

Thermal Process Technology

Industrial furnaces and heat treatment systems for



Annealing
Hardening
Tempering
Ageing
Solution annealing
Forging
Carburising
Nitriding
Preheating
Drying
Age hardening
Ageing

**of metals
and plastics**

THERM  **CONCEPT**

Industrial furnaces and systems for

Heat treatment of metals and plastics



THERMCONCEPT develops, designs and manufactures furnaces and industrial systems for a broad range of heat treatment processes. THERMCONCEPT furnaces and systems are proven in daily use at satisfied customers in many countries worldwide. The reasons for our success are simple:

Proven technology

For the production of our furnaces only the best materials from world-renowned suppliers are used. This ensures maximum efficiency, reliable operation and a long service life.

Cutting-edge designs

The furnaces are planned and produced in strict accordance with economic considerations. Direct contact with users enables us to design furnaces that are practical to use. Our aim is to deliver crucial technical and financial benefits



Wide range of standard furnaces

Many applications can be achieved with our extensive range of standard furnaces. The advantages are: proven, fully-developed models, excellent value for money and quick delivery times.

Customer-specific solutions

Of course, we also supply customised furnaces specially designed to meet your specific requirements. In close consultation with you, we create a furnace system which meets your challenging tasks both reliably and economically.

Professional service

With our skilled workforce we are able to provide you from the outset with a wide range of professional services relating to all furnace matters.

THERMCONCEPT is your partner for furnaces and systems for heat treatment of metals and plastics.

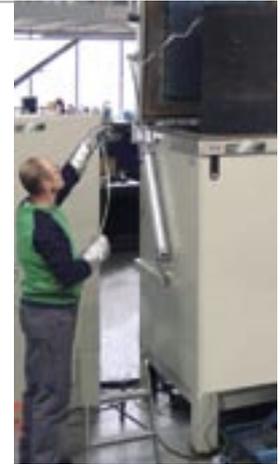


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Furnaces and systems for hardening of metals

- Operating temperatures up to 1300 °C
- Electrically heated and gas-fired furnaces

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Furnaces and systems for tempering, annealing, ageing, preheating, drying and age hardening of metals and plastics

- Operating temperatures 50 - 850 °C
- Furnaces with air circulation
- Electrically heated and gas-fired furnaces

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Bench Type Furnaces KM 10/13 – KM 30/13 Chamber Furnaces KM 50/13 – KM 90/13

T max 1300 °C



- Double-lined housing with rear ventilation
> Very low outer casing temperature
- Outer casing side walls and door made of stainless steel
> Corrosion resistant
- Lintel of door also made of stainless steel
- Downwards moving door
- Stainless steel charging support on the door frame
- Exhaust pipe in rear wall
- Base included as standard supply (from model KM 50/13)
- Multilayer insulation (fire bricks and rear insulation)
> Low heat loss, very low energy consumption, low operating costs
- High-quality heating elements, securely fixed on tubes
- Heated from 3 sides (left, right and bottom)
> Excellent temperature uniformity in the chamber
- Heating elements wound on ceramic tubes (from model KM 50/13)
> Free heat radiation into the chamber, low energy consumption, longer service life of heating elements
- Bottom heating elements covered by silicon carbide plates
> High mechanical strength, protection for bottom heating elements
- Furnace offer sufficient power > Short heat-up times
- Door safety switch



Technical Data

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Volume [l]	Outside dimensions [mm] width x depth x height	Power [kW]	Voltage [V]	Weight [kg]
KM 10/13	1300	250 x 250 x 120	8	500 x 600 x 700	2,5	230 1/N	75
KM 15/13	1300	250 x 250 x 200	13	500 x 700 x 700	3,6	230 1/N	85
KM 20/13	1300	250 x 350 x 200	18	500 x 700 x 700	6,0	400 3/N	85
KM 30/13	1300	250 x 500 x 200	25	500 x 850 x 700	7,0	400 3/N	95
KM 50/13	1300	350 x 500 x 250	44	1000 x 1300 x 1400	13	400 3/N	250
KM 70/13	1300	350 x 750 x 250	66	1000 x 1400 x 1400	20	400 3/N	330
KM 90/13	1300	350 x 1000 x 250	88	1000 x 2000 x 1400	22	400 3/N	500

Chamber Furnaces KM 105/13 – KM 1400/13

T max 1280 °C

- Rugged furnace housing made of construction steel, frame welded with steel profiles, covered by metal sheet profiles
- Double lined housing with rear ventilation > Very low outer casing temperature
- Vertical lifting door, from Model KM 680/13 incl. hydraulic drive
- Door collar made from strong refractory concrete > Resistant to mechanical damages
- Exhaust pipe in rear wall
- Base included in standard supply
- Multilayer insulation (fire bricks and rear insulation)
> Low heat loss, very low energy consumption, low operating costs
- Heated from 3-sides (left, right and bottom)
> Excellent temperature uniformity in the chamber
- High quality heating elements > Long service life
- Side heating elements wound on ceramic tubes > Free heat radiation into the chamber, low energy consumption, longer service life for heating elements
- Bottom heating elements covered by silicon carbide plates
> High mechanical strength, protection for bottom heating elements
- Furnaces offer sufficient power > Short heating-up time
- Door safety switch

Options:

- Charging plate: Extra protection for the furnace bottom
- Silicon carbide protective tiles: Protect the side heating elements against mechanical damage
- Lift door: With hydraulic drive, operated by foot or hand switch
- Cooling fan: Provides forced cooling of the batch
- Inert gas connection and sealing: Prepares furnace for semi-gastight operation



