

DESCRIPTION

The Thermo-Aire Heater is used in situations where oils of heavier viscosity ranges are required or where an increase of the lubricant output capacity of lower viscosity oils is needed. When the Thermo-Aire Heater is incorporated in the Oil Mist Unit, oils in the viscosity range of 1,000 to 3,500 SSU at 100° F. can be used. The Air Heater is enclosed in a pipe and heats the air which passes over it.

COMPONENTS

The Thermo-Aire Heater Kit is equipped with a Cartridge Thermostat 383884 and is rated 10 Amps at 120 VAC or 5 Amps at 240 VAC. It is installed in the path of the heated air and automatically controls air temperature at the factory-set temperature of 150°F. Model 383808-A4 is rated at 120 VAC, Model 383808-B4 is rated at 240 VAC.

A warning Thermostat 383842-1 is mounted on the surface of the pipe and energizes a warning device (visual or audible) when the heating element is not operating properly. It is rated 10 Amps at 120 VAC or 5 Amps at 240 VAC and has a range of 50 to 300° F. It is factory set at 125° F.

ASSEMBLY

The Thermo-Aire Heater Kit is completely assembled at the factory except for electrical wiring and air tube assembly.

INSTALLATION

A. Electrical:

1. Consult the Wiring Diagram in Figure 3.
2. Cut Fiberglass Sleeve 171470-1 in two and cover the wire leads going into the Heater Housing. This will insulate the wire against heat.

CAUTION: Do not insert wire through hole on Heater Housing. Wiring should be inserted through hole on the Oil Mist Reservoir tank.

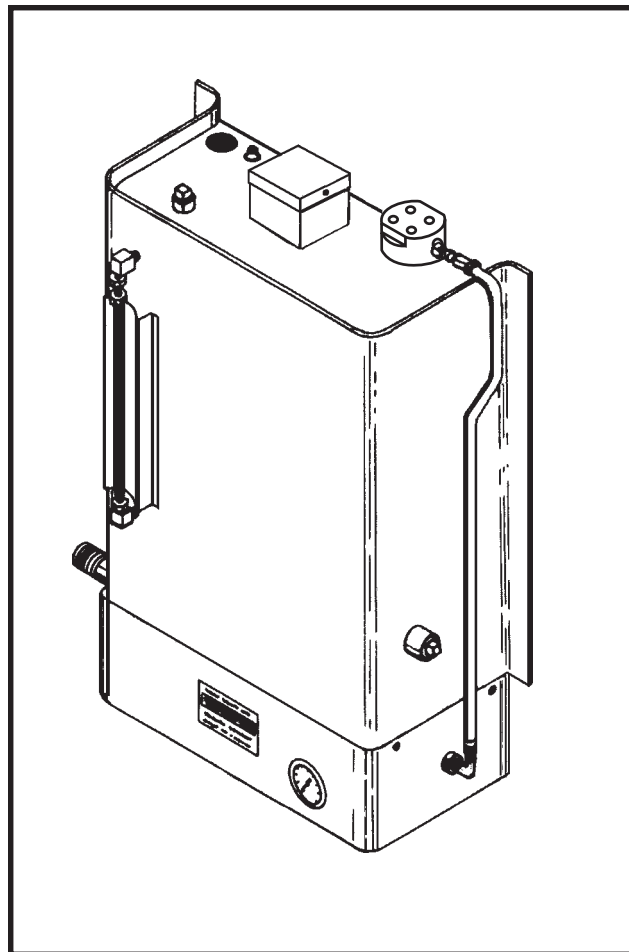


Figure 1: 383802 Series Oil Mist
with 383808 Series Thermo-Aire Heater

B. Mechanical : (Figure 2)

1. Position Thermo-Aire Heater under the Oil Mist Reservoir with Thermometer 383846 facing forward.
2. Secure unit with four Pan Head Machine Screws 170313.

C. Air Inlet:

1. Connect air supply to air inlet (3/8" NPT).

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D. Installation of Air Tube and Sleeve: (Figure 2)

1. Cut Air Tube 383843 and Sleeve 386404 to proper length as shown in Table 1 below.
2. Insert Air Tube into Insulating Sleeve 386404 and secure both ends of Sleeve with two Clamps 386340. (Leave approximately 3/4" of Tube exposed at each end.)
3. Thread Compression Fitting 328306-66 into air outlet of Thermo-Aire Heater. The compression fitting should face straight up when Elbow is tight.
4. Thread Straight Fitting 328303-66 into air inlet of Mist Generating Head.
5. Slide the compression nut of Compression Fitting 328306-66 onto the bottom end of Air Tube, insert the compression sleeve into the elbow and partially thread the nut onto the elbow.
6. Slide the compression nut of Compression Fitting 328303-66 onto the top end of the Tube, insert the compression sleeve into the straight fitting and thread the nut onto the Fitting.
7. After making sure that both ends of Tube are fully bottomed in Fittings, tighten bottom Fitting, then top Fitting.

