

HTRV-A – High Temperature Vertical Split Tube Furnaces

The HTRV-A split tube furnaces have a maximum operating temperature of 1700 °C.

The split heating module allows either easy positioning of the work tube or positioning around reactors which have fixed end flanges. The split design may also allow faster cooling of samples. The control thermocouple is fitted in the centre of the heating zone. Cooling channels are engineered into the housing to aid with convection cooling of the outer case. The two furnace chamber halves consist of high grade insulation plates with vertically hanging MoSi_2 heating elements. A safety switch protects the operator by switching off the heating elements once the furnace is opened.

Furnaces are supplied without a stand, allowing customers to build them into their own equipment. Optional 'L' stands are available allowing the furnaces to be self supporting.

Standard features

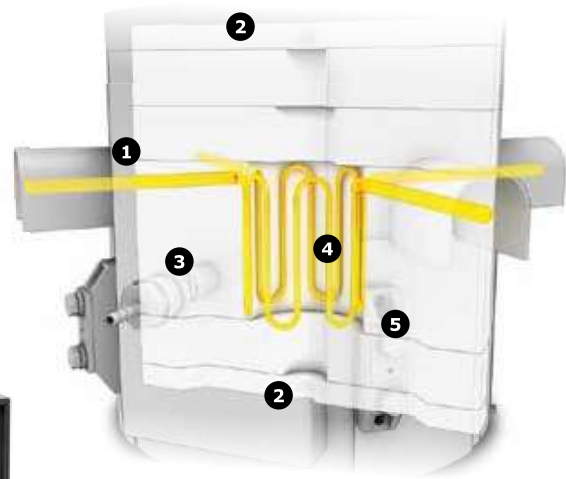
- 1600 and 1700 °C maximum operating temperatures
- Programmable 3216P1 controller
- Over-temperature protection
- Designed for vertical use
- Accepts work tubes with outer diameters up to 100 mm for use with modified atmosphere
- Heated lengths of 120, 250, 500 or 700 mm
- High grade type B thermocouple
- Low thermal mass ceramic fibre insulation
- Vertically hanging high quality MoSi_2 heating elements
- Rectangular housing with holes for convection cooling
- Supplied with separate control box and 3 m cable, plug and socket



HTRV-A 17/100/700 with optional stand

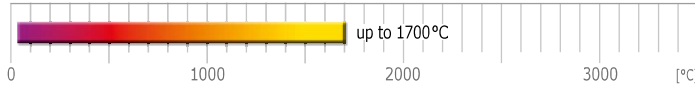
View inside the HTRV-A

- 1) Outer case
- 2) Ceramic fibre end insulation
- 3) Ceramic fibre case insulation
- 4) Heating elements
- 5) Ceramic fibre inner insulation



HTRV-A 17/70/250
with optional basic inert gas bundle

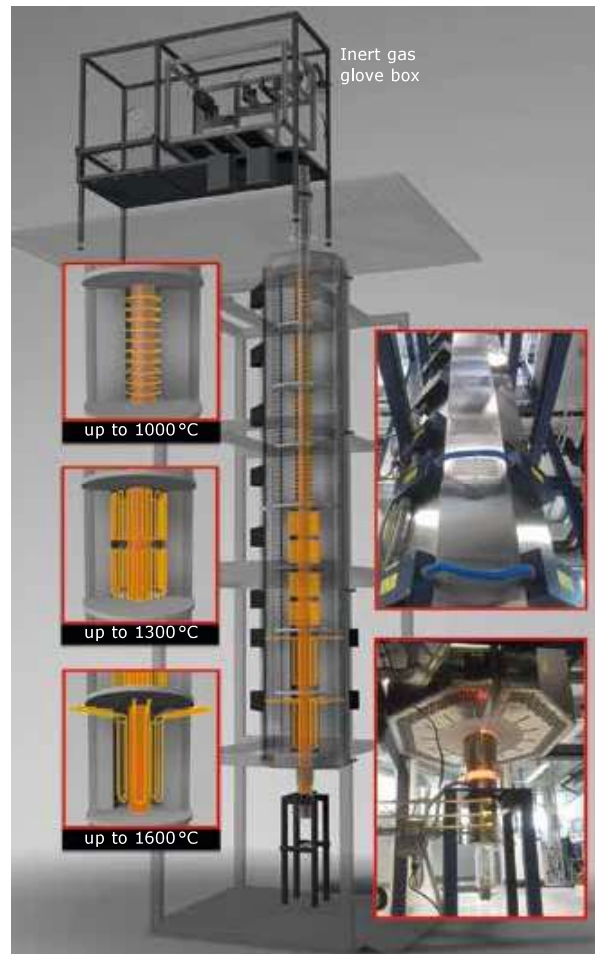




HTRV-A – High Temperature Vertical Split Tube Furnaces

Options (specify these at time of order)

- A range of sophisticated digital controllers, multi-segment programmers and data loggers is available. These can be fitted with RS232, RS485 or Ethernet communications (see pages 106 – 111). Please note that special controllers may be needed for this model
- A range of additional work tubes is available in a variety of materials (see page 113)
- Insulation plugs & radiation shields are strongly recommended for high temperature vertical tube furnaces to prevent heat loss & improve uniformity (see page 117)
- Modified atmosphere and vacuum packages are available (see page 117)
- Vacuum packages with a choice of rotary vane pump or turbomolecular pump are available (page 118)
- Longer heated lengths
- 'L' stand for convenient usage
- Oxygen sensor for inert gas packages



Custom designed 8-zone vertical split tube furnace, model HTRV-A 16/100/4000, with 4000 mm heated length. For debinding and sintering of fibres under inert gas atmosphere. The fibres are introduced into the furnace from an inert gas glove box.

Technical data

CGN	Max. temperature [°C]	Dimensions: Max. outer Ø accessory tube [mm]	Dimensions: Heated length [mm]	Recommended tube length		Dimensions: External H x W x D [mm]	Furnace weight [kg]	Dimensions: Control module H x W x D* [mm]	Control module weight [kg]	Uniform length ± 5°C [mm]	Max. power [W]
				for use in air [mm]	for use with modified atmosphere [mm]						

High Temperature Vertical Split Tube Furnace HTRV-A

HTRV-A __/70/120	1600	70	120	470	910	700 x 700 x 890 (closed with stand)	65	850 x 560 x 500	60	50	4800
HTRV-A __/70/250	1600, 1700	70	250	600	1040	800 x 600 x 890 (closed with stand)	75	850 x 560 x 500	90	125	6000
HTRV-A __/70/500	1600, 1700	70	500	850	1290	1050 x 700 x 890 (closed with stand)	120	850 x 560 x 500	90	250	13000
HTRV-A __/70/700	1600, 1700	70	700	1050	1490	1250 x 800 x 990 (closed with stand)	170	850 x 560 x 500	120	350	19000
HTRV-A __/100/500	1600, 1700	100	500	850	1290	1050 x 800 x 990 (closed with stand)	140	850 x 560 x 500	120		13000
HTRV-A __/100/700	1600, 1700	100	700	1050	1490	1250 x 800 x 990 (closed with stand)	170	850 x 560 x 500	120		19000

i Please note:

- Heat up rate when using an optional ceramic work tube must be limited to 5°C/min
- The power supply is based on 200–240 V for 1 phase and 380–415 V for 3 phase power
- Minimum uniform length in horizontal furnace with insulation plugs fitted at 100°C below max. temperature

- Maximum continuous operating temperature is 100°C below maximum temperature
- * Further to the depth of the control module 150 mm for the power plugs and other plugs needs to be added