contact your nearest Alemite Distributor.

PRINCIPLES OF OPERATION

NOTE: Refer to Figure 2 for component identification.

Oil-Mist lubrication systems use the energy of compressed air to atomize and convey oil to multiple points of lubrication. Atomization and delivery are done in the following manner:

Compressed air, usually taken from plant supply, first enters the air filter/moisture separator where it is scrubbed clean of water and particles. This clean air

flows to the air pressure regulator where it is reduced to operating pressure as indicated on the air pressure gauge. It is then heated by the air heater to stabilize resultant air/oil ratio in spite of the varying ambient temperature.

The compressed air now flows through the venturi, creating a vacuum to draw in oil from the oil reservoir. Filtered oil drawn through the oil lift tube, enters in liquid form but, once in the air stream, is ruptured into a myriad of particles. Larger particles immediately fall back to the reservoir, leaving the smaller ones to be airborne. The system has by now produced a "rough" mist.

A baffle is placed downstream of the venturi. The heavier airborne particles blast against the baffle, coalesce and return to the reservoir while lighter particles remain airborne.

The compressed air is now loaded with very tiny particles of oil. This air/oil mixture constitutes the oil mist which is then delivered to lubrication areas through main and branch lines.

INSTALLATION

A. Pre-Installation

The reservoir is shipped assembled except for the Mist Generating Head. To install it to reservoir, proceed as follows:

1. Remove the tape covering the opening on top of the reservoir 383802 (Figure 4).
2. Place gasket 381525 (Figure 5) over opening mentioned in step 1.

RESERVOIR ASSEMBLY		MIST-HEAD ASSEMBLY				
Reservoir Model	Capacity	Model	Capacity (CFM)	Mist Head	Screen & Nozzle	Tube
383802-B4	5 Qts.	383803-B4	2.3	387088	383831-2	386581-3
		383804-B4	4.3	387088	383831-1	386581-3
		383805-B4	9.7	387088	381812-3	386581-3
383802-C4	3 Gals.	383803-C4	2.3	387088	383831-2	386581-4
		383804-C4	4.3	387088	383831-1	386581-4
		383805-C4	9.7	387088	381812-3	386581-4

Table 1: Major Components of Reservoir and Oil-Mist Heads

3. Insert mist head assembly (Figure 4) into opening with air inlet to the right (as you face unit).

4. Secure mist head to reservoir using four gaskets 383828 and four screws 171568 (Figure 5).

B. Mounting Unit

The Oil-Mist Unit must be installed in an upright position. When selecting a location, allow sufficient space for filling the reservoir as well as adjustment and maintenance of the unit. Space allowance for the accessories should also be taken into consideration.

To mount unit:

1. Drill four holes in wall corresponding to mounting holes on the side of the unit (Figure 4).

2. Secure unit to wall with 3/8" dia. bolts (NOT FURNISHED WITH UNIT).

NOTE: Wall should be sturdy and vibration-free.

C. Preparation

(Figure 4)

1. Filling the reservoir with oil:

a. Remove filler plug from reservoir.

b. Fill the reservoir with oil until a reading of "FULL" is reached on the oil-level sight tube 385728-2 or 385728-3. DO NOT OVERFILL.

