



industrial furnaces and dryers





PROFILE OF LAC

LAC Ltd. with its registered office in Rajhrad near Brno has been for 13 years successfully dealing in manufacture of furnaces and dryers for numerous technological applications such as:

mechanical engineering • foundries • electro technical industry • plastic and rubber industry • custom-made hardening shops • research • laboratories • stomatology • jewel-making • ceramic industry • education • glass industry • art ceramic • china production

Production range of LAC Ltd. for domestic and foreign markets does not consist of a complex line or serial-made furnaces and dryers only, but it meets also requirements in the area of non-typical design of furnaces according to the customers' specific requirements

Dynamic development of the company is illustrated by the current number 250 employees, registered capital of 12 million CZK, 16 000 m² of production, storage and administrative premises and 7,000 furnaces manufactured to date.

In our sales department we are ready to meet your requirements and provide qualified advice on selection of the most suitable furnace for any application. Our own team of service engineers providing maintenance of our products is a matter of course.

Besides main products we offer also supply of heating elements, refractory and insulation materials, control elements, refractory shaped pieces and implementation of reconstructions of furnaces, heating systems and switchboards.



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DRYERS S

APPLICATION

These dryers are suitable for plastic, rubber, automotive, electro technical, glass and foundry industry, especially for drying, vulcanisation, preheating and curing, for drying and curing of surface layers and modifications of various materials...

STANDARD DESIGN

- For max. temperature 200 °C a 300 °C
- Muffle assembled of stainless steel
- Air circulation using circulation fans (for models S 60 and S 100)
- Circulation using central circulation units (for models S 250 to S 1000)
- Adjusting shelves
- Horizontal air circulation
- Optimal heat distribution in dryer according DIN 17052-1 (Class C)
- Circulation insert
- Optimal distribution of air circulation
- Manually controlled ventilation flap
- Door opening to the left on hinges
- Stand (for models S 60 to S 400)
- Programmable PID controller INDUSTRY

ACCESORIES FOR EXTRA CHARGE

- Automatically controlled ventilation flap
- Additional shelves
- Exhaust fan
- One-hand door opening
- Travelling wheels
- Hydraulic door opening upwards for models S60 to S650
- Manual door opening to the right
- Second door for model S 1000
- Relative humidity measurement
- Gas analyzer METREX
- Graphic temperature recorder
- Connection of controller to PC
- Non-typical design of dryer or stand
- Door window
- Inside light
- Pressurized cooling
- Alarm device



| Type LAC | t max °C | Volume l | External dimension (w×h×d) mm | Internal dimension (w×h×d) mm | Input kW | Number of fans pcs | Number of shelves pcs | Weight kg | Voltage V |
|-----------|----------|----------|-------------------------------|-------------------------------|----------|--------------------|-----------------------|-----------|-----------|
| S 60/02 | 200 | 60 | 1025×1315×935 | 450×300×450 | 2 | 1 | 1 | 60 | 230 |
| S 100/02 | 200 | 100 | 1025×1515×960 | 450×500×450 | 3 | 2 | 1 | 100 | 230 |
| S 250/02 | 200 | 240 | 1385×1515×1170 | 800×500×600 | 4 | 1 | 2 | 250 | 400 |
| S 400/02 | 200 | 380 | 1390×1725×1175 | 800×800×600 | 4 | 1 | 2 | 350 | 400 |
| S 650/02 | 200 | 640 | 1700×1340×1370 | 1000×800×800 | 6 | 1 | 2 | 480 | 400 |
| S 1000/02 | 200 | 960 | 1700×1730×1370 | 1000×1200×800 | 9 | 2 | 3 | 650 | 400 |
| S 60/03 | 300 | 60 | 1025×1315×935 | 450×300×450 | 3 | 1 | 1 | 60 | 230 |
| S 100/03 | 300 | 100 | 1025×1515×960 | 450×500×450 | 3 | 2 | 1 | 100 | 230 |
| S 250/03 | 300 | 240 | 1385×1515×1170 | 800×500×600 | 4 | 1 | 2 | 250 | 400 |
| S 400/03 | 300 | 380 | 1390×1725×1175 | 800×800×600 | 6 | 1 | 2 | 350 | 400 |
| S 650/03 | 300 | 640 | 1700×1340×1370 | 1000×800×800 | 8 | 1 | 2 | 480 | 400 |
| S 1000/03 | 300 | 960 | 1700×1730×1370 | 1000×1200×800 | 12 | 2 | 3 | 650 | 400 |

Technical changes reserved

4 FURNACES AND DRYERS WITH ATMOSPHERE CIRCULATION

DRYERS SV

APPLICATION

These dryers are suitable for plastic, rubber, automotive, electro technical, glass and foundry industry, especially for drying, vulcanisation, preheating and curing, for drying and curing of surface layers and modifications of various materials...

STANDARD DESIGN

- For max. temperature 250 and 450 °C
- Muffle assembled of stainless steel
- Horizontal circulation using central fan on back side of dryer
- Optimal heat distribution in dryer according DIN 17052-1 (Class C)
- Circulation insert
- Optimal distribution of air circulation
- Exhaust chimney with manual controlled flap
- Double wing door with handles and opens sideways
- Programmable PID controller INDUSTRY
- 3 ammeters
- Limit unit is thermoregulator

ACCESORIES FOR EXTRA CHARGE

- Graphic temperature recorder
- Automatic ventilating flap
- Exhaust fan for outlet
- RS 232 or RS 485 interface for connect the controller to PC
- Relative humidity measurement
- Loading frame with shelves according the request
- Charging bogie with shelves according the request
- Door window
- Gas analyzer METREX
- Hydraulic door opening upwards
- Software for record and monitoring of temperature cycle
- Pressurized ventilation
- Adjustment for vertical air circulation in dryer
- Second door
- Adjustment of bottom for charging bogie
- Furnace power reduction or increase
- Indirect gas heating
- Alarm device



SV 18500

| Type LAC | t max °C | Volume l | External dimension (w x h x d) mm | Internal dimension (w x h x d) mm | Input kW | Weight kg | Voltage V |
|-------------|----------|----------|-----------------------------------|-----------------------------------|----------|-----------|-----------|
| SV 1500/25 | 250 | 1500 | 1800 x 2200 x 2100 | 1000 x 1800 x 800 | 18 | 900 | 400 |
| SV 3300/25 | 250 | 3300 | 2000 x 2400 x 2650 | 1100 x 2000 x 1500 | 24 | 1400 | 400 |
| SV 4000/25 | 250 | 4190 | 2100 x 2350 x 2750 | 1200 x 2000 x 1600 | 30 | 1550 | 400 |
| SV 4500/25 | 250 | 4560 | 2700 x 1600 x 3100 | 2000 x 1200 x 1900 | 36 | 1600 | 400 |
| SV 6000/25 | 250 | 6000 | 2700 x 1850 x 3200 | 2000 x 1500 x 2000 | 58 | 1750 | 400 |
| SV 8000/25 | 250 | 8000 | 2700 x 2350 x 3400 | 2000 x 2000 x 2000 | 75 | 1900 | 400 |
| SV 18500/25 | 250 | 18500 | 3700 x 2400 x 4200 | 3000 x 2050 x 3000 | 50 | 2650 | 400 |
| SV 1500/45 | 450 | 1500 | 1700 x 2150 x 1950 | 1000 x 1800 x 800 | 30 | 900 | 400 |
| SV 3300/45 | 450 | 3300 | 1800 x 2350 x 2650 | 1100 x 2000 x 1500 | 42 | 1400 | 400 |
| SV 4000/45 | 450 | 4190 | 1900 x 2350 x 2750 | 1200 x 2000 x 1600 | 55 | 1550 | 400 |
| SV 4500/45 | 450 | 4560 | 2700 x 1600 x 3100 | 2000 x 1200 x 1900 | 60 | 1600 | 400 |
| SV 6000/45 | 450 | 6000 | 2700 x 1850 x 3200 | 2000 x 1500 x 2000 | 85 | 1750 | 400 |
| SV 8000/45 | 450 | 8000 | 2700 x 2350 x 3400 | 2000 x 2000 x 2000 | 105 | 1900 | 400 |
| SV 18500/45 | 450 | 18500 | 3700 x 2400 x 4200 | 3000 x 2050 x 3000 | 80 | 2650 | 400 |

Technical changes reserved

DRYERS SVK

APPLICATION

These dryers are suitable for plastic, rubber, automotive, electro technical, glass and foundry industry. Thanks to its design they provide for comfortable loading of bulky and heavy batches into the furnace using a crane or other method. Especially for drying, vulcanisation, curing of surface layers, granulates drying, burning-in of electrical components and preheating of various materials before additional processing and further for heat treatment of material such as artificial ageing of aluminium and its alloys and other materials

STANDARD DESIGN

- For max. temperature 250 and 450 °C
- Muffle assembled of stainless steel
- Vertical circulation using central fan on the furnaces ceiling
- Optimal heat distribution in dryer according DIN 17052-1 (Class C)
- Circulation insert
- Optimal distribution of air circulation
- Manually controlled ventilating flap
- Hydraulic door opening upwards
- Furnace bogie including gear
- Frame of bogie is made of steel profile
- Bottom of the bogie is made of steel metal
- Programmable PID controller INDUSTRY
- 3 ammeters
- Limit unit HT 40B
- Rails

ACCESORIES FOR EXTRA CHARGE

- Graphic temperature recorder
- Second manually or electrically-driven bogie
- RS 232 or EIA 485 interface for connect the controller to PC
- Automatic ventilating flap
- Software for record and monitoring of temperature cycle
- Second door
- Relative humidity measurement
- Gas analyzer METREX
- Alarm device
- Furnace power reduction or increase
- Indirect gas heating
- Exhaust fan



