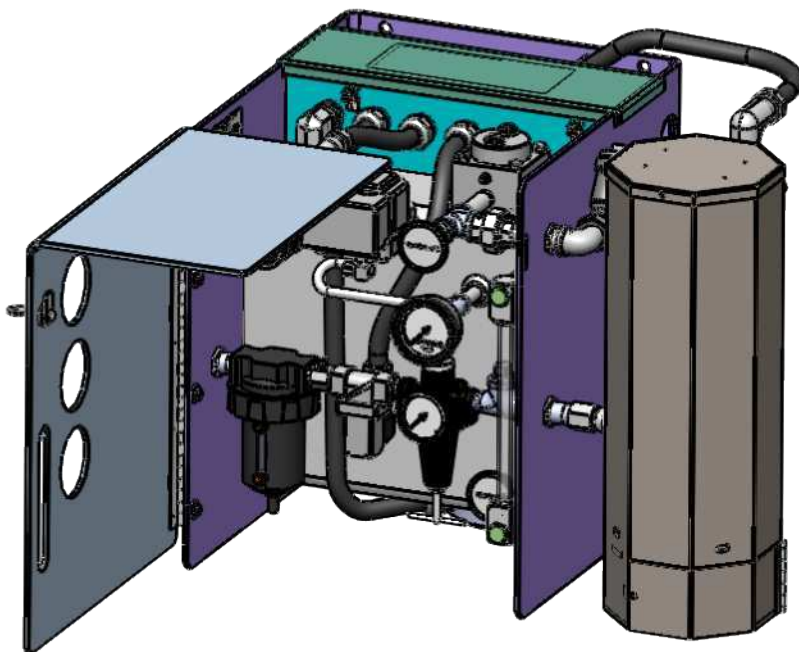


# Oil-Mist Generator

Model 3730, 3731 and 3732 series



Date of issue	January 2023
Form number	397852
Version	2

# Contents

<b>Safety</b> .....	<b>3</b>
<b>Signal words for safety</b> .....	<b>3</b>
<b>Description</b> .....	<b>4</b>
<b>General safety requirements</b> .....	<b>4</b>
<b>Model identification chart</b> .....	<b>4</b>
<b>Specifications</b> .....	<b>4</b>
<b>Principles of operation</b> .....	<b>6</b>
Mechanical .....	6
Reservoir assembly components .....	8
Control assembly components .....	8
Thermo-Aire assembly components ...	8
<b>Installation</b> .....	<b>9</b>
<b>Operation</b> .....	<b>9</b>
Fill unit .....	9
Adjustment .....	9
Operating instructions .....	9
<b>Mounting dimensions</b> .....	<b>9</b>
<b>Maintenance</b> .....	<b>12</b>
Adjust air thermostat .....	12
<b>Service</b> .....	<b>13</b>
Air regulator .....	13
Air filter .....	13
Mist head assembly .....	13
Manifold pressure switch assembly ...	13
Oil level sight glass .....	13
Replace oil heater control thermostat ..	14
Replace oil heater .....	14
Low level switch .....	18
Solenoid valve .....	18
Air thermostat .....	18
<b>Parts list</b> .....	<b>22</b>
<b>Troubleshooting</b> .....	<b>25</b>

# Safety

Read and carefully observe installation instructions before installing/operating/troubleshooting assembly. Assembly must be installed, maintained and repaired exclusively by persons familiar with instructions.

Install assembly only after safety instructions and guide have been read and are completely understood.

Adequate personal protection must be used to prevent splashing of material on skin or in eyes.

Always disconnect power source (electricity, air or hydraulic) from pump when not in use.

- Do not misuse, over-pressurize, modify parts, use incompatible chemicals, fluids, or use worn and/or damaged parts.
- Do not exceed stated maximum working pressure of pump or of lowest rated component in system. Refer to **Specifications, page 4 and 5.**
- Always read and follow fluid manufacturer's recommendations regarding fluid compatibility and use of protective clothing and equipment.
- Failure to comply may result in personal injury and/or damage to equipment.

# Explanation of signal words for safety

## NOTE

Emphasizes useful hints and recommendations as well as information for efficient and trouble-free operation.

## ⚠ CAUTION

Indicates a dangerous situation that can lead to light personal injury or property damage if precautionary measures are ignored.

## ⚠ WARNING

Indicates a dangerous situation that could lead to death or serious injury if precautionary measures are ignored.

## ⚠ DANGER

Indicates a dangerous situation that will lead to death or serious injury if precautionary measures are ignored.

# Description

Models 3730, 3731 and 3732 Oil-Mist Generators are high-output units that require air pressure and electric power to operate.

Each model consists of a strainer assembly, low level switch, mist head assembly of specified CFM capacity, reservoir assembly, Thermo-Aire and a door and hinge assembly. See **Specifications** for specific major components of each model.

# General safety requirements

- Do not make adjustments on component settings not recommended in this manual. Contact Alemite service representative for questions or concerns.
- Electrical service on unit must be performed by a qualified electrician or by someone familiar with equipment.
- Shut off power and air supply before servicing unit.
- Protect material and air lines from damage or puncture, making certain that all connections are secure.
- Damaged or worn parts are a potential danger to person and property. Never reuse them.

### Model identification chart

Model	Delivery capacity	Voltage (nominal)	Strainer assembly	Low level switch	Mist head assembly	Reservoir assembly	Thermo-Aire	Door and hinge assembly
3730-BW6	13 CFM	240 VAC	380372-B1	385007-A1	385011-1	386235-B1	386249	385679-B4
3730-RW6	13 CFM	120 VAC	380372-B1	385007-A1	385011-1	386235-A1	386249	385679-B4
3731-BW6	21 CFM	240 VAC	380372-B1	385007-A1	385011-2	386235-B1	386249	385679-B4
3731-RW6	21 CFM	120 VAC	380372-B1	385007-A1	385011-2	386235-A1	386249	385679-B4
3732-BW6	41 CFM	240 VAC	380372-B1	385007-A1	385003	386235-B1	386249	385679-B4
3732-RW6	41 CFM	120 VAC	380372-B1	385007-A1	385003	386235-A1	386249	385679-B4

### Specifications

Model	Delivery capacity	Flow range	Number of nozzles	Mist outlet	Voltage solenoid and oil heater	Voltage air heater
3730-RW6	13 CFM	5.2–21	1	2 1/2 in NPTF (internal)	120 VAC, 50/60 Hz	240 VAC, 50/60 Hz
3731-RW6	21 CFM	7.5–33	1	2 1/2 in NPTF (internal)	120 VAC, 50/60 Hz	240 VAC, 50/60 Hz
3732-RW6	41 CFM	15–45	2	2 1/2 in NPTF (internal)	120 VAC, 50/60 Hz	240 VAC, 50/60 Hz
3736-RW6	65 CFM	31–73	2	3 in NPTF (internal)	120 VAC, 50/60 Hz	240 VAC, 50/60 Hz
3730-BW6	13 CFM	5.2–21	1	2 1/2 in NPTF (internal)	240 VAC, 50/60 Hz	240 VAC, 50/60 Hz
3731-BW6	21 CFM	7.5–33	1	2 1/2 in NPTF (internal)	240 VAC, 50/60 Hz	240 VAC, 50/60 Hz
3732-BW6	41 CFM	15–45	2	2 1/2 in NPTF (internal)	240 VAC, 50/60 Hz	240 VAC, 50/60 Hz
3736-BW6	65 CFM	31–73	2	3 in NPTF (internal)	240 VAC, 50/60 Hz	240 VAC, 50/60 Hz

### NOTE

Voltages apply to air solenoid and oil heater only. Thermo-Aire is wired for 240 AC on all models.

**Specifications continued**

**Dimensions**

Height 21 5/8 in (549 mm)  
 Weight 27 21/32 in (702 mm)  
 Depth 17 3/16 in (437 mm)

**Weight**

Empty 178 lbs (80.7 kg)  
 Full (approximately) 213 lbs (96.6 kg)

Inlet 1/2 in NPTF (external)  
 Mist outlet 2 1/2 in NPTF (internal)  
 Electrical conduit openings Ø 7/8 in for 1/2 in electrical fittings

Mounting holes Ø 17/32 in  
 Reservoir fill port 1 in NPTF (internal)  
 Reservoir drain 2 in NPTF (internal)

**Reservoir capacity**

Dry unit to full mark 4.2 gal (970 in<sup>3</sup>)  
 Full to nozzle starvation 3.6 gal (840 in<sup>3</sup>)

Oil remaining between low level switch closing and nozzle starvation 0.9 gal (210 in<sup>3</sup>)  
 Oil remaining at nozzle starvation 0.6 gal (130 in<sup>3</sup>)

**380372-B1 Strainer assembly (5)**

Filter 138 Microns

**381542-1 or -2 Oil heater (65)**

Maximum wattage 300 Watts  
 Power requirements  
 381542-1 120 V AC 60/50 Hz  
 381542-2 240 V AC 60/50 Hz

**382663 Finned tubular heater (air) (36)**

Wattage 2 000 Watts  
 Power requirement 240 Volts

**382677 Air thermostat (37)**

Preset to open at 150 °F (66 °C)  
 Temperature range -100 to +400 °F (-38 to +204 °C)

**Rating**

Voltage Amperage  
 120 V AC 25 A  
 240 V AC 12.5 A

**386347 Air thermostat (33)**

Preset to open at 115 °F (66 °C)  
 Temperature range -100 to +300 °F (-38 to +149 °C)

**Rating**

Voltage Amperage  
 120 V AC 60/50 Hz 10 A  
 240 V AC 60/50 Hz 5 A

**384880-A4 or -B4 Solenoid valve (40)**

Operating pressure 5-150 psi  
 Inlet 1/2 in NPTF (internal)  
 Outlet 1/2 in NPTF (internal)  
 Power requirements  
 384880-A4 120 V AC 60/25 Hz  
 384880-64 240 V AC 60/25 Hz

**384885 Mist relief valve (83)**

Opens at 10 psi, 277 in H<sub>2</sub>O (.69 bar, 7040 mm H<sub>2</sub>O)

**384884 Regulated air pressure gauge (dual scale) (86)**

Pressure range 0-100 psi (0-7 bar)

**384889 Manifold pressure gauge (dual scale) (7)**

Pressure range 0-100 in H<sub>2</sub>O (0-2500 mm in H<sub>2</sub>O)

**384898 Air thermometer (dual scale) (4)**

Range 50-500 °F (10-260 °C)  
 ± 5 °F accuracy

**384974 Oil thermostat (76)**

Preset to open at approximately 100 °F oil temperature  
 Voltage Amperage  
 120 V AC 4 A  
 240 V AC 2 A