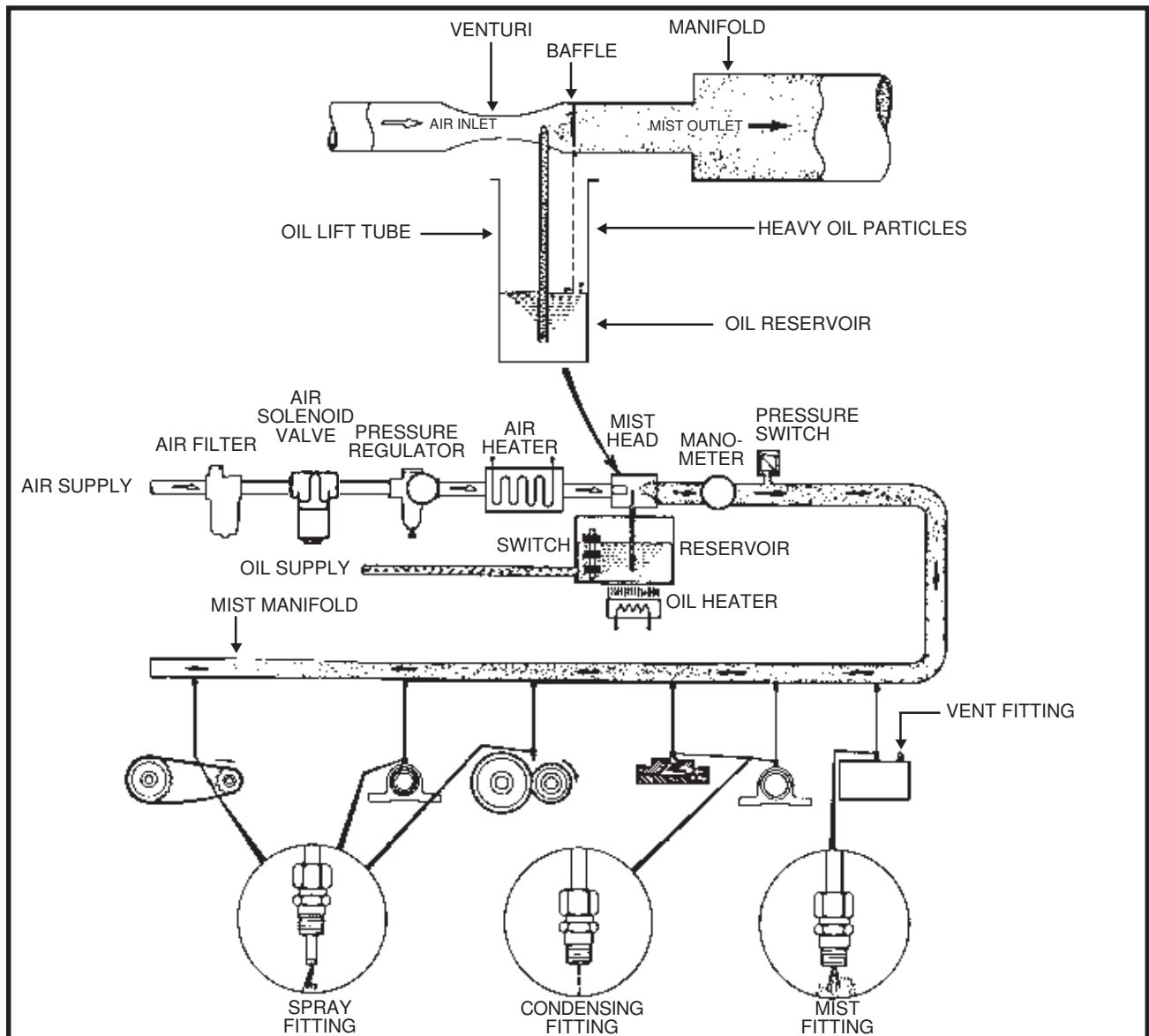


Figure 2: Functional Layout of Typical Oil-Mist System

2. Air Pressure

a. Connect the facility air supply to the air inlet of the mist head assembly using an air regulator to control the inlet air pressure and an air filter/ moisture separator to assure clean, dry air for proper oil atomization (Figure 4).

b. Turn on the air supply.

NOTE: A minimum of 10 psi controlled inlet air pressure is required for the proper misting of oil. Maximum air pressure is 80 psi.

ADJUSTMENTS

1. Oil Flow Adjustment:

(Figure 5)

Oil-Mist density can be varied by adjusting the Oil-Flow Adjustment Screw 383834 in the mist head 387088. For initial setting, adjust the screw as follows.

a. With unit off, turn the adjustment screw 383834 clockwise until it is gently seated.

b. Rotate the adjustment screw four turns counterclockwise.

c. If, after a reasonable period, oil mist appears to be excessive, turn the adjustment screw clockwise in fractional increments (1/6 or 1/4 turn) to reduce oil mist.

NOTE: The adjustment screw may be varied from a maximum of 4 turns (open) to a minimum of 1/2 turn (open).