KM 225/13



KM 900/13/S
Chamber furnace with hydraulic lift door

Technical Data

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Volume [l]	Outside dimensions [mm] width x depth x height	Power [kW]	Voltage [V]	Weight [kg]
KM 105/13	1280	500 x 600 x 350	105	1300 x 1900 x 1350	21	400 3/N	660
KM 130/13	1280	500 x 750 x 350	130	1300 x 2000 x 1500	21	400 3/N	750
KM 180/13	1280	550 x 800 x 400	180	1350 x 2000 x 1950	29	400 3/N	830
KM 225/13	1280	600 x 750 x 500	225	1400 x 2050 x 2150	29	400 3/N	920
KM 350/13	1280	700 x 1100 x 450	350	1500 x 2400 x 2150	50	400 3/N	1100
KM 540/13	1280	600 x 1500 x 600	540	1500 x 3000 x 2450	50	400 3/N	1540
KM 680/13	1280	900 x 1500 x 500	680	2200 x 2450 x 2600	70	400 3/N	1620
KM 1000/13	1280	900 x 1800 x 600	970	2100 x 2850 x 2750	70	400 3/N	1980
KM 1400/13	1280	1100 x 2100 x 600	1400	2300 x 3200 x 2750	95	400 3/N	2500

Charging height 900 mm • Other sizes on request

Bogie-hearth Furnaces WM 800/12 – WM 7000/12

T max 900 °C and 1280 °C



WM 1500/12
Bogie-hearth furnace with brick insulation

- Furnaces for temperatures up to 900 °C and 1280 °C
- Robust case designs, double lined housing with rear ventilation > Very low outer casing temperature
- Furnace door designed as hinged door > Simple, easy operation
- Fitted with a door safety switch
- Stable bogie-hearth with single-flanged rail wheels, including rails in front of the furnace
- Heating elements in the bogie hearth covered with silicon carbide plates > Protection of heating elements, charging made easy by level support
- With bottom damper and manually operated exhaust air flaps in the furnace top
- High-quality, multilayer insulation made of refractory bricks featuring special rear insulation > Low heat loss, low power consumption
- Heating from 5 sides (left, right, rear wall, door, bogie hearth) > Exceptionally uniform temperature distribution
- High-quality heating elements > Long service life
- Heating elements wound on ceramic tubes > Allows free radiation of heat into chamber, no heat accumulation



WM 4300/12/5
Bogie-hearth furnace with two lifting doors and two bogie hearths

Options:

- Furnaces completely insulated with fibre and with meander-shaped heating elements for fast heating cycles
- Hydraulic lifting door
- With second door at rear furnace wall for operation with two bogie hearths
- Electrical bogie drive
- Furnace with parallel bogie loading system
- Charging grate for bogie hearth, made of heat-resistant cast steel for optimum load distribution
- Automatic cooling system for forced cooling
- Automatic control of exhaust flaps
- Multi-zone control



WM 4500/12/S
Bogie-hearth furnace with parallel bogie loading system



WM 18400/12/S
Bogie-hearth furnace with fibre insulation

Technical Data

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Volume [l]	Outside dimensions [mm] width x depth x height	Power [kW]	Voltage [V]	Weight [kg]
WM 800/09	900	900 x 1500 x 600	800	2350 x 2500 x 2650	32	400 3/N	1300
WM 1000/09	900	900 x 2000 x 600	1000	2350 x 3050 x 2650	40	400 3/N	1500
WM 1500/09	900	1000 x 2500 x 600	1500	2450 x 3500 x 2650	60	400 3/N	2300
WM 2000/09	900	1000 x 2500 x 800	2000	2450 x 3500 x 2900	80	400 3/N	2800
WM 3000/09	900	1000 x 3000 x 1000	3000	2650 x 4000 x 3250	110	400 3/N	3600
WM 5000/09	900	1200 x 3000 x 1400	5000	2700 x 4000 x 4500	130	400 3/N	4300
WM 7000/09	900	1200 x 4000 x 1400	6700	2700 x 5050 x 4500	150	400 3/N	5000
WM 800/12	1280	900 x 1500 x 600	800	2350 x 2500 x 2650	40	400 3/N	1300
WM 1000/12	1280	900 x 2000 x 600	1000	2350 x 3050 x 2650	60	400 3/N	1500
WM 1500/12	1280	1000 x 2500 x 600	1500	2450 x 3500 x 2650	80	400 3/N	2300
WM 2000/12	1280	1000 x 2500 x 800	2000	2450 x 3500 x 2900	110	400 3/N	2800
WM 3000/12	1280	1000 x 3000 x 1000	3000	2650 x 4000 x 3250	130	400 3/N	3600
WM 5000/12	1280	1200 x 3000 x 1400	5000	2700 x 4000 x 4500	180	400 3/N	4300
WM 7000/12	1280	1200 x 4000 x 1400	6700	2700 x 5050 x 4500	250	400 3/N	5000

Other sizes on request

Gas-fired Furnace Systems

Technical features:

- Furnaces for various applications
- Superb heat treatment results
- Low power consumption due to multilayer refractory lining with best insulation properties
- Proprietary burner systems with large performance range, specially designed to match the furnace, optimised for low power consumption
- Automatic control of furnace atmosphere to prevent oxidation of the material
- Start-up with ramped control giving temperature uniformity throughout
- Optimal temperature distribution by means of multi-zone control and special flue gas routing system
- Cutting-edge control and regulation system with optimal process control for fully-automatic operation, perfectly matching the needs of users
- Minimal maintenance required



KM 500/14 GAS
Chamber furnace for T max. 1400 °C with two doors



WM 8000/11 GAS Bogie-hearth furnace for annealing steel rings, fitted with reduction system



Hood furnace system · For homogenising aluminium parts



Artificial ageing furnaces · Gas fired directly



Continuous annealing furnace · With heating-up, holding and cooling chamber

Gas-fired Chamber, Bogie-hearth, Hood and Continuous Furnaces

We supply:

- Furnaces with direct or indirect gas heating
- Batch furnaces (chamber, bogie-hearth and hood furnaces)
- Continuous furnace systems
- Furnace systems for reduction atmosphere

Optional equipment:

- Conveying equipment
- Charging and recharging systems
- Control and regulation systems
- Systems for heat recovery



Retort chamber furnace

Inert-gas Retort Furnaces

Retort furnaces are suitable for heat treatment processes that must be carried out under a defined atmosphere, such as bright annealing, tempering or soldering. The product program includes chamber furnaces as well as pit-type furnaces. Retort furnaces are electrically or gas heated