SVK 3600

| Type LAC | t max °C | Volume l | External dimension (w×h×d) mm | Internal dimension (w×h×d) mm | Voltage V | Input kW | Weight kg |
|-------------|----------|----------|-------------------------------|-------------------------------|-----------|----------|-----------|
| SVK 1000/25 | 250 | 1020 | 1300×2400×1500 | 900×900×1260 | 400 | 30 | 1106 |
| SVK 1500/25 | 250 | 1500 | 1400×2500×1750 | 1000×1000×1500 | 400 | 45 | 1258 |
| SVK 2000/25 | 250 | 2000 | 1400×2500×2250 | 1000×1000×2000 | 400 | 55 | 1390 |
| SVK 3600/25 | 250 | 3600 | 1600×2700×2750 | 1200×1200×2500 | 400 | 65 | 1690 |
| SVK 4500/25 | 250 | 4330 | 1600×2700×3250 | 1200×1200×3000 | 400 | 70 | 1790 |
| SVK 7200/25 | 250 | 7200 | 1900×3350×3250 | 1500×1600×3000 | 400 | 85 | 2695 |
| SVK 1000/45 | 450 | 1020 | 1300×2400×1500 | 900×900×1260 | 400 | 38 | 1133 |
| SVK 1500/45 | 450 | 1500 | 1400×2500×1750 | 1000×1000×1500 | 400 | 50 | 1288 |
| SVK 2000/45 | 450 | 2000 | 1400×2500×2250 | 1000×1000×2000 | 400 | 65 | 1417 |
| SVK 3600/45 | 450 | 3600 | 1600×2700×2750 | 1200×1200×2500 | 400 | 75 | 1724 |
| SVK 4500/45 | 450 | 4300 | 1600×2700×3250 | 1200×1200×3000 | 400 | 80 | 1817 |
| SVK 7200/45 | 450 | 7200 | 1900×3350×3250 | 1500×1600×3000 | 400 | 95 | 2789 |

Technical changes reserved

6 FURNACES AND DRYERS WITH ATMOSPHERE CIRCULATION

HORIZONTAL CHAMBER FURNACES **KNC/H**

APPLICATION

These furnaces are suitable for industrial and glass technologies where a very precise temperature distribution and dynamic progress of temperature curve are required. Especially for tempering, artificial ageing, preheating heat treatment, hot connecting, batch testing, drying, etc.



KNC/H 2000

STANDARD DESIGN

- For max. temperature 650 °C and 850 °C
- Circulation insert for temperature 650 °C of material DIN 1.4301, for 850 °C of material DIN 1.4828
- Optimal distribution of air circulation
- Loading sill height of the furnace is 500 mm
- Heating meanders on ceramic holders
- Door opening upwards using hydraulic cylinders
- Horizontal air circulation
- Optimal heat distribution in class B (for 650 °C) and class A (for 850 °C) according to DIN 17052-1
- Insulation with mineral fibre isoblocks
- Programmable PID controller INDUSTRY
- Controller and regulator in the switch board on the right side
- Limit unit HT 40B.

ACCESORIES FOR EXTRA CHARGE

- Graphic temperature recorder
- Grids with own legs
- RS 232 or RS 485 interface for connect the controller to PC
- 3 ammeters
- Software for record and monitoring of temperature cycle
- Non-typical dimension design on request
- Manually controlled ventilating flap
- Automatic ventilating flap

| Type LAC | t max °C | Internal volume l | External dimension (w×h×d) mm | Internal dimension (w×h×d) mm | Input kW | Weight kg | Voltage V |
|---------------|----------|-------------------|-------------------------------|-------------------------------|----------|-----------|-----------|
| KNC/H 1000/65 | 650 | 1000 | 2300×3000×2100 | 1000×1000×1000 | 36 | 1300 | 400 |
| KNC/H 1500/65 | 650 | 1500 | 2900×3000×2100 | 1500×1000×1000 | 48 | 1500 | 400 |
| KNC/H 2000/65 | 650 | 2000 | 3400×3000×2100 | 2000×1000×1000 | 72 | 1750 | 400 |
| KNC/H 1000/85 | 850 | 1000 | 2300×3000×2100 | 1000×1000×1000 | 42 | 1300 | 400 |
| KNC/H 1500/85 | 850 | 1500 | 2900×3000×2100 | 1500×1000×1000 | 54 | 1500 | 400 |
| KNC/H 2000/85 | 850 | 2000 | 3400×3000×2100 | 2000×1000×1000 | 80 | 1750 | 400 |

Technical changes reserved

VERTICAL CHAMBER FURNACES KNC/V

APPLICATION

These furnaces are suitable for industrial and glass technologies where a very precise temperature distribution and dynamic progress of temperature curve are required. Especially for tempering, artificial ageing, preheating heat treatment, hot connecting, batch testing, drying, etc.

STANDARD DESIGN

- For max. temperature 650 °C and 850 °C
- Circulation insert for temperature 650 °C of material DIN 1.4301, for 850 °C of material DIN 1.4828
 - optimal distribution of air circulation
- Heating meanders on ceramic holders
- Door opening backwards using pneumatic cylinders
- Horizontal air circulation
- Optimal heat distribution in class B (for 650 °C) and class A (for 850 °C) according to DIN 17052-1
- Insulation with mineral fibre isoblocks
- Programmable PID controller INDUSTRY
- Controller and regulator in desk switch board
- Limit unit HT 40B

ACCESORIES FOR EXTRA CHARGE

- Graphic temperature recorder
- RS 232 or RS 485 interface for connect the controller to PC
- 3 ammeters
- Software for record of temperature cycle
- Non-typical internal dimension
- Manually controlled ventilating flap
- Automatic ventilating flap

KNC/V 730



KNC/V 290

| Type LAC | t max °C | Internal volume l | External dimension (w×h×d) mm | Internal dimension (w×h×d) mm | Input kW | Weight kg | Voltage V |
|------------|----------|-------------------|-------------------------------|-------------------------------|----------|-----------|-----------|
| KNC/V 270 | 650 | 270 | 1100×1200×1500 | 700×650×600 | 18 | 360 | 400 |
| KNC/V 540 | 650 | 540 | 1480×1350×2000 | 900×750×800 | 24 | 600 | 400 |
| KNC/V 1000 | 650 | 1000 | 1600×1680×2200 | 1000×1000×1000 | 36 | 890 | 400 |
| KNC/V 1500 | 650 | 1500 | 2100×1680×2200 | 1500×1000×1000 | 60 | 1240 | 400 |
| KNC/V 2000 | 650 | 2000 | 2600×1680×2200 | 2000×1000×1000 | 75 | 1750 | 400 |
| KNC/V 270 | 850 | 270 | 1100×1200×1500 | 700×650×600 | 24 | 380 | 400 |
| KNC/V 540 | 850 | 540 | 1480×1350×2000 | 900×750×800 | 36 | 630 | 400 |
| KNC/V 1000 | 850 | 1000 | 1600×1680×2200 | 1000×1000×1000 | 48 | 930 | 400 |
| KNC/V 1500 | 850 | 1500 | 2100×1680×2200 | 1500×1000×1000 | 64 | 1290 | 400 |
| KNC/V 2000 | 850 | 2000 | 2600×1680×2200 | 2000×1000×1000 | 90 | 1830 | 400 |

Technical changes reserved

BOGIE-HEARTH CHAMBER FURNACES VKNC

APPLICATION

These furnaces are suitable for all industrial and glass technologies where a very precise temperature distribution and dynamic progress of temperature curve are required. Especially for tempering, artificial ageing, preheating heat treatment, hot connecting, batch testing, drying, etc. Thanks, the bogie, which made the bottom of the furnace, is suitable for heavy and high volume charges using crane.



VKNC 1000

STANDARD DESIGN

- For max. temperature 650 °C and 850 °C
- Door opening upwards using hydraulic cylinders
- Circulation insert for temperature 650 °C of material
DIN 1.4301 for 850 °C of material DIN 1.4828
– optimal distribution of air circulation
- Vertical air circulation
- Optimal distribution of temperature in class B (for 650 °C) and class A (for 850 °C) according DIN 17052-1
- Heat meanders on ceramic holders
- Manually driven bogie for VKNC 1000 and 1500
- Electrically driven bogie from type VKNC 2000
- Manually controlled ventilating flap
- Insulation with mineral fiber isoblocks
- Programmable PID controller INDUSTRY
- Limit unit HT 40B
- Controller and control in switchboard on right side
- Rails

ACCESORIES FOR EXTRA CHARGE

- Graphic temperature recorder
- Electrically or manually driven bogie for furnaces of volume 1000 and 1500l
- Second bogie manually or electrically driven
- RS 232 or RS 485 interface for connect the controller to PC
- 3 ammeters
- Automatic ventilating flap
- Software for record and monitoring of temperature cycle
- Second door
- Non-typical internal dimension

| Type LAC | t max °C | Volume l | External dimension (w×h×d) mm | Internal dimension (w×h×d) mm | Input kW | Voltage V | Weight kg |
|--------------|----------|----------|-------------------------------|-------------------------------|----------|-----------|-----------|
| VKNC 1000/65 | 650 | 1000 | 2200×3150×1800 | 900×900×1260 | 42 | 400 | 1450 |
| VKNC 1500/65 | 650 | 1500 | 2300×3250×2100 | 1000×1000×1500 | 54 | 400 | 1600 |
| VKNC 2000/65 | 650 | 2000 | 2300×3250×2550 | 1000×1000×2000 | 74 | 400 | 1950 |
| VKNC 3600/65 | 650 | 3600 | 2500×3450×3000 | 1200×1200×2500 | 87 | 400 | 2400 |
| VKNC 5500/85 | 650 | 5240 | 2500×3450×3600 | 1300×1300×3100 | 95 | 400 | 4800 |
| VKNC 7200/65 | 650 | 7200 | 2800×4000×3600 | 1500×1600×3000 | 110 | 400 | 5500 |
| VKNC 1000/85 | 850 | 1000 | 2200×3150×1800 | 900×900×1260 | 45 | 400 | 1500 |
| VKNC 1500/85 | 850 | 1500 | 2300×3250×2100 | 1000×1000×1500 | 60 | 400 | 1650 |
| VKNC 2000/85 | 850 | 2000 | 2300×3250×2550 | 1000×1000×2000 | 80 | 400 | 2100 |
| VKNC 3600/85 | 850 | 3600 | 2500×3450×3000 | 1200×1200×2500 | 95 | 400 | 2550 |
| VKNC 5500/85 | 850 | 5240 | 2500×3450×3600 | 1300×1300×3100 | 150 | 400 | 4950 |
| VKNC 7200/85 | 850 | 7200 | 2800×4000×3600 | 1500×1600×3000 | 160 | 400 | 5600 |

Technical changes reserved

FURNACES PP

APPLICATION

These furnaces are suitable for all industrial and glass technologies where a very precise temperature distribution and dynamic progress of temperature curve are required. Especially for tempering, artificial ageing, curing, heat treatment, glass tempering, heating and after cooling to glass stress elimination, ceramic firing, glazing and glass fritting.

