

RH Series - Tube Heater Specification Sheet

Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.



RH SERIES TUBE HEATERS

ENGINEERING SUBMITTAL DATA - LOW INTENSITY GAS FIRED INFRA-RED TUBE HEATERS & ACCESSORIES.

| Model # | Gas Type (circle one) | BTU's | Tube Length | Combustion Tube | Typical Mounting Height* | Baffle Pieces | Hot Rolled Tube Package | | | Coated Aluminized Tube Package | | |
|------------|--------------------------|---------|----------------|--------------------|--------------------------------|------------------|-------------------------|----------------------------|----------------------------|--------------------------------|----------------------------|----------------------------|
| | | | | | | | Tube Package ID | "Type" Tube Package 1 * | "Type" Tube Package 2 * | Tube Package ID | "Type" Tube Package 1 * | "Type" Tube Package 2 * |
| RH 50-20B | N or LP | 50,000 | 20' | Aluminized | 10' - 16' | 5 | TPK-B | (B) 20-4 Alum-HRT | N/A | TPK-H | (H) 20-4 Alum | N/A |
| RH 50-30B | N or LP | 50,000 | 30' | Aluminized | 10' - 16' | 4 | TPK-D | (D) 30-4 Alum-HRT | N/A | TPK-I | (I) 30-4 Alum | N/A |
| RH 50-40B | N or LP | 50,000 | 40' | Titanium | 10' - 16' | 2 | TPK-F | (F) 40-4 Titan-HRT | N/A | TPK-K | (K) 40-4 Titan | N/A |
| RH 75-20B | N or LP | 75,000 | 20' | Aluminized | 13' - 20' | 5 | TPK-B | (B) 20-4 Alum-HRT | N/A | TPK-H | (H) 20-4 Alum | N/A |
| RH 75-30B | N or LP | 75,000 | 30' | Aluminized | 13' - 20' | 4 | TPK-D | (D) 30-4 Alum-HRT | N/A | TPK-I | (I) 30-4 Alum | N/A |
| RH 75-40B | N or LP | 75,000 | 40' | Titanium | 13' - 20' | 2 | TPK-F | (F) 40-4 Titan-HRT | N/A | TPK-K | (K) 40-4 Titan | N/A |
| RH 100-30B | N or LP | 100,000 | 30' | Aluminized | 15' - 23' | 5 | TPK-D | (D) 30-4 Alum-HRT | N/A | TPK-I | (I) 30-4 Alum | N/A |
| RH 100-40B | N or LP | 100,000 | 40' | Titanium | 15' - 23' | 4 | TPK-F | (F) 40-4 Titan-HRT | N/A | TPK-K | (K) 40-4 Titan | N/A |
| RH 100-50B | N or LP | 100,000 | 50' | Titanium | 15' - 23' | 2 | TPK-F,A | (F) 40-4 Titan-HRT | (A) 10-4 HRT | TPK-K,G | (K) 40-4 Titan | (G) 10-4 Alum |
| RH 125-40B | N or LP | 125,000 | 40' | Titanium | 15' - 25' | 4 | TPK-F | (F) 40-4 Titan-HRT | N/A | TPK-K | (K) 40-4 Titan | N/A |
| RH 125-50B | N or LP | 125,000 | 50' | Titanium | 15' - 25' | 4 | TPK-F,A | (F) 40-4 Titan-HRT | (A) 10-4 HRT | TPK-K,G | (K) 40-4 Titan | (G) 10-4 Alum |
| RH 125-60B | N or LP | 125,000 | 60' | Titanium | 15' - 25' | 2 | TPK-F,C | (F) 40-4 Titan-HRT | (C) 20-4 HRT | TPK-K,H | (K) 40-4 Titan | (H) 20-4 Alum |
| RH 150-40B | N or LP | 150,000 | 40' | Titanium | 16' -30' | 4 | TPK-F | (F) 40-4 Titan-HRT | N/A | TPK-K | (K) 40-4 Titan | N/A |
| RH 150-50B | N or LP | 150,000 | 50' | Titanium | 16' -30' | 4 | TPK-F,A | (F) 40-4 Titan-HRT | (A) 10-4 HRT | TPK-K,G | (K) 40-4 Titan | (G) 10-4 Alum |
| RH 150-60B | N or LP | 150,000 | 60' | Titanium | 16' -30' | 2 | TPK-F,C | (F) 40-4 Titan-HRT | (C) 20-4 HRT | TPK-K,H | (K) 40-4 Titan | (H) 20-4 Alum |
| RH 175-50B | N or LP | 175,000 | 50' | Titanium | 17' - 35' | 2 | TPK-F,A | (F) 40-4 Titan-HRT | (A) 10-4 HRT | TPK-K,G | (K) 40-4 Titan | (G) 10-4 Alum |
| RH 175-60B | N or LP | 175,000 | 60' | Titanium | 17' - 35' | 2 | TPK-F,C | (F) 40-4 Titan-HRT | (C) 20-4 HRT | TPK-K,H | (K) 40-4 Titan | (H) 20-4 Alum |