2. Air Flow Adjustment:

Using the air regulator, adjust air pressure so that an oil-mist pressure of 20" of H₂O in the mist manifold is registered on the mist-pressure gauge. At this pressure, the desired output from the application fittings, attached to machines being lubricated, should be attained.

The above pressure may be varied to satisfy the system design for some particular applications. Check with your Alemite supplier who designed the system for your application.

MAINTENANCE

CAUTION: Shut off the facility air supply before servicing the unit.

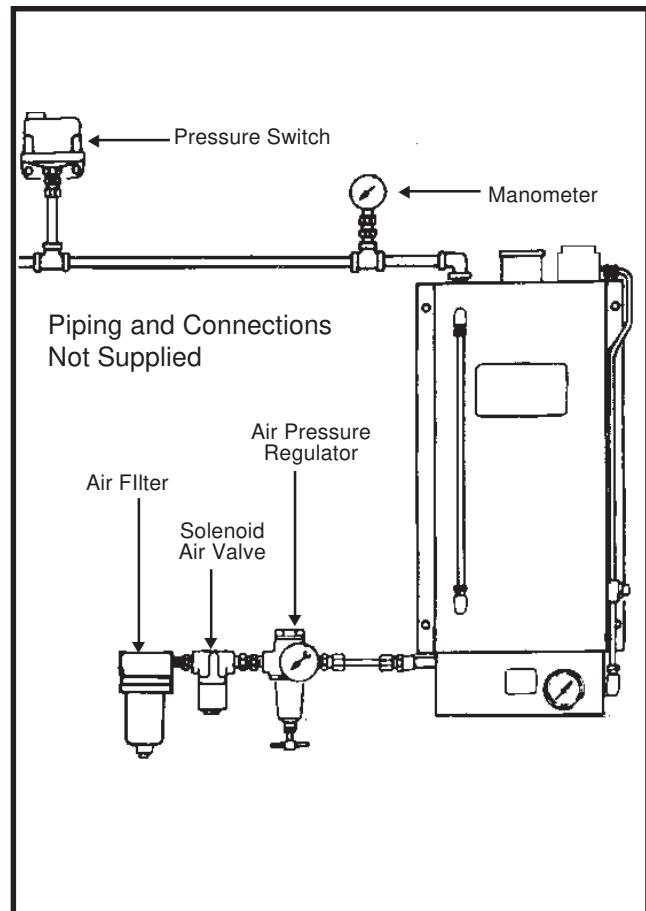


Figure 3: Diagram of Oil-Mist System with Accessories

A. Mist-Generating Head :

(Figure 5)

This unit should be inspected monthly to make sure screen-and-nozzle assembly 383831-1, 383831-2 or 381812-3 is clean and free of obstructions.

To disassemble unit, refer to service section of this instruction sheet.

NOTE: More frequent inspections are recommended for those units having a "Thermo-Aire" heater as carbon may accumulate in the screen and nozzle assembly.

B. Reservoir :

(Figure 4)

The reservoir should be drained periodically to prevent sludge build-up on the bottom of the tank.

