



Industry

Enjoy your **results.**

PRODUCT CATALOGUE FURNACES AND SYSTEMS

for heat treatment

CHAMBER FURNACES

TRUCK FURNACES

HOOD FURNACES

TOPLOADERS

EXHAUST AIR CLEANING

Th

Μ

MEASURING AND CONTROL TECHNOLOGY

Re

SAFETY EFFICIENCY PASSION



About ROHDE	4-9
Chamber Furnaces	10-11
Chamber Furnaces KE series	12 – 13
Ergo Load System ELS series	14 – 15
Annealing and Hardening Furnaces ME series	16–17
Laboratory Furnaces LS series	18–19
Air Circulating Chamber Furnaces KU series	20-21
Dewaxing Chamber Furnaces	22-23
Debinding Chamber Furnaces	24-25
Custom-designed Chamber Furnaces	26-29
Truck Furnaces	30-31
Electric Truck Furnaces HWE series	32-33
Air Circulating Truck Furnaces HWU series	34-35
Gas-fired Truck Furnaces HWG series	36-37
Custom-designed Truck Furnaces	38-41
Hood Furnaces	42-43
Hood Furnaces HE series	44-45
Custom-designed Hood Furnaces	46-49
Toploaders	50-51
Regeneration Furnaces TE-DPF series	52
Shaft Furnaces BT series	53
Custom-designed Toploaders	54-57
Exhaust Air Cleaning	58-59
Catalytic Post-Combustion CPC	60
Thermal Post-Combustion TPC	61
Measuring and Control Technology	62-63
Control Systems	64-65
Control Technology	66-67
References	68
Service and Contact	70-72

Since the company was founded in 1982, ROHDE has been committed to customer and product benefits and offers solutions in all areas of heat treatment. Benefit from smooth processes and efficient workflows when it comes to the consultation as well as the development, construction and manufacture of your furnace.

INNOVATIVE BY TRADITION -TODAY, TOMORROW AND IN THE FUTURE

Our extensive product range comprising standard furnaces provides well-engineered models that suit almost any of your applications and are available at short notice. The wide range of products and varied options allow for specially adapting each standard furnace to your process.

ROHDE has a competent team for the development of special heat treatment solutions if our standard products do not suit your process. Individual heat treatment solutions are designed in collaboration with the customer. On request, our technicians install and commission them on site.

This means that we can always find the perfect solution.









"WE ARE COMMITTED TO OFFERING A TECHNOLOGICAL AND QUALITATIVE LEADING EDGE."





INDUSTRY

ALWAYS RELIABLE AND EFFICIENT.

ARTSANDCRAFTS







MATERIALS

INDUSTRIES

Optical industry

APPLICATIONS









ROHDE Chamber furnaces



THE **TREASURE CHAMBER** OF YOUR PRODUCTS.



Chamber Furnaces KE series

ROHDE Chamber Furnaces from the KE series comprise models with furnace volumes between 100 and 1000 litres and are suitable for temperature ranges up to 1200°C, 1300°C and 1400°C.

- The reliable all-rounder for heat treatment has been especially designed for many years of continuous use in production and manufacturing.
- The torsion-resistant steel construction, high-quality insulation material and 5-side heating provides even distribution of temperature throughout every performance range. KANTHAL heating elements have been calculated with minimal surface load to minimise wear and to ensure a long service life.

ROHDE develops customised special solutions to meet the respective application requirements with individual dimensions and varied optional equipment.

◎ 5-side heating

- Heating elements recessed into bricks (KE /12) Heating elements on support rods (KE/13 and KE /14)
- (III) 3-layer insulation structure
- ᢙ Robust R-SiC ceiling support





KE 200/13

"System ROHDE" R-SiC ceiling support prevents cracks and particles falling onto the products