STANDARD DESIGN

- For max. temperature 450 °C, 650 °C and 850 °C
- External jacket from crimped sheet
- Muffle assembled of stainless refractory steel
- Circulation insert
 - optimal distribution of air circulation
- Horizontal air circulation
- Optimal temperature distribution in class B (for 650 °C) and in class A (for 850 °C)
- Manually controlled ventilating flap
- Fibre insulation
 - low operational costs
- Stand (except of type PP 20)
- Programmable PID controller INDUSTRY
- Limit unit

ACCESORIES FOR EXTRA CHARGE

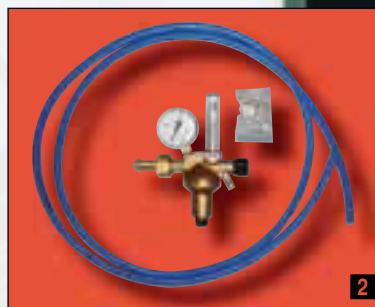
- Semi-gastight design of the furnace (detail of door seal) **1**
- Protection atmosphere inlet (component set) **2**
- Automatically controlled ventilating flap **3**
- One-hand door opening
- Door opening to the left or upwards **4**
- Graphic temperature recorder **5**
- Connection of controller to PC
- Non-typical design of furnaces or stand
- Automatic overpressure cooling **6**
- Additional shelves
- Software for record and monitoring of temperature cycle



PP 140



1



2



3



4



5



6

FURNACES PP

PP 40

| Type LAC | t max °C | Volume l | External dimension (w*h*d) mm | Internal dimension (w*xh*d) mm | Shelves pcs | Heating Input kW | Weight kg | Voltage V |
|-----------|-------------|-------------|----------------------------------|-----------------------------------|----------------|---------------------|--------------|--------------|
| PP 20/45 | 450 | 20 | 680×650×1020 | 300×200×350 | - | 3 | 115 | 230 |
| PP 40/45 | 450 | 35 | 680×750×1020 | 300×300×400 | 2 | 6 | 160 | 400 |
| PP 70/45 | 450 | 70 | 740×850×1120 | 350×400×500 | 2 | 8 | 200 | 400 |
| PP 140/45 | 450 | 135 | 940×975×1240 | 450×500×600 | 2 | 12 | 350 | 400 |
| PP 270/45 | 450 | 270 | 1095×1175×1615 | 600×600×750 | 2 | 18 | 580 | 400 |
| PP 540/45 | 450 | 540 | 1190×1400×1600 | 750×800×900 | 2 | 26 | 850 | 400 |
| PP 20/65 | 650 | 20 | 680×650×1020 | 300×200×350 | - | 3 | 115 | 230 |
| PP 40/65 | 650 | 35 | 680×750×1020 | 300×300×400 | 2 | 6 | 160 | 400 |
| PP 70/65 | 650 | 70 | 740×850×1120 | 350×400×500 | 2 | 8 | 200 | 400 |
| PP 140/65 | 650 | 135 | 940×975×1240 | 450×500×600 | 2 | 12 | 350 | 400 |
| PP 270/65 | 650 | 270 | 1095×1175×1615 | 600×600×750 | 2 | 18 | 580 | 400 |
| PP 540/65 | 650 | 540 | 1190×1400×1600 | 750×800×900 | 2 | 26 | 850 | 400 |
| PP 20/85 | 850 | 20 | 680×650×1020 | 300×200×350 | - | 3,3 | 115 | 230 |
| PP 40/85 | 850 | 35 | 680×750×1020 | 300×300×400 | 2 | 7 | 160 | 400 |
| PP 70/85 | 850 | 70 | 740×850×1120 | 350×400×500 | 2 | 9 | 200 | 400 |
| PP 140/85 | 850 | 135 | 940×975×1240 | 450×500×600 | 2 | 14 | 350 | 400 |
| PP 270/85 | 850 | 270 | 1095×1175×1615 | 600×600×750 | 2 | 20 | 580 | 400 |
| PP 540/85 | 850 | 540 | 1190×1400×1600 | 750×800×900 | 2 | 30 | 850 | 400 |

* without controller ** without stand

Technical changes reserved

SHAFT FURNACES SC AND SRC

FURNACES SC

APPLICATION These furnaces are suitable for heat treatment of bulky and heavy charges, where a crane has to be used for loading the batch into the furnace. It comprises primarily technologies of annealing, tempering, artificial ageing, etc.

STANDARD DESIGN

- For max. temperature to 850 °C
- Circular layout frame from structural steel
- Elektrohydraulic cover sealed by graphitic cord
- Heat resisting steel grid on the bottom
- Cylindrical circulation insert of fire-resisting stainless steel providing
- Vertical air circulation
- Fan located in the furnace cover
- Heat meanders on ceramic holders
- Separate switchboard
- INDUSTRY controller
- Limit unit HT 40B
- 3 ammeters

ACCESORIES FOR EXTRA CHARGE

- Graphic temperature recorder
- RS 232 or RS 485 interface for connect the controller to PC
- Overpressure cooling with automatic flap on input and output of the cooling air
- Batch thermocouple
- Protection atmosphere inlet
- Individual non-typical dimension according request
- 3 ammeters for voltage control

Atyp SC 200/07



FURNACES SRC

APPLICATION

These furnaces are suitable for heat treatment of bulky and heavy batches, where a crane has to be used for loading the batch into the furnace, in defined protective atmosphere (argon, nitrogen, moulding gas etc.) with low consumption of protective gas up to max. temperature 1100 °C. It comprises primarily technologies of bright annealing, tempering, sintering of powder metals, soldering, etc.

STANDARD DESIGN

- For max. temperature to 1100 °C
- Circular layout frame of structural steel
- Lid lifted upwards electrohydraulically
- Lid sealed with silicone sealing of circular section
- Water-cooled sealing
- Heat resisting steel grid on the bottom
- Manually controlled protection atmosphere for one type of gas
- Supply for connection of air pump
- Thermistor to check the flange temperature and signalling of presence of cooling liquid in the retort collar
- Overpressure check valve on protection gas outlet from furnace with 15 kPa overpressure
- Cylindrical circulation insert of fire-resisting stainless steel providing
- Vertical air circulation
- Fan located in the furnace cover
- Heat meanders on ceramic holders
- Separate switchboard
- INDUSTRY controller
- Limit unit HT 40B
- 3 ammeters

ACCESORIES FOR EXTRA CHARGE

- Graphic temperature recorder
- RS 232 or RS 485 interface for connect the controller to PC
- Overpressure cooling with automatic flap on input and output of the cooling air
- Batch thermocouple
- Air pump
- Pressure-vacuum gauge
- Replacement retort
- Automatic protection atmosphere supply for one or more gases
- Individual non-typical dimension

| Type LAC | t max °C | Volume l | Internal dimension (d×h) mm | External dimension (w×h×d) mm | Input kW | Weight kg | Voltage V |
|------------|----------|----------|-----------------------------|-------------------------------|----------|-----------|-----------|
| SC 500/85 | 850 | 500 | 800×1000 | 1600×2400×1800 | 50 | 1450 | 400 |
| SC 800/85 | 850 | 800 | 1000×1000 | 1800×2400×1800 | 70 | 1700 | 400 |
| SC 1000/85 | 850 | 1000 | 1000×1300 | 1800×2700×2100 | 90 | 1850 | 400 |
| SC 1700/85 | 850 | 1500 | 1200×1300 | 2000×2700×2100 | 120 | 2300 | 400 |

| Type LAC | t max °C | Volume l | Internal dimension (d×h) mm | External dimension (w×h×d) mm | Input kW | Weight kg | Voltage V |
|-------------|----------|----------|-----------------------------|-------------------------------|----------|-----------|-----------|
| SRC 500/11 | 1100 | 500 | 800×1000 | 1600×2400×1800 | 50 | 1650 | 400 |
| SRC 800/11 | 1100 | 800 | 1000×1000 | 1800×2400×1800 | 70 | 2100 | 400 |
| SRC 1000/11 | 1100 | 1000 | 1000×1300 | 1800×2700×2100 | 90 | 2250 | 400 |
| SRC 1700/11 | 1100 | 1700 | 1200×1500 | 2000×2700×2100 | 120 | 2650 | 400 |

Technical changes reserved

BOGIE-HEARTH FURNACES VKT

APPLICATION

These furnaces are suitable for all industrial and glass technologies where a very precise temperature distribution and dynamic progress of temperature curve are required with managed cooling system using to open of furnace on temperature. Especially for hardening and tempering, annealing, curing, heat treatment, preheating of glass forms, cooling to stress relieving, glazing, decorate firing and glass fusing etc. The bogie, which simultaneously makes the bottom of the furnace, is suitable for heavy and high volume charges using crane.

STANDARD DESIGN

- For max. temperature 1260 °C
- Door opening upwards using hydraulic cylinders
- Tiller contact stop
- Heating placed on four walls of the furnace and in the bogie
 - optimal distribution of temperature in furnace according DIN 17052-1 (class B)
- Separate switchboard from VKT 5000
- Manually-driven bogie
- Electrically-driven bogie from VKT 3000
- Bogie spirals covered with SiC plates
- Manually controlled ventilating flap
- Programmable PID controller INDUSTRY
- Limit unit HT 40B
- Controller a control in switchboard
- Rails

ACCESORIES FOR EXTRA CHARGE

- Graphic temperature recorder
- Second bogie manually or electrically driven
- Electrically driven bogie for furnaces of volume 800 and 2000l
- RS 232 or RS 485 interface for connect the controller to PC
- Metal plates on working surface of the bogie up to temperature of 1000 °C
- 3 ammeters
- Overpressure cooling system
- Automatic ventilating flap
- Multi zone regulation system „MASTER-SLAVE“
- Software for record and monitoring temperature cycle
- Second door



VKT 7000

| Type LAC | t max °C | Internal volume l | External dimension (w×h×d) mm | Internal dimension (w×h×d) mm | Input kW | Weight kg | Voltage V |
|-------------|----------|-------------------|-------------------------------|-------------------------------|----------|-----------|-----------|
| VKT 800/12 | 1260 | 800 | 1900×1800×2100 | 900×600×1500 | 40 | 1300 | 400 |
| VKT 1000/12 | 1260 | 1000 | 1900×1800×2400 | 900×600×2000 | 60 | 1500 | 400 |
| VKT 1500/12 | 1260 | 1500 | 2000×1600×3300 | 1000×600×2500 | 80 | 2300 | 400 |
| VKT 2000/12 | 1260 | 2000 | 2000×2000×2800 | 1000×800×2500 | 110 | 2800 | 400 |
| VKT 3000/12 | 1260 | 3000 | 2000×2000×3800 | 1000×1000×3000 | 130 | 3600 | 400 |
| VKT 5000/12 | 1260 | 5000 | 2300×2500×3900 | 1200×1400×3000 | 180 | 4300 | 400 |
| VKT 7000/12 | 1260 | 6700 | 2300×2500×4900 | 1200×1400×4000 | 250 | 5000 | 400 |

Technical changes reserved

FURNACES PK

APPLICATION

These furnaces are suitable for all industrial and glass technologies where a very precise temperature distribution and dynamic progress of temperature curve are required. Especially for hardening, artificial ageing, curing, heat treatment, heating before forging, preheating of glass forms etc.