**385007-A1 Low level switch (27)**

Voltage Amp. resistive  
 115 V AC 0.5 A  
 230 V AC 0.25 A

**Voltage**

Holding 0.25 A at 115 V, 0.12 A at 230 V  
 In rush 0.5 A at 115 V, 0.25 A at 230 V

**386295-1 Air filter (moisture separator) (8)**

Maximum operating pressure 175 psi (12 bar)  
 Minimum operating pressure 30 psi (2 bar)

**384850 Oil level sight glass (13) (graduated in quarts)**

3/8 in oil column= 1 quart

**384876 Oil temperature gauge (6) (dual scale)**

Range 20-240 °F (0-115 °C)

# Principles of operation

## Mechanical

Compressed air entering unit passes through air filter that removes most water and contaminants. Air flows through

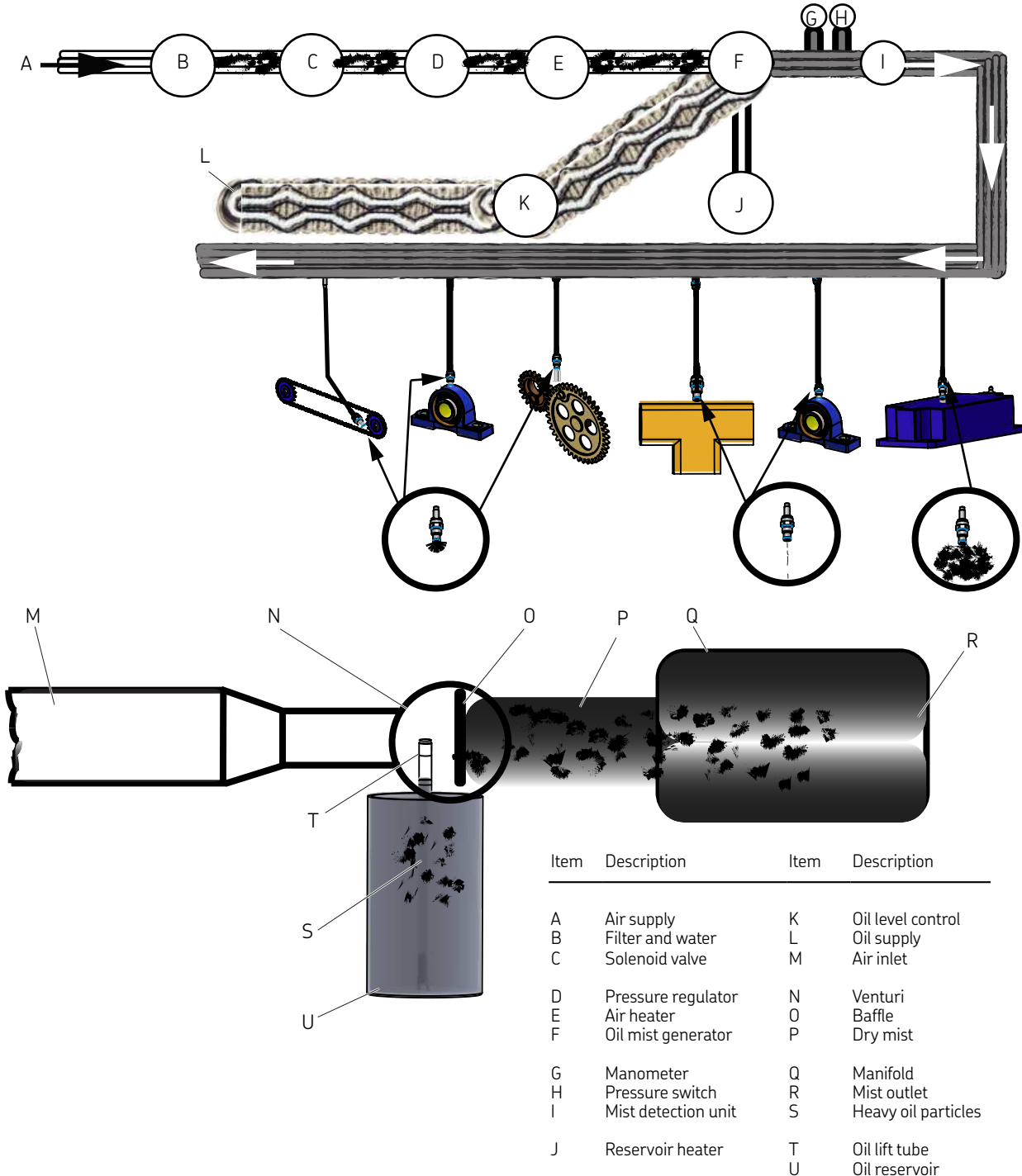
solenoid valve that acts as control valve, allowing air to generator only when solenoid valve is energized. Source pressure is reduced to operational pressure by regulator. After Thermo-Aire unit heats, air moves to mist head.

Mist head venturi increases air flow to high velocity, siphoning oil from reservoir. Air stream ruptures it into multiple particles

varying in size from droplets a few microns in diameter to large globules. Heavier particles immediately fall back to reservoir, while lighter particles remain airborne and constitute rough mist. Mist is refined by baffle placed downstream of venturi where heavier airborne particles, directed by weight, impact on baffle and break up. Heavier particles combine and return to

Diagram 1

### Oil mist components



reservoir while lighter particles remain airborne. Refined mist with correct viscosity enters mist manifold and is sent to lubrication areas.

**NOTE**

Information concerning oil heater (OH) to follow is assuming mist generator is wired to circuitry of a machine segment in a multiple machine operation, and machine start-stop controls are interlocked with generator warning circuits, via relay.

**NOTE**

3 to 5 minute delay is required to allow air thermostat to respond to heater input when stabilizing system.

Circuit shows air heater on same power input as control circuits. Circuit can include 2CR relay for interlocking machine start with proper oil mist system operation. When 2CR is used, 2CR contacts in start circuit are normally open.

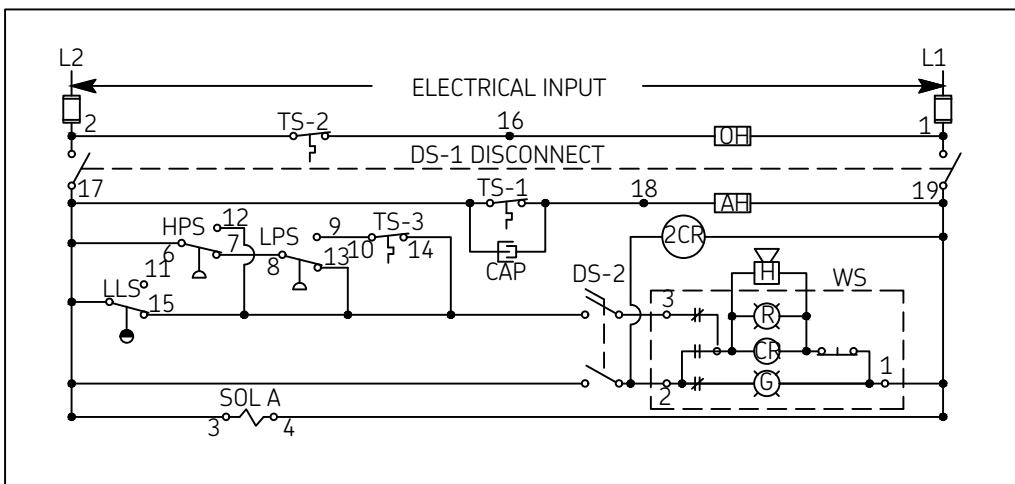
An automatic reset warning light signal unit is used in **Diagram 2**.

Sequence of operation:

- 1 Power across input lines energizes oil heater.
- 2 Manually closing **DS-1** starts oil mist system.
- 3 When system stabilizes, **DS-2** closes to lock in **WS** alarm (light signal and Howler) and optional **2CR** relay.

**Diagram 2**

**External wiring**



Oil heater (OH) functions whenever power across input line is on; it is controlled by oil heater thermostat (TS-2). Refer to **External wiring, Diagram 2**.

Closing main switch (DS-1) starts air heater (AH-temperature is regulated by air thermostat TS-1), and opens solenoid valve (SOLA) allowing air to generator.

After system has stabilized, switch (DS-2) is closed to lock in alarms and machine-start interlock (2CR). Green light (G) will be on.

**NOTE**

If system malfunction occurs, circuitry will de-energize green light (G), activate red light (R) and howler (H).

**Component codes**

Code	Component	Code	Component
SOLA	Air valve solenoid	TS-3	Low air temperature switch
AH	Air heater	CAP	Capacitor
OH	Oil heater	LPS	Mist manifold low pressure switch
TS-1	Air heater thermostat	HPS	Mist manifold high pressure switch
TS-2	Oil heater thermostat	LLS	Reservoir low level switch

**NOTE**

See **Principles of operation, page 6** for component mechanical interactions during generation of oil mist and for component electrical interaction during normal and abnormal operations.

**NOTE**

Refer to **Model identification chart, and Specifications, page 4** for ratings and capacities.

### Reservoir assembly (85) components

- 1 Reservoir (61) stores lubricant. See **Fig. 3, page 11** for more details.
- 2 Manifold pressure switch assembly (23) (**Fig. 2, page 10** and **Fig. 7, page 17**) consists of pressure switch (59) as main component. Switch responds to significant pressure variations above or below adjusted range between two independent switches. Low pressure switch 1 is set at 8 in (203 mm) of water, low limit on falling pressure. Switch 2 is set to actuate at 55 in (1 397 mm) of water on rising pressure. Closer setting to actual manifold pressure can be obtained by resetting elements. See manual **397714** for resetting procedure.
- 3 Manifold pressure gauge (7) (**Fig. 5, page 16**) indicates mist pressure in distribution system.
- 4 Reservoir safety valve (83) vents when pressure exceeds 10 psi (0.7 bar). Valve is mounted on front wall of reservoir.
- 5 Oil heater (65) (**Fig. 4, page 15**) keeps oil warm even when unit is not in operation so that mist output will begin quickly when unit is turned on. Heater is surface mounted.
- 6 Thermostat (76) (**Fig. 4, page 15**) maintains oil temperature at approximately 100 °F (37 °C). It is wired in series with oil heater, above.
- 7 Oil temperature gauge (6) (**Fig. 5, page 16**) indicates oil temperature in the reservoir.

### Control assembly (87) components

Refer to **Fig. 12, page 20**.