1. Disconnect the power and allow the unit to cool to at least 100°F.

2. Remove drain plug 311730.

3. Flush out tank with solvent.

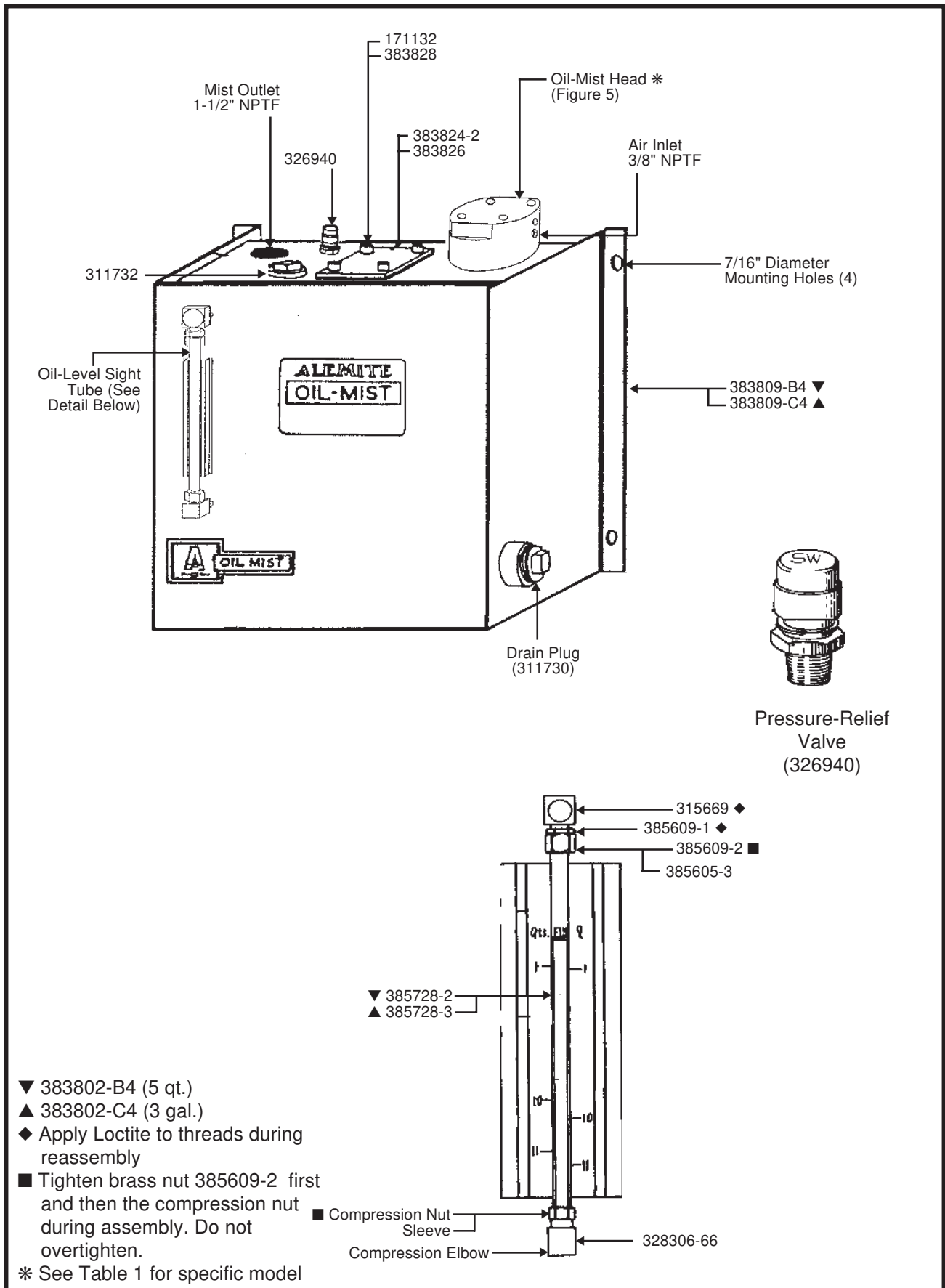


Figure 4: Series 383802 Oil-Mist Reservoir with a Mist-Generating Head

4. Dispose of the spent solvent in an approved waste-oil container.
5. Dry tank thoroughly with air.
6. Replace drain plug 311730.

7. Refill the reservoir following the instructions under Section-C, Preparation.

NOTE: Readjust oil-mist flow after every inspection of the unit. Refer to preceding procedure for ADJUSTMENTS.

SERVICE

TO DISASSEMBLE MIST HEAD ASSEMBLY, PROCEED AS FOLLOWS:

CAUTION: Shut off facility air supply before servicing unit.

1. Disconnect air supply from mist head assembly (Figure 4).
 2. Remove four screws 171568 and four gaskets 383828 to disconnect mist head assembly from reservoir (Figure 5).
 3. Remove mist head assembly from reservoir.
 4. Unscrew tube 386581-3 or 386581-4 from mist head 387088 (Figure 5).
- NOTE:** DO NOT REMOVE tube unless replacement is to be made. If replaced, apply Loctite to threads.
5. Unscrew the pickup screen assembly from the tube.
 6. Unscrew screen and nozzle assembly 383831-1, 383831-2 or 381812-3 from head 387088 (Figure 5).
 7. Detach gaskets 381525 and 131266 and "O" ring 171018-12.

