

## Tensile Test Tube Furnaces

TMS Europe manufactures a range of material tensile testing furnaces, commonly used as creep test furnaces and stress rupture furnaces, and also produce a range of temperature control systems for these and other specialist applications.

We currently offer three design categories as standard models; cylindrical tube, split tube (half-shell) and split rectangular. In addition to our standard ranges, we can often manufacture bespoke units to spec. All our standard models are 3-zone to ensure good uniformity across the test sample, but we can also offer single zone models if required.

We do not supply mounting systems/test rigs, but the mountings of our furnaces are often compatible with existing equipment. Umbilical power connection assemblies and thermocouple leads are ordered separately.

Our range of MetTest temperature control units are designed to accompany these furnaces and can be ordered separately. Control systems with over-temperature protection are recommended if using these furnaces above 750°C, or if they will be left unattended (e.g. running overnight) to help comply with health and safety requirements.



## Standard Models

### UTFC - Universal Cylindrical Tube Furnaces – 1000°C

Our UTFC range of universal 3-zone tube furnaces can be used in a vertical or horizontal position and have three separate heating zones to ensure good uniformity across the work piece. They are often used by laboratories for tensile testing of materials, as creep-test furnaces or stress rupture test furnaces. In most cases they are suitable for replacing units of other makes.

Each unit has three separately controllable heating zones, consisting of high-grade wire-wound heating elements. On the side of the casing is a terminal box for connecting to the elements and earthing the unit.

Most models have a small tube for a thermocouple embedded in the heating elements for over-temperature protection (which when used with the proper equipment ensures the elements don't over-heat). Therefore the units can last much longer and are less likely to fail during a test. The units have either three or four M10 threaded mounted rods on a PCD of 203mm  $\pm$ 3mm.



Model	Inside Diameter	Tube Length	External Body W / H (Approx.)	Mounting Rods	Weight (Approx.)	OTP Tube	Price
UTFC0	50mm	300mm	260mm / 350mm	4x M10	10kg	Y	£1,080
UTFC1	86mm	315mm	260mm / 350mm	3x M10	13kg	Y	£1,140
UTFC2	86mm	365mm	260mm / 390mm	3x M10	15kg	Y	£1,240
UTFC3	100mm	380mm	280mm / 400mm	4x M10	16kg	N	£1,340
UTFC4	120mm	380mm	330mm / 400mm	4x M10	22kg	Y	£1,440
UTFC12	90mm	485mm	330mm / 520mm	4x M10	26kg	Y	£1,480

#### Optional Metal Mesh Protection Wrap +£50

Stainless steel. Extends beyond body ends by ~10mm.

Zones: 3

Max Continuous Temperature: 1000°C  
 Max Short Term Temperature: 1100°C\*  
 (\* Element over-temperature protection system with a maximum setting of 1140°C is required.)

Mounting Rods: On a PCD of 203mm  $\pm$ 3mm

Power Rating: UTFC0 : 750W per zone (2.25kW total at 240Vac)

UTFC[1-4], [12] : 1kW per zone (3kW total at 240Vac)

Supply Voltage: 220-240Vac 50Hz (via a suitable control unit, ordered separately)



Any prices exclude VAT and delivery.

Specification and price are subject to change without notice. Appearance may vary from image(s) shown. Trademarks acknowledged.

## UTFC - Universal Cylindrical Tube Furnaces – 1200°C



Our 1200°C UTFC models include 3 Type R thermocouples, located within each element zone, to provide over-temperature protection to the furnace. These furnaces may only be used to their maximum temperature with a suitable over-temperature protection system attached. See our MetTest range of control units, which have the option of 3-zone over-temperature protection as a customisation.

Model	Inside Diameter	Tube Length	External Body W / H (Approx.)	Price
UTFC23R	100mm	380mm	330mm / 400mm	POA
UTFC24R	120mm	380mm	360mm / 400mm	POA

*Due to fluctuation in the cost of the Type R thermocouples, please contact us for the exact current price.*

**Optional Metal Mesh Protection Wrap +£50**  
Stainless steel. Extends beyond body ends by ~10mm.

Zones: 3

Max Continuous Temperature: 1200°C

Max Short Term Temperature: 1250°C\*

(\* 3-zone element over-temperature protection system with a maximum setting of 1280°C is required.)

Mounting Rods: 3 or 4, M10 or M12, on a PCD of 203mm ±3mm.

Power Rating: 1kW per zone (3kW total at 240Vac)

Supply Voltage: 220-240Vac 50Hz (via a suitable control unit, ordered separately)

## UTFC - Universal Cylindrical Tube Furnaces – 1120°C

This construction of furnace is also available with 3 Type N thermocouples, located within each element zone, to provide over-temperature protection to the furnace. They are more economically priced, but have a lower maximum temperature.

