Vertical Split Tube Furnace - VST / TVS

General Information

The split tube furnace range VST (single zone) and TVS (three zone) uses free radiating wire elements embedded within the insulation of the furnace body. The benefit of this design is its flexibility with the use of tube adapters the same furnace can be used with a variety of tube diameters.

These furnaces comprise a furnace body which is hinged and split into two halves along its length. This makes exchange of work tubes easier and also enables the furnace to be used with reactors or work tubes where end flanges would make insertion into a non-split furnace difficult. This design is particularly suitable for incorporation into extension test and creep test apparatus.

This range of tube furnaces does not include an integral work tube and one must be selected as an additional item. The work tube length is dependent on the application eg for use with modified atmosphere or vacuum. The use of a separate work tube has the advantage of protecting the heating elements from damage or contamination.

The "near-hinge" format is standard, an alternative option that can be specified at the time of purchase is the "far-hinge" format, where the pivot of hinges is further from the centre line of the furnace to enable a wider opening action.

Standard features

- 1200°C maximum operating temperature
- Carbolite Gero 301 controller, with single ramp to set-point & process timer
- Accepts worktubes with outer diameters up to 110 mm
- Heated lengths, single zone 200, 300, 400, 450, 600 or 900 mm (VST)
- Heated lengths, 3-zone 600 or 900 mm (TVS)
- Furnace splits into two halves to accommodate work tubes or samples fixed into a test rig
- Wire elements in high quality vacuum formed insulation ensure fast heat up, excellent temperature uniformity and short cool down times
- Supplied in 'near-hinge' configuration complete with stand
- Vertical furnace with a separate control module on a 2 metre conduit
- VST: End zone control is via back to back thermocouples
- VST: End zones of 150 mm each end

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
- Over-temperature protection (recommended to protect valuable contents & for unattended operation)
- A range of additional work tubes, end seals and work tube packages is available for use with modified atmosphere and/or vacuum
- Vacuum packages with a choice of rotary vane pump or turbomolecular pump are available for furnaces with tube inner diameters of 60 mm and

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above
- Insulation plugs, gas tight end seals and vacuum connections available
- 'Far-hinge' configuration providing wider opening of furnace body
- Wide choice of tube diameters and materials is available: eg quartz, ceramic, metal
- Control module on longer 6 metre conduit
- TVS: Three equal length zones

Technical Specifications

VST 12/200	
Max temp (°C)	1200
Number of heated zones	Single zone
Dimensions: Max outer diameter accessory tube (mm)	110
Heated length (mm)	200
Heat-up time (mins)	45
Dimensions: Furnace body length (mm)	350
Tube length for use in air (mm)	550
Tube length for use with modified atmosphere (mm)	650
Dimensions: External Furnace (inc stand) H x W x D (mm)	640 x 500 x 495
Dimensions: Control module H x W x D (mm)	222 x 370 x 376
Uniform length ±5°C (mm)	--
Max power (W)	1000
Holding power (W)	800
Thermocouple type	N
Weight (kg)	24

VST 12/300	
Max temp (°C)	1200
Number of heated zones	Single zone
Dimensions: Max outer diameter accessory tube (mm)	110
Heated length (mm)	300
Heat-up time (mins)	45
Dimensions: Furnace body length (mm)	450
Tube length for use in air (mm)	650
Tube length for use with modified atmosphere (mm)	750

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Dimensions: External Furnace (inc stand) H x W x D (mm)	740 x 500 x 495
Dimensions: Control module H x W x D (mm)	222 x 370 x 376
Uniform length ±5°C (mm)	--
Max power (W)	1500
Holding power (W)	850
Thermocouple type	N
Weight (kg)	25

VST 12/400

Max temp (°C)	1200
Number of heated zones	Single zone
Dimensions: Max outer diameter accessory tube (mm)	110
Heated length (mm)	400
Heat-up time (mins)	45
Dimensions: Furnace body length (mm)	550
Tube length for use in air (mm)	750
Tube length for use with modified atmosphere (mm)	850
Dimensions: External Furnace (inc stand) H x W x D (mm)	840 x 500 x 495
Dimensions: Control module H x W x D (mm)	222 x 370 x 376
Uniform length ±5°C (mm)	--
Max power (W)	2000
Holding power (W)	900
Thermocouple type	N
Weight (kg)	44