NOTE: When replacing "O" ring 171018-12, lubricate with oil.

8. Remove two pan head screws to disconnect nozzle from the screen assembly.
9. Turn oil-flow adjustment screw 383834 counter-clockwise until removed from head 387088. Detach "O" ring 171018-9 from the oil-flow adjustment screw.
10. Clean screen and nozzle and all other passages (air and/or oil) with solvent.
11. Inspect for wear or damage and replace worn parts with new ones and those supplied in Repair Kit 393031.

CAUTION: Damaged or worn parts can cause improper operation of unit. Under no circumstances should they be reused.

12. Reassemble unit by reversing steps 1 through 9.

NOTE: More frequent inspections are recommended for those units having a "Thermo-Aire" heater as carbon may accumulate in the screen and nozzle assembly 383831-1, 383831-2 or 381812-3.

TO DISASSEMBLE RESERVOIR (FIGURE 4), PROCEED AS FOLLOWS:

CAUTION: Shut off facility air supply before servicing unit.

1. Unscrew drain plug 311730.
2. Remove four screws 171132 and four gaskets 383828 to release plate 383824-2 and gasket 383826.
3. Unscrew pressure-relief valve 326940.
4. Unscrew plug 311732.
5. Remove oil-level sight tube 385728-2 or 385728-3 following steps below:

NOTE: DO NOT REMOVE oil-level sight tube unless cleaning or replacement is required.
6. Unscrew upper nut 385609-2 and sleeve 385605-3.

CAUTION: Always remove and re-tighten upper nut & sleeve first or broken tube 385728-2 or 385728-3 would result. DO NOT over-tighten.

7. Unscrew lower compression nut and remove the sleeve and tube 385728-2 or 385728-3.

NOTE: Do not remove angle body 315669, compression elbow body and fitting 385609-1 unless replacement is to be made. If replaced, apply Loctite sparingly on new threads.

8. Clean metal parts with solvent and dry with air.
9. Inspect for wear or damage and replace worn parts with new ones.

CAUTION: Damaged or worn parts can cause improper operation of unit. Under no circumstances should they be reused.