- 1 Moisture separator (air filter) (8) removes condensate and contaminants present in air line under normal filtration conditions. Additional filter and/or dryers are recommended where clean air is not readily available. Air filter automatically drains off accumulated water after removing 80 to 95% of water condensate through most of flow range.
- 2 Solenoid valve (40) starts and stops air supply to oil mist generator. Air shut-off valve is operable with 5 to 150 psi (0.34 to 10.3 bar) pressure differential between inlet and outlet pressures.
- 3 Air regulator assembly (43) provides accurate control of air pressure to mist head.
- 4 Air pressure gauge (42) indicates amount of regulated air pressure applied to oil mist nozzle.
- 5 Mist head assembly (78) (**Fig. 7, page 17**) breaks up oil into liquid particles small enough to be airborne. Resulting oil/air mixture is called mist. Oil flow is controlled by adjustment of needle valve assembly (80) (**Fig. 13, page 21**) that, by varying size of orifice, limits flow rate.

**NOTE**

In high output (65 CFM) mist head (78), two needle valve assemblies, screen and related parts are utilized to generate mist at high rate. Refer to **Fig. 13, page 21** and parts list for more information on mist head.

- 6 Low level switch (27) (**Fig. 8, page 17**) incorporates single float operating single pole, double-throw switch. With sufficient oil in reservoir, circuit between terminals 5 and 11 is closed. At low oil level, circuit between terminals 5 and 15 is closed. The 5 - 11 circuit can be used for start interlock, while 5 - 15 can be used for low level alarm. For more information, refer to manual **397570**.
- 7 Door and hinge assembly (82) (**Fig. 3, page 11**) serves as convenient, lockable enclosure for controls and adjustable components, preventing unauthorized tampering with equipment.
- 8 Strainer assembly (5) (**Fig. 5, page 16**) removes solid particles from heated air before air is introduced into mist head.

### Thermo-Aire assembly (84) components

Refer to **Fig. 10, page 18**.

- 1 Air heater assembly (88) heats air to stabilize oil/air ratio at varying ambient temperature, or to mist heavy oils that will not atomize at prevailing ambient temperature. Heater is provided with finned tubular heater (36) (**Fig. 11, page 19**). Air thermostat (37) is wired in series with air heater. Thermostat is normally closed and preset to open at 150 °F (93 °C) air temperature.
- 2 Air thermostat (33) (**Fig. 10, page 18**) indicates low air temperature. Normally closed, thermostat is preset to open at 115 °F (46 °C) air temperature.
- 3 Air thermometer (4) (**Fig. 5, page 16**) indicates air heater discharge temperature.



# Installation

Generators should be installed in upright position and secured with four 1/2 in bolts inserted through holes at rear corners of unit cabinet. Choose convenient location, allowing sufficient room for opening unit door and removing terminal box cover or reservoir plate. Make sure inspection, adjustment or filling of reservoir is not hindered. Provide room for electrical/air/mist connections, oil fill and water drain. Refer to **Fig. 1** for mounting dimensions, **Diagram 2, page 7** for basic wiring connections.

## CAUTION

Oil mist generator is not recommended for installation on machine that vibrates excessively. Should lubrication problem arise, mount unit on adjoining solid wall and use flexible hose to oil mist distribution system on machine.

# Operation

## Fill unit

Fill reservoir through T-strainer (62), located on left side of unit (**Fig. 3, page 11**). Fill reservoir to **FULL** mark on sight glass assembly.

## Adjustment

Air pressure and oil flow require adjustment for proper operation of all models of oil mist generators. Air pressure, which directly determines oil mist pressure, is controlled by air regulator (43) (**Fig. 12, page 20**). Oil mist pressure (or manifold pressure) should be adjusted to specific amount desired for application by adjustment of air pressure at air regulator. Manifold pressure gauge indicates oil mist pressure and is calibrated in inches of water. Typical system operation pressure is approximately 20 inches (508 mm) of water.

## NOTE

The following assumes unit is connected to air supply, manual disconnect switch and warning system.

## Mounting dimensions

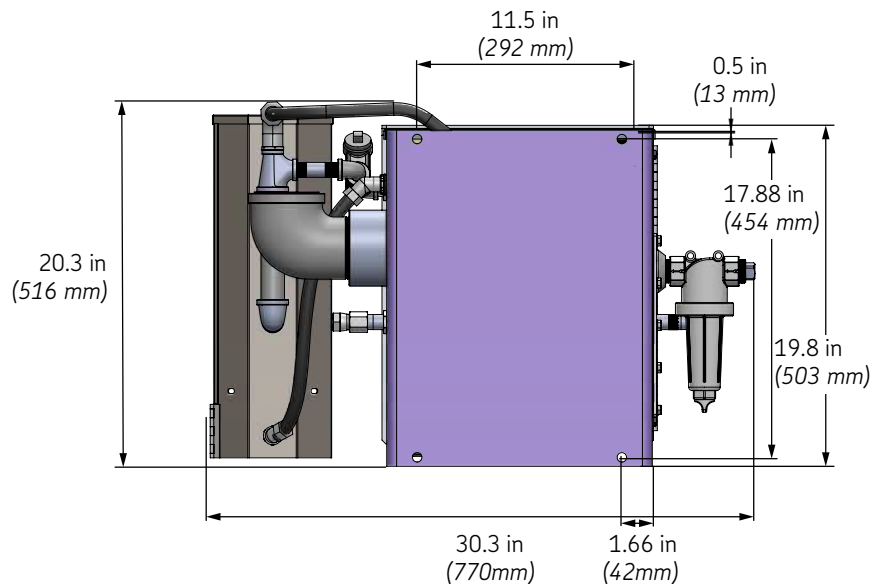


Fig. 1

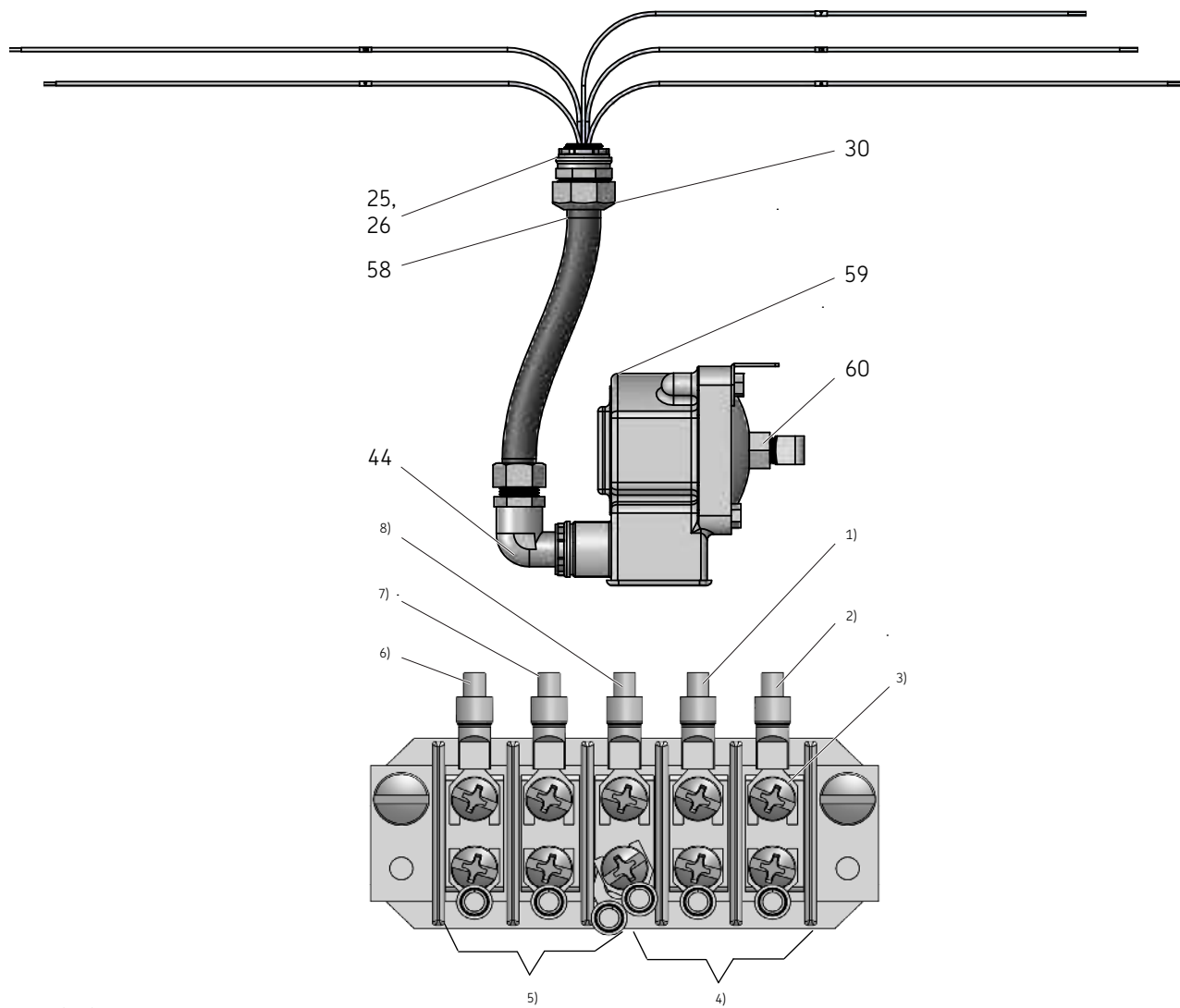
## NOTE

1.0 psi (.06 bar) equals 27.7 in (704 mm) of water; 1 in (25.4 mm) of mercury equals 13.6 in (91.4 mm) of water.

## Operating instructions

- 1 Load unit as described under section **Fill unit**.
- 2 Close air regulator. Unthread adjustment of regulator until no spring tension is felt.
- 3 Open air supply valve (not part of oil mist unit).
- 4 Close disconnect switch. Red warning light will come on.
- 5 Adjust regulator to provide proper manifold pressure in system.
- 6 After 3 to 5 minute delay to allow air thermostat (37) (**Fig. 11, page 19**) to respond to heater input, warning light will turn green. Should green light fail to glow and red light stay on, check air temperature, manifold pressure and oil level. Repeat **step 6**. Should unit still fail to operate satisfactorily, refer to **Troubleshooting, page 25**.

