Chambers for Tensile Tester
**TH 2700 chamber for tensile tester**

Self-supported two-fold body frame
Made of stainless steel 2mm 1.4301

Melted, polished and brushed from the outside
Heating power 2.3 kW (220 Volt/380 Volt)
Range of temperature -80°C + 280°C (optional 350°C)

Air circulation with a centric blower - mixing fan

Front door contains 4 glass-platens;
Between inner glass platens are heating coils to remove frosting of the glass – (optional door light, internal light)

Up and down hole has a Teflon guide tube outside, V2a inside
We add insert shells to reduce to smaller diameter for Pullrods
If we supply also Pullrods

External regulator self-optimizing 0.1°C Sika TLK96
(optional Omron RS232 or Eurotherm RS485, analog in and out)

19" Rack with 4 m cable and a solid plug on backside
Sensor PT 100

Frame to move chamber in and out of tensile tester
Chamber with adjustable feet is carried by the bearings and can be moved to 611 mm away.

Heat up speed 15°C/Minute (from 20 to 80°C without grip)

Energy consumption of our standard TH2700 without grips

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Energy Consumption (kWh/h)</th>
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<tbody>
<tr>
<td>100°C</td>
<td>0.11</td>
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<tr>
<td>200°C</td>
<td>0.24</td>
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<tr>
<td>300°C</td>
<td>0.38</td>
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Cooling requires liquid nitrogen, which is controlled by a magnet valve on back side of chamber

Temporary frosting of the internal glass is occurred by opening the door and can be solved by using heating coils

To come down to -70°C 4 kg liquid air is requested
To keep -70°C ~ 3 kg liquid air per hour is requested
TH 2700  standard size (delivery 14 days)
Dimensions: inside 220x220x580  outside 360x480x766mm

TH2700-Esk  dto but with removeable wedge ports

TK...-SX  special versions of chambers with special dimensions
Inside A x B x C (Width x Deepness x Height)
1/3 prepaying required

TK...-SX-Esk  like Version SX but with removeable wedge ports

Options

-Lit        door light (heating coils alternative )
-RS232      regulator with RS232
-RS485      regulator with RS485
-T350       elevated temperature range
-WT         heat exchanger
-SSR        special hinge
-ESP        Antireflex glasses
-LHB        long hole on back side for extensometer

Grips for chambers
Suitable grips (TH175 THS321) you find on  www.grip.de

THS521 Adapter made of stainless steel
Tube with air pressure connector and Teflon tube
Standard version on stock
ZH2700-Esk on stock
TH2700

TH2700+Esk+SSR Esk Removeable wedge ports
SSR special hinge without lateral extension
Special Versions

Chamber with special Dimension
TK72.3 deep chamber with inserts
TK45-SX small chamber

TH2700-H850-Li special chamber inter height 850mm with light (220x220x850mm)
TK21-SX Little chamber
Cooler and heating on the right side
TK332  -180°C .. + 280°C  innen 220x230x310mm  120mm Wandstärke
TK26- LHB-Esk  with removeable wedge ports and slot on backside

TK190-LHB  long hole on back side for long travel extensiometer
TK43 SX-Esk  Big chamber special size with wedges
TK349 special chamber with special wedgeports

https://youtu.be/XWKYuSbwEKg
TH3870-SX with frame for tensile tester
TK42 SX-Esk  Special size with Light Special door turning point
TK168 220x230x580 side window removeable wedge ports light
TK293 SF45  side window 45°
TK43-SX-Esk special chamber
TK149

Dimensions 220x250x480mm
BE    light
Esk   Removeable wedge ports
SSR   special hinge
SF    extra windows on left and right
For single column machines

TK21-3 for single column machine
TK71 220x225x350mm (340x478x430mm) small chambers
TK108  310x280x400mm  small chambers
Short Cooling

with fluid air - with magnetic valve - Standard Solution

Consumption at -70°C ~ 3 kg fluid air per hour
Air coolings system down to -30°C   TH4240-1000
Long cooling solutions

TH4240-1000  air cooler -30°C
Special wide chambers for multi axe machines

TK56 Special chamber with double-folding door
TK101 open
TK62 4x glasses on each side - wedge ports - no heating - no ventilator
TH3930-40 special Trolley with counter balance
Connector for fluid air

To fix a 8mm tube on valve of chamber

https://youtu.be/ERwOe80rF_I  how to connect liquid air
TK2-66-1200 trail for chamber

Teflon bushes for chambers -180°C ..+280°C
### Pullrods

<table>
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<tr>
<th>THS-158-159-P-L117</th>
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<tbody>
<tr>
<td>Long Adapter with Teflon tube and pneumatic fittings,</td>
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<td>length 117 mm</td>
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<table>
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<tr>
<th>THS521-158-159-L150</th>
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<td>Rod 150mm pin to pin</td>
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<table>
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<tr>
<th>THS521-158-159-L400-Hsd</th>
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<td>Rod 400mm with Hestshield</td>
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<th>TH2700 +</th>
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$THS481-158-100$
$THS481-158-50$
Grips for chambers

TH175-10 + BP
Pneumatic grip 10kN -80°C bis 280°C V2a

TH175-10 + BP
pneumatic grip + pyramid jaws 10kN -80°C up to 280°C

www.grip.de/G12/TH175
THS321-10  10kN  -70°C up to 350°C
THS321-100-pn
100kN -70°C up to 350°C
www.grip.de/G08/THS321
Heat up and cool down diagram without grips

Heat up time of TH2700 without grips
Controller

- ORS232  Omron

E5AN-Q3MT-500-N  for SSR  E53-EN01 optional with RS232

The universal regulators of the product line E5_N are available in 4 Standard-DIN-Formats. All constructions have lighted two-line display with good viewing angle. Each model of this line have 3-colored actual value indicating.

- 2-Point- or PID-Regulation
- relay output, hybrid Relay output, voltage output (for solid-state relay) or current output
- power options 24 V DC / 24 V AC or 100 to 240 V AC
- simply connection to industry-PC to configure, save and copy parameters
- simply setting and operation with the buttons on the front side
- clear diagnosis and alarm indication
- safety in use thanks to the password security and adjustable menu
- large selection of special functions and options

http://www.ia.omron.com/product/family/1432/index_i_u.html

Eurotherm 2404

MODELL (2404) Industrieregler Typ 2404
FUNKTION (CC) PID Regler
VERSORGUNGSSPANNUNG (VH) 85-264Vac Netzversorgung
MODUL 1 (LH) Logikausgang Heizen
MODUL 2 (YC) Relais Wechsler Kuehlausgang
KOMMUNIKATION 1 (YM) RS485 MODBUS Protokoll
BEDIENUNGSANLEITUNG (GER) Deutsch
SENSOREINGANG (Z) Pt100 DIN 43760
MINIMUM RANGE -70
MAXIMUM RANGE 280
ANZEIGEEINHEIT (C) Celsius


Types of communication protocols vs type of Controller

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Optische Eigenschaften