* Type packages refer to the tube package that will ship with models (length, diameter, combustion tube type and radiant tube).
N/A - This model is not available with this feature.

Project: _____ **Date:** _____
Location: _____
City: _____ **State:** _____ **Zip:** _____
Contractor: _____
Engineer: _____
Local Representative: _____
Customer Name: _____
Address: _____
City: _____ **State:** _____ **Zip:** _____ **Phone #:** _____
Notes: _____



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Specifications & Clearances

APPROVALS

- IAS, AGA.
- Commercial approval.

BURNER SIGHT GLASS

- For burner inspection.

COMBUSTION AIR INLET & VENT

- 4" Male Duct.

CONTROLS

- 100% Safety shut off.
- Moisture and corrosion resistant ignition module.
- Differential pressure switch.
- Three (3)-try spark ignition.
- Flame rod sensing.
- Pre-purge controls.

OPERATIONAL LIGHTS

- Light #1-Indicates switch operation.
- Light #2 -Indicates gas valve power.

COMBUSTION & EMITTER TUBES

- 16ga. 4" O.D. hot rolled steel
- Aluminized combustion chamber. (20" - 30" models).
- Titanium combustion chamber. (40" - 60" models).
- Slip fit connection.

ENAMELED CONTROL BOX

- Outside air collar (4") attached.
- Totally enclosed components.

GAS CONNECTION

- 7/8" flare M NPT connection to 1/2"x2" SS (304) flex connector included.
- 1/2" F NPT gas cock included.

GAS SUPPLY-W.C.P. NAT LP

- Manifold pressure 3.5" 10.0"
- Min. Inlet pressure 5.0" 11.0"
- Max. Inlet pressure 14.0" 14.0"

MOUNTING ANGLE

- 0 to 45 degrees from horizontal.

MOUNTING HEIGHTS MIN. MAX.

- 50,000 BTU 10' 16'
- 75,000 BTU 13' 20'
- 100,000 BTU 15' 23'
- 125,000 BTU 15' 25'
- 150,000 BTU 16' 30'
- 175,000 BTU 17' 32'

POWER SUPPLY

- 120 V.A.C., 60 Hz GRD.
- Ignition current- 1.7 amps.
- Running current- 1.1 amps.

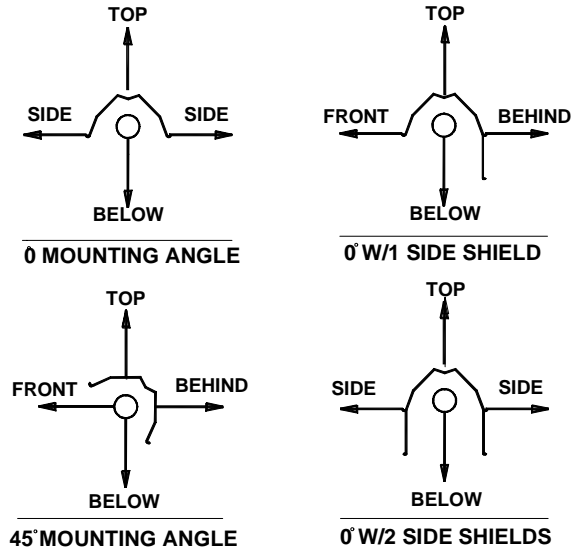
WARRANTY

- 1 year-Burner box components.
- 3 years-Combustion and radiant tubes.
- 5 years-Burner.

