

Induction Heating Vacuum Furnaces

- Small Footprints Fit Your Mfg. Cell
- Utilize Quick, Clean Induction Heat
- For Brazing & General Purpose Heating
- Facilitate Continuous Flow Manufacturing
- Operate At High Vacuum or Partial Pressure Of Inert Gas
- Can Reduce Overall Cost of Ownership by 75%
- Available in three standard configurations or built to your specifications



Model VF-40

Particularly in today's challenging economy, manufacturers are searching for new ways to improve energy efficiency and reduce operating costs. The GH Induction Atmospheres Vacuum Furnaces – designed to operate with quick, clean induction heating – provide an excellent example of how lean, green technology can have a positive impact on the bottom line. When compared to a traditional large vacuum furnace system, VF Series Vacuum Furnaces can reduce overall all cost of ownership by as much as 75%.

Vacuum furnaces are ideal for industrial heating processes which require high part quality and heating consistency. Brazing or heat treating in a high vacuum environment offers a high degree of process control and produces exceptionally clean parts - free of oxidation and scaling. In a vacuum system,

parts are loading into a steel chamber which is then pumped free of air and other gases. In contrast to flame heating and resistance heating, a vacuum furnace heats the entire part and not just the joint area.

The most common applications for vacuum furnaces include heating small lot sizes, brazing parts of unusual shapes, repairing "orphans" from other heating processes, and other applications which benefit from whole part heating. It's easy to set up a continuous manufacturing flow, run various processes throughout the day and realize up to 90% improvement in overall cycle time.

GH IA vacuum furnaces are designed to heat parts of virtually any shape in a high temperature, high vacuum environment or in partial pressure of an inert gas.

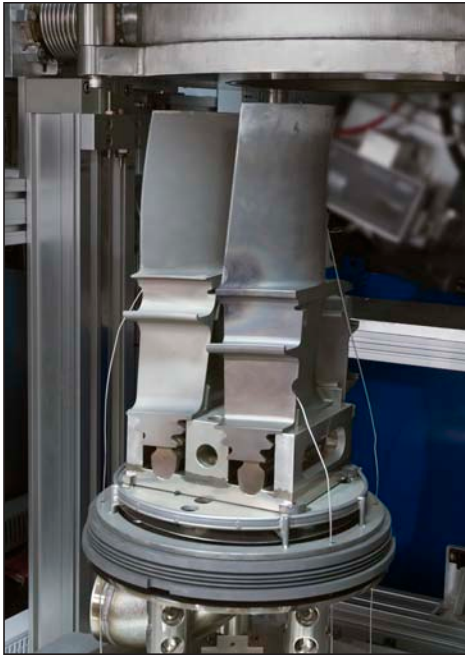
Three different models offer a range of hot zone specifications, operating temperatures, power and gas usage:

VF-40 - Our largest furnace heats up to 110 lbs. (49.9 kg) of parts at temperatures up to 2100°F (1149°C).

VF-30 - This mid-size model features a 11"x12" (279 mm x 305 mm) heating zone and a compact 6' x 5' (1829 mm x 1524 mm) footprint.

VF-20 - This compact furnace heats up to 40 lbs. (18.1 kg) of parts at temperatures up to 3200°F (1760°C).

GH IA will also custom design a vacuum furnace to match your process specifications. Contact us today at 585.368.2120 or email to info@gh-ia.com.



Easy part loading

To permit easy loading, the part handling mechanisms on GH IA vacuum furnaces open at the base of the system, then automatically raise the parts up into the vacuum chamber and heating coil, and finally lower the parts back down to base level for unloading. The chambers are mounted on heavy duty frames that house all the required equipment for vacuum, atmospheric and system control, as well as the induction heating station.