ADJUSTMENTS

A. Adjusting Cartridge Thermostat: (Figures 4a & 4b)

Cartridge Thermostat 383884 controls the heater and is pre-set at the factory to cut out at approximately 155° F. The Thermostat may be adjusted by the customer to suit his application (See Figure 4a).

1. Pry Plug Button 171439-3 from opening on air inlet side of Thermo-Aire Heater.
2. Insert a thin screwdriver through the opening and turn the adjustment screw on Thermostat 383884 (see Figure 4b) clockwise to decrease air temperature or counter-clockwise to increase air

Reservoir	Length of Steel Air Tube	Length of Insulating Sleeve
383802-2 5 Quart	16-1/4"	16-3/4"
383802-3 3 Gallon	As Furnished	As Furnished

Table 1: Air Tube & Sleeve Length

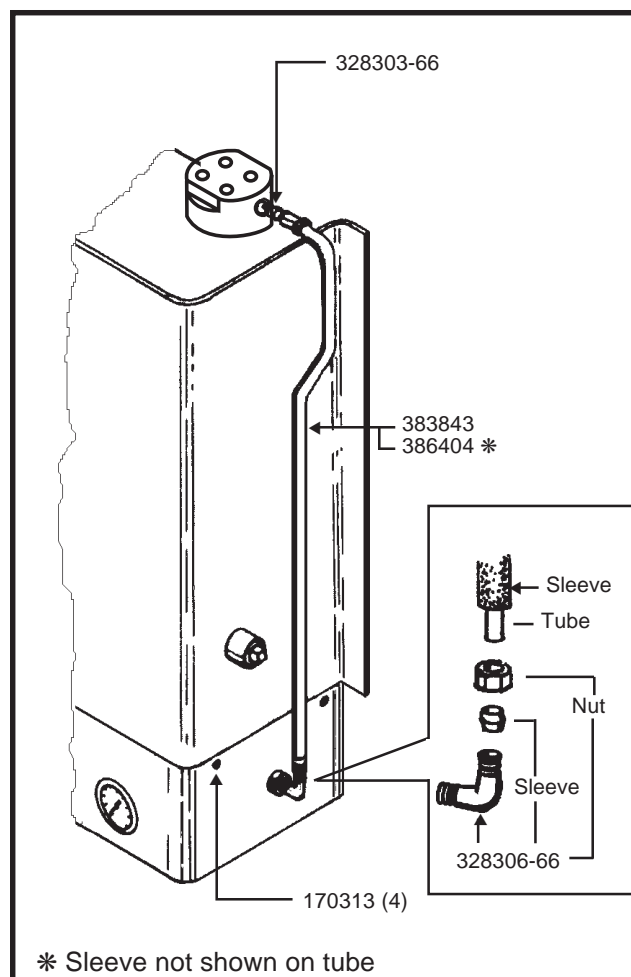


Figure 2: Kit Installation: 383808 Series

temperature. One turn of slotted adjusting screw = 80° F.

CAUTION: It is not recommended that the Thermo-Aire Heater be operated at temperatures above 200° F. The Thermostat may be permanently damaged if the adjustment screw is rotated more than two turns counter-clockwise beyond its 150° F. pre-set condition.

3. Check Thermometer 383846 with the Heater on.
4. If adjustment is satisfactory, replace the cover on opening. If the air temperature has been decreased from the preset 150°F, then the low temperature thermostat may need adjusting.

