

North American Fuel Oil Heaters Electric

Sheet 8587
Ref: Dwg. OA6-0179

8587 Preheaters heat and maintain heavy fuel oils at proper temperatures for combustion.

They are installed horizontally in fuel lines or at oil pump sets. Low watt density (12 Wsi) and reduced surface temperatures minimize carbon formation on heating elements.

Each unit has an integral thermostat with a standard field adjustable range of 100°F to 225°F. A 3-pole contactor, actuated by the thermostat, is required. If a heater is ordered with a contactor, the contactor is assembled to the heater assembly. See Dwg. OA6-0179 for schematic field wiring.

Heater shells are Schedule 40 seamless pipe, designed for 150 psi maximum pressure at 275°F maximum temperature. Standard heaters are offered for 208, 230, and 460 V ac 3-phase supply voltage. For other supply voltage inputs, consult with North American.

SELECTION

Heater capacity depends on temperature rise and gallons per hour of oil; e.g., ratings for a typical heater might be:

- 64 gph through 100 degree rise, or
- 43 gph through 150 degrees, or
- 128 gph through 50 degrees.

Use this formula:

$$\text{Watts} = \text{gph} \times \text{degrees rise}$$

Example: heat 50 gph from 50 F to 200 F
 $50 \times 150 = 7500 \text{ watts (7.5 kW)}$

Good practice calls for adding 20-30% for heater shell and piping losses. Therefore, this heater's rating should be at least 9.0 kW, and correct selection is the 8587-10 (10 kW) heater.



INSTRUCTIONS

Heaters must be installed horizontally with oil inlet and outlet facing directly upward. Whenever heating element is removed from shell, it must be reinstalled with thermostat sensing tube uppermost; and shell must be full of oil before heater is turned on.

Thermostat settings are field adjusted by rotating the dial pointer. Pointer settings:

- 4 to 5: Approximately 125°F oil temperature
- 8: Approximately 185°F oil temperature
- 10-11: Approximately 225°F oil temperature

A cold oil interlock switch is factory set at 125 F; it can be adjusted by turning a knurled knob under the dial pointer (per instructions on heater nameplate).

Heating unit should be withdrawn from shell at least once a year and cleaned with trichlorethylene or an equivalent solvent (avoid getting the solution on the electric control unit or heater connections).

CAUTION: Use alternating current only.

A. HEATER TABLE

Heater designation	nominal rating, kW	Heater amperage		
		208 V	230 V	460 V
8587-5	5	13.6	12.6	6.3
8587-6	6	18.2	15.0	7.5
8587-8	8	22.7	20.1	10.0
8587-10	10	27.2	25.1	12.6
8587-12	12	34.0	30.2	15.0
8587-15	15	40.9	37.7	18.8
8587-18	18	45.4	45.2	22.6
8587-20	20	54.5	50.2	25.1
8587-24	24	68.0	60.3	30.1

(For other sizes and options, consult North American.)

B. CONTACTOR TABLE (120 V coil is standard)

designation	ampere rating	"R" Number
(A-B) 500L-BAD-93	30	R190-9911
(A-B) 500L-CAD-93	60	R190-9921
(A-B) 500L-DAD-93	100	R190-9924

Contactors with 240 V, 50-60 Hz coil are available at same prices as the above 120 V 60 Hz contactors, but they are not stocked by North American. 240 V is maximum allowable for control circuit.