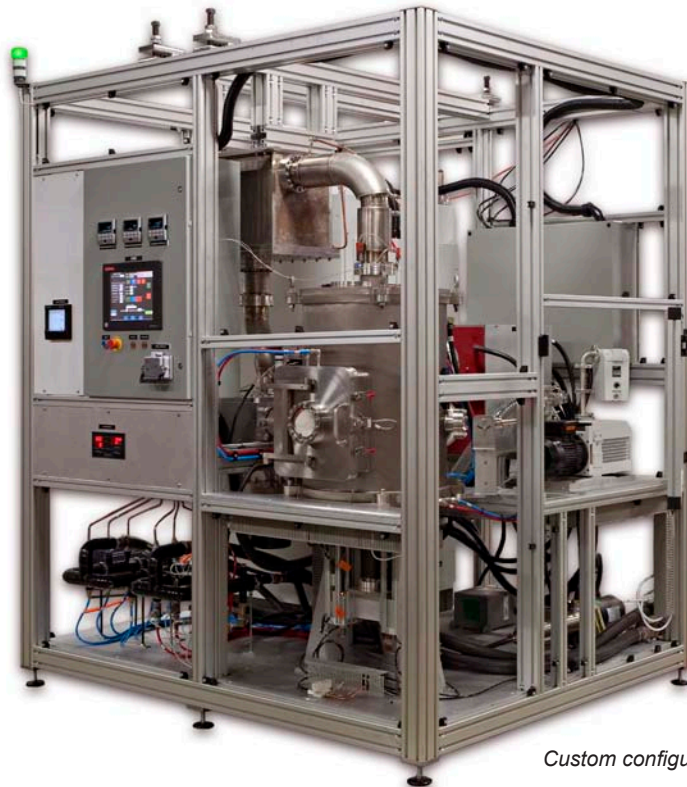
Real time monitoring and SPC are a snap with the optional LAN interface or digital chart recorder; data may be stored and sent directly to your desktop. The standard thermocouple controls record all chamber temperatures; individual part temperatures may be controlled and monitored with the optional optical pyrometer.

To maximize operator safety, GH IA vacuum furnace heating systems are fully isolated. Safety interlocks protect access to the vacuum chamber and manual controls. Other operator safety features include a light curtain, emergency stop and other warning systems built into the software and hardware.

Protected under US Patent 6,649,887 and 7724045. Other patents pending.

GH IA Vacuum Furnaces

Specification	VF-20	VF-30	VF-40
Hot Zone Size - id x h 254 x 254 mm	10x10 in. 254 x 254 mm	11 x12 in. 279 x 305 mm	12x17 305 x 432 mm
Hot Zone Volume 0.0127 m ³	0.45 cu ft. 0.0127 m ³	0.66 cu ft. 0.0187 m ³	1.11 cu ft. 0.0314 m ³
Max. Operating Temperature 1760°C	3200°F 1760°C	3200°F 1760°C	2100°F 1149°C
Temperature Uniformity +/- 8°C at 1204°C	+/- 15°F at 2200°F +/- 8°C at 1204°C	+/- 15°F at 2200°F +/- 8°C at 1204°C	+/- 25°F at 2000°F +/- 14°C at 1093°C
Time to 1900°F (1038°C)	12 min	15 min	15 min
Max Parts Weight (lb) 18.1 kg	40 lb (18.1 kg)	60 lb (27.2 kg)	110 lb (49.9 kg)
Power Usage (kwh)	12	17	33
Gas Usage 0.227 m ³	8 cu ft. 0.227 m ³	12 cu ft. 0.340 m ³	16 cu ft. 0.453 m ³
Typical Hourly Running Cost	\$1.99	\$2.69	\$5.13
Dimensions (W x D x H) 1524x1524x2438 mm	5 x 5 x 8 ft. 1524x1524x2438 mm	6 x 5 x 8 ft. 1829x1524x2438 mm	7 x 7 x 9 ft 2134x2134x2743 mm
Water Required: (gpm @40 psi differential) (lpm @117 kg/sq cm. differential)	20 75.7	25 94.6	30 113.6
Circuit Breaker Size (amp)	100	100	150
Shipping Weight 907.2 kg	2000 lbs. 907.2 kg	2000 lbs. 907.2 kg	3500 lbs. 1587.6 kg



Custom configuration