> Corrosion protection and low external temperature due to in-frame ventilation





KE 200/12

Electric Chamber Furnaces **KE** series to 1400°C

		Tmax				Externa	l dimens		Output		Connector		
											Plug		kg
KE	100/12	1200	410	480	530	750	1050	1700	6.6	10	CEE 16 A	400 V/50 Hz	323
KE	200/12	1200	460	640	680	800	1210	1780	11.0	16	CEE 16 A	400 V/50 Hz	415
KE	330/12	1200	590	720	790	920	1280	1800	16.5	25	CEE 32 A	400 V/50 Hz	531
KE	480/12	1200	640	770	980	980	1340	1830	22.0	32	CEE 32 A	400 V/50 Hz	641
KE	100/13	1300	460	470	540	750	1040	1700	8.0	12	CEE 16 A	400 V/50 Hz	324
KE	200/13	1300	590	630	680	800	1210	1770	13.2	20	CEE 32 A	400 V/50 Hz	416
KE	330/13	1300	640	720	800	930	1280	1800	22.0	32	CEE 32 A	400 V/50 Hz	529
KE	480/13	1300	720	770	1020	980	1340	1830	32.0	47	CEE 63 A	400 V/50 Hz	630
KE	750/13	1300	920	1100	1030	1570	1690	2010	50.0	73	_	400 V/50 Hz	1122
KE	1000/13	1300	410	1070	1140	1660	1610	2040	70.0	100	-	400 V/50 Hz	1250
KE	100/14	1400	580	480	530	810	1120	1700	10.5	16	CEE 16 A	400 V/50 Hz	403
KE	200/14	1400	630	640	680	890	1280	1790	18.0	26	CEE 32 A	400 V/50 Hz	558
KE	330/14	1400	580	710	800	1080	1350	1840	32.0	47	CEE 63 A	400 V/50 Hz	690
KE	480/14	1400	630	770	995	1130	1410	1860	40.0	59	CEE 63 A	400 V/50 Hz	800

Optional accessories for Chamber Furnaces KE series





and exhaust air flaps

Automatic exhaust air flaps





Stainless steel exhaust air hood Door opening to the left





KE 100/14



Active cooling system



Forklift charging car



Multi-zone control



Individual measuring and control technology

Chamber Furnaces Ergo Load System ELS series

ROHDE Chamber Furnaces with the Ergo Load System from the ELS series comprise models with furnace volumes between 150 and 1000 litres and are suitable for temperature ranges up to 1200°C and 1300°C.

Based on the design of chamber furnaces, ROHDE has developed the unique ELS Ergo Load System furnace concept. The free-running mechanism of this furnace allows the floor to be pulled out completely.

The furnace floor can be pulled out effortlessly using the door that opens to 180° and allows charging on three sides. This makes it faster, safer and more efficient to load the furnace, combining the compact chamber furnace construction with all the advantages of truck furnace loading.

The entire steel construction is equipped with an in-frame ventilation made of stainless steel sheets contributing to low external temperatures and the best possible corrosion protection. The insulation comprises three layers and the furnace floor is fitted with a conical sealing cord providing optimum sealing.

() 5-side heating

14

- Heating elements recessed into bricks (ELS /12)
 Heating elements on support rods (ELS /13)
- ③ 3-layer insulation structure
- 🕸 ELS Ergo Load System

Easy charging on three sides when the furnace floor is pulled out

Silent, low-wear solid-state relays with external cooling element





ELS 200/13

ELS 200/12





Electric Chamber Furnaces **ELS** series to 1300°C

		Tmax				Externa	l dimens		Output		Connector		
											Plug		kg
ELS	150/12	1200	460	460	680	800	1080	1730	9.0	13	CEE 16 A	400 V/50 Hz	450
ELS	200/12	1200	460	620	680	800	1240	1730	11.0	16	CEE 16 A	400 V/50 Hz	510
ELS	150/13	1300	460	460	680	800	1080	1730	10.5	16	CEE 16 A	400 V/50 Hz	460
ELS	200/13	1300	460	620	680	800	1250	1670	13.2	20	CEE 32 A	400 V/50 Hz	550
ELS	330/13	1300	590	720	800	930	1310	1840	22.0	32	CEE 32 A	400 V/50 Hz	690
ELS	480/13	1300	640	770	995	1060	1420	1970	32.0	47	CEE 63 A	400 V/50 Hz	800
ELS	750/13	1300	720	1110	1030	1510	1730	1970	50.0	73	-	400 V/50 Hz	1350
ELS	1000/13	1300	920	1060	1145	1670	1730	2100	70.0	100	-	400 V/50 Hz	1500



Automatic exhaust

air flaps



Automatic air supply and exhaust air flaps





Stainless steel exhaust air hood Door opening to the left



ELS 480/13

Optional accessories for Chamber Furnaces ELS series



Active cooling system



Electrically extendable furnace floor



Multi-zone control



Individual measuring and control technology

Annealing and Hardening Furnaces ME series

ROHDE Annealing and Hardening Furnaces from the ME series comprise models with furnace volumes between 10 and 665 litres and are suitable for temperatures up to 1300°C.