B. Adjusting Surface Thermostat (Figures 4a & 4b)

Surface Thermostat is factory set to make contact at 125° F. The Surface Thermostat 383842-1 will energize a warning system when the unit is first turned on, but will de-energize when the proper

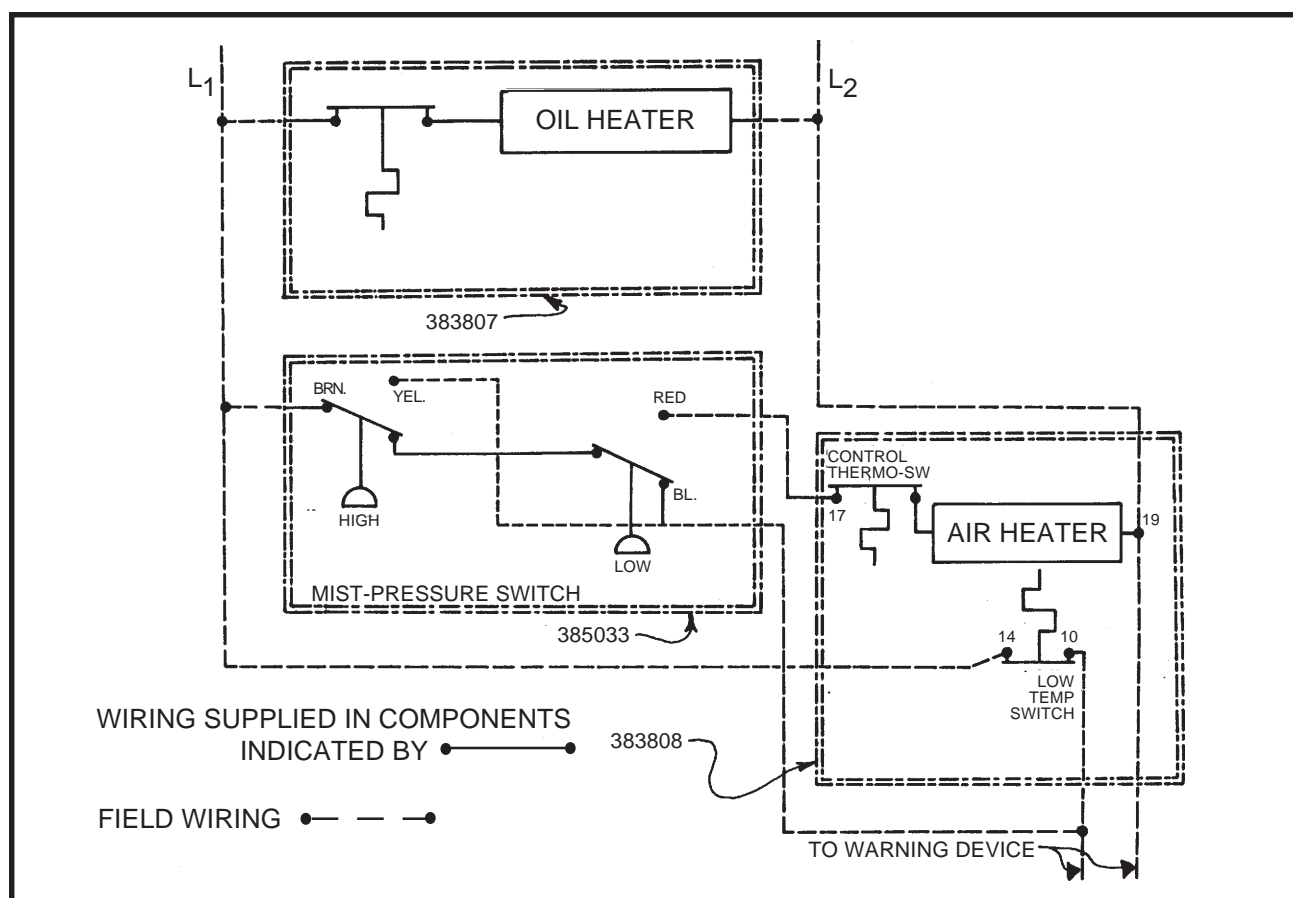


Figure 3: Wiring Diagram

operating temperature has been reached. If the Surface Thermostat energizes the warning system when Thermometer shows a proper operating temperature, the Thermostat may be adjusted as follows:

1. Remove the Heater from reservoir tank by unthreading four Screws 170313 on side of unit.
2. Remove insulation 383882 and 383883.
3. Loosen the Allen Screw which locks the adjustment knob on the Thermostat.
4. Turn the adjustment knob counter-clockwise to lower the cut-in temperature until the warning system goes off. Clockwise rotation raises opening temperature; counterclockwise rotation lowers opening temperature.

If the Surface Thermometer does not energize the warning system when the Thermometer indicates abnormally low air temperature, then follow these steps:

5. Turn the adjustment knob clockwise to raise the cut-in temperature until the warning system comes

on.

