



System Specification for HP Series Duct Furnace

Provide indirect-fired air heater / duct furnace for regenerative heating. Individual furnaces are rated for a maximum rise of 125 °F with entering air temperatures up to 125 °F (Maximum 250 oF discharge air temperature). Tandem furnace installations are rated up to 250 oF rise with entering air temperature of 75 oF (Maximum discharge air temperature 325 oF). The Duct Furnace models HP(A, G) shall be listed to Standard IAS 9-90 Gas-fired Desiccant Dehumidifiers and applicable sections of ANSI Z83.8 / CAS 2.6 Gas-Fired Duct Furnaces and Z21.47 / CSA 2.3 Central Furnaces by Intertek Testing Services (ITS / ETL), for operation on Natural or Propane gas. Duct furnaces shall be listed for installation on the positive or negative pressure side of the circulating air blower.

The Duct Furnace module shall employ patented inshot gas burners with integral carryovers, a tubular heat exchanger assembly, a combustion blower to provide for venting of flue gases, air pressure switches to prove air supply for combustion, direct spark ignition of the gas burners with remote flame sensor to prove carryover across all burners, an automatic reset type high limit switch to limit maximum outlet air temperature, a manual reset flame rollout switches and a two stage redundant safety shut-off gas valve which regulates gas pressure to burner supply manifold.

Gas-fired duct furnace(s) provided shall have a tubular heat exchanger constructed of Type 304L stainless tubes (.047 Min. Wall thickness) produced to ASTM A249. Heat exchanger design shall be suitable to withstand 3.0" W.C. total external static pressure without burner flame disturbance. Tube connections at the tube sheet shall be mechanically swaged and welded to insure a leak proof joint.

Duct Furnace modules may be applied downstream of refrigeration and cooling systems. For such applications means for removal of condensate that occurs in the tubes during cooling operation shall be connected to the drain taps provided.

Duct Furnace shall incorporate a Direct Spark Ignition control module that is design certified by a recognized national testing agency (NRTL). The control shall incorporate a 15 second minimum pre-purge period prior to trial for ignition and a 0.8 second flame failure response time. The control shall provide up to 2 additional ignition retrials, each preceded by an inter-purge period and shall incorporate a minimum 30 second post-purge. Control shall provide for automatic reset after one hour, to initiate additional ignition trials if lockout occurs during a call for heat. The control shall incorporate an alarm capable contact and an LED indicator light to provide a flash code to identify the operating condition of the control and conditions preventing normal operation of the ignition system should they occur.

The Duct furnace may be equipped for operation on a 115, 208 or 230 VAC, 1 Φ , 60 Hz power supply as specified at time of order. All electrical components shall be listed or recognized by a Nationally Recognized Test Laboratory (ETL, UL, CSA, etc.).

Gas inlet supply pressure shall be 5.0" to 13.5" w.c. for Natural Gas (or) 11.0" to 13.5" W.C. for Propane Gas.

Furnaces are orificed for operation up to 2000 ft. above sea level, unless specified for high altitude operation.

Duct furnaces shall be test fired prior to shipment to verify proper ignition, operation and shut down and satisfactory operation of all components.

Duct Furnace shall be provided with printed installation and maintenance instructions, burner operating and maintenance instructions, piping and wiring diagrams and Installation Start-up data sheet



Heatco Inc.
50 Heatco Court
Cartersville, GA. 30120

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