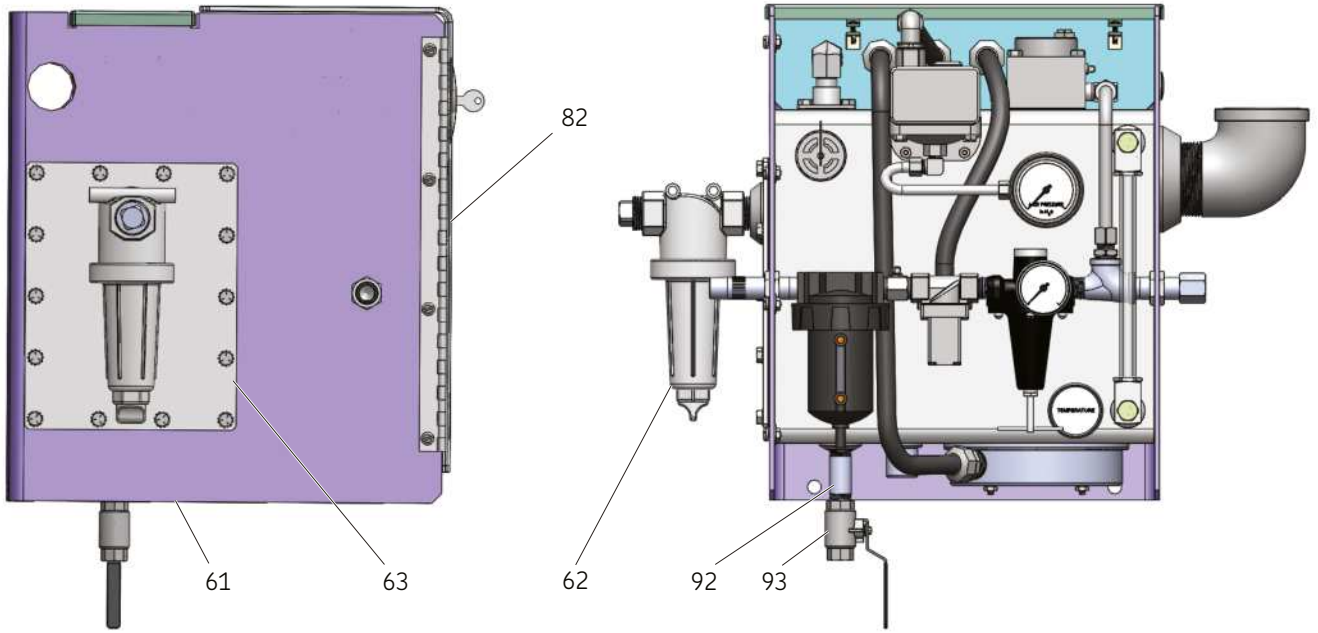
Pressure switch assembly (23)



- 1) No. 9 Red (N.O.)
- 2) No. 13 Blue (N.C.)
- 3) Attach and crimp all five terminals.
- 4) Circuit No. 1 low pressure switch
- 5) Circuit No. 2 high pressure switch
- 6) No. 6 Brown (common)
- 7) No. 12 Yellow (N.O.)
- 8) No. 7 Orange (N.C.)

Left side view

Front view (door assembly hidden)



# Maintenance

## ⚠ DANGER

Do not perform maintenance with air supply or electrical power on to unit.  
Failure to comply may result in death or serious injury.

- 1 Periodically inspect and clean the following:
  - 1.1 Air regulator (43) (Fig. 12, page 20). Refer to manual 397910.
  - 1.2 Air filter (8) (Fig. 5, page 16). To maintain maximum filtering efficiency and to avoid excessive pressure drop, air filter must be kept reasonably clean. Visible coating or film on filter element (dirt or condensate) or noticeable pressure drop indicates cleaning is needed. To disassemble air filter, refer to **Service, page 13**. All parts, particularly filter element, must be cleaned with methanol alcohol and air dried.

## ⚠ CAUTION

Do not exceed maximum operating pressure of 175 psi (12 bar) of air filter with auto-drain accessory.  
Failure to comply may result in personal injury.

- 1.3 Mist head assembly (78) (Fig. 7, page 17). For disassembly, refer to **Service, page 13**.
  - 1.4 Reservoir (61) (Fig. 3, page 11). Remove cover assembly (63) to inspect and clean.
- 2 When necessary, reset manifold pressure switch (59) (Fig. 2, page 10) to normal or base limits (8-55 in H<sub>2</sub>O). Closer setting to actual manifold pressure in event manifold operational pressures are critical or normal setting of switch allows pressure to reach undesirably wide variances from desired level.
- 3 Re-adjust air heater thermostat (33) on heater assembly (37) if necessary (Fig. 11, page 19).

## Adjust air thermostat (37)

Refer to Fig. 11, page 19.

### NOTE

Thermostat is located under top cover of thermo aire assembly.

- 1 Remove screws (31) and lockwashers (32) securing cover (34). Refer to Fig. 10, page 18.
- 2 Lift cover off unit.
- 3 Using screwdriver, turn slotted screw on thermostat to desired adjustment.

### NOTE

One turn of screw varies temperature 80 °F (27 °C).

Clockwise rotation raises air temperature. Counter-clockwise rotation lowers temperature.

- 4 Check adjustment by observing air thermometer (4) (Fig. 5, page 16). Replace cover (34) (Fig. 10, page 18), lockwashers (32) and screws (31).

## Adjust air thermostat (33)

Refer to Fig. 10, page 18.

### NOTE

Thermostat is located at upper bend in hot air plumbing, behind air heater.

- 1 Remove access cover on elbow (56).

### NOTE

One turn of screw varies setting 80 °F (27 °C). Clockwise rotation raises temperature setting. Counter-clockwise rotation lowers temperature setting.

- 2 Using screwdriver, turn slotted screw at the top of thermostat.
- 3 Replace access cover.

# Service

## **⚠ DANGER**

Do not perform maintenance or service with air supply or electrical power to unit on.

Do not operate unit with damaged or worn parts

Failure to comply may result in death or serious injury.

## Air regulator (43)

Refer to **Fig. 12, page 20**.

Refer to manual **397910**.

## Air filter (8)

To service air filter.

- 1 Disassemble air filter using **Fig. 5, page 16** as guide.

## **NOTE**

It is not necessary to remove air filter from air line or to use tools for disassembly.

- 2 Inspect for wear or damage and replace worn parts with those contained in kits **393339-80** and **-82**.
- 3 Reassemble unit.

## **⚠ CAUTION**

Do not exceed maximum operating pressure **175 psi (12 bar)** of air filter with auto-drain accessory.

Failure to comply may result in personal injury.

## Mist head assembly (78)

Refer to **Fig. 13, page 21**.

- 1 Loosen adapter (**19**) to disconnect nipple (**18**) from pipe tee (**20**). See **Fig. 7, page 17**.

## **NOTE**

Apply threadlocker on external threads when reassembling parts.

- 2 Remove four screws (**46**) and four gaskets (**45**) to disconnect mist head assembly (**78**) from reservoir (**61**) (**Fig. 13, page 21**).
- 3 Remove gasket (**3**) (**Fig. 5, page 16**).
- 4 Disconnect nipple (**79**) from mist head assembly (**78**) (**Fig. 7, page 17**).
- 5 Disassemble mist head assembly using **Fig. 13, page 21**, as guide.
- 6 Inspect for wear or damage and replace worn parts with new ones.
- 7 Reverse **steps 1 to 4** for reassembly.

## Manifold pressure switch assembly (23)

Refer to **Fig. 2, page 10**.

- 1 Disconnect terminals (**41**) of leads numbered **6, 7, 9, 12** and **13** from terminal strip (**16**) (**Fig. 7, page 17**, and **Fig. 12, page 20**).

## **NOTE**

In reassembly, fasten terminals on numbered leads to terminal strip on side indicated above corresponding numbers on marker plate (**17**) (**Fig. 7, page 17**).

- 2 Disconnect connector (**30**) from reservoir (**Fig. 2, page 10**).
- 3 Unscrew two nuts (**60**) to disconnect tube (**22**) (**Fig. 7, page 17**).
- 4 Remove two nuts (**2**) and two lockwashers (**1**) (**Fig. 5, page 16**).
- 5 Remove pressure switch assembly (**23**) from reservoir assembly.
- 6 Remove ferrule (**26**) and gasket (**25**) from connector (**30**) (**Fig. 9, page 17**).
- 7 Disconnect connectors (**30, 44**) from conduit (**58**) (**Fig. 2, page 10**).
- 8 Unscrew connector (**44**) from switch (**59**).
- 9 Remove ferrule (**26**) and gasket (**25**).
- 10 Unscrew elbow body (**60**) from switch (**59**).
- 11 Disconnect all leads from switch (**59**).
- 12 Inspect for wear or damage and replace worn parts with new ones.
- 13 Reassemble unit by reversing **steps 1 through 11**.

## Oil level sight glass (13)

Refer to **Fig. 6, page 16**.

Replace sight glass.

- 1 Unthread and remove screws (**15**).
- 2 Grasping sight glass assembly at upper and lower ends, pull assembly smoothly and evenly away from reservoir.

## **NOTE**

It is not necessary to completely unthread screws (**11**). Loosen screws enough to relax o-ring seals.

- 3 Loosen screws (**11**) to ease hold on sight glass (**13**) and allow bodies (**10**) to be slipped off ends. Replace new sight glass (**13**).
- 4 When reassembling, push bodies (**10**) onto tubes (**12**) and then tighten screws (**11**). Replace and tighten screws (**15**).

## Replace oil heater control thermostat (76)

Refer to Fig. 4, page 15.

### NOTE

Oil heater thermostat is located at end of radial arm protruding from oil heater cover on underside of reservoir.  
Thermostat is not adjustable.

- 1 Remove two nuts (67) and two lockwashers (66) holding cover (74) to bottom of reservoir.
- 2 Drop down cover (74), and remove two wires (70) from heater ring by using a nut driver.
- 3 Pull thermostat (76) out of retainer (75).
- 4 Cut away tubing (73) from thermostat (76) and unsolder wire leads.
- 5 Slide new tubing over leads.

### NOTE

Service replacement kit 393400 is available to replace oil heater wires (69), terminals (71, 41) (Fig. 12, page 20), tubing (73) and gasket (77).

- 6 Solder leads onto new thermostat.
- 7 Slip tubing (73) over solder connections.
- 8 Shrink using heat gun adjusted to 275 °F (135° C).
- 9 Place thermostat back in retainer (75).
- 10 Connect wires (70) to heater ring (65).
- 11 Replace cover (74) on studs securing with nuts (67) and lockwashers (66).