Retort Chamber Furnaces KM 25/11/R – KM 250/11/R

T max 1100 °C

- Gas-tight retort furnaces in rugged design with horizontally inserted retort
- Retort made of highly heat-resistant steel
- Heating from several sides (both sides and bottom), thus providing uniform temperature distribution in the retort
- Door with water-cooled flange
- Suitable for various inert gases, e.g. nitrogen, argon, forming gas 95/5
- Very low gas consumption

Options:

- Retort with gas circulation (T max 900 °C)
- Automatic gassing system
- Vacuum pump for cold evacuation of the retort
- Process control by means of thermocouple in retort
- Cooling fan with exhaust flap control for fast cooling of retort



Retort pit-type furnace

Technical Data

Model	T max [°C]	Inside dimensions retort [mm] width x depth x height	Volume [l]	Outside dimensions [mm] width x depth x height	Power [kW]	Voltage [V]	Weight [kg]
KM 25/11/R	1100	220 x 450 x 260	23	1400 x 1300 x 1450	11	400 3/N	400
KM 30/11/R	1100	320 x 450 x 200	30	1450 x 1300 x 1450	13	400 3/N	570
KM 65/11/R	1100	450 x 700 x 200	65	1450 x 1550 x 1450	21	400 3/N	950
KM 120/11/R	1100	500 x 700 x 340	120	1650 x 1550 x 1650	29	400 3/N	1050
KM 250/11/R	1100	700 x 1050 x 340	250	1800 x 1850 x 1750	50	400 3/N	1350

Systems for controlled-atmosphere hardening, semi-vacuum hardening, carburising

Components specially designed for use in standard hardening furnaces enable hardening processes under inert gas, semi-vacuum hardening, carburising, etc. These controlled-atmosphere systems are modular in design and can be enlarged to form compact hardening systems. For many of these special heat treatment processes, such hardening systems are a very cost-efficient solution for the user. We can conduct tests and experiments for you in our Test Centre.



Hardening Box System – Hardening, carburising, nitriding up to 1100 °C

- All hardening boxes match the inside dimensions of the annealing furnaces
- The addition of carburising granulate, neutral annealing carbon, nitriding and borating powder ensures the respective surface changes in workpieces.
- Also available with gas connection for almost oxidation-free inert-gas hardening of heavy parts
- Easy handling, reliable processing



Gas Grid System – Hardening and cooling under inert gas up to approx. 1200 °C

- Bright hardening under inert-gas atmosphere with subsequent gas quenching
- Use of ultra-thin foil containers ensures no loss of time during heating
- Can be used with forming gas, nitrogen or inert gases such as argon or helium
- Very low gas consumption due to small container volumes
- Also available with thermocouple for continuous measurement of the temperature inside the container



Inert-gas Hardening System SHA 300 – Annealing and quenching in oil under inert gas

- Annealing in the furnace followed by quenching in oil under inert gas
- Pneumatic lowering of batch into oil bath
- Upward and downward movement for uniform quenching
- Designed for use with KM 50/13 hardening furnace
- System can be moved on rollers
- Also available with gas extractor





Salt-bath Furnaces

Salt bath furnaces are characterised by rapid heat transfer and outstanding temperature uniformity. We supply salt-bath furnaces for operating temperatures of up to 1000 °C and warm bath furnaces for operating temperatures of up to 500 °C.

Salt-bath Furnaces TS 20/10 – TS 360/10

T max 1000 °C

- Fields of application include Tenifer nitriding up to 600 °C, carburising up to 950 °C or bright annealing up to 1000 °C
- Rugged case construction
- Multilayer insulation (lightweight refractory bricks and rear insulation) > Very low heat loss, low energy consumption, low operating costs
- Heating from 4 sides > Uniform heating of salt pot and salt
- Heating elements wound on ceramic tubes > Allows free heat radiation into chamber, resultant energy savings and long service life
- Removable collar plate made of solid steel > Optimal protection for crucible
- Bath temperature control
- Safety regulator for protection of furnace

Warm bath Furnaces

Operating temperatures 150 °C to 500 °C

- Baths filled with neutral salt for fast, intensive heat transfer
- Salt can be re-used
- Excellent temperature uniformity in warm bath up to +/-2 K, in accordance with DIN 17052
- Heating by immersed heating elements
- Temperature control via bath temperature
- **Ask for our special brochures**

Technical Data

Model	T max [°C]	Inside dimensions crucible [mm] Ø x height	Volume [l]	Outside dimensions [mm] width x depth x height	Power [kW]	Voltage [V]	Weight [kg]
TS 20/10	1000	220 x 450	20	950 x 950 x 790	21	400 3/N	570
TS 40/10	1000	350 x 500	40	1020 x 1020 x 880	27	400 3/N	710
TS 80/10	1000	500 x 500	80	1120 x 1120 x 940	53	400 3/N	810
TS 150/10	1000	500 x 800	150	1210 x 1210 x 1250	68	400 3/N	1120
TS 180/10	1000	700 x 750	180	1380 x 1380 x 1250	72	400 3/N	1300
TS 240/10	1000	600 x 1000	240	1380 x 1380 x 1350	82	400 3/N	1420
TS 360/10	1000	800 x 1000	360	1470 x 1470 x 1450	102	400 3/N	1510

Conveyor Belt Furnaces

Conveyor belt furnaces can be supplied for heat treatment processes involving temperatures up to 1150 °C. Heat treatment is carried out in a defined atmosphere. The cooling process can also be carried out under an inert-gas atmosphere. Proven standard models form the basis of our furnace range. Of course, we also design tailor-made furnace systems for our customers.



