

VACUUM HEAT TREATING

STANDARD FURNACE MODELS



MENTOR® Compact, internal quench

- Models up to 3000°F Max Temp.
- Models up to 2800°F Max Operating Temp.
- 12"W x 12"H x 18"D Work Zone Size



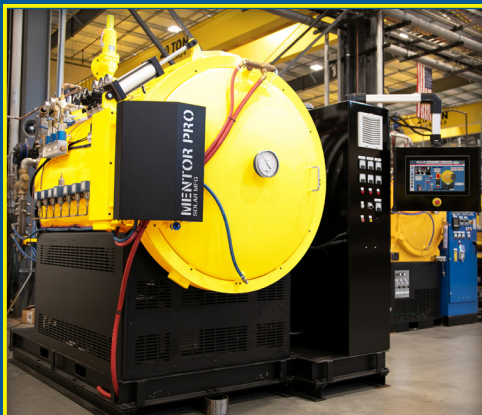
IQ Production ready, internal quench

- 2500°F Max Temp.
- 2400°F Max Operating Temp.
- Up to 48"W x 48"H x 72"D Work Zone Size



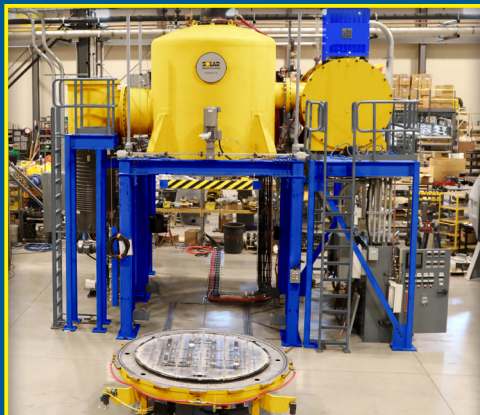
EQ Production ready, external quench

- 2500°F Max Temp.
- 2400°F Max Operating Temp.
- Up to 48"W x 48"H x 96"D Work Zone Size



MENTOR PRO Mid-size, internal quench

- 2500°F Max Temp.
- 2400°F Max Operating Temp.
- 18"W x 18"H x 36"D Work Zone Size



VBL Vertical bottom loading

- 2500°F Max Temp.
- 2400°F Max Operating Temp.
- Up to 120"Dia x 60"H Work Zone Size



HCB High capacity, car bottom loading

- 2500°F Max Temp.
- 2400°F Max Operating Temp.
- Up to 80"W x 80"H x 432"D Work Zone Size

Standard on all models:

- | Energy Efficient Graphite Insulation
- | 2 Bar Gas Quench Pressure and up to 20 Bar on the IQ
- | ±10°F Temp. Uniformity (1000° - 2100°)
- | SolarVac® Controls and Automation
- | Factory Start-up and Testing
- | One Year Warranty

Custom furnaces available, including all-metal hot zones on all models.



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**MENTOR® AND MENTOR® PRO SERIES –
HORIZONTAL FRONT LOADING, INTERNAL QUENCH**

Model Number	Hot Zone Size	Load ¹ Capacity	Temperature Range See Note Below ²
Mentor®	12"W x 12"H x 18"D	250 lbs	2800°F / 3000°F MAX
Mentor® Pro	18"W x 18"H x 36"D	1000 lbs	2400°F / 2500°F MAX

**HFL IQ SERIES – HORIZONTAL FRONT LOADING,
INTERNAL QUENCH**

Model Number	Hot Zone Size	Load ¹ Capacity	Temperature Range See Note Below ²
HFL-3836-2IQ	24"W x 24"H x 36"D	2000 lbs	2400°F / 2500°F MAX
HFL-3848-2IQ	24"W x 24"H x 48"D	2000 lbs	2400°F / 2500°F MAX
HFL-3860-2IQ	24"W x 24"H x 60"D	2000 lbs	2400°F / 2500°F MAX
HFL-3872-2IQ	24"W x 24"H x 72"D	2000 lbs	2400°F / 2500°F MAX
HFL-5748-2IQ	36"W x 36"H x 48"D	5000 lbs	2400°F / 2500°F MAX
HFL-5760-2IQ	36"W x 36"H x 60"D	5000 lbs	2400°F / 2500°F MAX
HFL-5772-2IQ	36"W x 36"H x 72"D	5000 lbs	2400°F / 2500°F MAX
HFL-6648-2IQ	48"W x 36"H x 48"D	5000 lbs	2400°F / 2500°F MAX
HFL-6660-2IQ	48"W x 36"H x 60"D	5000 lbs	2400°F / 2500°F MAX
HFL-6672-2IQ	48"W x 36"H x 72"D	5000 lbs	2400°F / 2500°F MAX
HFL-7460-2IQ	48"W x 48"H x 60"D	5000 lbs	2400°F / 2500°F MAX
HFL-7472-2IQ	48"W x 48"H x 72"D	5000 lbs	2400°F / 2500°F MAX

All HFL IQ Series models are available with a 6, 10, and 20 bar high pressure gas cooling.
Optional Low Pressure Carburizing (LPC) capabilities available on all IQ models.