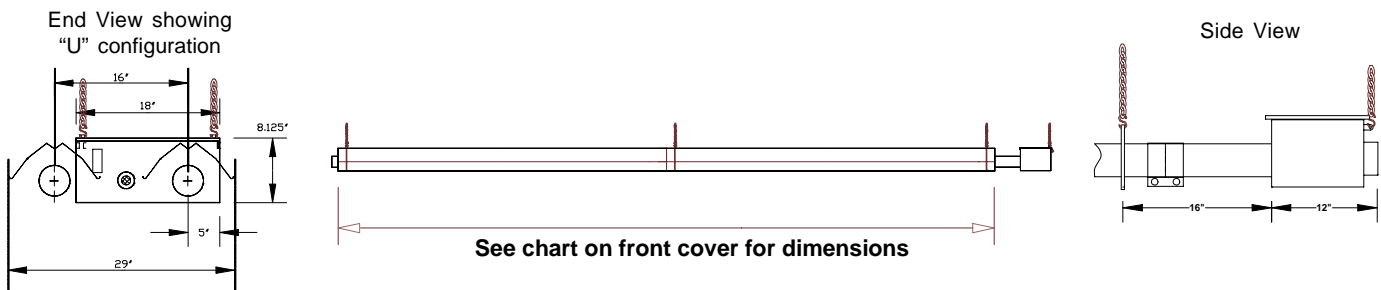
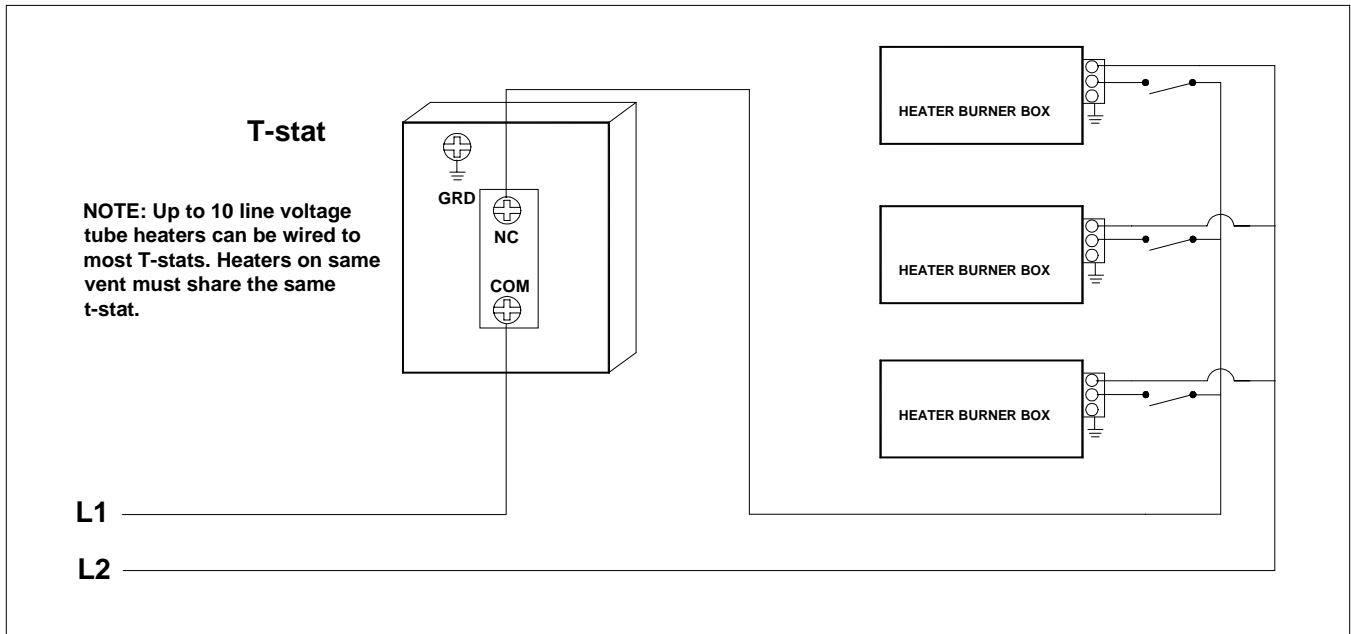
OTHER

- One reflector center support per reflector.
- Turbulator baffle included.
- Optional aluminized steel emitter tubing with high temperature, corrosion resistant black coating .95 emissivity.
- Made in USA.