Conveyor Belt Furnaces DM 900/11 – DM 990/11

T max up to 1150 °C

- Continuous system for operation under defined atmosphere
- Furnaces lined with high-quality fibre insulation
- Heat-resistant, gas-tight steel muffle
- High-quality chain-driven conveyor belt system
- Multizone control
- Fully automatic control of heating zones, belt speed and cooling



Applications



Technical Data

Model	T max [°C]	Useful dimensions [mm] width x height	Heated length [mm]	Heating zones	Outside dimensions [mm] width x depth x height	Power [kW]
DM 900/11	1150	120 x 50	1750	2	900 x 8000 x 2100	15
DM 920/11	1150	200 x 60	2500	3	1350 x 11615 x 2100	38
DM 940/11	1150	300 x 60	3500	4	1750 x 14218 x 2100	64
DM 960/11	1150	400 x 100	4600	5	1750 x 16000 x 2100	112
DM 980/11	1150	500 x 120	7000	5	1500 x 17000 x 2100	125
DM 990/11	1150	600 x 120	7000	7	1900 x 17000 x 2100	168

Other sizes on request

Air-circulation Chamber Furnaces KT 1500/02/A – KT 18500/04/A

T max 250 °C and 450 °C

- All furnaces available as electrically heated or indirectly with gas
- Furnaces for temperatures up to 250 °C and 450 °C
- Horizontal or vertical air circulation
- Rugged case construction, inner liner made of stainless steel
- Standard furnace door designed as hinged door
- Powerful circulation fans for high air exchange
> Excellent temperature uniformity of up to +/- 5 K in accordance with DIN 17052
- High-quality insulation > Low heat loss, low power consumption



KT 18500/02/A

Technical Data

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Volume [l]	Outside dimensions [mm] width x depth x height	Power [kW]	Voltage [V]	Weight [kg]
KT 1500/02/A	250	1000 x 800 x 1800	1500	1800 x 2100 x 2400	18	400 3/N	900
KT 3300/02/A	250	1100 x 1500 x 2000	3300	2000 x 2850 x 2500	24	400 3/N	1400
KT 4000/02/A	250	1200 x 1600 x 2000	4200	2100 x 2950 x 2500	30	400 3/N	1550
KT 4500/02/A	250	2000 x 1900 x 1200	4600	2900 x 3200 x 1700	36	400 3/N	1600
KT 6000/02/A	250	2000 x 2000 x 1500	6000	2850 x 3200 x 2500	58	400 3/N	1750
KT 8000/02/A	250	2000 x 2000 x 2000	8000	2850 x 3200 x 3000	75	400 3/N	1900
KT 18500/02/A	250	3000 x 3000 x 2050	18500	3850 x 4200 x 3100	110	400 3/N	2650
KT 1500/04/A	450	1000 x 800 x 1800	1500	1800 x 2100 x 2400	30	400 3/N	900
KT 3300/04/A	450	1100 x 1500 x 2000	3300	2000 x 2850 x 2500	42	400 3/N	1400
KT 4000/04/A	450	1200 x 1600 x 2000	4200	2100 x 2950 x 2500	55	400 3/N	1550
KT 4500/04/A	450	2000 x 1900 x 1200	4600	2900 x 3200 x 1700	60	400 3/N	1600
KT 6000/04/A	450	2000 x 2000 x 1500	6000	2850 x 3200 x 2500	85	400 3/N	1750
KT 8000/04/A	450	2000 x 2000 x 2000	8000	2850 x 3200 x 3000	105	400 3/N	1900
KT 18500/04/A	450	3000 x 3000 x 2050	18500	3850 x 4200 x 3100	140	400 3/N	2650

Options:

- All models available as electrically heated or indirect with gas
- Hydraulic lifting door
- Loading ramp or track for ground-level loading with charging wagon
- Automatic cooling system for forced cooling
- Automatic control of intake/exhaust air flaps for furnace ventilation
- Viewing window
- Furnace chamber lighting
- Customised designs made to order



KT 36000/03/AS · Multi-chamber dryer, 36000 l volume



KT 4000/02/AS



KT 9500/02/AS



KT 19200/03/AS · Furnace for drying composite fibre parts for the aviation industry and motor sports

Air-circulation Chamber Furnaces KU 40/04/A – KU 540/08/A

T max 450 °C, 650 °C and 850 °C



- Air-circulation chamber furnaces up to 850 °C, mainly used for annealing, tempering, ageing, pre-heating, drying, shrinking, baking, testing
- Rugged casing construction made of high-grade steel sheets
- Swinging door hinged on the right
- Inner liner of heat-resistant stainless steel > Long service life, extremely resilient, corrosion resistant
- 2 sheet-metal trays included as standard (KU 15/06/A without trays, for 850 °C models sheet metal trays as option)
- High-grade heating elements with long service life
- Heating from several sides, powerful horizontal air circulation > Excellent temperature uniformity up to +/-3 K in accordance with DIN 17052
- High-grade insulation > Low energy consumption, low operating costs
- Base included in standard supply (KU 15/06/A as bench-type furnace without base)

Technical Data

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Volume [l]	Outside dimensions* [mm] width x depth x height	Power [kW]	Voltage [V]	Weight [kg]
KU 40/04/A	450	300 x 400 x 300	35	540 x 1050 x 1270	3,2	230 1/N	115
KU 70/04/A	450	350 x 500 x 400	70	590 x 1150 x 1370	6,4	400 3/N	130
KU 140/04/A	450	450 x 600 x 500	135	690 x 1250 x 1470	9,6	400 3/N	205
KU 270/04/A	450	600 x 750 x 600	270	840 x 1450 x 1620	12,8	400 3/N	370
KU 540/04/A	450	750 x 900 x 800	540	990 x 1600 x 1820	19,2	400 3/N	540
KU 15/06/A	650	300 x 350 x 150	15	500 x 900 x 440	2,4	230 1/N	50
KU 40/06/A	650	300 x 400 x 300	35	540 x 1050 x 1270	4,0	400 3/N	125
KU 70/06/A	650	350 x 500 x 400	70	590 x 1150 x 1370	8,0	400 3/N	140
KU 140/06/A	650	450 x 600 x 500	135	690 x 1250 x 1470	12,0	400 3/N	220
KU 270/06/A	650	600 x 750 x 600	270	830 x 1560 x 1610	16,0	400 3/N	390
KU 540/06/A	650	750 x 900 x 800	540	990 x 1600 x 1820	24,0	400 3/N	560
KU 40/08/A	850	300 x 400 x 300	35	850 x 1360 x 1470	6,0	400 3/N	290
KU 70/08/A	850	350 x 500 x 400	70	900 x 1460 x 1570	10,0	400 3/N	360
KU 140/08/A	850	450 x 600 x 500	135	1000 x 1560 x 1670	14,0	400 3/N	580
KU 270/08/A	850	600 x 750 x 600	270	1150 x 1710 x 1770	20,0	400 3/N	770
KU 540/08/A	850	750 x 900 x 800	540	1300 x 1860 x 1970	30,0	400 3/N	920