Model	Inside Diameter	Tube Length	External Body W / H (Approx.)	Price
UTFC23N	100mm	380mm	330mm / 400mm	POA
UTFC24N	120mm	380mm	360mm / 400mm	POA

**Optional Metal Mesh Protection Wrap +£50**  
Stainless steel. Extends beyond body ends by ~10mm.

Zones: 3

Max Continuous Temperature: 1120°C

Max Short Term Temperature: 1170°C\*

(\* 3-zone element over-temperature protection system with a maximum setting of 1200°C is required.)

Mounting Rods: 3 or 4, M10 or M12, on a PCD of 203mm ±3mm.

Power Rating: 1kW per zone (3kW total at 240Vac)

Supply Voltage: 220-240Vac 50Hz (via a suitable control unit, ordered separately)



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## UTFS - Universal Split Tube Furnaces – 1000°C

Our UTFS range of universal split tube (half shell) 3-zone furnaces can be used in a vertical or horizontal position and have three separate heating zones to ensure good uniformity across the work piece. They are often used by laboratories for tensile testing of materials, as creep-test furnaces or stress rupture test furnaces. In most cases they are suitable for replacing units of other makes.

On each side of the casing is a terminal box for connecting to the elements and earthing the unit. They have a small tube in each half for a thermocouple embedded in the heating elements for over-temperature protection (which when used with the proper equipment ensures the elements don't over-heat or burn-out). Therefore the units can last much longer and are less likely to fail during a test.

Model	Inside Diameter	Nominal Length	External Body W / H (Approx.)	Power Rating <sup>(240V)</sup> Per Zone / Total	Price
UTFS1	130mm	430mm	350mm / 450mm	1kW / 3kW	£3,240
UTFS2	100mm	430mm	350mm / 450mm	1kW / 3kW	£3,680
UTFS3	100mm	350mm	350mm / 370mm	0.9kW / 2.7kW	£3,680

Zones: 3

Max Continuous Temperature: 1000°C

Max Short Term Temperature: 1050°C\*

(\*element over-temperature protection system is required)

Mounting Rods: Four M10 threaded mounted rods on a PCD of 310mm ±3mm

Supply Voltage: 220-240Vac 50Hz (via a suitable control unit, ordered separately)

*Variations for higher temperature use, up 1100°C, are available on request.*



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## UTFSE - Universal Split Tube Furnaces, with Side Entry Port – 1000°C

With side entry port for extensometer or other apparatus. And sharing the features of our UTFS models.

Model	Inside Diameter	Nominal Length	External Body W / H (Approx.)	Power Rating <sup>(240V)</sup> Per Zone / Total	Price
UTFS1E	130mm	430mm	350mm / 450mm	1kW / 3kW	£3,480
UTFS2E	100mm	430mm	350mm / 450mm	1kW / 3kW	£3,680
UTFS3E	100mm	350mm	350mm / 370mm	0.9kW / 2.7kW	£3,680

Zones: 3

Max Continuous Temperature: 1000°C

Max Short Term Temperature: 1050°C\*

(\*element over-temperature protection system is required)

Side Entry Port: 40 x 90mm (WxH) at neck, 60 x 90mm (WxH) for the rest.  
(The entry can be further reduced with soft insulation to the customer's needs.)

Mounting Rods: Four M10 threaded mounted rods on a PCD of 310mm ±3mm

Supply Voltage: 220-240Vac 50Hz (via a suitable control unit, ordered separately)



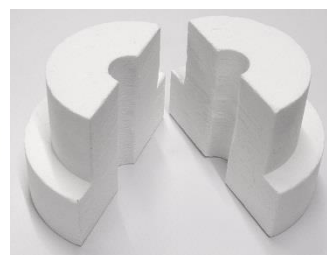
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## Connection Options

All our furnaces have enclosed termination for power connection to a suitable control unit. We can supply umbilical power connections, either direct wired or with ruggedised metal connectors (shown right), which makes installing or relocating a unit quicker and easier. Direct wired connections require an electrician (or suitably qualified person) to wire or unwire them when first setting up or relocating the unit.