STANDARD DESIGN

- PK 10/12 and PK 17/12 has insulation of insulation fire bricks and mineral fibre
- From types PK 17/12R the stressed parts of lining made of refractory concrete
 - high resistance
 - long life
- Heating on sides and on the bottom
 - optimal distribution of temperature in furnace according DIN 17052-1 (class A)
- Heating spirals on ceramic tubes (side walls) and in grooves (bottom)
- Door opening
 - downwards using springs for PK 10/12 and PK 17/12
 - downwards using counterweight for PK 17/12(R) to PK 75/12
 - upwards using counterweight for PK 105/12 to PK 540/12
 - upwards using hydraulic cylinders for PK 680/12 to PK 1400/12
- Turning table for charge handling from PK 105/12 to PK 540/12
- Programmable PID controller INDUSTRY
- Stand



PK 225

| Type LAC | t max °C | Volume l | External dimension (w×h×d) mm | Internal dimension (w×h×d) mm | Input kW | Weight kg | Voltage V |
|------------|----------|----------|-------------------------------|-------------------------------|----------|-----------|-----------|
| PK 10/12 | 1280 | 10 | 700×700×760 | 230×200×350 | 3 | 60 | 230 |
| PK 10/12R | 1280 | 10 | 700×700×760 | 230×200×350 | 5,5 | 70 | 400 |
| PK 17/12 | 1280 | 17 | 720×700×760 | 250×200×350 | 3,5 | 80 | 230 |
| PK 17/12R | 1280 | 17 | 940×880×980 | 250×200×350 | 7,25 | 230 | 400 |
| PK 25/12 | 1280 | 25 | 940×940×1050 | 250×250×400 | 11 | 250 | 400 |
| PK 35/12 | 1280 | 40 | 1100×910×1320 | 290×250×550 | 11 | 320 | 400 |
| PK 55/12 | 1280 | 55 | 1180×910×1320 | 400×250×550 | 13 | 450 | 400 |
| PK 75/12 | 1280 | 75 | 1180×910×1500 | 400×250×750 | 18 | 510 | 400 |
| PK 105/12 | 1280 | 105 | 1340×1010×1350 | 500×350×600 | 21 | 660 | 400 |
| PK 130/12 | 1280 | 130 | 1340×1010×1500 | 500×350×750 | 21 | 750 | 400 |
| PK 180/12 | 1280 | 180 | 1390×1060×1550 | 550×400×800 | 29 | 830 | 400 |
| PK 225/12 | 1280 | 225 | 1450×1170×1500 | 600×500×750 | 29 | 920 | 400 |
| PK 350/12 | 1280 | 350 | 1550×1110×1900 | 700×450×1100 | 50 | 1100 | 400 |
| PK 540/12 | 1280 | 540 | 1500×1320×2300 | 600×600×1500 | 50 | 1540 | 400 |
| PK 680/12 | 1280 | 680 | 1900×1170×2300 | 900×500×1500 | 70 | 1620 | 400 |
| PK 1000/12 | 1280 | 1000 | 2000×1400×2750 | 900×600×1800 | 70 | 1980 | 400 |
| PK 1400/12 | 1280 | 1400 | 2200×1400×3100 | 1100×600×2100 | 95 | 2500 | 400 |

* types for 230 V have slower temperature heat curve that why are suitable only for laboratory works

Technical changes reserved

14 FURNACES WITHOUT ATMOSPHERE CIRCULATION WITH ACCESSORIES

FURNACES PK

ACCESORIES FOR EXTRA CHARGE

- Semi-gas tide design of the furnace (detail of door seal) **1**
- Protection atmosphere inlet (set of components) **2**
- Metal plate on furnace bottom **3**
- SiC side cover plates to protect spirals **4**
- Pneumatic manual (push button) or foot pedal door control
- Graphic temperature recorder **5**
- Connection of controller to PC
- Non-typical internal dimensions **6**
- Non-typical stand
- RS 232 or RS 485 interface for connect the controller to PC
- Semi-gas metal retort with atmosphere protection supply
- Overpressure ventilation



PK 17/12 – 230 V

HARDENING TABLES SKM AND SKV

APPLICATION

Complete hardening centre for all heat treatment tests in industrial and school laboratories. It is suitable especially for hardening in oil bath or in water bath, carburising and nitriding, for artificial ageing and curing.

DETERMINATION

Big hardening table SKV – for hardening furnaces PK 10/12 to PK 105/12 and tempering furnaces PP 20/45 and 20/65.

Small hardening table SKM – for hardening furnaces PK 10/12 or for all models of furnaces LH and tempering furnaces PP 20/45,20/65 if you like L03 – L15.

STANDARD DESIGN

- 60/150 litre vessel for water
- 60/150 litre vessel for oil
- Pails obtained lids with handrails
- Fan for hardening on air
- Hardening manipulation baskets
- Steel profile table frame
- Hardening grid on work desk of the table
- Fan situated under grid
- Shelf on bottom part of table



Laboratory centre with table

SKM

ACCESORIES FOR EXTRA CHARGE

- Additional vessels
- Additional baskets
- Refractory shaped pieces around hardening grid
- Thermostat-controlled heating of hardening medium



Hardening centre with table

SKV

| Type LAC | Fan output W | External dimension (w×h×d) mm | Vessels dimension (w×h×d) mm | Grid Dimension (w×h) mm | Heating Input kW | Weight kg | Voltage V |
|----------|--------------|-------------------------------|------------------------------|-------------------------|------------------|-----------|-----------|
| SKM | 120 | 1855*×850×750 | 200×550×550 | 350×350 | 3 | 200 | 230 |

| Type LAC | Fan output W | External dimension (w×h×d) mm | Vessels dimension (w×h×d) mm | Grid Dimension (w×h) mm | Heating Input kW | Weight kg | Voltage V |
|----------|--------------|-------------------------------|------------------------------|-------------------------|------------------|-----------|-----------|
| SKV | 370 | 2900*×850×1200 | 300×700×1000 | 600×600 | 3 | 450 | 400 |

* included vessels on side

Technical changes reserved

16 FURNACES WITHOUT ATMOSPHERE CIRCULATION WITH ACCESSORIES

HARDENING CONTAINER **KK** HARDENING SALT BATH **KSL**, OIL OR WATER BATH **KLO**



KK 250

| Type LAC | Volume l | External dimension (w×h×d) mm | Grid Dimension (w×d) mm | Max. weight of charge kg | Weight kg | Input kW | Voltage V |
|----------|----------|-------------------------------|-------------------------|--------------------------|-----------|----------|-----------|
| KK/250 | 300 | 870×1830×950 | 600×900 | 35 | 350* | 3 | 400 |

* without charge

Technical changes reserved

HARDENING CONTAINER **KK**

APPLICATION The container is suitable for rapid charge transfer of smaller dimension into hardening medium, which can be water or oil depending on design of internal tub.

STANDARD DESIGN

- Double-jacked design
- Manual traversing
- Pneumatically moved grid with vertical console along side wall of container (air – 6 bar)
- Adjustable speed of grid move
- Mixing of hardening medium
- Drain cock

ACCESSORIES FOR EXTRA CHARGE

- Internal stainless steel tube and grid for cooling water medium
- Heating of hardening medium
- Cooling of hardening medium

Note: Max. grid load is 30 kg



KSL 20

| Type | t max °C | Top Volume l | External dimension (w×h×d) mm | Input kW | Weight kg | Voltage V |
|-----------|----------|--------------|-------------------------------|----------|-----------|-----------|
| KSL 20/11 | 1100 | 20 | 950×790×950 | 21 | 570 | 400 |

Technical changes reserved

HARDENING SALT BATH **KSL**

APPLICATION This equipment is suitable for quick warming-up of steel parts before hardening without scaling. Appropriate salts may be used also as a hardening media for thermal and isothermal hardening.

STANDARD DESIGN

- For max. temperature 1100 °C in heating chamber
- Frame welded of „L“ profiles with weld on sheets
- Crucible suspended in upper cover
- Back-folding furnace lid
- Insulation with insulation fire bricks
- Heating spirals on ceramic tubes – high heat transmission efficiency – crucible heated from four sides
- Emergency drain in furnace bottom – furnace protection in case of damage of the crucible
- Separate switchboard
- Lid equipped with safety and limit switch
- Status of heating elements using three ammeters
- HT 40 PID controller – exact temperature regulation in heating chamber
- Limit unit

ACCESSORIES FOR EXTRA CHARGE

- Charge thermocouple with protection tube
- Steel crucible



Detail of interior

OIL OR WATER BATH **KLO**

APPLICATION The bath is suitable for heat treatment of metal batch, intermediate annealing, annealing without risk of cracking and accurate hardening with preserved plasticity.