Air-circulation Chamber Furnaces KM 1000/06/A - KM 2000/08/A

T max 650 °C and 850 °C

- Air-circulation chamber furnaces designed for heavy industrial applications with charging weights of more than several tonnes
- Rugged casing construction made of high-grade steel sheets
- Standard furnace door designed as hinged door
- Inner liner of heat-resistant stainless steel > Long service life, extremely resilient, corrosion resistant
- High-grade heating elements with long service life
- Heating from several sides, powerful horizontal air circulation > Excellent temperature uniformity up to +/-7 K in accordance with DIN 17052
- Optimal air circulation by means of air outlets, adapted to the charge
- High-grade insulation > Low energy consumption, low operating costs

Options:

- Hydraulic lifting door
- Automatic control of exhaust flaps
- Powerful cooling system
- Furnace in semi-gastight version with inert-gas connection for operation with protective gases
- Customised designs made to order



KM 2000/06/A · Chamber furnace with hydraulic lift door

Technical Data

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Volume [l]	Outside dimensions [mm] width x depth x height	Power [kW]	Voltage [V]	Weight [kg]
KM 1000/06/A	650	1000 x 1000 x 1000	1000	2300 x 2100 x 3200	36	400 3/N	1300
KM 1500/06/A	650	1500 x 1000 x 1000	1500	2800 x 2100 x 3200	48	400 3/N	1500
KM 2000/06/A	650	2000 x 1000 x 1000	2000	3400 x 2100 x 3200	72	400 3/N	1750
KM 1000/08/A	850	1000 x 1000 x 1000	1000	2400 x 2200 x 3300	42	400 3/N	1300
KM 1500/08/A	850	1500 x 1000 x 1000	1500	2900 x 2200 x 3300	54	400 3/N	1500
KM 2000/08/A	850	2000 x 1000 x 1000	2000	3500 x 2200 x 3300	80	400 3/N	1750

Other sizes on request

Air-circulation Drying Ovens KT 60/02/A – KT 1000/03/A

T max 200 °C and 300 °C



KT 400/02/A

- Drying ovens can be used for a wide range of applications, e.g. for drying, vulcanisation and polymerisation.
- Rugged casing made of high-grade steel sheets
- Inner lining made of heat-resistant stainless steel
- Standard version already fitted with metal sheet trays
- High-quality heating elements with long service life
- Powerful horizontal air circulation > Excellent temperature uniformity up to +/-5 K in accordance with DIN 17052
- High-grade insulation
> Low energy consumption, low operating costs
- Base included as standard

Technical Data

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Volume [l]	Outside dimensions [mm] width x depth x height	Power [kW]	Voltage [V]	Weight [kg]
KT 60/02/A	200	450 x 450 x 300	60	1050 x 950 x 1350	2	230 1/N	60
KT 100/02/A	200	450 x 450 x 500	100	1050 x 1000 x 1550	3	230 1/N	100
KT 250/02/A	200	800 x 600 x 500	240	1400 x 1200 x 1550	4	400 3/N	250
KT 400/02/A	200	800 x 600 x 800	380	1400 x 1200 x 1750	4	400 3/N	350
KT 650/02/A	200	1000 x 800 x 800	640	1700 x 1400 x 1350	6	400 3/N	480
KT 1000/02/A	200	1000 x 800 x 1200	960	1700 x 1400 x 1750	9	400 3/N	650
KT 60/03/A	300	450 x 450 x 300	60	1050 x 950 x 1350	3	230 1/N	60
KT 100/03/A	300	450 x 450 x 500	100	1050 x 1000 x 1550	3	230 1/N	100
KT 250/03/A	300	800 x 600 x 500	240	1400 x 1200 x 1550	4	400 3/N	250
KT 400/03/A	300	800 x 600 x 800	380	1400 x 1200 x 1750	6	400 3/N	350
KT 650/03/A	300	1000 x 800 x 800	640	1700 x 1400 x 1350	8	400 3/N	480
KT 1000/03/A	300	1000 x 800 x 1200	960	1700 x 1400 x 1750	12	400 3/N	650

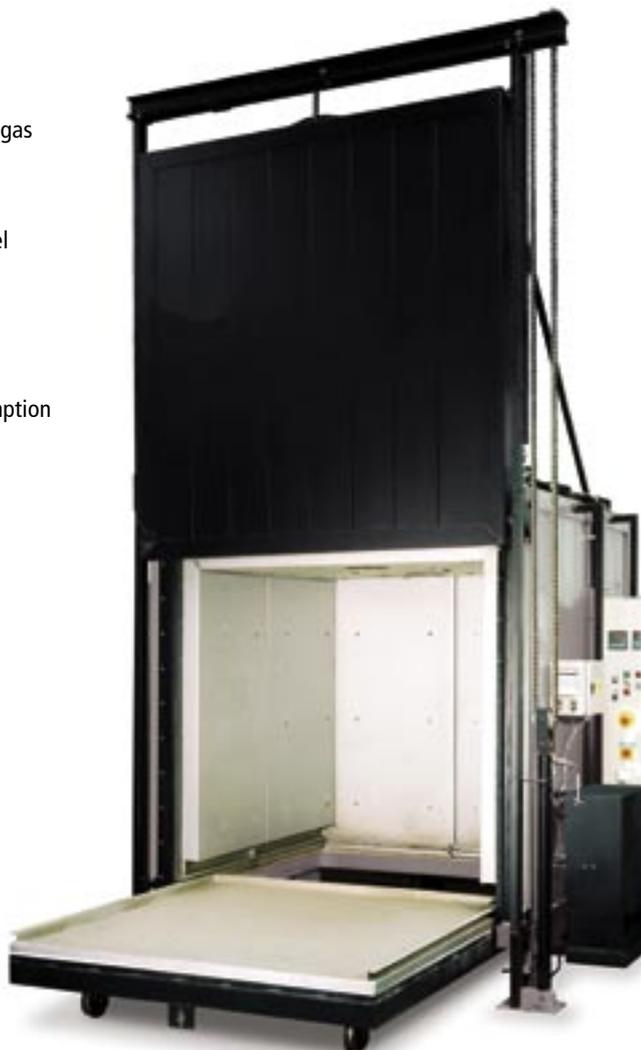
Air-circulation Bogie-hearth Furnaces WT 1000/02/A – WT 7200/04/A