10. Reassemble unit by reversing steps 1 through 7.

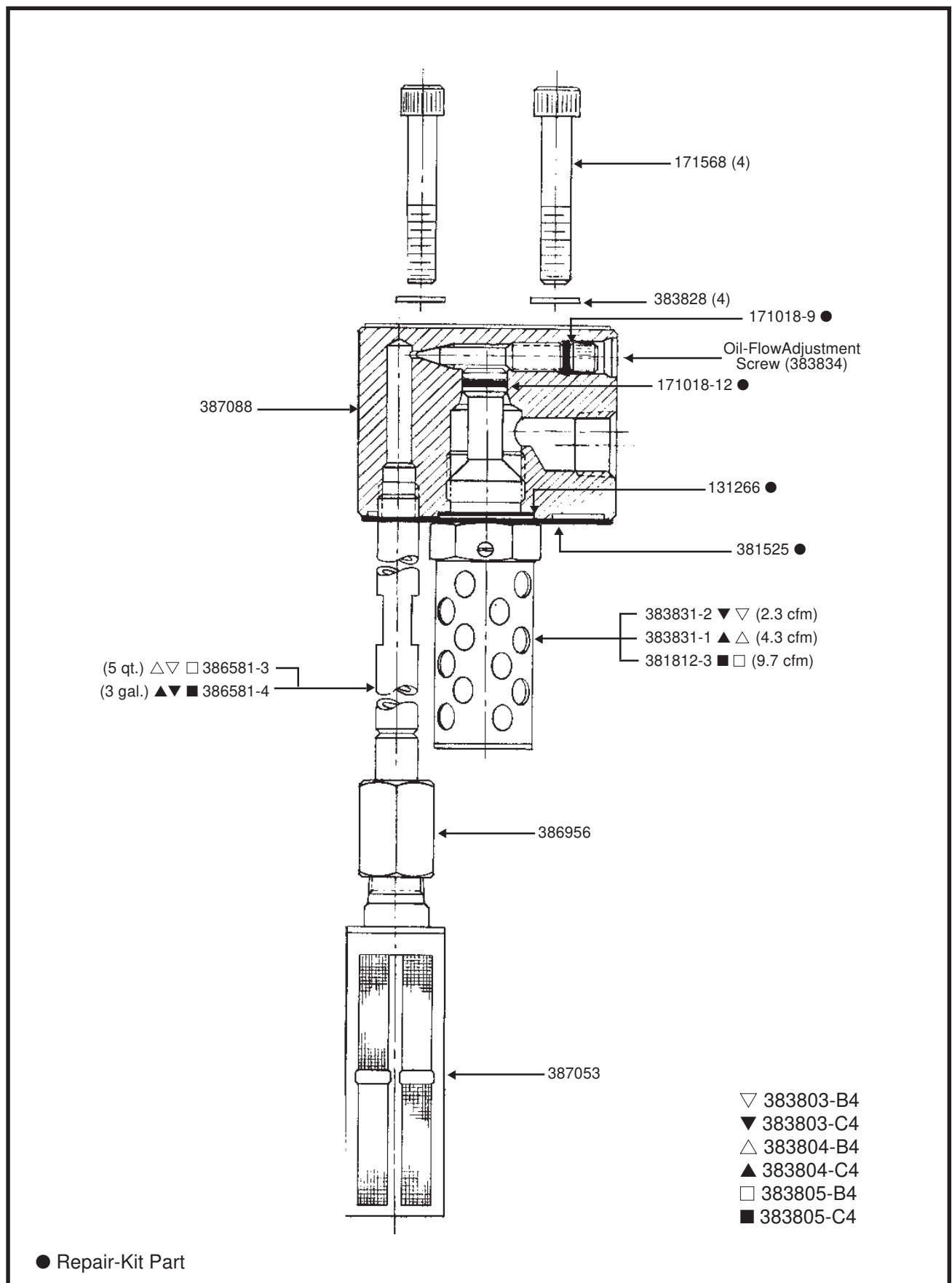


Figure 5: Oil-Mist Generating Assembly

SERVICE DIAGNOSIS CHART

NOTE: This chart is intended for use with a fully equipped Oil-Mist having an indicator lamp warning system. Disregard reference to items not in your particular set-up and interpret data as required.

