

# REZTOR<sup>®</sup>

## MODELS RA/RAD



**Model  
RA250**



**Reznor<sup>®</sup> Used Oil Heaters meet all EPA requirements and are CSA certified to UL 296A and CSA B140.0-03.**

NOTE: Recycling of used oil in heating equipment is not approved in New York City or in the state of California.

### DESCRIPTION

Reznor<sup>®</sup> Model RA/RAD Series Used Oil Unit Heaters are available in four sizes with BTUH inputs from 148,000 to 500,000 with either a propeller fan or blower for air delivery. These oil-fired heaters are designed to burn used oil but will also burn No. 2 fuel oil. The used oil must be no heavier than 50 weight and not lighter than No. 2 fuel oil.

Model RA is a fan-type unit heater with a propeller fan designed for air delivery to open areas. Model RAD is a blower-type unit heater with a centrifugal blower and adjustable belt drive. All blower-type Model RAD heaters may be connected to ductwork and are capable of handling up to .25" w.c. of external static pressure. Size RAD500 will handle up to .5" w.c. of external static pressure. All units are equipped with either a full fan guard or blower and belt guards.

Model RA/RAD units feature a low-stress heat exchanger and a heavy gauge combustion chamber with large, easily accessible service panels. The air atomizing burner provides excellent flame retention. Air for atomization of the oil is provided by an onboard piston-type compressor. An oil preheating system (U.S. Patent No. 5,080,579) heats the oil, maintaining it at a temperature required for atomization but preventing nozzle after-drip. The burner has electric spark ignition and an electronic cad-cell flame safety system with manual reset. The fan time delay prevents cold air discharge at startup and provides continued warm air while the unit is hot after burner shutdown. The limit controls protect the heater from high temperatures caused by an airflow restriction or motor failure. Sizes 150, 250 and 350 require a 115 volt, 60 Hz power supply. The size 500 heater requires a 230 volt, 60 Hz power supply. A 24-volt thermostat is supplied with each heater.

The remote fuel pump mounted on or near the oil supply tank is part of a unique positive pressure supply system providing a pre-

## INDOOR, OIL-FIRED, BLOWER AND FAN-TYPE USED OIL UNIT HEATERS FOR COMMERCIAL/INDUSTRIAL USE

cisely metered flow of oil to the heater. This positive displacement pump produces a stable flame under a wide range of operating parameters. A lift height of 15 ft (4.6M) is acceptable with a maximum supply line length of 100 ft (30.5M) depending on the unit size and the size (o.d.) of the tubing. It is recommended that used oil be at a temperature of 50°F or above when it enters the pump. A fuel line filter, with a disposable strainer and vacuum gauge, and a foot valve are provided for installation in the field-supplied suction line that runs from the supply tank to the fuel pump.

Reznor<sup>®</sup> used oil unit heaters are engineered to facilitate installation and required maintenance procedures.

Model RA and RAD heaters are CSA certified to UL 296A and CSA B140.0-03. Reznor used oil unit heaters meet EPA requirements for disposal of used oil.

### STANDARD FEATURES

- Automatic, thermostat controlled operation
- 10-year combustion chamber/heat exchanger limited warranty
- Remote pump system provides a metered flow of fuel
- Oil preheating system (U.S. Patent No. 5,080,579)
- Air atomizing burner
- Electric spark ignition with electronic cad-cell flame safety
- Piston air compressor with replaceable filter
- Fan time delay
- Limit controls
- Terminal block wiring
- Built-in disconnect switches (pump and heater)
- Permanently lubricated fan or blower motor with internal overload protection
- Operation hour meter
- 24-volt thermostat
- Barometric draft regulator
- Flexible fuel line and built-in tray for service to the burner and nozzle (without disconnecting the fuel line)
- Backflow sensor