STANDARD DESIGN

- Oil hardening to max. temperature 60 °C
- Internal stainless steel tube and grid for hardening oil medium
- Hydraulic operation of grid
- Mixing of hardening medium
- Cooling of hardening medium
- Heating of hardening medium

ACCESSORIES FOR EXTRA CHARGE

- Internal stainless steel tube and grid for cooling water medium

KLO 2400

| Type LAC | Volume l | External Dimension (w×h×d) mm | Grid Dimension (w×d) mm | Max. charge weight kg | Weight kg | Power kW | Voltage V |
|----------|----------|-------------------------------|-------------------------|-----------------------|-----------|----------|-----------|
| KLO 2400 | 2400 | 2400×2700×1850 | 690×750 | 300 | 1200* | 20 | 400 |

* without charge

Technical changes reserved



GASTIGHT CHAMBER FURNACES **PKR** AND **PKRC**

APPLICATION

These furnaces are suitable for heat treatment of materials in controlled atmosphere (argon, nitrogen, forming gas etc.) with low gas drain, to the max. temperature 1100 °C Especially for bright annealing, tempering, soldering, steel powder sintering etc.

STANDARD DESIGN

- PKR for max. temperature 1100 °C
- PKRC for max. temperature 900 °C
- Gastight retort
- Engine with extended shaft for internal air circulation of furnace PKRC
- Fan located in door of furnace
- INDUSTRY controller
- Limit unit
- Space for thermocouple location inside the retort
- Low protective gas consumption
- Heating elements on sides and on the bottom
- Optimal temperature distribution in internal chamber space
- Insulation by insulation fire bricks and mineral fibre
- Manually opened door and water cooled seal grid
- Doors are sealed by silicon sealing
- Manually operated inlet of protective atmosphere for one gas



PKR 35/11

Detail airscrew for internal air circulation of furnace PKRC

ACCESORIES FOR EXTRA CHARGE

- Graphic recorder temperature
- RS 232 or RS 485 interface for connect the controller to PC
- Atypical stand
- Pressurized cooling with automatic flap on input and output of air cooling
- Charge thermocouple
- Air-pump
- Manovacuumeter
- Spare retort
- Automatically controlled ventilation flap
- Automatic protection atmosphere supply for one or more gases (supplied always with air pump)

| Type LAC | t max °C | Volume l | Internal retort dimension (w x h x d) mm | Internal chamber dimension (w x h x d) mm | External dimension (w x h x d) mm | Input kW | Weight kg | Voltage V |
|------------|----------|----------|--|---|-----------------------------------|----------|-----------|-----------|
| PKR 35/11 | 1100 | 20 | 220×200×400 | 290×250×550 | 1250×1450×1300 | 11 | 400 | 400 |
| PKR 55/11 | 1100 | 40 | 320×200×450 | 400×250×680 | 1400×1450×1450 | 13 | 570 | 400 |
| PKR 130/11 | 1100 | 75 | 450×200×700 | 500×250×900 | 1450×1450×1550 | 21 | 950 | 400 |
| PKR 180/11 | 1100 | 145 | 500×340×700 | 550×400×900 | 1500×1650×1550 | 29 | 1050 | 400 |
| PKR 350/11 | 1100 | 300 | 700×340×1050 | 750×450×1310 | 1750×1750×2200 | 50 | 1350 | 400 |

| Type LAC | t max °C | Volume l | Internal retort dimension (w x h x d) mm | Internal chamber dimension (w x h x d) mm | External dimension (w x h x d) mm | Input kW | Weight kg | Voltage V |
|-------------|----------|----------|--|---|-----------------------------------|----------|-----------|-----------|
| PKRC 55/09 | 900 | 40 | 320×200×450 | 400×250×680 | 1400×1450×1750 | 13 | 600 | 400 |
| PKRC 130/09 | 900 | 75 | 450×200×700 | 500×250×900 | 1450×1450×1950 | 21 | 980 | 400 |
| PKRC 180/09 | 900 | 145 | 500×340×700 | 550×400×900 | 1500×1650×2100 | 29 | 1100 | 400 |
| PKRC 350/09 | 900 | 300 | 700×340×1050 | 750×450×1310 | 1750×1750×2500 | 50 | 1380 | 400 |

Technical changes reserved

MELTING ELECTRICAL BALE OUT RESISTANCE TILTING MELTING FURNACES PT

APPLICATION

These furnaces are suitable for melting and holding furnaces for various metal alloys up to 1300 °C according to the type of furnace (Tin, Zinc, Lead, Aluminium, Silver, Gold, Copper).

PT 210



STANDARD DESIGN

- Temperature line for 1100 °C and 1300 °C in heating chamber
- Frame welded of „L“ sections with weld-on sheets
- Removable refractory concrete upper plate with cast iron collar
 - quick replacement of crucible
 - mechanical resistance
- Back-folding furnace lid
- Insulation with insulation fire bricks and micro porous panels (low heat loss)
- Heating spirals on ceramic tubes
 - high heat transmission efficiency
 - crucible heated from four sides
- Emergency drain in furnace bottom
 - furnace protection in case of damage of the crucible
- Wall mountable switchboard
- Patch cord with steel braided cover
- Lid equipped with safety end limit switch
- Checking of heating element status using three ammeters
- HT 40T PID controller
 - accurate temperature control in heating chamber
- Limit unit HT 40B
- Armoured cable between furnace and switchboard (5 m)

ACCESORIES FOR EXTRA CHARGE

- Charge thermocouple with protection tube
- Crucible
- Crucible with opening hole for thermocouple
- Heating spirals of material Kanthal APM
- Alsint tubes
- Warning system in case of crucible emergency
- Programmable PID controller INDUSTRY

| Type LAC | t max °C | Crucible Type | Crucible Volume l | External dimension (w x h x d) mm | Melting output kg/kg.h-1 | Input kW | Weight kg | Voltage V |
|-----------|----------|---------------|-------------------|-----------------------------------|--------------------------|----------|-----------|-----------|
| PT 30/11 | 1100 | A 70 | 10 | 1060×1300×1060 | 20/35 Al | 18 | 750 | 400 |
| PT 60/11 | 1100 | A 150 | 20 | 1100×1400×1100 | 45/42 Al | 21 | 850 | 400 |
| PT 110/11 | 1100 | A 300 | 40 | 1250×1450×1250 | 90/58 Al | 27 | 1100 | 400 |
| PT 210/11 | 1100 | BU 200 | 80 | 1350×1500×1350 | 200/130 Al | 53 | 1400 | 400 |
| PT 330/11 | 1100 | BU 300 | 120 | 1380×1650×1380 | 300/140 Al | 63 | 1650 | 400 |
| PT 400/11 | 1100 | BU 350 | 150 | 1400×1870×1400 | 350/150 Al | 68 | 1750 | 400 |
| PT 500/11 | 1100 | BU 500 | 180 | 1600×1850×1600 | 500/170 Al | 72 | 2100 | 400 |
| PT 650/11 | 1100 | BU 600 | 240 | 1600×1850×1600 | 600/210 Al | 82 | 2500 | 400 |
| PT 800/11 | 1100 | BU 800 | 360 | 1600×1980×1600 | 800/290 Al | 102 | 2800 | 400 |
| PT 90/13 | 1300 | A 70 | 10 | 1060×1300×1060 | 70/45 Cu | 18 | 750 | 400 |
| PT 180/13 | 1300 | A 150 | 20 | 1100×1400×1100 | 150/60 Cu | 21 | 850 | 400 |
| PT 360/13 | 1300 | A 300 | 40 | 1250×1450×1250 | 300/80 Cu | 27 | 1100 | 400 |
| PT 710/13 | 1300 | BU 200 | 80 | 1350×1500×1350 | 650/190Cu | 53 | 1400 | 400 |

Technical changes reserved

ELECTRICAL TILTING MELTING FURNACES PTS

APPLICATION

These furnaces are suitable for melting furnace with subsequent possibility of tilting and over pouring of hot melt into the transport pan or transport holding for subsequent treatment.

STANDARD DESIGN

- Maximum temperature in heating chamber 1200 °C
- Frame welded of „L“ sections with weld-on sheets
- Tilting of furnace using hydraulic cylinders with aggregate
 - accurate pouring of metal from crucible at various tilt angles
- Crucible
- Removable refractory concrete upper plate with cast iron collar
 - quick replacement of crucible
 - mechanical resistance
- Heating spirals on ceramic tubes
 - high heat transmission efficiency
 - crucible heated from three sides
- Back-folding furnace lid
- Insulation with insulation fire bricks and micro porous panels
 - low heat loss
- Emergency drain in furnace bottom
 - furnace protection in case of damage of the crucible
- Wall mountable switchboard
- Checking of heating element status using three ammeters
- HT 40T PID controller
 - accurate temperature control in heating chamber
- Limit unit HT 40B



2 × PTS 650

ACCESORIES FOR EXTRA CHARGE

- Charge thermocouple with protection tube
- INDUSTRY programmable PID controller
- Heating spirals of material Kanthal APM
- Alsint tubes
- Tilting of furnace using hydraulic cylinders for PTS 30 and 60
- Warning system in case of crucible emergency

| Type LAC | T max °C | Crucible l | Crucible type | External dimension (w×h×d) mm | Input kW | Melting output kg/h Al | Weight kg | Voltage V |
|------------|----------|------------|---------------|-------------------------------|----------|------------------------|-----------|-----------|
| PTS 30/12 | 1200 | 10 | A70 | 1540×1850×1300 | 18 | 30 | 1250 | 400 |
| PTS 60/12 | 1200 | 20 | A150 | 1600×1900×1200 | 21 | 40 | 1450 | 400 |
| PTS 110/12 | 1200 | 40 | A300 | 1850×1950×1500 | 27 | 55 | 1500 | 400 |
| PTS 210/12 | 1200 | 80 | TP 287 | 1950×2000×1600 | 53 | 120 | 1790 | 400 |
| PTS 400/12 | 1200 | 150 | TP 412 | 1960×2100×1650 | 63 | 140 | 2180 | 400 |
| PTS 650/12 | 1200 | 240 | TP 587 | 2200×2300×2000 | 82 | 200 | 2820 | 400 |
| PTS 970/12 | 1200 | 360 | TBN 800 | 2300×2400×2100 | 102 | 250 | 3500 | 400 |

Technical changes reserved

FUEL-FIRED BALE OUT MELTING FURNACES PTP

APPLICATION

These furnaces are suitable for melting and holding alloys like (Tin, Lead, Zinc, Aluminium, Silver, Gold, Copper etc.)