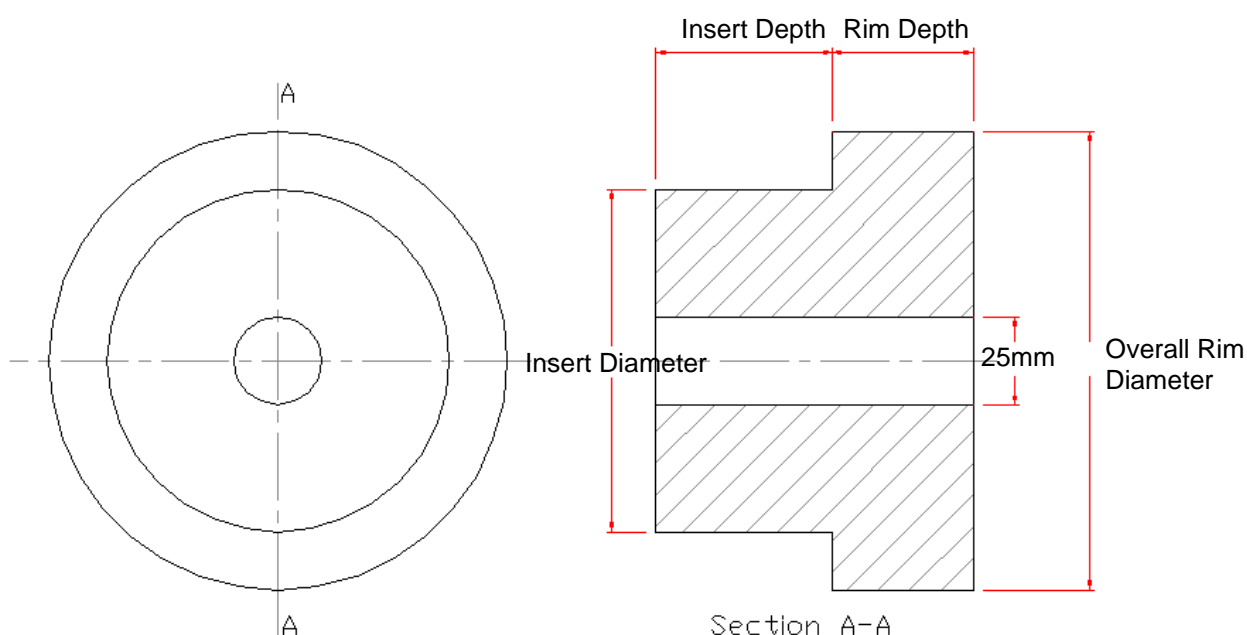
Furnace Models	Type	Price
All	Direct Wired 2m Umbilical	£60
UTFC	2m Umbilical with Connectors	£190
UTFS, UTFS_E, VRFS	2m Umbilical with Connectors	£290



## Insulation End Plugs

Model	Insert Diameter	Overall Rim Diameter	Rim Depth	Insert Depth	Price Standard	Price Split/Halved
Plug 1	130mm	160mm	40mm	50mm	£80	£95
Plug 2	97mm	130mm	40mm	50mm	£75	£90
Plug 3	84mm	114mm	30mm	30mm	£55	

Round end plugs (bungs) for tube furnaces, made from fibre insulation with a maximum temperature of 1260°C. All have a 25mm diameter hole through the centre. These sizes are normally available from stock (split half versions ~1 week). Other sizes are available on request.

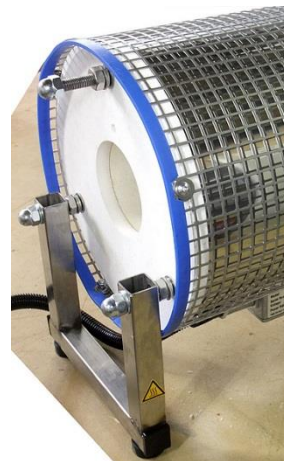


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In addition to our standard range of tensile furnaces and we can often manufacture them to spec too. We do not supply mounting systems/test rigs, but can normally offer furnaces with compatible mounting for existing equipment. Basic metal stands for horizontal benchtop use are available on request for UTFC models. Horizontal mounting of smaller UTFC models atop a MetTest control unit is an optional customisation. Umbilical power connection assemblies and thermocouple leads are order separately.

As is typical of these types of furnace, the outer surface may exceed 200°C during prolonged use. Some models have the option of a metal mesh protective wrapper to help mitigate against the risk of burns by accidental contact.



TMS Europe offers a range of control systems for use with our range of tensile test furnaces (used for creep test, stress rupture test, etc). Our standard 'MetTest' range provides precise and stable temperature control of 3 furnace zones. We can also provide bespoke solutions to meet your requirements, including phase-angle output, automatic 3-zone PID control, recording and LED bargraph power indicators.

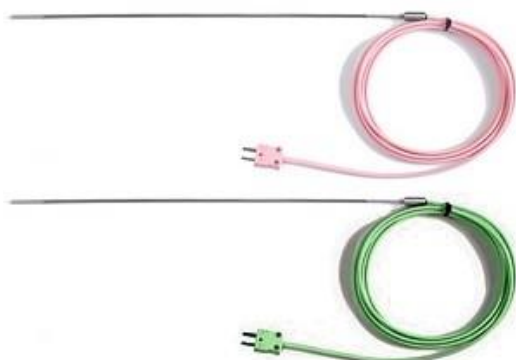


TMS is a manufacturer of thermocouple temperature sensors, so can provide a complete system comprising furnace, temperature sensors and control system.

We can supply temperature sensors and instruments complete with calibration.



TMS Europe Ltd is a UKAS accredited calibration laboratory No. 0461. We are accredited for calibration on site and in our laboratory, as defined in our Schedule Of Accreditation( see [www.tmseurope.co.uk/soa](http://www.tmseurope.co.uk/soa) ).



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