T max 250 °C and 450 °C

- All furnaces available as electrically heated or indirect with gas
- Furnaces for temperatures up to 250 °C and 450 °C
- Available with horizontal or vertical air circulation
- Rugged case construction, inner liner made of stainless steel
- Standard furnace door designed as hinged door
- Powerful circulation fans for high air exchange > Optimal temperature uniformity of up to +/- 5 K in accordance with DIN 17052
- High-quality insulation > Low heat loss, low energy consumption
- Manually operated exhaust air flaps

Options:

- Hydraulic lifting door
- Automatic cooling system for forced cooling
- Automatic control of intake/exhaust air flaps for furnace ventilation
- Customised designs made to order



WT 3600/02/A
Air-circulation bogie-hearth furnace with hydraulic lifting door

Technical Data

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Volume [l]	Outside dimensions [mm] width x depth x height	Power [kW]	Voltage [V]	Weight [kg]
WT 1000/02/A	250	900 x 1260 x 900	1000	1300 x 1500 x 2400	30	400 3/N	1100
WT 1500/02/A	250	1000 x 1500 x 1000	1500	1400 x 1750 x 2500	45	400 3/N	1300
WT 2000/02/A	250	1000 x 2000 x 1000	2000	1400 x 2250 x 2500	55	400 3/N	1400
WT 3600/02/A	250	1200 x 2500 x 1200	3600	1600 x 2750 x 2700	65	400 3/N	1700
WT 4500/02/A	250	1200 x 3000 x 1200	4300	1600 x 3250 x 2700	70	400 3/N	1800
WT 7200/02/A	250	1500 x 3000 x 1600	7200	1900 x 3250 x 3350	85	400 3/N	2700
WT 1000/04/A	450	900 x 1260 x 900	1000	1300 x 1500 x 2400	38	400 3/N	1200
WT 1500/04/A	450	1000 x 1500 x 1000	1500	1400 x 1750 x 2500	50	400 3/N	1300
WT 2000/04/A	450	1000 x 2000 x 1000	2000	1400 x 2250 x 2500	65	400 3/N	1400
WT 3600/04/A	450	1200 x 2500 x 1200	3600	1600 x 2750 x 2700	75	400 3/N	1700
WT 4500/04/A	450	1200 x 3000 x 1200	4300	1600 x 3250 x 2700	80	400 3/N	1800
WT 7200/04/A	450	1500 x 3000 x 1600	7200	1900 x 3250 x 3350	95	400 3/N	2800

Air-circulation Bogie-hearth Furnaces WM 1000/06/A – WM 7200/08/A

T max 650 °C and 850 °C

- These bogie-hearth furnaces with air circulation are especially designed for heat treatment of large batches and heavy charging weights.
- Furnaces for temperatures up to 650 °C and 850 °C
- Rugged case construction
- Inner liner made of heat-resistant stainless steel
- Standard furnace door designed as hinged door
- Stable bogie-hearth with single-flanged rail wheels, including rails in front of the furnace
- High-quality, multilayer insulation > Low heat loss, low energy consumption
- Powerful air circulation fans in furnace roof
- Vertical air circulation, optimal temperature uniformity of up to +/- 5 K in accordance with DIN 17052

WM 9500/06/AS

Air-circulation bogie-hearth furnace with hydraulic lifting door



Technical Data

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Volume [l]	Outside dimensions [mm] width x depth x height	Power [kW]	Voltage [V]	Weight [kg]
WM 1000/06/A	650	900 x 1260 x 900	1000	2200 x 1800 x 3200	42	400 3/N	1450
WM 1500/06/A	650	1000 x 1500 x 1000	1500	2300 x 2100 x 3300	54	400 3/N	1600
WM 2000/06/A	650	1000 x 2000 x 1000	2000	2300 x 2600 x 3300	74	400 3/N	1950
WM 3600/06/A	650	1200 x 2500 x 1200	3600	2500 x 3100 x 3500	87	400 3/N	2400
WM 5500/06/A	650	1300 x 3100 x 1300	5300	2600 x 3700 x 3600	95	400 3/N	4800
WM 7200/06/A	650	1500 x 3000 x 1600	7200	2800 x 3800 x 3900	110	400 3/N	5500
WM 1000/08/A	850	900 x 1260 x 900	1000	2200 x 1800 x 3200	45	400 3/N	1500
WM 1500/08/A	850	1000 x 1500 x 1000	1500	2300 x 2100 x 3300	60	400 3/N	1650
WM 2000/08/A	850	1000 x 2000 x 1000	2000	2300 x 2600 x 3300	80	400 3/N	2100
WM 3600/08/A	850	1200 x 2500 x 1200	3600	2500 x 3100 x 3500	95	400 3/N	2550
WM 5500/08/A	850	1300 x 3100 x 1300	5300	2600 x 3700 x 3600	150	400 3/N	4950
WM 7200/08/A	850	1500 x 3000 x 1600	7200	2800 x 3800 x 3900	160	400 3/N	5600

Options:

- Hydraulic lifting door
- Second door at rear furnace wall for operation with two bogie hearths
- Electrical bogie drive
- Furnace with parallel bogie loading system
- Charging grate for bogie hearth, made of heat-resistant cast steel for optimal load distribution
- Automatic cooling system for forced cooling
- Automatic control of exhaust air flaps for furnace ventilation and faster cooling
- Multi-zone control
- **Bogie-hearth furnaces for temperatures up to 850 °C also available in gas-fired version.**



WM 7200/06/A · Bogie-hearth furnace with hydraulic lifting door



WM 10000/06/AS · Bogie-hearth furnace for 20-tonne charging weight



WM 3600/06/A · Bogie-hearth furnace with hinged door

Air-circulation Pit-type Furnaces with horizontal air circulation

Air-circulation pit-type furnaces are supplied for operating temperatures between 450°C and 850°C. Heavy parts or baskets can be easily loaded from the top using a crane. The furnaces have a hinged lid or a backwards sliding lid, both are pneumatically driven.