CONDITION	PROBABLE CAUSE	REMEDY
<p>■ Red light on – High manifold pressure.</p>	<p>a. Feeder lines or application fitting restricted. b. Trap in main line. c. Air supply excessive for system.</p>	<p>a. Repair as required. b. Repair as required. c. Refer to application data.</p>
<p>■ Red light on – manifold pressure gauge indicates no pressure.</p>	<p>a. Closed air supply line. b. Mist head air passage plugged. c. Break, kink, bend or improper pitch in main or branch oil-mist supply line. d. Inoperative air solenoid. e. Inadequate air supply to unit.</p>	<p>a. Open air supply line. b. Disassemble & clean as required. c. Repair line. d. Replace solenoid. e. Provide adequate air supply to unit.</p>
<p>■ Red light on – everything else functioning correctly.</p>	<p>a. Oil level insufficient.</p>	<p>a. Refill oil reservoir, if light remains on check Low Level Switch operation.</p>
<p>■ Red light on – Unit functioning normally.</p>	<p>a. Malfunction of mist pressure switch.</p>	<p>a. See mist pressure switch instruction sheet.</p>
<p>■ Red light on – Oil mist at bearings. Manifold pressure gauge indicates proper pressure.</p>	<p>a. Air heater thermostat not functioning properly. b. Heating element defective.</p>	<p>a. Adjust air heater thermostat as outlined under ADJUSTMENTS in SER 383808. If adjustment of the Air Heater Thermostat does not correct the situation, check for continuity across the thermostat. If the thermostat is defective, replace it. b. If air heater thermostat checks out correctly and heating element does not heat, check continuity across the heating element terminals. If there is an open circuit, the heater is defective. Replace it.</p>
<p>■ Green light on – no mist at bearings.</p>	<p>a. Air pressure set too low at air pressure regulator. b. Oil intake screen closed. c. Malfunction of air regulator. d. Malfunction of air filter/moisture separator.</p>	<p>a. Adjust air regulator so that minimum air pressure is 10 PSI and the minimum oil-mist pressure is 20 inches of water. b. Clean screen c. Clean filter in air regulator. Repair air regulator if necessary (see Instruction Sheet for air regulator). d. Clean or replace element. Repair air filter if necessary (see Instruction Sheet for filter).</p>
<p>■ Green light on – Manifold pressure gauge indicates sufficient pressure. Insufficient or no oil in mist at bearings.</p>	<p>a. Oil flow adjustment screw set too lean. b. Oil too cold and sluggish due to malfunction of oil heater. c. Viscosity of oil too heavy. d. Oil inlet screen clogged.</p>	<p>a. Turn oil flow adjustment screw counterclockwise to increase oil flow. (Adjustment range of the oil flow adjustment screw is between 1/2 turn to 4 turns open.) DO NOT FORCE ADJUSTMENT SCREW INTO SEATED POSITION. b. Reset thermostat; if necessary replace heater element or thermostat. c. Check proper viscosity of oil. d. Clean screen.</p>
<p>Excessive oil mist at bearings.</p>	<p>a. Oil type changed from that previously used. b. Air temperature set too high. c. Fittings too large. d. Oil flow adjustment screw set too rich. e. High manifold pressure.</p>	<p>a. Use proper oil. b. Reduce in 10°F increments. c. Consult application data. d. Turn oil flow adjustment screw clockwise to decrease oil flow. CAUTION: Do not reduce oil flow adjustment below recommended minimum setting. e. Check cause of excessive air pressure.</p>
<p>■ NOTE: The red and green indicators are only available with the Model 380745-A4 Visible Signal Unit.</p>		

Minor Repair Kit

393031 For Oil-Mist Generating Heads

Part No.	Description	Qty.
131266	Copper Gasket, 1-1/16" O.D.	1
171018-9	"O" Ring, 7/32" I.D. x 11/32" O.D.	1
171018-12	"O" Ring, 3/8" I.D. x 1/2" O.D.	1
381525	Fiber Gasket, 2-5/8" Diameter	1

393651 For Sight-Glass Repair on Five-Quart Reservoir

Part No.	Description	Qty.
328301-6	Steel Compression Nut for 3/8" Tubing	1
328302-6	Brass Compression Sleeve for 3/8" Tubing	1
385605-3	Rubber Sleeve for Flex-Tube Fitting	1
385609-2	Brass Nut for Flex-Tube Fitting	1
385728-2	Sight Tube, 7-5/8" Long (Lexan)	1

393652 For Sight-Glass Repair on Three-Gallon Reservoir

Part No.	Description	Qty.
328301-6	Steel Compression Nut for 3/8" Tubing	1
328302-6	Brass Compression Sleeve for 3/8" Tubing	1
385605-3	Rubber Sleeve for Flex-Tube Fitting	1
385609-2	Brass Nut for Flex-Tube Fitting	1
385728-3	Sight Tube, 17-3/8" Long (Lexan)	1

PARTS LIST – Oil-Mist Reservoir Assembly (383802-B4/C4) (Figure 4)

Part No.	Description	Qty.
+ 171132	Hex-Head Cap Screw, 5/16-18 x 7/8" long	4
+ 311730	Pipe Plug, 3/4" NPT	1
+ 311732	Pipe Plug, 1" NPT	1
315669	Angle Body, 3/8" NPT	1
326940	Pressure-Relief Valve	1
● 328306-66	Compression Fitting for 3/8" Tubing (Steel)	1
+ 383809-B4	Reservoir Tank Assembly (383802-B4)	1
+ 383809-C4	Reservoir Tank Assembly (383802-C4)	1
+ 383824-2	Square Plate, 2-1/4"	1
383826	Square Gasket, 2-1/4"	1
383828	Aluminum Gasket, 7/16" O.D.	4
● + 385605-3	Rubber Sleeve	1
385609-1	Brass Fitting Body	1
● + 385609-2	Brass Nut	1
● + 385728-2	Sight Tube, 7-5/8" long (383802-B4)	1
● + 385728-3	Sight Tube, 17-3/8" long (383802-C4)	1