## Replace oil heater (65)

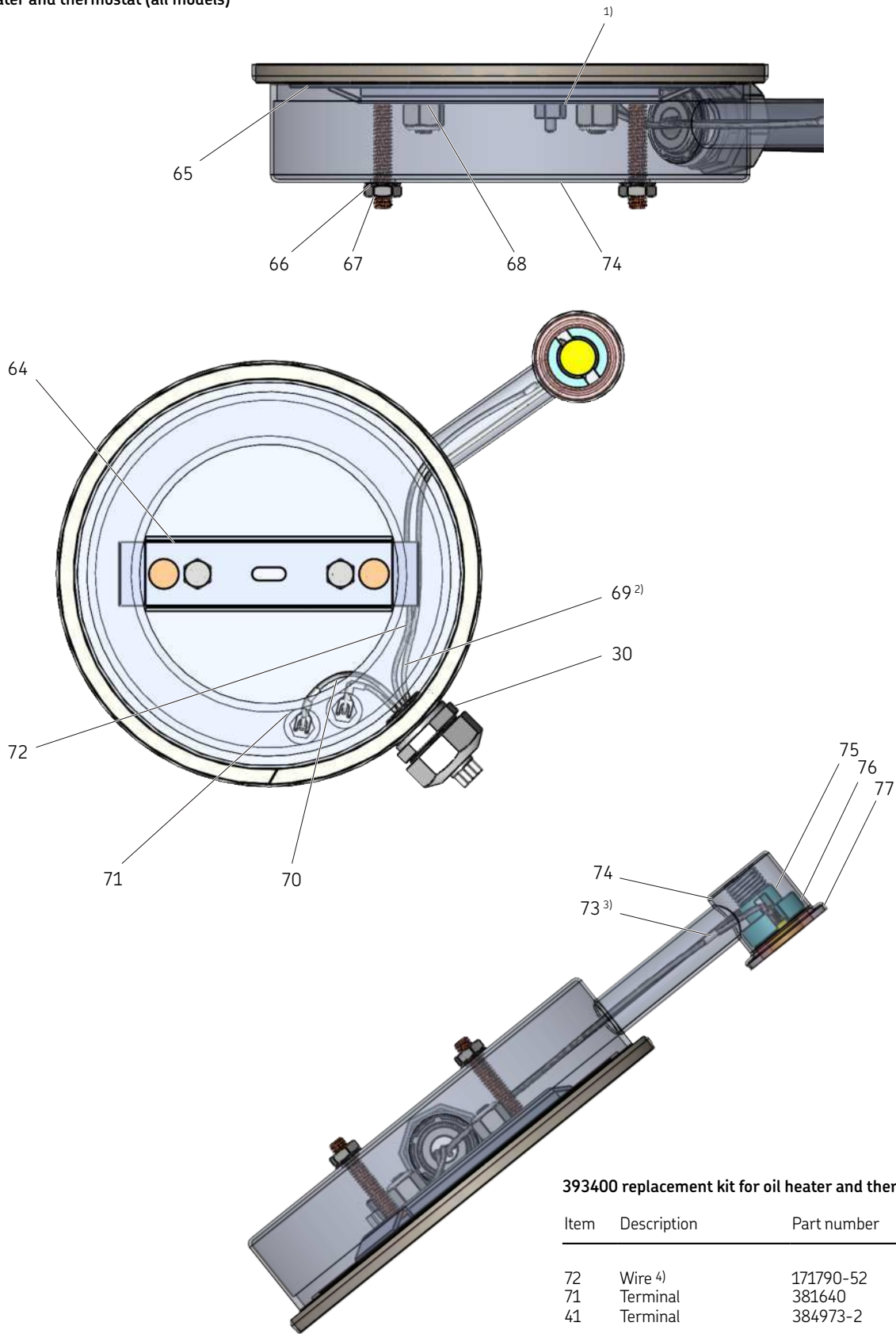
Refer to Fig. 4, page 15.

### NOTE

Oil heater is located under a protective cover (74) on underside of oil reservoir.  
Thermostat is not adjustable.

- 1 Remove two nuts (67) and washers (66) holding cover to bottom of reservoir.
- 2 Drop down cover and remove two wires (70) from heater ring (65).
- 3 Remove two lock-nuts (68), two lockwashers (66) and retainer assembly (64) holding heater ring (65) against bottom of reservoir.
- 4 Reverse steps 1 through 3 when assembling new heater.

Oil heater and thermostat (all models)



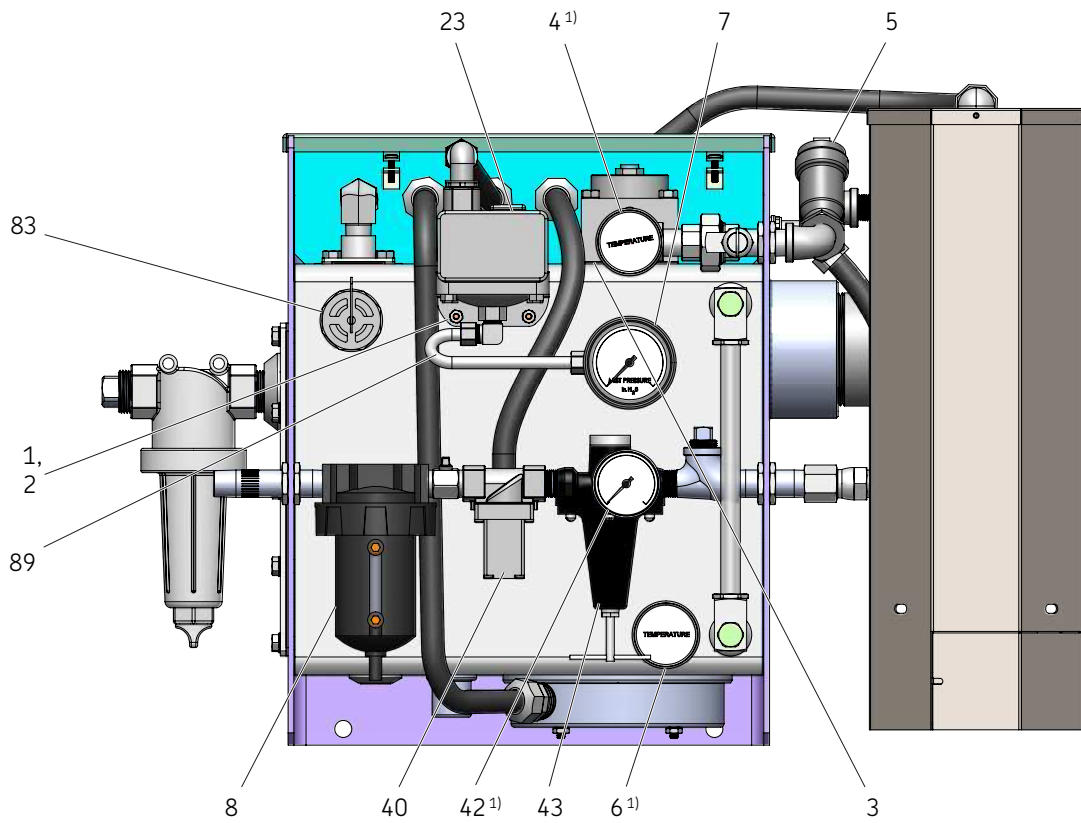
393400 replacement kit for oil heater and thermostat

Item	Description	Part number	Quantity
72	Wire <sup>4)</sup>	171790-52	1
71	Terminal	381640	2
41	Terminal	384973-2	4
73	Heat shrink tubing	385001-1	2
77	Gasket	386339	1

1) Bend terminal lugs away from master ring 45 degrees.  
 2) Heat shrink at approximately 275°F (135°C).  
 3) Solder leads to thermostat with rosin core solder.  
 4) Not shown. Cut to proper lengths for replacement of wires 171790-50 and 171790-51.

Fig. 5

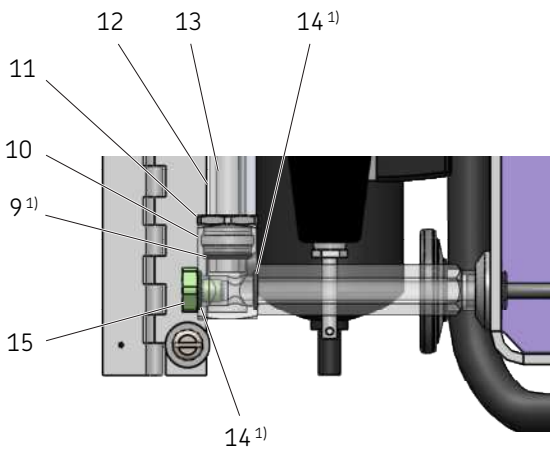
Front view (all models with heaters)



<sup>1)</sup> Apply pipe thread sealant (not tape) threads when servicing part.

Fig. 6

Sight tube assembly

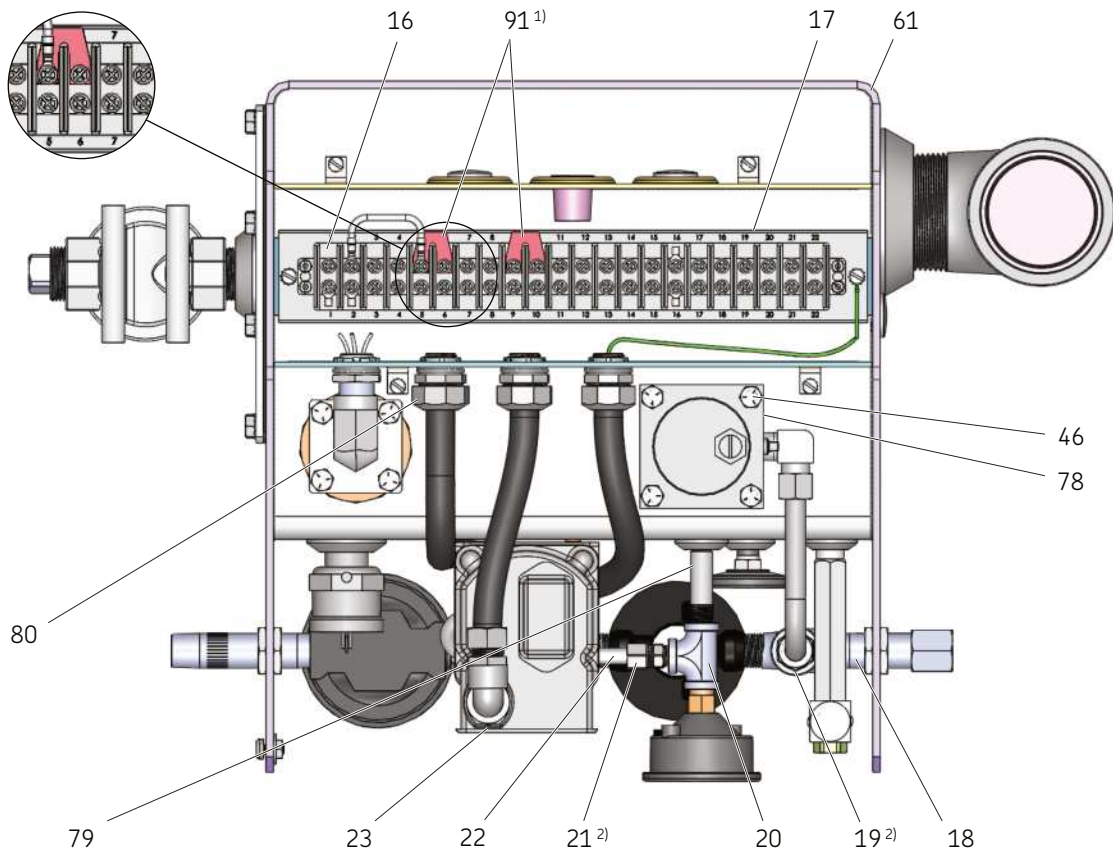


<sup>1)</sup> Lubricate with SAE no. 10 oil before assembling.