Air-circulation Pit-type Furnaces

SM 300/06/HA – SM 2000/08/HA

T max 650 °C and 850 °C

- Rugged case designs made of high-grade sheet steel
- Inner liner made of heat-resistant stainless steel > Long service life, extremely resilient, corrosion resistant
- High-quality heating elements with long service life
- Horizontal air circulation > Excellent temperature uniformity up to +/-5 K in accordance with DIN 17052
- High-grade insulation > Low energy consumption, low operating costs



SM 800/06/HA



SM 3000/04/HA

Technical Data

Model	T max [°C]	Inside dimensions [mm] width x depth x height	Volume [l]	Outside dimensions [mm] width x depth x height	Power [kW]	Voltage [V]	Weight [kg]
SM 300/06/HA	650	700 x 600 x 650	270	1600 x 2300 x 1200	18	400 3/N	360
SM 550/06/HA	650	900 x 800 x 750	540	1800 x 2500 x 1300	24	400 3/N	600
SM 1000/06/HA	650	1000 x 1000 x 1000	1000	1700 x 2700 x 1600	36	400 3/N	890
SM 1500/06/HA	650	1500 x 1000 x 1000	1500	2200 x 2700 x 1600	60	400 3/N	1240
SM 2000/06/HA	650	2000 x 1000 x 1000	2000	2700 x 2700 x 1600	75	400 3/N	1750
SM 300/08/HA	850	700 x 600 x 650	270	1600 x 2300 x 1200	24	400 3/N	380
SM 550/08/HA	850	900 x 800 x 750	540	1800 x 2500 x 1300	36	400 3/N	630
SM 1000/08/HA	850	1000 x 1000 x 1000	1000	1700 x 2700 x 1600	48	400 3/N	930
SM 1500/08/HA	850	1500 x 1000 x 1000	1500	2200 x 2700 x 1600	64	400 3/N	1290
SM 2000/08/HA	850	2000 x 1000 x 1000	2000	2700 x 2700 x 1600	90	400 3/N	1830

Air-circulation Pit-type Furnaces

with vertical air circulation

Air-circulation pit-type furnaces with vertical circulation are especially suitable for heat treatment of bulk materials with a high mass, such as springs or gear wheels loaded in baskets. Models featuring air-guidance cylinders enable very homogenous heating of batches.

Air-circulation Pit-type Furnaces

SU 220/06/VA – SU 380/06/VA for T max 650 °C

SM 500/08/VA – SM 1700/08/VA for T max 850 °C

- Furnaces with round air-guidance cylinders for charging with several round baskets in stacks
- Highly efficient circulation fans with very high air speed
- Vertical air circulation
- Superb temperature uniformity up to ± 3 K in accordance with DIN 17052, also with non-uniform basket batches
- Heated from all sides with high-quality heating elements with long service life
- High-grade insulation > Low energy consumption, low operating costs
- Pneumatic cover drive
- Semi-gastight version with inert-gas connector available as option



SM 500/08/VA



SU 380/06/VA · Furnace for annealing springs in baskets

Technical Data

Model	T max [°C]	Inside dimensions [mm] Ø x height*	Volume [l]	Outside dimensions [mm] width x depth x height	Power [kW]	Voltage [V]	Weight [kg]
SU 220/06/VA	650	630 x 700	220	1100 x 1100 x 1580	24	400 3/N	420
SU 310/06/VA	650	630 x 1000	310	1100 x 1100 x 1880	32	400 3/N	490
SU 380/06/VA	650	630 x 1200	380	1100 x 1100 x 2080	36	400 3/N	540
SM 500/08/VA	850	800 x 1000	500	1600 x 1800 x 2400	50	400 3/N	1450
SM 800/08/VA	850	1000 x 1000	800	1800 x 1800 x 2400	70	400 3/N	1700
SM 1000/08/VA	850	1000 x 1300	1000	1800 x 2100 x 2700	90	400 3/N	1850
SM 1700/08/VA	850	1200 x 1300	1500	2000 x 2100 x 2700	120	400 3/N	2300

* Diameter x height of air-guidance cylinder · Other sizes on request



Conveyor belt furnace DT 300/02/AS
 Useable dimensions (mm): 600 wide x 1600 deep x 300 high
 Controlled belt speed



Continuous furnace DT 4700/01/AS
 Useable dimensions (mm): 2500 wide x 4520 deep x 420 high
 For hardening sealing mass on plastic housings.
 With extraction fans for removing vapours



Continuous gas-fired furnace DT 12400/02 GAS
 Useable dimensions (mm): 2000 wide x 10300 deep x 600 high
 For drying moulds

Continuous Furnaces

Continuous furnaces are used for continuous heat treatment processes. Suitable feeding and removal systems can be supplied as supplementary equipment. Continuous furnaces can be designed for semi-automatic or fully automatic operation.

Models

Continuous furnaces can be supplied with electric heating or gas-firing as

- Roller furnaces
- Conveyor belt furnaces
- Walking-beam furnaces
- Chain-driven continuous furnaces
- Push-through furnaces
- Pass-through furnaces

Performance Features

- Furnaces for various applications
- Freely selectable belt speeds
- With automatic cycles
- Splitting into several zones (preheating, heating, cooling)
- Multizone control for optimal temperature uniformity
- Cutting-edge control and regulation system with optimal process control for fully-automatic operation, perfectly matching the needs of users
- Superb heat treatment results



Monorail conveyor furnace DT 34000/02/AS
 Useable dimensions (mm): 2250 wide x 10000 deep x 1500 high
 Monorail length 18 m
 For hardening composite materials
 With extraction fans for removing vapours

Solution Annealing and Ageing Plants

Plant systems are mainly used for solution annealing (up to 600°C) and for artificial ageing (up to 260°C) of aluminium parts. Depending on requirements, plant systems are designed for manual, semi- or fully-automatic operation, with optional integrated charging and quenching systems for quenching times of up to 15 seconds.