**HFL EQ SERIES – HORIZONTAL FRONT LOADING,
EXTERNAL QUENCH**

Model Number	Hot Zone Size	Load ¹ Capacity	Temperature Range See Note Below ²
HFL-3836-2EQ	24"W x 24"H x 36"D	1500 lbs	2400°F / 2500°F MAX
HFL-3848-2EQ	24"W x 24"H x 48"D	2000 lbs	2400°F / 2500°F MAX
HFL-3860-2EQ	24"W x 24"H x 60"D	2000 lbs	2400°F / 2500°F MAX
HFL-5748-2EQ	36"W x 36"H x 48"D	5000 lbs	2400°F / 2500°F MAX
HFL-5760-2EQ	36"W x 36"H x 60"D	5000 lbs	2400°F / 2500°F MAX
HFL-5772-2EQ	36"W x 36"H x 72"D	5000 lbs	2400°F / 2500°F MAX
HFL-6648-2EQ	48"W x 36"H x 48"D	5000 lbs	2400°F / 2500°F MAX
HFL-6660-2EQ	48"W x 36"H x 60"D	5000 lbs	2400°F / 2500°F MAX
HFL-6672-2EQ	48"W x 36"H x 72"D	5000 lbs	2400°F / 2500°F MAX
HFL-6696-2EQ	48"W x 36"H x 96"D	5000 lbs	2400°F / 2500°F MAX
HFL-66144-2EQ	48"W x 36"H x 144"D	5000 lbs	2400°F / 2500°F MAX
HFL-7460-2EQ	48"W x 48"H x 60"D	5000 lbs	2400°F / 2500°F MAX
HFL-7472-2EQ	48"W x 48"H x 72"D	10,000 lbs	2400°F / 2500°F MAX
HFL-7496-2EQ	48"W x 48"H x 96"D	10,000 lbs	2400°F / 2500°F MAX
HFL-84144-2EQ	54"W x 54"H x 144"D	50,000 lbs	2400°F / 2500°F MAX

VBL SERIES – VERTICAL BOTTOM LOADING, EXTERNAL QUENCH

Model Number	Hot Zone Size	Load ¹ Capacity	Temperature Range See Note Below ²
VBL-5754-2EQ	48"Dia x 54"H	3500 lbs	2400°F / 2500°F MAX
VBL-7060-2EQ	60"Dia x 60"H	4500 lbs	2400°F / 2500°F MAX
VBL-7072-2EQ	60"Dia x 72"H	5000 lbs	2400°F / 2500°F MAX
VBL-8060-2EQ	72"Dia x 60"H	5000 lbs	2400°F / 2500°F MAX
VBL-8072-2EQ	72"Dia x 72"H	5000 lbs	2400°F / 2500°F MAX
VBL-8860-2EQ	80"Dia x 60"H	5000 lbs	2400°F / 2500°F MAX
VBL-8880-2EQ	80"Dia x 80"H	5000 lbs	2400°F / 2500°F MAX

HCB SERIES – HORIZONTAL CAR BOTTOM, EXTERNAL QUENCH

Model Number	Hot Zone Size	Load ¹ Capacity	Temperature Range See Note Below ²
HCB-84144-2EQ	54"W x 54"H x 144"D	50,000 lbs	2400°F / 2500°F MAX
HCB-84288-2EQ	54"W x 54"H x 288"D	100,000 lbs	2400°F / 2500°F MAX
HCB-84432-2EQ	54"W x 54"H x 432"D	150,000 lbs	2400°F / 2500°F MAX
HCB-84576-2EQ	54"W x 54"H x 576"D	150,000 lbs	2400°F / 2500°F MAX
HCB-120432-2EQ	80"W x 80"H x 432"D	150,000 lbs	2400°F / 2500°F MAX

**HFL VGN SERIES – HORIZONTAL FRONT LOADING, VACUUM
NITRIDING, EXTERNAL QUENCH**

Model Number	Hot Zone Size	Load ¹ Capacity	Temperature Range See Note Below ²
HFL-3648-VGN	36"W x 30"H x 48"D	2500 lbs	1400°F / 1500°F MAX

¹Load Capacity – This is a nominal number that is offered as a standard. Larger or smaller load capacities can be accommodated as required by the application.

²Temperature Range – Normal operating temperature for the standard furnace is up to 2400°F with bake-out capability of 2500°F Maximum. This would include processing loads at temperatures as low as 500°F. Optional furnace lower or higher temperature capabilities are available on various furnace models.

³All of the above furnace models provided with a gas cooling system capable of quenching the standard weight capacity at 2 bar gas pressure. When required for the application, a larger than standard cooling system can be incorporated to meet the customer's specification.

⁴All furnaces can be equipped with a vacuum pumping system that allows for operation in what is considered soft vacuum (10⁻² Torr) or high vacuum (10⁻³ to 10⁻⁴ Torr) depending on the process requirements. Various vacuum pumping system combinations are available.

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