The reliable all-rounder for heat treatment of metals has been designed for many years of use in tough production and workshop operations.

The torsion-resistant steel construction, high-quality insulation material and particularly durable firebricks in the door area meet the highest requirements for quality and reliability. The parallel swing door reduces heat radiation and allows easy and safe operation.

3-side heating with heating elements mounted on support rods provides even distribution of temperature. KANTHAL heating elements have been calculated with minimal surface load to minimise wear and to ensure a long service life.

③ 3-side heating

- Heating elements on support rods
- (III) 2-layer insulation structure
- Solid construction, entirely in-frame ventilated



ME 10/13

Smooth and easy door mechanism for safe and effortless opening of the furnace when hot

Corrosion protection and low external temperature due to in-frame ventilation





Annealing and Hardening Furnaces **ME** series to 1300°C

		Tmax		l dimens		Externa	l dimens		Output		Connector		
ME	10/13	1300	250	250	120	500	600	700	2.5	13	Schuko	230 V/50 Hz	69
ME	15/13	1300	250	250	200	500	700	700	3.6	16	Schuko	230 V/50 Hz	75
ME	20/13	1300	250	350	200	500	700	700	6.0	16	CEE 16 A	400 V/50 Hz	91
ME	30/13	1300	250	500	200	500	850	700	7.0	16	CEE 16 A	400 V/50 Hz	105
ME	45/13	1300	350	500	250	1000	1300	1400	13.0	19	CEE 32 A	400 V/50 Hz	268
ME	65/13	1300	350	750	250	1000	1400	1400	20.0	29	CEE 32 A	400 V/50 Hz	330
ME	87/13	1300	350	1000	250	1000	2000	1400	22.0	32	CEE 32 A	400 V/50 Hz	380
ME	105/13	1300	500	750	300	1350	1850	1900	22.0	32	-	400 V/50 Hz	636
ME	165/13	1300	550	750	400	1400	1850	2000	30.0	44	-	400 V/50 Hz	900
ME	333/13	1300	750	1100	400	1600	2200	2000	44.0	64	_	400 V/50 Hz	1445
ME	665/13	1300	1000	1300	500	1850	2400	2100	70.0	100	-	400 V/50 Hz	2600



ME 45/13

Optional accessories for Annealing and Hardening furnaces ME series



Pneumatic door opening



Semi gas-tight construction with protective gas connection





SiC cover for heating elements

Different hardening units





ME 105/13



Robust charging plates



Hardening boxes



Active cooling system



Hardening boxes with protective gas connection

Laboratory Furnaces LS series

ROHDE Laboratory Furnaces from the LS series comprise models with furnace volumes between 15 and 120 litres and are suitable for temperature ranges up to 1300°C and 1400°C.

The furnace series has been developed especially to meet the various requirements in laboratory and production applications. Its cubic useful volume is ideally suitable for testing, inspecting, preheating, firing, sintering, melting and incinerating.

The torsion-resistant steel construction, high-quality insulation material and 5-side heating with heating elements mounted on support rods provide the best possible distribution of temperature. KANTHAL heating elements have been calculated with minimal surface load to minimise wear and to ensure a long service life.

Extensive accessories such as air supply and exhaust air flap control, an active cooling system or a parallel swing door allow the furnace to meet your individual requirements.