VST 12/450

Max temp (°C)	1200
Number of heated zones	Single zone
Dimensions: Max outer diameter accessory tube (mm)	110
Heated length (mm)	450
Heat-up time (mins)	53
Dimensions: Furnace body length (mm)	600
Tube length for use in air (mm)	800
Tube length for use with modified atmosphere (mm)	900

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Dimensions: External Furnace (inc stand) H x W x D (mm)	890 x 500 x 500
Dimensions: Control module H x W x D (mm)	222 x 370 x 376
Max power (W)	2250
Holding power (W)	1363
Thermocouple type	N
Weight (kg)	30

VST 12/600

Max temp (°C)	1200
Number of heated zones	Single zone
Dimensions: Max outer diameter accessory tube (mm)	110
Heated length (mm)	600
Uniform length ±5°C (mm)	--
Heat-up time (mins)	45
Dimensions: Furnace body length (mm)	750
Tube length for use in air (mm)	950
Tube length for use with modified atmosphere (mm)	1050
Dimensions: External Furnace (inc stand) H x W x D (mm)	1040 x 500 x 495
Dimensions: Control module H x W x D (mm)	222 x 370 x 376
Max power (W)	3000
Holding power (W)	1100
Thermocouple type	N
Weight (kg)	32

VST 12/900

Max temp (°C)	1200
Number of heated zones	Single zone
Dimensions: Max outer diameter accessory tube (mm)	110
Heated length (mm)	900
Heat-up time (mins)	45
Dimensions: Furnace body length (mm)	1050
Tube length for use in air (mm)	1250
Tube length for use with modified atmosphere (mm)	1350
Dimensions: External Furnace (inc	1340 x 500 x 675

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stand) H x W x D (mm)	
Dimensions: Control module H x W x D (mm)	222 x 370 x 376
Uniform length ±5°C (mm)	--
Max power (W)	4500
Holding power (W)	1450
Thermocouple type	N
Weight (kg)	44

TVS 12/600

Max temp (°C)	1200
Number of heated zones	Three zone
Dimensions: Max outer diameter accessory tube (mm)	110
Heated length (mm)	600
Heat-up time (mins)	45
Dimensions: Furnace body length (mm)	750
Tube length for use in air (mm)	950
Tube length for use with modified atmosphere (mm)	1050
Dimensions: External Furnace (inc stand) H x W x D (mm)	1040 x 500 x 495
Dimensions: Control module H x W x D (mm)	225 x 570 x 380
Uniform length ±5°C (mm)	500
Max power (W)	3000
Holding power (W)	1100
Thermocouple type	N
Weight (kg)	34

TVS 12/900

Max temp (°C)	1200
Number of heated zones	Three zone
Dimensions: Max outer diameter accessory tube (mm)	110
Heated length (mm)	900
Heat-up time (mins)	45
Dimensions: Furnace body length (mm)	1050
Tube length for use in air (mm)	1250
Tube length for use with modified atmosphere (mm)	1500
Dimensions: External Furnace (inc	1340 x 500 x 675

Vertical Split Tube Furnace - VST / TVS

stand) H x W x D (mm)	
Dimensions: Control module H x W x D (mm)	225 x 570 x 380
Uniform length ±5°C (mm)	750
Max power (W)	4500
Holding power (W)	1450
Thermocouple type	N
Weight (kg)	64

Please note:

- Heat up rate when using an optional ceramic work tube must be limited to 5 °C/min
- Heat up rate is measured to 100°C below max, using an empty tube & insulation plugs
- Uniform length measured with insulation plugs fitted
- Control box width increases to 570 mm for models with three phase power supply
- Maximum continuous operating temperature is 100°C below maximum temperature