PTP 400/14

STANDARD DESIGN

- Temperature line for 1200 °C and 1400 °C in heating chamber
- Circular frame welded of bars with weld-on sheets
- Removable refractory concrete upper plate with cast iron collar
 - quick replacement of crucible
 - mechanical resistance
- Insulation with insulation fire bricks, micro porous material and refractory concrete (low heat loss)
- Gas burner Weishaupt
 - high heat transmission efficiency
- Emergency drain in furnace bottom
- Burned gas outlet around crucible with four openings
- Standalone switchboard
- PID controller HT 40T
 - accurate temperature control in heating chamber
- Limit unit HT 40B

ACCESORIES FOR EXTRA CHARGE

- Crucible
- Crucible lid
- Charge thermocouple with protection tube
- Oil burner
- Dual fuel burner
- Conduit gas exhaust from furnace sides
- Warning system in case of crucible emergency

| Type LAC | Capacity kg Al | Capacity kg Cu | Maximal melting temp. °C | Crucible Type | Crucible Volume l | Melting output in 700 °C kg Al/hour | Melting output in 1000 °C kg Cu/hour | External dimension (w x h x d) mm | Burner input kW | Weight kg |
|------------|----------------|----------------|--------------------------|---------------|-------------------|-------------------------------------|--------------------------------------|-----------------------------------|-----------------|-----------|
| PTP 200/12 | 200 | – | 720 | BU 200 | 80 | 140 | – | 2100×1100×1400 | 180 | 900 |
| PTP 250/12 | 250 | – | 720 | BU 250 | 100 | 140 | – | 2200×1150×1500 | 180 | 1000 |
| PTP 300/12 | 300 | – | 720 | BU 300 | 110 | 150 | – | 2200×1200×1500 | 210 | 1200 |
| PTP 350/12 | 350 | – | 720 | BU 350 | 150 | 250 | – | 2200×1300×1500 | 300 | 1400 |
| PTP 500/12 | 500 | – | 720 | BU 500 | 180 | 270 | – | 2400×1250×1650 | 300 | 1700 |
| PTP 600/12 | 600 | – | 720 | BU 600 | 240 | 400 | – | 2400×1400×1650 | 390 | 1900 |
| PTP 100/14 | 30 | 100 | 1150 | A 100 | 10 | – | 90 | 1900×900×1200 | 210 | 1000 |
| PTP 150/14 | 45 | 150 | 1150 | A 150 | 20 | – | 100 | 1950×950×1250 | 210 | 1250 |
| PTP 400/14 | 120 | 400 | 1150 | A 400 | 40 | – | 300 | 2100×1100×1400 | 300 | 1500 |
| PTP 500/14 | 150 | 500 | 1150 | A 500 | 60 | – | 320 | 2100×1150×1400 | 320 | 1600 |
| PTP 600/14 | 180 | 600 | 1150 | A 600 | 80 | – | 320 | 2150×1200×2150 | 320 | 1750 |

Technical changes reserved

FUEL-FIRED TILTING MELTING FURNACES PTSP

APPLICATION

These furnaces are suitable for melting with possibility to tilt and pour the alloy into transporting pan or transporting holding furnace for transport to following processes. (Tin, Lead, Zinc, Aluminium, Silver, Gold, Copper etc.)

STANDARD DESIGN

- Temperature line for 1200 °C and 1400 °C in heating chamber
- Circular frame welded of bars with weld-on sheets
- Tilting of furnace using hydraulic cylinders with a set
- Accurate pouring of metal from crucible at various tilt angles
- Removable refractory concrete upper plate with cast iron collar
 - quick replacement of crucible
 - mechanical resistance
- Insulation with insulation fire bricks, micro porous material and refractory concrete (low heat loss) designed for 1400 °C
- Insulation with mineral fibre blocks designed for 1200 °C
- Gas burner Weishaupt
 - high heat transmission efficiency
- Emergency drain in furnace bottom
- Furnace protection in case of damage of the crucible
- Burned gas outlet around crucible with four openings
- Standalone switchboard
- PID controller HT 40T
- Accurate temperature control in heating chamber
- Limit unit HT 40B

ACCESORIES FOR EXTRA CHARGE

- Charge thermocouple
- Oil burner
- Dual fuel burner
- Conduit gas exhaust from furnace sides
- Warning system in case of crucible emergency



PTSP 180

| Type LAC | Capacity kg Al | Capacity kg Cu | Maximal melting temp. °C | Crucible Type | Crucible Volume l | Melting output in 700 °C kg Al/hour | Melting output in 1000 °C kg Cu/hour | External dimension (w×h×d) mm | Burner input kW | Weight kg |
|-------------|----------------|----------------|--------------------------|---------------|-------------------|-------------------------------------|--------------------------------------|-------------------------------|-----------------|-----------|
| PTSP 180/12 | 180 | – | 720 | TP 287 | 80 | 220 | – | 2850×1300×1600 | 300 | 2000 |
| PTSP 330/12 | 330 | – | 720 | TP 412 | 150 | 240 | – | 2900×1550×1750 | 300 | 2400 |
| PTSP 370/12 | 370 | – | 720 | TP 412 H | 180 | 260 | – | 3000×1850×1700 | 300 | 3000 |
| PTSP 570/12 | 570 | – | 720 | TP 587 | 240 | 400 | – | 3200×2300×2100 | 390 | 3800 |
| PTSP 750/12 | 750 | – | 720 | TBN 800 | 360 | 420 | – | 3300×2400×2250 | 450 | 4300 |
| PTSP1000/12 | 1000 | – | 720 | TBN 1100 | 400 | 450 | – | 3300×2550×2250 | 450 | 5300 |
| PTSP 400/14 | 120 | 400 | 1150 | TP 723 | 40 | – | 330 | 2800×1400×1600 | 400 | 1900 |
| PTSP 500/14 | 150 | 500 | 1150 | TP 843 | 60 | – | 360 | 2800×1400×1600 | 400 | 2100 |
| PTSP 600/14 | 180 | 600 | 1150 | TP 287 | 80 | – | 380 | 2850×1300×1600 | 400 | 2500 |

FURNACES PTT 400

APPLICATION

These furnaces are suitable for melting up to maximal temperature 1200 °C in heating chamber. Furnaces are designed as holding and transporting for transport of melted aluminium between melting furnace and individual workplaces by Forklift car.

STANDARD DESIGN

- Circular frame of furnace
- Special settling frame consisting of two separate frames-inner and outer
- Frame suspended by silent blocks
- Vibration resistance
- Controller HT 40T
- Limit unit HT40B
- Protection of crucible by steel collar
- 3 ammeters
- Charge thermocouple
- Connection of furnace and frame by special plug

ACCESORIES FOR EXTRA CHARGE

- Crucible BU 400
- Software for connection to PC
- Spare set of heating meanders



PTT 400

| Type LAC | Volume kg Al | Maximal melting temperature °C | Crucible | Crucible Volume l | Voltage V | External dimension (w x d) mm | Input kW | Weight kg |
|------------|--------------|--------------------------------|----------|-------------------|-----------|-------------------------------|----------|-----------|
| PTT 400/12 | 200 | 1200 | BU 400 | 160 | 400 | 1450×930 | 49 | 1100 |

* without controller

Technical changes reserved

TNT 30



FURNACES TNT

APPLICATION

Furnace is suitable for low-melting metals up to max. temperature of 500 °C.

STANDARD DESIGN

- External jacket made from stainless polished steel
- Stainless steel crucible with handling grips
- Insulation of insulation fire bricks and mineral fibre
- Back-folding furnace lid
- Heating spirals inserted in grooves in insulation bricks
- Controller HT 40A on right side of furnace
- Electrical installation on back side of furnace
- Feeder cable with single-phase plug
- Limit unit

ACCESORIES FOR EXTRA CHARGE

- INDUSTRY programmable PID controller

| Type LAC | t max °C | Crucible Volume l | Maximal melting weight kg | External dimension (w x d) mm | Input kW | Weight kg | Voltage V |
|----------|----------|-------------------|---------------------------|-------------------------------|----------|-----------|-----------|
| TNT 30 | 500 | 5-13 | 70 | 550×580 | 3,5 | 65 | 230 |

Technical changes reserved

DEWAXING FURNACES KV

APPLICATION These furnaces are suitable for wax running of the pattern forms and resulting curing and annealing of ceramic materials.

STANDARD DESIGN

- Maximum temperature 900 °C
- Insulation of insulation fire bricks and mineral fibre
 - quick heating
 - low power consumption
 - low operating cost
- Heating on sides and bottom of the furnace
 - even heat distribution in the furnace
- Heating spirals on ceramic tubes
- Furnace bottom fitted with grid
- Container for wax trapping under the furnace
- Heated wax drain
- Door opening to the left
- Door equipped with safety and limit switch
- Ventilating chimney or ventilating flap
- Stand
- CERAMIC programmable PID controller
- Limit unit

ACCESORIES FOR EXTRA CHARGE

- Atypical stand (KV 50–KV 300)
- Automatic ventilating flap
- Manually controlled ventilation flap (KV 50–KV 300)
- Door opening to the right
- Overpressure cooling system
- Graphic temperature recorder
- PID programmable controller INDUSTRY
- RS 232 or RS 485 interface for connect the controller to PC

- Multi-zone system MASTER-SLAVE
- Software for recording and monitoring temperature cycle
- Protective SiC desks covering heating spirals on sides of furnace

Atyp KV 900/08



| Type LAC | t max °C | Internal volume l | External dimension (w×h×d) mm | Internal dimension (w×h×d) mm | Input kW | Weight kg | Voltage V |
|------------|----------|-------------------|-------------------------------|-------------------------------|----------|-----------|-----------|
| KV 50/09 | 900 | 50 | 909×1375×1066 | 350×350×400 | 2,5 | 125 | 230 |
| KV 70/09 | 900 | 80 | 909×1460×1091 | 350×450×450 | 5 | 165 | 400 |
| KV 120/09 | 900 | 120 | 1009×1550×1141 | 450×530×500 | 7 | 230 | 400 |
| KV 150/09 | 900 | 150 | 1009×1640×1161 | 450×600×520 | 9 | 280 | 400 |
| KV 200/09 | 900 | 200 | 1056×1820×1161 | 500×750×520 | 10,5 | 310 | 400 |
| KV 250/09 | 900 | 230 | 1080×1850×1230 | 520×800×550 | 13 | 360 | 400 |
| KV 300/09 | 900 | 310 | 1121×1850×1341 | 550×800×700 | 16 | 420 | 400 |
| KV 500/09 | 900 | 490 | 1473×1825×1448 | 650×1000×750 | 20 | 700 | 400 |
| KV 700/09 | 900 | 730 | 1600×1925×1600 | 750×1100×900 | 28 | 920 | 400 |
| KV 1000/09 | 900 | 1000 | 1520×2116×1772 | 800×1200×1000 | 40 | 1950 | 400 |
| KV 1500/09 | 900 | 1625 | 1758×2161×1885 | 950×1350×1200 | 55 | 2350 | 400 |
| KV 2000/09 | 900 | 2100 | 2200×2500×2500 | 1000×1500×1400 | 70 | 2700 | 400 |

Technical changes reserved

WAX BOILER TKV

APPLICATION

This melting boiler is suitable for wax melting at temperatures up to 150 °C for the purpose of separation of mechanical dirt and removal of water from the wax.