◎ 5-side heating

18

Heating elements on support rods

(III) 3-layer insulation structure

Solid construction, entirely in-frame ventilated





Easy-to-maintain switchgear at the back of the furnace, easily accessible

5-side heating provides rapid heating rates with even distribution of heat





Laboratory Furnaces **LS** series to 1400°C

		Tmax				Externa	l dimens		Output		Connector		
LS	15/13	1300	250	250	250	650	800	1400	7.0	16	CEE 16 A	400 V/50 Hz	160
LS	30/13	1300	320	320	320	700	850	1450	8.0	12	CEE 16 A	400 V/50 Hz	190
LS	60/13	1300	400	400	400	780	950	1520	11.0	16	CEE 16 A	400 V/50 Hz	250
LS	120/13	1300	500	500	500	880	1050	1620	15.0	22	CEE 32 A	400 V/50 Hz	300
LS	15/14	1400	250	250	250	700	850	1400	8.0	18	CEE 32 A	400 V/50 Hz	250
LS	30/14	1400	320	320	320	780	900	1450	10.0	15	CEE 16 A	400 V/50 Hz	330
LS	60/14	1400	400	400	400	860	970	1520	12.0	18	CEE 32 A	400 V/50 Hz	365
LS	120/14	1400	500	500	500	960	1080	1620	18.0	26	CEE 32 A	400 V/50 Hz	470

Optional accessories for Laboratory Furnaces LS series











Active cooling system





Automatic exhaust air flaps



Stainless steel exhaust air hood



Automatic air supply and exhaust air flaps



Port to mount additional thermocouples

Air Circulating Chamber Furnaces KU series

ROHDE Air Circulating Furnaces from the KU series comprise models with furnace volumes between 15 and 800 litres and temperature ranges up to 650°C and 750°C.

This model is suitable for a variety of materials and applications and is used for tempering, aging, preheating, drying, shrinking, curing and testing for instance.

The robust housing construction consists of high-quality steel sheets. The internal housing is made of heat-resistant stainless steel guaranteeing a long service life and is extremely durable and corrosion-resistant. The high-quality insulation ensures efficient use of energy and contributes to reduced electricity costs and low external temperatures.

One of the principal characteristics of this series is the even distribution of temperature, achieved through heating from several sides and powerful air circulation. These furnaces can be equipped with inserting shelves and two fitted inserting trays to allow the best utilisation of the interior.

- ② 2-side heating with powerful air circulation
- Tubular heating elements
- (III) 2-layer insulation structure
- (1) High temperature accuracy

Powerful air circulation results in even temperature distribution

The dTron 304 program controller allows easy and intuitive operation





KU 15/65

Air Circulating Chamber Furnaces **KU** series to 750°C

Mode		Tmax		l dimens		Externa	l dimens		Output	Connector		
										Plug		kg
KU	15/65	650	300	350	150	505	890	445	2.4		230 V/50 Hz	75
KU	40/65	650	300	400	300	665	1075	1315	4.0		400 V/50 Hz	235
KU	70/65	650	350	500	400	715	1175	1415	8.0		400 V/50 Hz	250
KU	140/65	650	450	600	500	815	1275	1515	12.0		400 V/50 Hz	330
KU	270/65	650	600	750	600	965	1600	1685	16.0		400 V/50 Hz	500
KU	540/65	650	750	900	800	1115	1750	1885	24.0		400 V/50 Hz	650
KU	800/65	650	800	1250	800	1665	2100	1885	35.0		400 V/50 Hz	895
KU	40/75	750	300	400	300	715	1165	1450	5.2		400 V/50 Hz	240
KU	70/75	750	350	500	400	765	1265	1550	10.4		400 V/50 Hz	270
KU	140/75	750	450	600	500	865	1365	1650	14.0		400 V/50 Hz	390
KU	270/75	750	600	750	600	1090	1725	1805	21.0		400 V/50 Hz	690
KU	540/75	750	750	900	800	1240	1875	2005	28.0		400 V/50 Hz	800
KU	800/75	750	800	1250	800	1290	2225	2005	40.0		400 V/50 Hz	1105



Optional accessories for Air Circulating Furnaces KU series



Exhaust air flaps



Active cooling system





Inserting trays

Door opening to the left





Pneumatic lifting door



Base frame on castors



Protective gas retort



Individual measuring and control technology

Dewaxing Chamber Furnaces KE-EW series

ROHDE Dewaxing Chamber Furnaces from the KE-EW series comprise models with furnace volumes between 6 and 600 litres and are suitable for temperature ranges up to 1000°C.