| CLEARANCES TO COMBUSTIBLES (IN.) | | | | | |
|----------------------------------|----------------|-------|--------|-----|-------|
| MODEL NO. | MOUNTING ANGLE | SIDE | | TOP | BELOW |
| | | FRONT | BEHIND | | |
| RH 50 (20,30, 40) [N,P] | 0° | 9 | 9 | 6 | 47 |
| | 45° | 39 | 8 | 10 | 47 |
| W/1 side shield | 0° | 29 | 8 | 6 | 47 |
| W/2 side shields | 0° | 9 | 9 | 6 | 47 |
| 20 ft from burner | 0° | 7 | 7 | 6 | 30 |
| RH 75 (20,30,40) [N,P] | 0° | 9 | 9 | 6 | 60 |
| | 45° | 39 | 8 | 10 | 60 |
| W/1 side shield | 0° | 29 | 8 | 6 | 60 |
| W/2 side shields | 0° | 9 | 9 | 6 | 60 |
| 20 ft from burner | 0° | 7 | 7 | 6 | 30 |
| RH 100 (30,40, 50) [N,P] | 0° | 14 | 14 | 6 | 66 |
| | 45° | 39 | 8 | 10 | 66 |
| W/1 side shield | 0° | 29 | 8 | 6 | 66 |
| W/2 side shields | 0° | 16 | 16 | 6 | 66 |
| 20 ft from burner | 0° | 7 | 7 | 6 | 30 |
| RH 125 (40,50, 60) [N,P] | 0° | 20 | 20 | 6 | 76 |
| | 45° | 58 | 8 | 10 | 76 |
| W/1 side shield | 0° | 42 | 8 | 6 | 76 |
| W/2 side shields | 0° | 20 | 20 | 6 | 76 |
| 20 ft from burner | 0° | 7 | 7 | 6 | 30 |
| RH 150 (40,50,60) [N,P] | 0° | 24 | 24 | 6 | 81 |
| | 45° | 58 | 8 | 10 | 81 |
| W/1 side shield | 0° | 42 | 8 | 6 | 81 |
| W/2 side shields | 0° | 23 | 23 | 6 | 81 |
| 20 ft from burner | 0° | 11 | 11 | 6 | 44 |
| RH 175 (40,50,60) [N,P] | 0° | 34 | 34 | 6 | 92 |
| | 45° | 63 | 8 | 10 | 92 |
| W/1 side shield | 0° | 50 | 8 | 6 | 92 |
| W/2 side shields | 0° | 30 | 30 | 6 | 92 |
| 20 ft from burner | 0° | 11 | 11 | 6 | 44 |



Field Data & Accessories



| QTY. | PART# | DESCRIPTION | NOTES |
|------|----------|---|--|
| | WIV-4 | 4" combustion air intake - sidewall cap | Used to duct fresh (cold) air 0-20ft. to a heater. Sidewall only. |
| | WVE-GALV | 4" unvented exhaust termination cap | Required on all units when operating unvented. |
| | 4-DSK | 4" sidewall vent kit | Required for all single sidewall vents. No roof venting. |
| | 6-DSK | 6" sidewall vent kit | Required for all common sidewall vents. No roof venting. |
| | Y | 4" x 4" x 6" common Y vent fitting | Used for joining two heaters on one vent. Same T-stat required. |
| | E6 | 90 degree, 4" radiant elbow | Used for making a "L" tube shaped heater. Max. two per unit. |
| | RE | Reflector elbow shield | Reflector and accessories used to cover E6. |
| | TF1B | 180 degree, 4" radiant "U" bend | Used for making a "U" shaped heater. Max. one per unit. |
| | SMB | Single mount bracket | Provides units with "U" bend uniform mounting points. One per 10'. |
| | RU | Reflector "U" shield | Reflector and accessories used to cover TF1B. |
| | TR60 | 5' x 4" tube & reflector extension | Optional 5' extension package. Max. two per unit. |
| | 10EA | 10' x 4" tube & reflector extension | Optional 10' extension package. Max. one per unit. |
| | SSE | Side shield extension | Reflector side guard used to lower side clearances. Each 5' in length. |
| | PG | Protective guard | Protects heat exchanger from contact or objects. Each 5' in length. |
| | PLQ | Warning plaque | Restates the clearance to combustible warning. |
| | BK | Angle mounting bracket 15-30-45 Deg. | Rotates unit to preset mounting angles. |