DESCRIPTION OF CONSTRUCTION

- Boiler jacket of polished stainless steel sheets with handling grips
- Stainless steel crucible with lid
- Insulation by mineral fibre mat
- Removable lid of boiler with handrail
- Exhaust
- Wallmountable switchboard
- Controller HT 40A

ACCESORIES FOR EXTRA CHARGE

- INDUSTRY controller



TKV 80

| Type LAC | t max °C | Crucible Volume l | Ext. dimension (w*×h) mm | Input kW | Weight kg | Voltage V |
|----------|----------|-------------------|--------------------------|----------|-----------|-----------|
| TKV 80 | 150 | 80 | 640×700 | 8,0 | 60 | 400 |

* diameter of cylinder body

Technical changes reserved

UNIVERSAL LINE CHTZ

Advanced, modular-construction technological unit for chemical thermal treatment – for cementation, nitro cementation, hardening, tempering.

CHARACTERISTIC

- Easy adaptation of grid assembly to various sizes of charge
- Automatic transfer of charge between individual line modules
- Option of alternating use of various hardening environments
- Easy and simple charge handling
 - direct transfer of charge from furnace to hardening bath without temperature drop
- Reduction of operating, production and handling cost by flexible adaptation of the line to your immediate needs
- Optional combination with other types of devices

STRUCTURE OF MODULES FOR CHTZ LINE

- Cementation furnace
- Tempering furnace for one or two charges
- Hardening bath – oil, water, salt
- Batch hardening washer
- Salt separator (regenerator)



PROCESS MEDIA

Nitrogen N_2 – safety gas for flushing of furnace atmosphere, driving medium for methanol
 Methanol CH_3OH – creating process atmosphere
 Propane C_3H_8 – enhances the atmosphere
 Air – leans the furnace atmosphere
 Ammonia NH_3 – creates atmosphere for nitro cementation

TECHNICAL PARAMETERS

- Maximum working temperature 950 °C
- Steel retort
- Electrical heating
- Locking of charge in furnace
- Oxygen probe
- Oil hardening ($T_{max} = 200$ °C)
- Salt hardening ($T_{max} = 450$ °C)
- Hardening medium cooling
- Bath agitation
- Simple replacement of part of the bath
- Visual or automatic surface level inspection

| Type | 60 | 120 | 220 | 350 | 600 | 950 | 1200 |
|--------------------|-----|-----|-----|-----|-----|-----|------|
| Charge height [mm] | 300 | 650 | 650 | 700 | 700 | 900 | 1100 |
| Charge width [mm] | 300 | 300 | 430 | 500 | 700 | 900 | 1100 |
| Charge weight [kg] | 60 | 120 | 220 | 350 | 600 | 950 | 1200 |

Technical changes reserved

WORKPLACE 2 × KNC/H 1000

APPLICATION

The working site is intended for heat treatment of aluminium castings with processes of solution annealing and artificial ageing, with possibility of further independent utilisation for other heat regimes as well.

TECHNICAL DATA

- Max. temperature: 650 °C
- Working temperature 530 °C ± 3 °C
- Batch max. 200 kg AL in basket with approx. dimensions 800 × 800 × 800 (according to furnace possibilities), approx. 50 kg
- Air-driven door moves upwards; when it is open, the space between the furnace and the bath is bridged over by a couple of rollers
- Height of stand and roller track according to bath grid height
- Roller non-driven track with side guides in the furnace bottom
- Basket with batch pulled up by air-driven roller
- Pneumatic ventilating flap
- Two RS interfaces for PC connection
- Two control thermocouples
- Controller calibration
- Standalone switchboard for both furnaces and bath

TECHNICAL PARAMETERS OF THE BATH

- Stainless steel bath, frame of structural steel with finish
- Two lower roller grids allowing for hardening, upper grids allowing for loading another basket with batch simultaneously with hardening of the first basket
- Water after immersion of the batch must not exceed 50 °C solved by sufficient size of bath
- Water cooling between hardening adding of cold water
- Hardening frequency 5 hours hardening always from one furnace at a time
- Two air-driven grids placed from sides for lowering of batch into water
- Circulation pump placed under furnaces allowing for quick discharge of water from the bath using a valve
- Workplace solution requiring no construction adaptations



CONTINUOUS LINE KNC/H 5760/65

APPLICATION The continuous line is suitable for annealing of shell moulds for precise casting.

TECHNICAL DATA

- Working temperature: 650 °C
- Max. temperature: 700 °C
- Temperature distribution in atmosphere: ± 5 °C
- Inner volume: 5760 l
- Internal useful dimensions (w × h × d): 1600 × 900 × 4000 mm
- External dimensions (w × h × d): 4700 × 4100 × 8300 mm
- Total input: 150 kW
- Heating input: 135 kW
- Max. soaking time: 2 hours for charge 300 kg of shell mould
- Voltage: 3/PEN 400/230 V AC 50 Hz
- Weight: 6400 kg
- Basket dimensions (w × h × d): 1400 × 60 × 1200 mm
- Supporting frame of basket for shell mould fixation: height c. 300 mm
- Max. weight of basket with charge: 300 kg
- Door opening: electric, time c. 15 s
- Conveyor speed inside of furnace: 150 mm/s
- Speed of charging and discharging of basket: continuously adjustable, max. 300 mm/s
- Electrically controlled chimney: 2 pcs in each zone
- Ventilator circulation units: Ø 400 mm, 3 kW, 3 pcs



APPLICATION LINE KNC/H

APPLICATION This line is suitable for heat treatment of racing car pistons.

The facility consists of the following components:

1. BATCH TABLE WITH CONVEYOR BELT

- 1 motor for chain 1.5 kW, reversing, with brake
- 1 motor for chain belt 0.55 kW
- 1 switching key with emergency function, reverse run with manual setup
- Stacking table
- 1 linear roller for compression of hoppits for the furnace

2. CONTINUOUS FURNACE PP 1500/65

- Working temperature of furnace 650 °C
- 5 fans, 1.5 kW with revolution speed control
- 5 double thermocouples NiCr-Ni, for control of zones and monitoring
- 5 heating thermocouples, 12 kW each
- 1 DS motor for chain driving, reversing, with brake
- 4 air rollers for partition and gate with 8 switches
- 8 air roller guns in furnace with 16 ES
- 1 lifting/lowering air roller for linear drive with 2 ES

3. VARIOTEMP

- 1 double hardening tank made of stainless steel, metal-coated
- 2 tanks made of stainless steel, coupling collecting tank for hardening tank, and storage tanks
- 2 screwable heating elements for electrical heating
- Pump providing for circulation between collecting tank and storage tank
- Storage tank level meter
- Hardening tank, dimensions l × w × d: approx. 1200 × 1000 × 950 mm each
- 2 storage tanks, dimensions l × w × d: approx. 1200 × 500 × 950 mm each
- Hardening temperature: 40 °C
- 2 injectors
- Dimensions: l × w × d approx. 600 × 600 × 50 mm
- Number of sinks: 25 sinks in 1 injector
- Injection pressure from piston pump is 10 bars
- 1 drive for transmission motor tank 0.55 kW with brake, 2 directions
- 2 ES for limit positions;
- 2 heating units for Variotemp max. 7 kW
- Electromagnetic starting
- 2 heat regulators
- 2 pumps, 1.1 kW max. with accumulator and 2 solenoid valves for injector
- 2 circulating pumps, 0.55 kW max.
- 2 flow meters

- 2 air cylinders for rotation of injectors with 4 ES, such as auxiliary engine 0.11 kW, single-phase can be used with integrated ES

4. CLEANING TANK (WASHER)

- Size: w × l × d approx. 1200 × 1000 × 950 mm plus collecting tank
- Contains aerator
- Level measurement control

5. STACKING TABLE

- Switch with vessel location signals
- Dimensions: 2000 × 1000 × 1300 mm



CONTINUOUS FURNACE PSP 9000/02

APPLICATION

Furnace is suitable for heat hardening of pressure tanks of composite materials.

TECHNICAL DATA

- Max. temperature: 160 °C
- Working temperature: 100 °C
- Heating module: 4 pcs of heating elements with input 2 kW + circulation ventilator
- Total number of modules: 10 pcs
- Belt height from the floor: about 1400 mm
- Feed opening: 500 × 1000 mm
- Max. heating input: 80 kW
- Max. total input: 100 kW
- Furnace capacity: 10 pcs of bottles / hour
- Ground plan dimensions: 2000 × 10000 mm
- Equipment: 3 pcs of automatic ventilation valves, device for gas concentration monitoring
- 3 pcs of exhausters, all operated together



CONTINUOUS FURNACE S 3000/01

APPLICATION

Furnace is suitable for hardening of sealing compound of bushing in point, where a optical cable connects with sensor box.

TECHNICAL DATA

- Unit dimensions (w×h×d): 100×2200×100 mm
- Unit weight: c. 2 kg
- Internal useful dimensions (w×h×d): 620×2550×1920 mm
- External dimensions (w×h×d): 1000×3380×2800 mm
- Max. temperature: 100 °C
- Working temperature: 75 ± 10 °C
- Heating input: 12 kW
- Cycle time: 1 min
- Hardening time of 1 pc: 15 min
- Capacity: 60 pcs/hour
- Voltage: 3/PEN 400/230 V AC 50 Hz
- Sucked air volume: 150 m³/hour
- Equipment: control PLC system Siemens S 200 - 1 pc
- Exhaust chimney - 1 pc
- Ventilator unit - 2 pcs



CONTINUOUS FURNACE S 4700/01

APPLICATION

Furnace is suitable for hardening of sealing compound between lid and box of sensor.