The series has been designed to burn-out wax and plastic moulded parts using controlled exchange of air. It combines all relevant functions in one furnace: melting, clean combustion of the moulding material and the firing of moulds.

Furnaces from KE 150/10 EW upwards use the precise supply of pre-heated air to ensure even drying and heating of casting moulds thus reducing the risk of cracking of the mould. Good heat distribution throughout the dewaxing process shortens the firing process and allows efficient energy input.

Exact control of the dewaxing process step prevents moulding material from uncontrolled ignition and at the same time allows reliable escape of exhaust gases. A special supporting grid is combined with a practical collecting drawer positioned below the furnace allowing the moulding material to be easily collected and emptied.

- 2-side heating (KE 6/10 EW KE 50/10 EW)
 4-side heating (from KE 150/10 EW upwards)
- Heating elements recessed into bricks
- 2-layer insulation structure

High-quality control system for clear presentation of process data (from KE 150 EW upwards)

Moulding material easy to collect and empty using practical collecting drawer









Dewaxing Chamber Furnaces **KE-EW** series to 1000°C

		Tmax				External	l dimens		Output		Connector		
KE	6/10 EW	1000	180	170	220	380	550	780	1.5	6.5	Schuko	230 V/50 Hz	45
KE	14/10 EW	1000	250	250	250	450	600	800	2.3	10.0	Schuko	230 V/50 Hz	55
KE	20/10 EW	1000	300	300	200	530	670	750	3.0	13.0	Schuko	230 V/50 Hz	60
KE	50/10 EW	1000	300	450	315	520	840	865	5.0	11.0	CEE 16 A	400 V/50 Hz	90
KE	150/10 EW	1000	460	470	580	800	1100	1800	13.5	20.0	CEE 32 A	400 V/50 Hz	460
KE	330/10 EW	1000	590	720	700	1000	1350	2100	22.0	32.0	CEE 32 A	400 V/50 Hz	680
KE	600/10 EW	1000	710	870	920	1100	1500	2300	40.0	59.0	CEE 63 A	400 V/50 Hz	1000

Features of the Dewaxing Chamber Furnaces KE-EW series





Automatic process flow

Air preheating for controlled burning-off





Integrated collecting drawer for moulding material



Removal of noxious gases through a separate flue system

Debinding Chamber Furnaces KE-DB series

ROHDE Debinding-Sintering Chamber Furnaces from the KE-DB series comprise models with furnace volumes between 200 and 1000 litres and are suitable for temperature ranges up to 1300°C and 1400°C.

Many components and in particular components made of technical ceramics require continuous treatment using a debinding and sintering process in one furnace system. ROHDE has developed the KE-DB series from the proven chamber furnaces to meet these particular requirements.

These combination furnaces are equipped with a flushing air preheating unit i.e. specific flushing of the furnace interior with preheated air during debinding. As a result, good temperature distribution is obtained inside the furnace and reliable removal and discharge of binders from the firing chamber are achieved.

After debinding is completed, the flushing air preheating turns off and starts the sintering process right away, thus saving time and elaborate handling between the two processes.

◎ 5-side heating

- Heating elements on support rods
- (III) 3-layer insulation structure
- (a) Ideally suited for combined debinding-sintering processes





Ceramic tubes for consistent supply of flushing air

"System ROHDE" R-SiC ceiling supports prevent cracks and particles falling onto the products





Debinding Chamber Furnaces **KE-DB** series to 1400°C

	Tmax	Interna			Externa	l dimens		Output	Supply	Connector	Voltage	Weight
KE 200/13 DB	1300	460	630	680	800	1210	1770	29	42	CEE 63 A	400 V/50 Hz	416
KE 480/13 DB	1300	640	770	1020	980	1340	1830	56	81	-	400 V/50 Hz	630
KE 750/13 DB	1300	720	1100	1030	1570	1690	2010	80	116	-	400 V/50 Hz	1122
KE 1000/13 DB	1300	920	1070	1140	1660	1610	2040	110	160	-	400 V/50 Hz	1250
KE 200/14 DB	1400	460	640	680	860	1280	1790	29	42	CEE 63 A	400 V/50 Hz	558
KE 480/14 DB	1400	630	770	995	1130	1410	1860	56	82	-	400 V/50 Hz	800
KE 750/14 DB	1400	720	1100	1030	1220	1750	1920	80	116	-	400 V/50 Hz	1250
KE 1000/14 DB	1400	910	1005	1145	1400	1650	2150	110	160	-	400 V/50 Hz	1400