Fig. 7

Top view (all models with heaters)



<sup>1)</sup> Jumpers attached to posts 5-6 and 9-10.

<sup>2)</sup> Apply pipe thread sealant (not tape) on external threads when servicing part.

Fig. 8

Low-level switch (27)

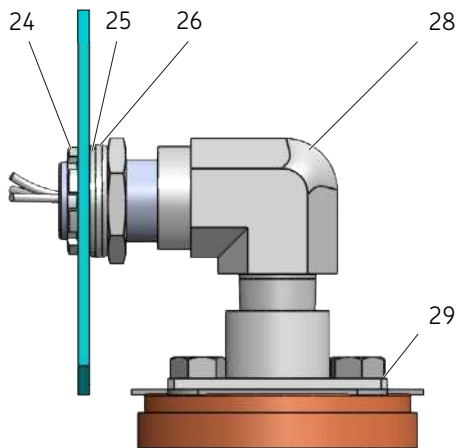
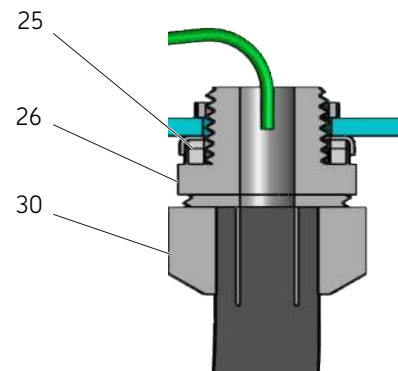
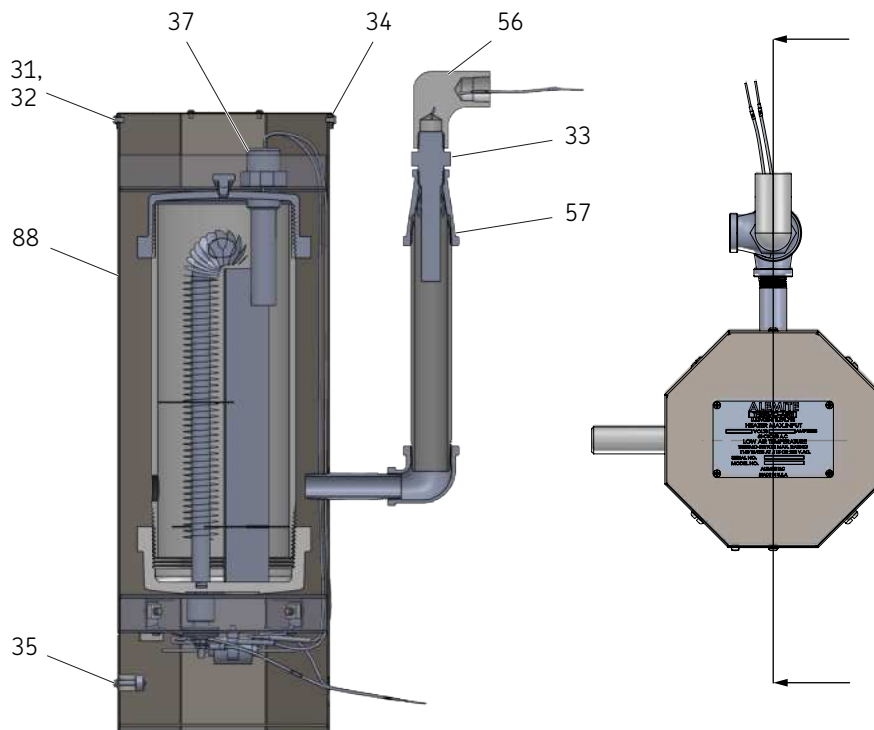


Fig. 9

Conduit assembly (typical)



## Thermo-Aire assembly (84)



## Low level switch (27)

Refer to Fig. 8, page 17.

Contact Alemite customer service.

## Solenoid valve (40)

Refer to Fig. 12, page 20.

Contact Alemite customer service.

## Air thermostat (37)

Refer to Fig. 11, page 19.

**NOTE**

Thermostat is located under top cover of Thermo-Aire (Fig. 10, page 18).  
Thermostat is not adjustable.

- 1 Remove two screws (31) and two lockwashers (90) securing cover.
- 2 Lift cover (34) off unit (Fig. 10).
- 3 Loosen screw (35) open door.
- 4 Cut one thermostat lead (asbestos covered wire) approximately 3 in (76.2 mm) from solderless connector.
- 5 Pull wire through body of unit from top.
- 6 Cut remaining wire to thermostat (37) as close as possible to thermostat body (Fig. 11, page 19).
- 7 Unthread old thermostat and discard.
- 8 Strip back wire still in unit 1/4 in (6.35 mm).
- 9 Thread new thermostat into position.
- 10 Attach leads to old wire.
- 11 At bottom of unit, cut old wire 3 in (76.2 mm) from solderless connector and use it as a pulling wire to draw new thermostat wires down through unit.
- 12 Strip back wires connected to capacitor 1/4 in (6.35 mm).
- 13 Connect thermostat leads to capacitor wires using two connectors (38) (Fig. 11, page 19).
- 14 Close and secure access door.
- 15 Replace heater cover and secure.

## Air thermostat (33)

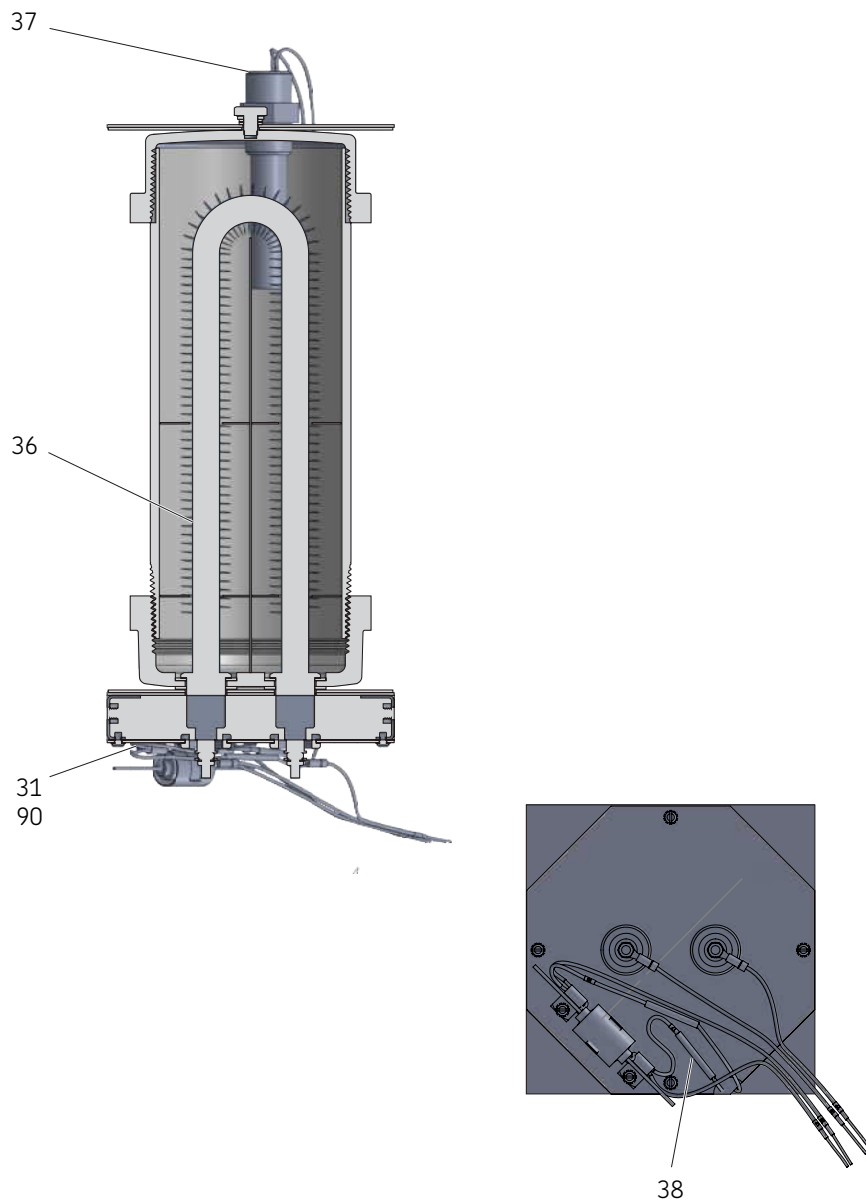
Refer to Fig. 10.

**NOTE**

Thermostat is located at the upper bend in the hot air plumbing behind the air heater.