- Large, easily accessible service panels designed to facilitate combustion chamber/heat exchanger maintenance
- Observation and overfire draft sampling ports
- Supply line filter system with a disposable strainer and dirty filter indicator gauge
- Individually adjustable horizontal louvers
- Full safety fan guard or blower inlet and belt guards
- Baked-on enamel finish
- 4-point threaded hanger connectors

### OPTIONAL FEATURES - Factory Installed

- High altitude operation

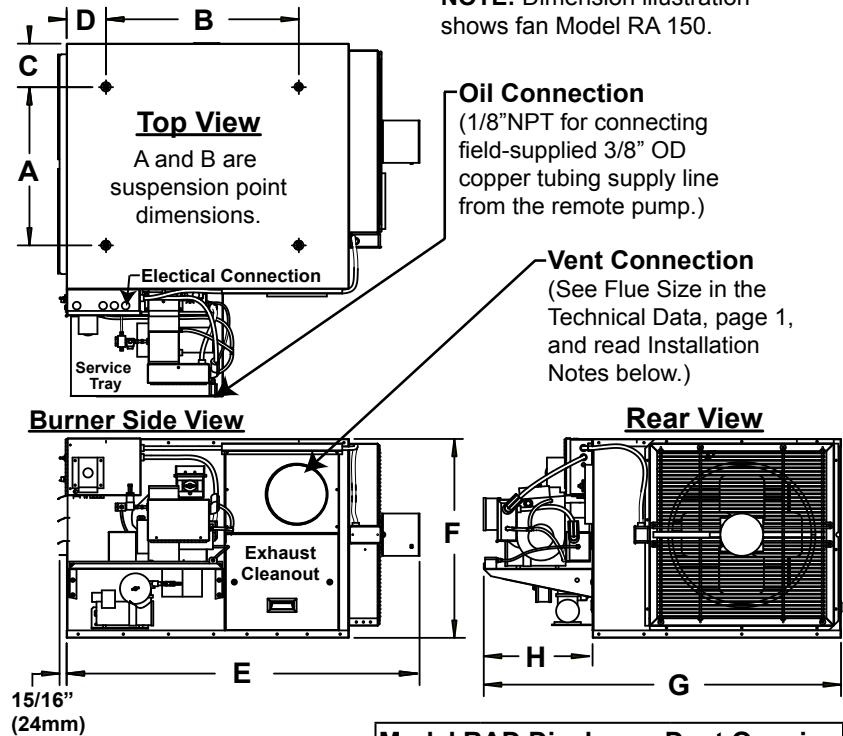
### ACCESSORIES - Field Installed

- Vertical louvers (Sizes 150, 250, 350)
- High altitude conversion kits (Sizes 250 and 350)
- 250-gallon workbench oil tank with or without heater stand (stand for RA 150 & 250 only)
- Hanger Kit
- Vent cap
- Inlet Duct Flange (RAD 150 and 250)

TECHNICAL DATA	Model RA (Fan-Type Unit Heater)				Model RAD (Blower-Type Unit Heater)			
	150	250	350	500	150	250	350	500
Size	150	250	350	500	150	250	350	500
BTUH Input	148,000	250,000	350,000	500,000	148,000	250,000	350,000	500,000
BTUH Thermal Output	118,400	200,000	275,000	400,000	118,400	200,000	275,000	400,000
Nozzle Input (GPH)	1.06	1.78	2.5	3.57	1.06	1.78	2.5	3.57
Motor RPM	1050	1050	850	1050	1725	1725	1725	1725
Motor HP	1/4	1/2	(2) 1/4	(2) 3/4	1/2	3/4	1-1/2	3
AMPS Full Load	115V-15	115V-21	115V-22	230V-17	115V-18	115V-22	115V-29	230V-20
CFM (free air)	2050	3300	5000	6400	2050	3150	5000	6400
CFM .25" ESP - RAD only	--	--	--	--	1600	2850	3500	5900
CFM .5" ESP - RAD500 only	--	--	--	--	--	--	--	5600
Air Throw (9-ft suspension)	55ft (17M)	70ft (21M)	80ft (24M)	90ft (27M)	55ft (17M)	70ft (21M)	80ft (24M)	90ft (27M)
Fan Dia/Pitch & Blower Size	18-30°	24-28°	(2)22-36°	(2)24-34°	12-9	15-11	(2)15-11	(2)15-11
Flue Size (inches)	8	8	8	10	8	8	8	10
Approximate Net Wt (lbs)	320	370	525	750	360	430	650	850
Approximate Shipping Wt (lbs)	380	440	685	925	435	520	810	1025