- Repair Kit Part
- + Not Available as separate purchased part

PARTS LIST – Oil-Mist Head Assembly (383803-B4/C4) (Figure 5)

Part No.	Description	Qty.
● 131266	Copper Gasket, 1-1/16" O.D.	1
● 171018-9	"O" Ring, 7/32" I.D. x 11/32" O.D.	1
● 171018-12	"O" Ring, 3/8" I.D. x 1/2" O.D.	1
+ 171568	Hex-Head Cap Screw, 5/16-18 x 2" long	4
+ ● 381525	Fiber Gasket, 2-5/8" Diameter	1
383828	Aluminum Gasket, 7/16" O.D.	4
383831-2	Screen and Nozzle Assembly	1
383834	Oil-Flow Adjustment Screw	1
386581-3	Tube, 10-7/8" long (383803-B4)	1
386581-4	Tube, 20-5/8" long (383803-C4)	1
386956	Coupling, 1" long	1
387053	Filter	1
+ 387088	Oil-Mist Head	1

- Part of Repair Kit 393031
- + Not Available as separate purchased part

PARTS LIST – Oil-Mist Head Assembly (383804-B4/C4) (Figure 5)

Part No.	Description	Qty.
● 131266	Copper Gasket, 1-1/16" O.D.	1
● 171018-9	"O" Ring, 7/32" I.D. x 11/32" O.D.	1
● 171018-12	"O" Ring, 3/8" I.D. x 1/2" O.D.	1
+ 171568	Hex-Head Cap Screw, 5/16-18 x 2" long	4
+ ● 381525	Fiber Gasket, 2-5/8" Diameter	1
383828	Aluminum Gasket, 7/16" O.D.	4
383831-1	Screen and Nozzle Assembly	1
383834	Oil-Flow Adjustment Screw	1
386581-3	Tube, 10-7/8" long (383804-B4)	1
386581-4	Tube, 20-5/8" long (383804-C4)	1
386956	Coupling, 1" long	1
387053	Filter	1
+ 387088	Oil-Mist Head	1

● Part of Repair Kit 393031
 + Not Available as separate purchased part

PARTS LIST – Oil-Mist Head Assembly (383805-B4/C4) (Figure 5)

Part No.	Description	Qty.
● 131266	Copper Gasket, 1-1/16" O.D.	1
● 171018-9	"O" Ring, 7/32" I.D. x 11/32" O.D.	1
● 171018-12	"O" Ring, 3/8" I.D. x 1/2" O.D.	1
+ 171568	Hex-Head Cap Screw, 5/16-18 x 2" long	4
+ ● 381525	Fiber Gasket, 2-5/8" Diameter	1
381812-3	Screen and Nozzle Assembly	1
383828	Aluminum Gasket, 7/16" O.D.	4
383834	Oil-Flow Adjustment Screw	1
386581-3	Tube, 10-7/8" long (383805-B4)	1
386581-4	Tube, 20-5/8" long (383805-C4)	1
386956	Coupling, 1" long	1
387053	Filter	1
+ 387088	Oil-Mist Head	1

● Part of Repair Kit 393031
 + Not Available as separate purchased part

NOTE: The parts listed in this instruction sheet are for reference identification in the instructions or illustrations. Some are not available as separate parts and these are noted in the parts list. Items such as nuts, bolts, elbows, etc. should be purchased at a hardware or plumbing supply. Refer to the current price list and bulletins before ordering parts, and always give the part number, quantity, description and model where used when ordering parts. Parts availability and prices are subject to change without notice.

PARTS CHANGES SINCE LAST PRINTING

Figure 4 (& parts list for Fig 4): Deleted 328301-6, 328302-6 & 333634; Added 328306-66.
 (Repair kits still include 328301-6 & 328302-6.)