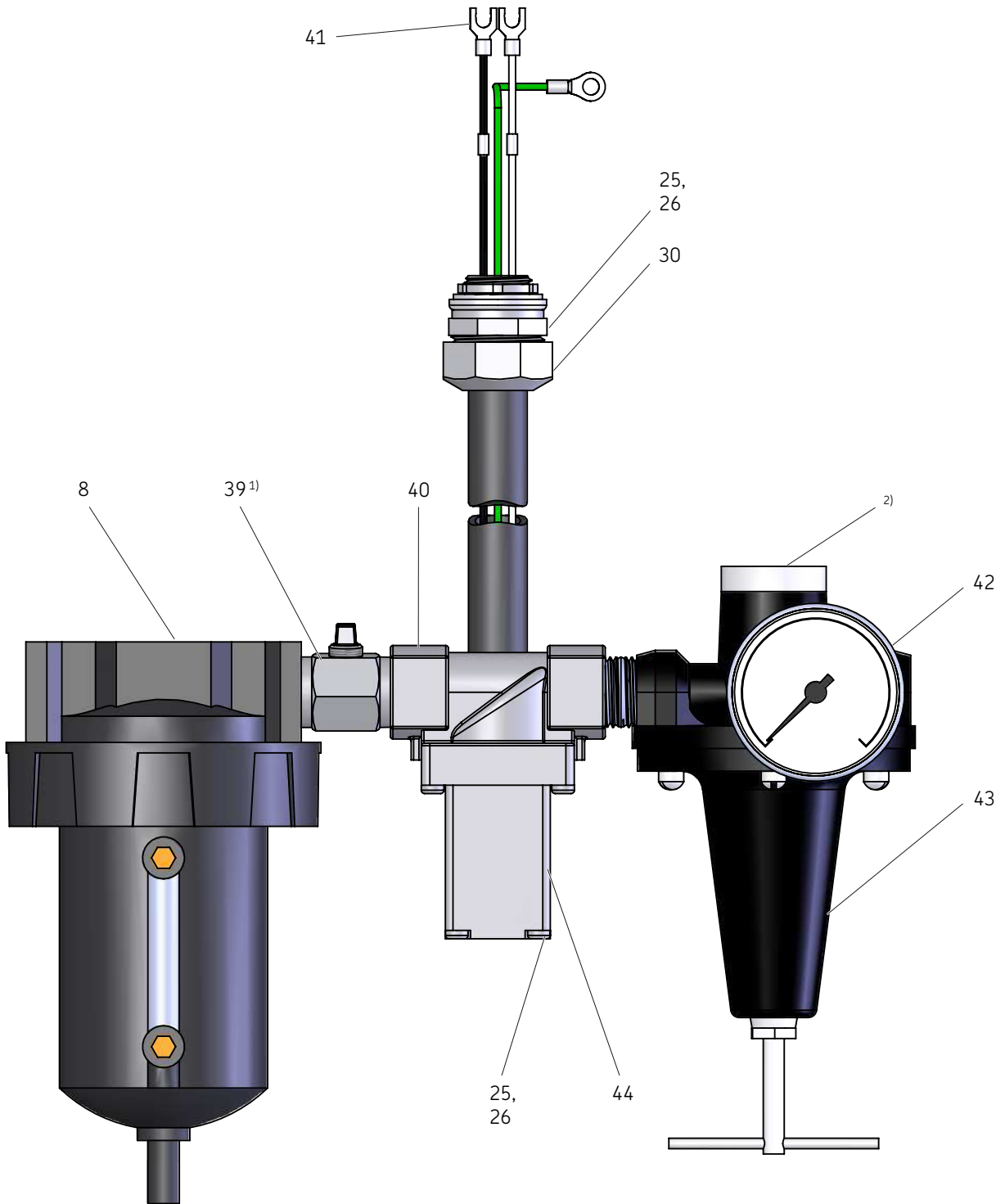
- 1 Loosen fitting (30) (Fig. 9, page 17) and slide back on flexible conduit.
- 2 Pull conduit free of elbow.
- 3 Disconnect thermostat leads 10 and 14 from terminal board.
- 4 Attach wire pull.
- 5 Remove side cover from elbow (56).

## Air heater assembly (88)



- 6 Pull wires through conduit and out of elbow side opening.
- 7 Disconnect wire pull.
- 8 Remove elbow from thermostat (33) (Fig. 10, page 18).
- 9 Unthread thermostat (33) from reducing pipe tee (57) and discard .
- 10 Thread new thermostat into place and tighten with wrench.
- 11 Feed wires through pulling elbow and install and tighten elbow (56).
- 12 Attach wires to pull.
- 13 Pull wires through conduit and attach to terminals 10 and 14.
- 14 Attach conduit to elbow (56) using fitting (30) (Fig. 4, page 15).
- 15 Replace elbow side cover.

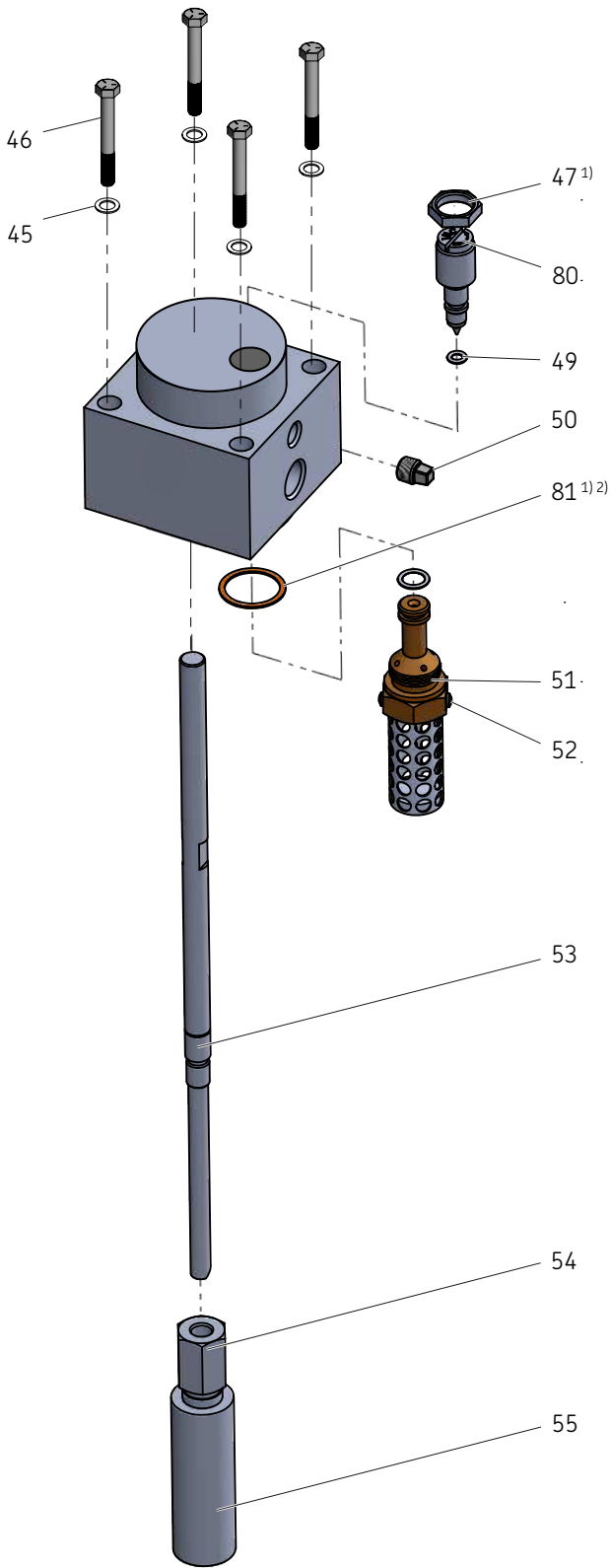
Control assembly (87)



1) Apply pipe thread sealant (not tape) on external threads when servicing this part.  
2) 1/4 NPT pipe plug.

Fig. 13

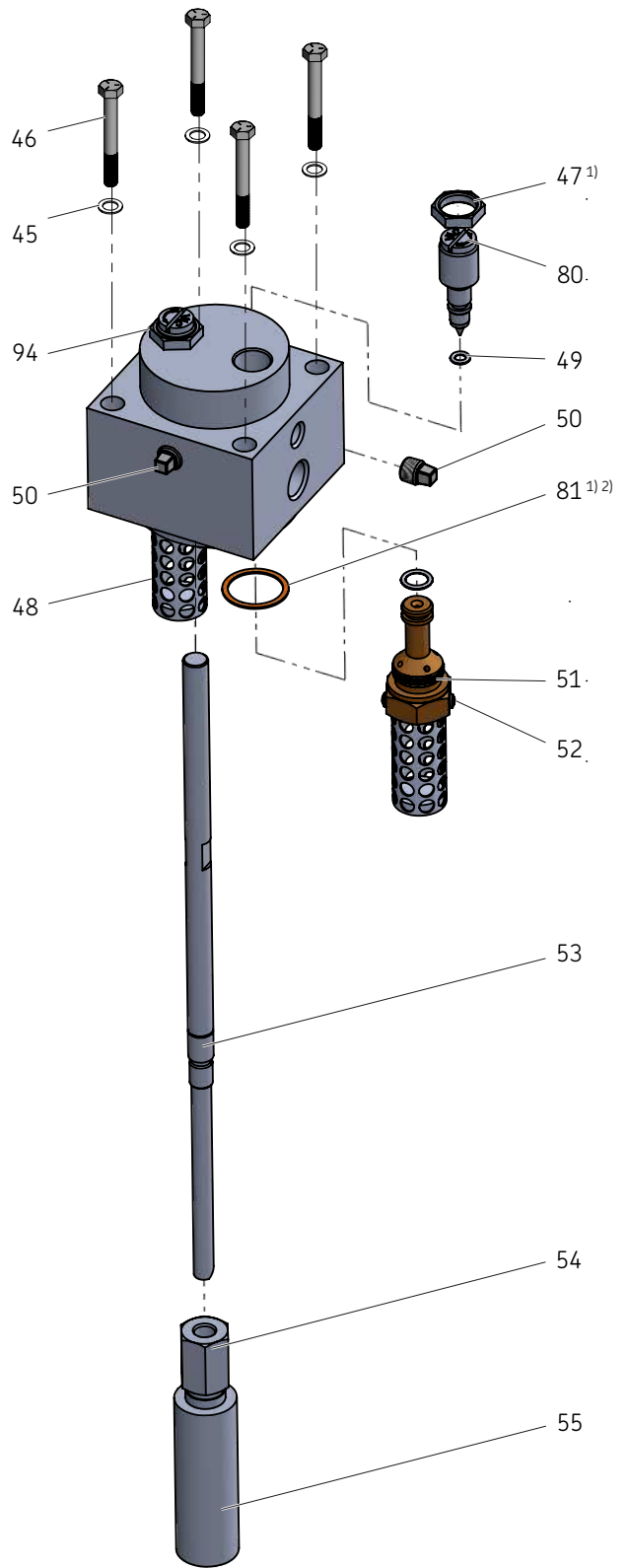
Mist head assembly 385003 or -B1 (78)



1) Mist head assembly uses two each of this part.  
 2) Lubricate with SAE No. 10 oil before assembling.

Fig. 14

Mist head assembly 385011-1 or -2 (78)



1) Mist head assembly uses two each of this part.  
 2) Lubricate with SAE No. 10 oil before assembling.