6. Tighten the Allen Screw to lock the adjustment knob on the Thermostat.
7. Replace insulation 383882 and 383883.
8. Reassemble Thermo-Aire Heater to the reservoir tank.

OPERATION

To operate Oil Mist Unit Thermo-Aire Heater:

1. Fill reservoir to "FULL" mark on sight glass with proper type oil.
2. Allow air into the air inlet of Thermo-Aire Heater.

CAUTION: To prevent damage to the heating elements, a minimum of air pressure of 15 psi must be maintained (for minimum air flow). Maximum inlet air pressure is 75 psi. NEVER OPERATE THERMO-AIRE HEATER WITHOUT AIR PRESSURE ON, AS HEATING ELEMENT WILL BE SEVERELY DAMAGED.

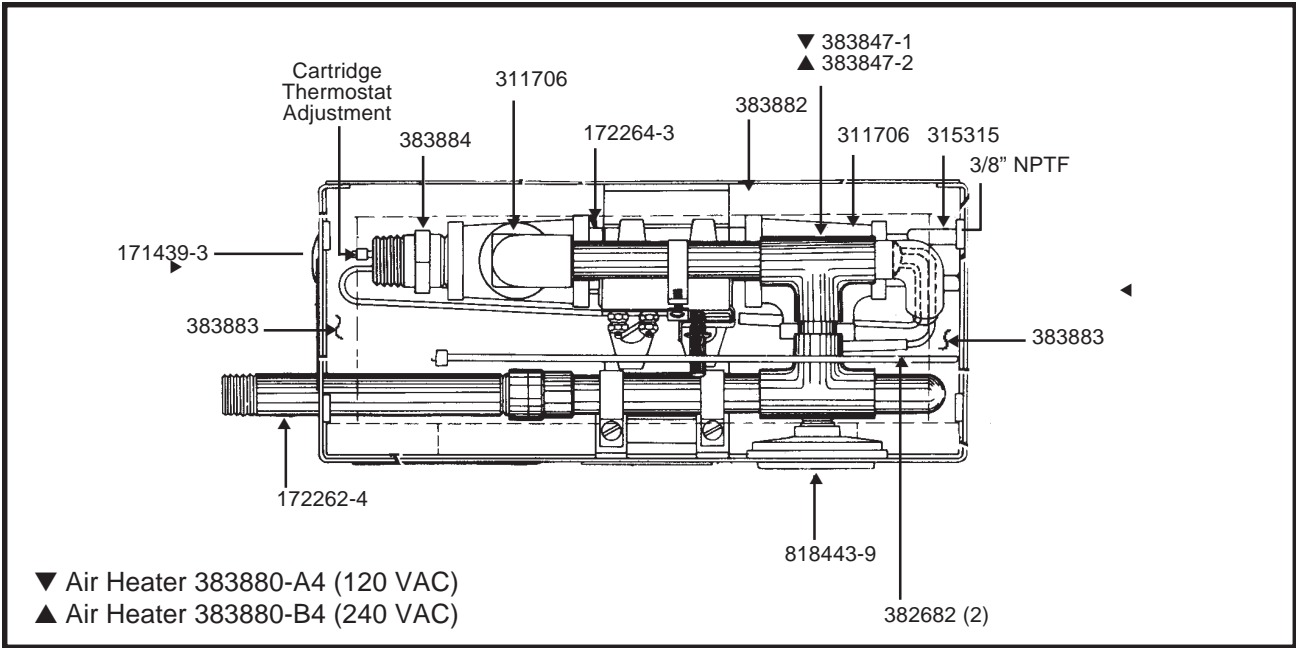


Figure 4a: Top View of 383880 Air Heater

3. Turn Air Heater on. Allow 5 minutes for warm-up.

MAINTENANCE

The Thermo-Aire Heater Unit does not require maintenance.

SERVICE DIAGNOSIS

A. If Thermo-Aire Heater does not heat, check the following points:

- 1. Defective electrical service.
- 2. Loose terminal connections or broken wire.
- 3. Cartridge Thermostat: Check electrical continuity through the Thermostat. If there is no continuity, then the Thermostat is not adjusted properly or is defective. Check adjustment as shown in “ADJUSTMENTS.” If adjustment does not correct fault, replace Thermostat.

4. Air Heater: Check electrical continuity through the Air Heater terminals. If there is no continuity, replace Air Heater. See Table 2 for Air-Heater Selection.