Models

Solution annealing and ageing plants based on:

- Air-circulation chamber furnaces with electrically driven charging system
- Air-circulation bogie-hearth furnaces with electrically driven bogie-hearths
- Air-circulation pit-type furnaces for charging by crane
- Continuous furnaces



Semi-automatic system
Based on two chamber furnaces with integrated quenching baths



Fully-automatic system
Based on a 4-chamber continuous furnace with integrated quenching and washing facility, fully-automatic batch feeding and batch transport, professional process control with extensive documentation options.



Integrated quenching and washing baths
Double quenching bath with circulation pump for different quenching liquids, with automatic drive, baths and collecting tank made of stainless steel, with washing facility and transfer station

Process control and documentation

State-of-the-art control technology is fitted as standard in THERMCONCEPT furnaces. Microprocessor controllers ensure precise furnace regulation of both simple and complex processes. The program controllers are extremely user-friendly.

The control system can be extended as required. Software packages for managing the controller and for evaluating the processes are

available, as is visualisation software. On request, we can install Siemens S7 control systems featuring Siemens touch panels as user interface.

In addition to our proven standard systems, we also design control panels according to customer wishes, in compliance with special plant standards and equipment regulations.

Program Controllers



Process documentation

Various printer options are available



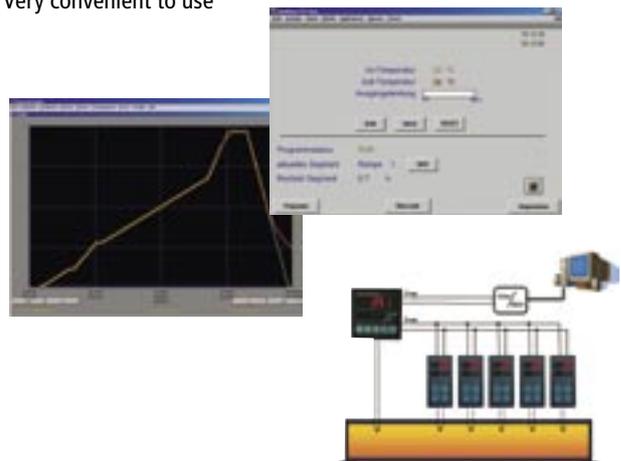
Siemens S7 control and operating touch panels

For professional process control and documentation



THERMcontrol software for analysis and control

- Management of several furnaces simultaneously
- Furnace control from a central PC
- Sensing of temperature / temperature-time profile in accordance with DIN ISO 9000 ff.
- Documentation of batch data
- Very convenient to use



Control panel technology

- Contactor control systems up to thyristor control
- Multi-zone control
- Automatic flap control systems
- Remote maintenance systems



Professional service

With our skilled workforce we are able to provide you from the outset with a wide range of professional services relating to all furnace matters:

- Expert advice on applications and uses, to ensure you make the right investment decisions
- Everything from a single source! As system suppliers, we can also advise you on supplementary aids, tools and systems for charging, quenching and cleaning
- Simulation of your heat treatment processes in our Test Centre
- Installation and commissioning of furnace systems, as well as training of operators
- DKD calibration / plant calibration on site or in our laboratories
- Inspection, maintenance and repairs
- Modernisation of control systems
- Fast delivery of replacement parts
- Information and training in our Test Centre



Repairs, reconstruction and modernization of furnaces, renovation of insulation and mechanical components.



Accessories and spare parts

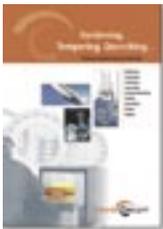


Test Centre

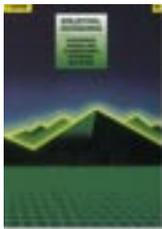


Control of temperature uniformity with calibrated instruments in accordance to certified procedures. Supply, renovation and modernization of control panels.

Experts for Industrial Furnaces – The product range at a glance



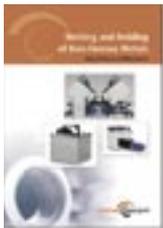
Brochure:
Hardening, Tempering,
Quenching



Brochure:
Heat treatment
Accessories



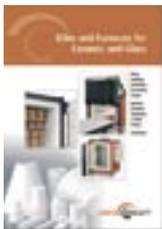
Brochure:
Heat treatment
Systems



Brochure:
Melting and Holding of
Non-Ferrous Metals



Brochure:
Furnaces for Research
and Laboratory



Brochure:
Kilns and Furnaces for
Ceramics and Glass



Brochure:
High-temperature
Chamber Furnaces
for Research and
Production

Annealing, Hardening, Tempering

Here you will find furnaces, systems and accessories for a broad range of uses in the fields of toolmaking and mould making, in the construction of valves and fittings and in the metalworking industry. Almost all the key requirements for heat treatment can be met with our proven range of products

Foundry

We supply electrically heated and fuel-fired melting and holding furnaces for non-ferrous metals. The furnace range includes bale-out furnaces, tilting furnaces and bath furnaces. A broad range of air-circulation furnaces are available for tempering and age-hardening of aluminium parts, including fully-automatic solution annealing and ageing plants.

Research and Laboratory

Furnaces for research and laboratory can be supplied for temperatures between 200 °C and 1800 °C. Our standard range includes muffle furnaces, tube furnaces, drying ovens, air-circulation furnaces, elevator furnaces and high-temperature furnaces.

Ceramics and Glass

THERMCONCEPT kilns and furnaces are used for many applications in the fields of ceramics, technical ceramics and for processing glass in the craft trades and industry. Our chamber furnaces, bogie-hearth furnaces, elevator furnaces, hood furnaces and continuous furnaces are electrically heated or gas fired, depending on requirements. In addition to our wide range of proven standard models, we also supply customised furnace and kiln systems specially designed for your specific application.



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