## Parts list

Item	Description	Part number
1	Lockwasher, #10 external tooth	
2	Nut, hex 10-32 UNF-2B	
3	Gasket	
4	Thermometer (air temp)	384898
5	Strainer assembly, Y type	380372-B1
6	Thermometer, oil temp, 0 to 250 °F (0 to 121 °C)	384876
7	Pressure gauge, 100 in H2O	384889
8	Filter, 1/2 NPTF auto drain	386295-1
9	O-ring, 5/8 x 13/16	
10	Body	
11	Screw, adjusting 7/8-14 UNF-2A x 0.48	384854
12	Tube steel	384956
13	Sight glass	
14	O-ring, 1/2 x 5/8	
15	Screw hex head with shoulder, 3/8-24 UNF-2A x 0.35	384958
16	Terminal strip	
17	Marker plate	
18	Nipple, 1/2 NPTF and 1/2 NPSM	
19	Adaptor union straight external	1000-88
20	Tee reducing pipe, 3/8 NPT x 3/8 NPT 1/2 NPT	
21	Body connector, 3/8 tube x 1/4 NPT	
22	Tube, steel	
23	HP switch assembly	
24	Lock nut conduit, 1/2-14 NPSL	
25	Gasket	
26	Lockwasher, #6 external tooth	
27	Low level switch assembly, hi-volume units	385007-A1
28	Locknut, 1/2 NPSL	45477
29	Gasket	383826
30	Connector, straight, 3/8 flexible conduit	
31	Screw, pan head tapping	
32	Lockwasher, #6 external tooth	
33	Thermostat	386347
34	Cover	
35	Screw, pan head machine	
36	Heater, finned 240 V	382663
37	Heater assembly	382677
38	Connector	
39	Adaptor, 1/2 NPTF x 1/2 NPTF	
40	Solenoid valve 230 V	384880-A4, -B4
41	Terminal, insulated #8 screw	
42	Pressure gauge	323449-4
43	Air pressure regulator, 1/8 NPTF	7608-1
44	Connector, 90 degrees, 3/8 flexible conduit	
45	Gasket	385030
46	Screw, hex head cap 5/16-18 x 2-1/2	
47	Nut	381541
48	Plug and screen assembly	385750

**Parts list (continued)**

Item	Description	Part number
49	Ring	171018-8
50	Fitting pipe plug 1/8 NPT	1480
51	Nozzle	
52	Screw, pan head cross recessed, tapping 4-40	
53	Suction tube, 7/32 OD x 0.083 wall x 12 1/16 in long	386581-1
54	Coupling	386956
55	Filter	387053
56	Fitting, 90 deg pulling elbow, 1/2 in	
57	Tee, 1/2 x 1/2 x 1 NPT	
58	Conduit, 3/8 diameter, 6 7/8 length	
59	Pressure switch	385033
60	Compression external elbow connector (tube x external NPT)	
61	Reservoir	
62	T-strainer, 30 mesh	339669-1
63	Cover assembly	
64	Retainer assembly	
65	Oil heater ring 240 V	381542-1, -2
66	Lockwasher, 1/4 internal tooth	
67	Nut, hex jam finished, 1/4-20 UNC-2B	
68	Nut, elastic stop, 1/4-20 UNC-3B	
69	Wire, FS	
70	Wire, FS	
71	Terminal, fork tongue, #6 post, 0.032-0.080 wire	
72	Wire	
73	Tubing, heat shrink, 0.153-0.093 ID	
74	Cover assembly	
75	Retainer	385396
76	Thermostat, 100 to 125 °F (38 to 52 °C)	384974
77	Gasket	
78	Mist head assembly, 13 CFM	385011-1
	Mist head assembly, 21 CFM	385011-2
	Mist head assembly, 41 CFM	385003
	Mist head assembly, 65 CFM	385003-B1
79	Nipple	
80	Needle valve assembly	
81	Gasket	
82	Door and hinge assembly	385679-B4
83	Reservoir safety valve	384885
84	Thermo-Aire assembly	386249
85	Reservoir assembly	386235-A1, -B1
86	Air pressure gauge	384884
87	Control assembly	
88	Air heater assembly	383928
89	Tube	
90	Lockwasher, external tooth #6	
91	Jumper	
92	Nipple	
93	Ball valve	
94	Body	386523

**Door and hinge assembly (82)**

Item	Description	Part number
	Hinge and nut assembly Nut swage 1/4-20 NC-2B Door	384891 <sup>1)</sup>

<sup>1)</sup> Not shown.

**Heater assembly 383928 (88)**

Item	Description	Part number	Item	Description	Part number
31	Screw, slotted pan head tapping		56	Fitting, 90° pulling elbow	
32	Lockwasher, #6 external tooth			Nipple	
36	Screw, pan head machine (#6-32 x 7/8)			Nameplate	
	Elbow, 90° reducing pipe		34	Cover	
57	Tee, reducing pipe		33	Thermostat	386347
	Insulation			Tape, wire marking	
	Shroud assembly			Tape, wire marking	
	Pivot			Tape, wire marking	

**Mist head assembly 385003-B1 (78)**

Item	Description	Part number
50	Plug	1480
81	Gasket	
49	O-ring	
	O-ring	
47	Nut	381541
51	Screen and nozzle assembly	
80	Valve	
53	Tube	386581-1
94	Body	
54	Coupling	386956
55	Filter	387053



## Troubleshooting

Problem	Cause	Solution
Red light on - manifold pressure gauge indicates high pressure	<ul style="list-style-type: none"> <li>a. Feeder lines or mist fittings restricted.</li> <li>b. Trap in main line.</li> <li>c. Regulated air pressure excessive for system.</li> </ul>	<ul style="list-style-type: none"> <li>a. Repair as required.</li> <li>b. Repair as required.</li> <li>c. Refer to application data or repair air regulator.</li> </ul>
Red light on- manifold pressure gauge indicates low pressure .	<ul style="list-style-type: none"> <li>a. Closed air supply line.</li> <li>b. Break or leak in main or branch oil mist supply line</li> <li>c. Mist head air passage plugged.</li> <li>d. Insufficient air or low pressure.</li> <li>e. Malfunctioning air regulator.</li> <li>f. Malfunctioning air filter.</li> <li>g. Inoperative air solenoid.</li> </ul>	<ul style="list-style-type: none"> <li>a. Open air supply line.</li> <li>b. Repair line.</li> <li>c. Disassemble and clean as required.</li> <li>d. Provide adequate air supply to unit.</li> <li>e. Clean filter in air regulator. Repair if necessary.</li> <li>f. Clean filter. Repair if necessary.</li> <li>g. Replace solenoid coil.</li> </ul>
Red light on everything else above functioning correctly	Insufficient oil level.	Refill oil reservoir. If light remains on, check oil level switch operation.
Red light on unit functioning normally	Malfunctioning of mist pressure switch.	Check adjustment of pressure switch. If necessary, reset it. Refer to manual <b>385033</b> for resetting procedure. With unit off, contacts 6 to 12 and 8 to 9 ( <b>Fig. 7, page 17</b> ) should be open. If defective, replace switch. NOTE: Disconnect leads as feed back is present in some circuits.
Red light on -Oil mist at bearings. Manifold pressure gauge indicates proper pressure.	<ul style="list-style-type: none"> <li>a. Air heater thermostat not functioning properly.</li> <li>b. Heating element defective.</li> </ul>	<ul style="list-style-type: none"> <li>a. Adjust air heater thermostat as outlined under <b>Maintenance, page 12</b>. If adjustment of air heater thermostat does not correct, situation, check for continuity across thermostat. If thermostat is defective, replace.</li> <li>b. If air heater thermostat checks out correctly and heating element does not heat, check continuity across heating element terminals. If there is an open circuit, heater is defective. Replace heater.</li> </ul>
Green light on- Manifold pressure gauge indicates correct pressure. Insufficient or no oil in mist at bearings.	<ul style="list-style-type: none"> <li>a. Oil flow adjustment screw set too lean.</li> <li>b. Oil too cold and sluggish due to malfunctioning of oil or air heater.</li> <li>c. Improper lubricant.</li> <li>d. Viscosity of oil too heavy.</li> <li>e. Oil inlet screen clogged.</li> </ul>	<ul style="list-style-type: none"> <li>a. Turn oil flow adjustment screw counter-clockwise to increase oil flow. Adjustment range of oil flow adjustment screw is between 1/2 turn to 2 turns open. NOTE: Do not force adjustment screw into seated position.</li> <li>b. Check and if necessary, replace heater element and/or thermostat.</li> <li>c. Contact Alemite representative.</li> <li>d. Contact Alemite representative.</li> <li>e. Clean screen.</li> </ul>
Excessive oil-mist at bearings.	<ul style="list-style-type: none"> <li>a. Oil type changed from that previously used.</li> <li>b. Air temperature set too high.</li> <li>c. Fittings too large.</li> <li>d. Oil flow adjustment screw set too rich.</li> <li>e. High manifold pressure.</li> </ul>	<ul style="list-style-type: none"> <li>a. Consult Alemite representative.</li> <li>b. Reduce in 10 ° increments.</li> <li>c. Consult application data.</li> <li>d. Turn oil flow adjustment screw clockwise to decrease oil flow. CAUTION: Do not reduce oil flow adjustment below recommended minimum setting, 1/2 turn open.</li> <li>e. Check cause of excessive air (CFM).</li> </ul>
Green light on- no mist at bearings.	<ul style="list-style-type: none"> <li>a. Air pressure set too low at air pressure regulator.</li> <li>b. Oil intake screen clogged.</li> <li>c. Malfunctioning of air regulator.</li> <li>d. Malfunctioning of air filter.</li> <li>e. Improper lubricant.</li> <li>f. Viscosity of oil too heavy.</li> <li>g. Oil too cold and sluggish due to malfunctioning of oil or air heater.</li> </ul>	<ul style="list-style-type: none"> <li>a. Adjust air regulator to increase manifold pressure. Between 5 to 40 in (127 to 1016 mm) is normal range.</li> <li>b. Clean screen.</li> <li>c. Clean filter in air regulator. Repair air regulator if necessary. Major repair kit 393339-77 is available. See manual <b>397910</b> for 7608-1 (<b>43</b>).</li> <li>d. Clean air filter. Repair air filter if necessary.</li> <li>e. Consult Alemite representative.</li> <li>f. Consult Alemite representative.</li> <li>g. Check heater element and thermostat, replace if necessary.</li> </ul>

## Troubleshooting

Problem	Cause
High manifold pressure.	Oil trap in delivery line. Clogged reclassifier. Oversized mist generating head (mist generating head much larger in CFM total output than requirements).  Defective manifold pressure switch
Low manifold pressure	Oil mist line(s) loose or broken. Missing reclassifier(s). No reclassifiers present.  Undersized mist generating head. Defective manifold pressure switch.
Overheating of oil or air.	Defective oil or air thermostat. Faulty heating element
Low oil consumption.	Mist generating head clogged. Mist generating nozzle clogged.  Improper oil being used. Oil adjustment screw closed. Excessive manifold pressure (above 50 in water column).  Over filling of oil mist reservoir.
Air heater failure.	Heater element failure. Thermostat failure. Air flow failure with heater energized (minimum air flow is 11 CFM).

This page left intentionally blank.

[alemite.com](http://alemite.com)

© Alemite, LLC is a registered trademark.

The contents of this publication are the copyright of the publisher and may not be reproduced (even extracts) unless prior written permission is granted. Every care has been taken to ensure the accuracy of the information contained in this publication but no liability can be accepted for any loss or damage whether direct, indirect or consequential arising out of the use of the information contained herein.

January 2023 · Form 397852 Version 2