TECHNICAL DATA

- Unit dimensions (w×h×d): 100×2200×100 mm
- Unit weight: c. 2 kg
- Internal useful dimensions (w×h×d): 2500×420×4 520 mm
- External dimensions (w×h×d): 2700×1930×6 300 mm
- Max. temperature: 100 °C
- Working temperature: 75 ± 10 °C
- Heating input: 18 kW
- Cycle time: 1 min

- Hardening time of 1 pc: 30 min
- Capacity: 60 pcs/hour
- Voltage: 3/PEN 400/230 V AC 50 Hz
- Sucked air volume: 150 m³/hour
- Equipment: control PLC system Siemens S 200 – 1 pc
- Exhaust chimney – 1 pc
- Ventilator unit – 2 pcs



FURNACE S 7600/01

APPLICATION

The non-typical low temperature furnace with “pater noster” conveyor for is suitable for preheating of plastic parts before shaping.

TECHNICAL DATA

- Max. temperature: 100 °C
- Working temperature: 60 °C
- Total volume: c. 9000 litres
- External dimensions (w×h×d): 2600×2 800×2600 mm
- Internal dimensions (w×h×d): 1900×2 000×2 000 mm
- Input: c. 27 kW
- Number of carriers: 4 pcs
- Weight: c. 700 kg
- Voltage: 3/PEN 400/230 V AC 50 Hz

CONTINUOUS ELECTRICAL DRYER SP 5400/01



APPLICATION

Furnace is suitable for preliminary drying of foundry moulds.

TECHNICAL DATA

- Max. temperature: 100 °C
- Working temperature: 100 °C
- Volume: 5,4 m³
- External dimensions (w × h × d): 2540 × 3100 × 4720 mm
- Internal dimensions (w × h × d): 2000 × 600 × 4500 mm
- Input: 45 kW
- Controller: INDUSTRY
- Weight: c. 1 800 kg
- Voltage: 3/PEN 400/230 V AC 50 Hz

CONTINUOUS GAS DRYER SP 12 400/02



APPLICATION

Furnace is suitable for after-drying of foundry moulds.

TECHNICAL DATA

- Max. temperature: 200 °C
- Working temperature: 200 °C
- Volume: 12,36 m³
- External dimensions (w × h × d): 2540 × 3100 × 10 520 mm
- Internal dimensions (w × h × d): 2000 × 600 × 10 300 mm
- Gas burner output: 360 kW
- Controller: INDUSTRY
- Weight: c. 4 200 kg
- Weight cca: 5 900 kg

TILTING FURNACE PTSMg 100

APPLICATION

Furnace is suitable for melting and tilting of magnesium

TECHNICAL DATA

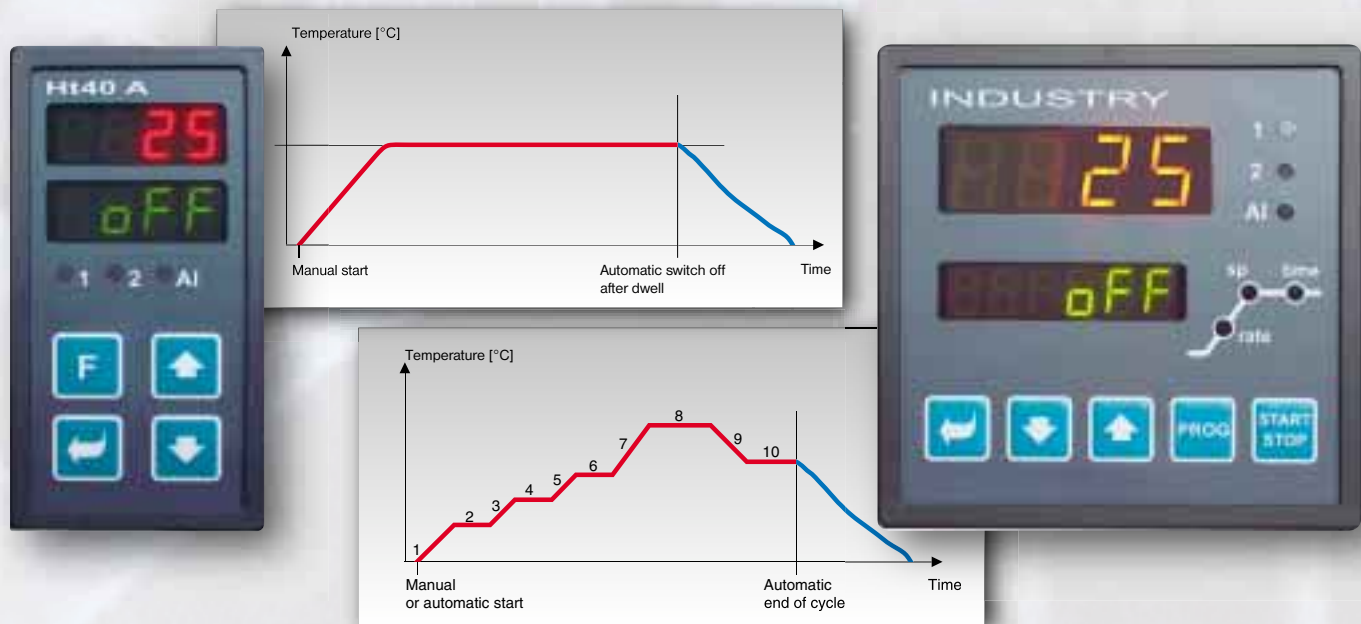
- Max. temperature: 1100 °C
- Weight of charge: 100 kg
- Pot: W. PILLING Ø 400 mm × Height 600 mm
- Pot capacity: 75 l
- External dimensions (w × h × d): 1200 × 1100 × 1300 mm
- Input: 40 kW
- Weight c.: 1850 kg
- Voltage: 3/PEN 400/230 V AC 50 Hz
- Melting capacity: 110kg / hour (counted for insert of charge in preheated furnace)



MEASUREMENT & CONTROL

TEMPERATURE CONTROLLERS

Electric resistance furnaces manufactured by LAC Ltd. are fitted with the following types of high-quality PID controllers HT 40 A or INDUSTRY. The concerned types of controllers are microprocessor-controlled devices meeting all requirements for temperature control and security of electrothermal devices.

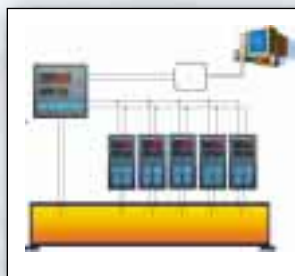


Temperature controller HT 40 A

- Easy operation
- Constant temperature control
- Control according to simple program
- Control accuracy $\pm 2^\circ\text{C}$

Temperature controller INDUSTRY

- Easy operation
- Real time clock
- Up to 30 programs can be saved in the memory, each of up to 15 steps
- Optional control of the furnace accessories
 - automatic ventilation flap
 - temperature progress record
 - signalling, etc.
- Temperature increase or decrease over defined time
- Control accuracy $\pm 2^\circ\text{C}$
- Temperature increase or decrease at required speed in $^\circ\text{C}/\text{hour}$
- Optional connection to PC using RS 232 or RS 485 interface
- Four independent auxiliary outputs
- Optional fitting with two communication lines (allowing for MASTER – SLAVE combination)
- Programs can be connected using JUMP steps
- Optional modification of setting parameters during program run



PROCESS CONTROL AND MONITORING FROM PC

- INDUSTRY communication software
- Monitoring and subsequent print of displayed processes
- Data history
- MASTER – SLAVE control

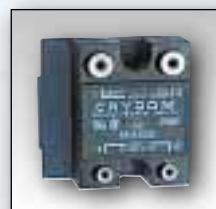
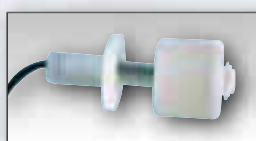
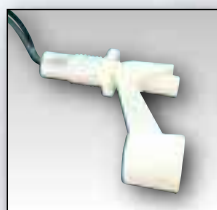


CONTROL PANEL

- Monitoring of device status
- Checking of individual phase supply using ammeters

SEMICONDUCTOR RELAYS

- Semiconductor relays with optically separated input and output, in which low input power (in orders of mW) can control high output powers (in orders of kW).



CONTACT SENSORS OF LIQUID SURFACE LEVELS

- Sensing of surface levels in tanks

RECONSTRUCTION OF FURNACES/CARRIAGES



- 1 Lining reconstruction** of melting tilting furnaces for copper alloys (NABERTHERM)
- 2 Reconstruction of lining** and inserts of circulation furnaces for chemical heat treatment of metals (AICHELIN)
- 3 Production of heating radiant bodies** for CHTZ (AICHELIN) furnaces including installation
- 4 Supply of heating coils** incl. installation
- 5 Special heating elements**

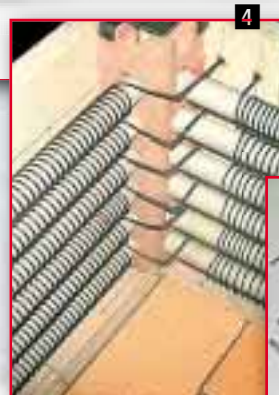
HEATING ELEMENTS



Cartridge heaters for Aichelin furnaces

- Furnace working temperature 855 °C
- Classification temperature of heating couples 1200 °C
- Resistance 0.72 Ω
- Three heating zones

| | | |
|---------------|------|------|
| Length [mm] | 1115 | 1120 |
| Diameter [mm] | 100 | 108 |
| Output [kW] | 3,33 | 3,66 |



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EDITION OF LAC CATALOGUES

LABORATORY FURNACES

FURNACES AND DRYERS FOR CERAMIC, PORCELAIN AND GLASS FIRING

HOBBY FURNACES – HOBBY KILNS

UNIVERSAL CARBURISING AND HARDENING LINE

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TENTO PROJEKT JE SPOLUFINANCOVÁN EVROPSKÝM FONDEM PRO REGIONÁLNÍ ROZVOJ A MINISTERSTVEM PRŮMYSLU A OBCHODU