Written Specifications

HEATER PARAMETERS/SPECIFICATIONS

- Gas fired radiant tube heaters shall be furnished and installed in accordance with governing codes and as shown per drawing(s) provided. Radiant tube heaters shall be RH SERIES of the model numbers and inputs(s) in BTU/H as manufactured by Detroit Radiant Products Company, Warren, MI 48089.
- Radiant tube heaters shall be Design Certified by the American Gas Association (AGA) and comply with current Occupational Safety and Health Act (OSHA) Requirements. The supplier shall provide the AGA Certification Number and the heaters shall bear the AGA Seal of Certification.
- The supplier shall provide a manufacturer's published warranty covering the heater's stainless steel burner for a period of five (5) years, combustion and radiant emitter tube assembly for a period of three (3) years, and all components utilized in the heater control assembly for a period of one (1) year.
- The supplier shall furnish the owner/contractor with _____ copies of the engineering specification forms, showing physical dimensions, installation detail, recommendations, control wiring diagrams, and spare parts list.
- Radiant tube heaters shall be designed to satisfactorily operate at a minimum inlet pressure of _____ inches W.C.P. to a maximum inlet pressure of _____ inches W.C.P.
- Radiant tube heaters shall be designed to operate without adjustments when burning natural gas having a heat value of _____ BTU per cubic foot with a specific gravity of _____, or when burning propane gas have a heat value of 2500 BTU per cubic foot with a specific gravity of 1.53.
- The heater's air flow control system shall provide a 15 second pre-purge prior to initiating burner operation.
- No condensation shall form as a result of combustion in the combustion chamber or radiant tubes while at operating temperatures.
- Total heater shutdown shall occur in the event of circuit control lockout. An interruption of power (reset thermostat) will restart the firing sequence.

INFRA-RED TUBE HEATER CONSTRUCTION

INFRA-RED TUBE HEATER BURNER CONTROLS

- Heaters shall be equipped with a spark ignition system with a three-(3) time ignition trial to sensing mode and an infinite trial after sensing mode. Power supplied to each burner shall be 120 VAC, 60 Hz. with flame rod sensing.
- The main burner shall be constructed of stainless steel.
- The control assembly shall be Design Certified by AGA, shall provide main burner regulation, and shall be of the redundant type.
- Heater controls shall include a safety differential pressure switch: to monitor exhaust back pressure and combustion air flow, so as to provide complete burner shutdown due to insufficient combustion air or flue blockage.
- Heater controls shall incorporate two (2) external indicator/diagnostic operational lights.
- The heater's control system shall be designed to shutoff the gas flow to the main burner in the event either a gas supply or power supply interruption occurs.
- Heater's control housing shall be totally enclosed with a corrosion resistant enameled steel exterior. The controls shall be easily serviceable by removing one (1) panel.
- Heater's combustion chamber shall be 4" O.D. 16ga. titanium (40'-60' models) alloy or aluminized steel (20'-30' models) finished with a high emissivity rated, corrosion resistant, black coating.
- Heater's radiant emitter tube shall be 4" O.D. 16ga. hot rolled steel.
- The radiant tube heaters shall be designed such that, at the customers option, outside combustion air may be supplied without the use of additional supply fans. An air intake collar shall be supplied as part of the burner control assembly to accept a 4" O.D. supply duct.
- The heater's combustion chamber and radiant emitter tube shall incorporate a 4" slip fit connection in which the upstream tube slides into the next tube and is held by a bolted clamp.
- The safety differential pressure switch shall incorporate atmospheric sensing termination fittings designed to eliminate blockage due to moisture or foreign matter.
- The direct spark ignitor shall be readily accessible and serviceable.
- Reflectors shall be .025 polished aluminum with a multi-faceted design. Reflectors shall be rotatable from 0 to 45 degrees when required. The heater's reflector hanging system shall be designed to permit expansion while preventing noise and/or rattles. Reflectors shall be assembled to the heater without the use of tools.
- The heaters shall utilize a downstream turbulator baffle for maximum thermal efficiency.
- Heaters shall be equipped with a sight glass allowing a visual inspection of ignitor and burner operation from the floor.
- Any part, or all of, the heater may be upgraded to coated aluminized steel. Combustion chamber for models over 40' in length shall be titanium alloy.
- Each heater shall include one (1) 24" stainless steel flex connector and one (1) 1/2" gas cock shutoff.