B. If air temperature runs too high, check the following point:

- 1. Cartridge Thermostat: Adjust Thermostat as shown under “ADJUSTMENTS.” If adjustment fails to correct the fault, replace Cartridge Thermostat.

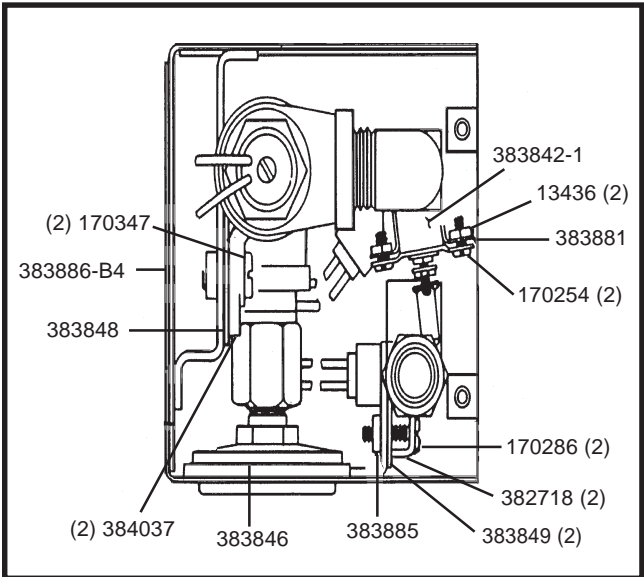


Figure 4b: Enlarged View of End of Air Heater Unit

Thermo-Aire Heater Kit	Air Heater Assembly	Air Heater	Volts
383808-A4	383880-A4	383847-1	120
383808-B4	3838880-B4	383847-2	240

Table 2: Air-Heater Selection Chart

PARTS LIST – Air-Heater Assembly (383808-A4/B4)

Part No.	Description	Qty.
170313	Pan-Head Machine Screw, 10-32 x 1/2" long	4
+ 171470-1	Fiberglass Sleeve, 18" long	1
+ 328303-66	Male Connector, 9/16-24 x 3/8" NPTF (Brass)	1
+ 328306-66	Male Elbow Connector, 9/16-24 x 3/8" NPTF (Brass)	1
+ 383843	Tube, 3/8" O.D. x 25-7/8" long (3 gal.)	1
* + 383880-A4	Air Heater, 120 VAC (383808-A4)	1
* + 383880-B4	Air Heater, 240 VAC (383808-B4)	1
+ 386340	Clamp	2
+ 386404	Braided Sleeve, 26-1/2" long	1
+ Not Available as a separate purchased part		
* See separate parts list		

PARTS LIST – 383880-A4 & 383880-B4 Air Heater

Part No.	Description	Qty.
+ 13436	Hex Nut, 6-32	2
+ 170254	Pan-Head Machine Screw, 6-32 x 1/2" long	2
+ 170286	Pan-Head Machine Screw, 8-32 x 3/4" long	2
+ 170347	Pan-Head Machine Screw, 1/4-20 x 5/8" long	2
+ 171439-3	Plug Button	1
+ 172262-4	Nipple, 3/8" NPT x 5"	1
+ 172264-3	Nipple, 3/4" NPT x 3-1/2"	1
+ 311706	Tee, 3/4" x 1/2" x 1/2"	2
+ 315315	Adapter, 1/2" NPT (M) x 3/8" NPTF (F)	1
+ 382682	Connector	2
+ 382718	Tube Clip, 5/16"	2
383842-1	Surface Thermostat	1
+ 383845	Adapter, 1/4" NPTF (F) x 1/2" NPTF (M)	1
383846	Thermometer, 60-280 Degrees F.	1
383847-1	Air Heater, 120 VAC (383880-A4)	1
383847-2	Air Heater, 240 VAC (383880-B4)	1
+ 383848	Insulator, 2" x 2-3/8" (Fiber Sheet)	1
+ 383849	Insulator, 1/2" x 1-1/3" (Fiber Sheet)	2
+ 383881	Clamp	1
+ 383882	Fiberglass Insulation, 10-1/2" x 12"	1
+ 383883	Fiberglass Insulation, 2-1/2" x 3-1/4"	2
383884	Cartridge Thermostat, 100-400 Degrees F.	1
+ 383885	Steel Plate, 3/8" x 2-1/8"	1
+ 383886-B4	Shroud Assembly	1
+ 384037	Clamp	2
+ 818443-9	Bezel	1
+ Not Available as a 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

Deleted: 328301-6 and 328302-6