## DIMENSIONS - inches and mm

Size	150	250	350	500
<b>Dimensions - inches</b>				
A	21-9/32	31-9/32	38	44
B	25-5/8	25-5/8	16-1/2	37-1/2
C	5-55/64	5-55/64	12-1/2	11-3/8
D	5-15/64	5-15/64	7-1/4	6-1/4
E-RA	46-29/32	46-5/32	45-1/4	61
E-RAD	57	64-1/2	57-1/4	74
F	26-3/4	26-3/4	41-3/8	34-3/8
G	47-15/32	57-15/32	72-13/16	75-3/4
H	14-15/32	14-15/32	14-7/16	14-7/16
<b>Dimensions - mm</b>				
A	541	795	965	1118
B	651	651	419	953
C	149	149	318	289
D	133	133	184	159
E-RA	1191	1172	1149	1549
E-RAD	1447	1638	1454	1880
F	679	679	1051	873
G	1206	1460	1849	1924
H	368	368	367	367



<b>Model RAD Discharge Duct Opening Dimensions - inches (mm)</b>		
Size	Width	Height
150	30 (762)	10 (254)
250	40 (1016)	10 (254)
350	54 (1372)	24-1/4 (616)
500	57-5/16 (1456)	20-7/16 (519)

## INSTALLATION NOTES:

**Vent Location** - Vent connection on Sizes 150, 250, and 500 is in the upper right corner as illustrated above. Vent connection on Size 350 is in the lower right corner with the exhaust cleanout door to the left of the vent connection.

**Barometric Draft Regulator** - A barometric draft regulator is factory-supplied with all heaters and must be installed in the vent.

**Remote Pump** - The remote fuel pump must be mounted in an upright horizontal position in a location near the fuel tank. Depending on the unit size and the size (o.d.) of the tubing, maximum supply line length is 100 ft (30.5M). Maximum lift height is 15 ft (4.6M).

**CAUTION:** Model RA and RAD heaters are designed to provide economical disposal of used oil. Due to the nature of the fuel being burned, this unit should not be depended on as the only source of heat. Any water or foreign material in the oil may cause the unit to shutdown. A secondary source of heat should always be provided to the building. This will prevent any building damage should the used oil heater become inoperative in subfreezing weather.

Clearances from Combustibles - inches (mm)	RA (Fan Models)				RAD (Blower Models)				
	150	250	350	500	150	250	350	500	
Top	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	6 (152)	
Front	48 (1219)	48 (1219)	48 (1219)	48 (1219)	48 (1219)	48 (1219)	48 (1219)	48 (1219)	
Side*	Canada	6 (152)	6 (152)	18 (457)	18 (457)	6 (152)	6 (152)	18 (457)	18 (457)
	United States	18 (457)	18 (457)	18 (457)	18 (457)	18 (457)	18 (457)	18 (457)	18 (457)
Rear*	18 (457)	18 (457)	24 (610)	24 (610)	6 (152)	6 (152)	6 (152)	6 (152)	
Bottom	3 (75)	3 (75)	18 (457)	18 (457)	3 (75)	3 (75)	18 (457)	18 (457)	
Flue Pipe	9 (229)	9 (229)	18 (457)	18 (457)	9 (229)	9 (229)	18 (457)	18 (457)	

\*Allow for service access.

**Reference:** For information about Reznor® Model OT-250 Workbench Fuel Tank, contact your distributor or check the Website ([www.ReznorHeaters.com](http://www.ReznorHeaters.com)).