Features of the Debinding Chamber Furnaces KE-DB series





Combined debindingsintering process

Ceramic flushing air tubes allow for even heat distribution





Removal of noxious gases through a separate flue system



Subsequent treatment of exhaust gases optional

CHAIN LINKS Annealing and Hardening.

CUSTOM-DESIGNED CHAMBER FURNACES





Gradient Furnace ME 65/10

- 350 x 650 x 250 mm (wxdxh)
- () 20 kW
- © 1000°C
- 3 different temperature zones, customised feeder unit and charging tray

Preheating Furnace ELS 200/85 U

3 460 x 640 x 1145 mm (wxdxh)

🕸 Extendable furnace floor (ELS),

hydraulic lifting door

🕑 13.2 kW

© 800°C





Burn-out Furnace KE 1000/11

- 😂 1300 x 700 x 1130 mm (wxdxh)
- 🕲 70 kW
- © 1100°C
- Controlled exchange of air to 300 m³/h, hot gas valve, automatic exhaust air flaps and cooling system



Sintering Furnace ELS 1000/13

- 😂 910 x 1005 x 1145 mm (wxdxh)
- 🕲 70 kW
- © 1350°C
- Electrically extendable floor (ELS), separate data recording, automatic exhaust air flaps and cooling system









ROHDE **TRUCK FURNACES**





Truck Furnaces HWE series

ROHDE Truck Furnaces from the HWE series comprise models with furnace volumes between 1000 and 7000 litres and are suitable for temperature ranges up to 1000°C or 1300°C.

A truck furnace system is particularly suited to the heat treatment of large components that can be easily loaded outside the furnace. KANTHAL-A1 heating elements provide 5-side heating that ensures even temperature distribution throughout the firing chamber and combined with a 3-layer insulation structure achieve a high energy efficiency.

Extensive optional accessories such as an automatic lifting door or additional trucks allow the furnace system to be adapted to any individual process flow.

In addition, ROHDE implements special solutions in accordance with individual internal dimensions and temperatures up to 1400°C.

(1) 5-side heating

- Heating elements recessed into bricks (HWE/10) Heating elements on support rods (HWE/13)
- (III) 3-layer insulation structure
- ☆ Stable R-SiC ceiling support



HWE 1000/13

HWE 1500/13



Corrosion protection and low external temperature due to in-frame ventilation





Truck Furnaces HWE series to 1300°C

Model	Tmax				Externa	l dimens		Output		Connector		
HWE 1000/10	1000	850	1200	1000	1450	1800	2000	50	75	-	400 V/50 Hz	1200
HWE 1500/10	1000	1000	1500	1000	1600	2100	2000	70	105	-	400 V/50 Hz	1800
HWE 2000/10	1000	1000	2000	1000	1600	2600	2000	95	140	-	400 V/50 Hz	2300
HWE 3000/10	1000	1250	2400	1000	1850	3000	2000	125	185	-	400 V/50 Hz	3500
HWE 4000/10	1000	1250	3200	1000	1850	3800	2000	140	205	-	400 V/50 Hz	4500
HWE 6000/10	1000	1250	4000	1200	1850	4600	2000	160	235	-	400 V/50 Hz	6600
HWE 7000/10	1000	1250	4000	1400	1850	4600	2000	200	290	-	400 V/50 Hz	8000
HWE 1000/13	1300	850	1200	1000	1450	1800	2000	70	105	_	400 V/50 Hz	1200
HWE 1500/13	1300	1000	1500	1000	1600	2100	2000	95	140	_	400 V/50 Hz	1800
HWE 2000/13	1300	1000	2000	1000	1600	2600	2000	125	185	_	400 V/50 Hz	2300
HWE 3000/13	1300	1250	2400	1000	1850	3000	2000	140	205	_	400 V/50 Hz	3500
HWE 4000/13	1300	1250	3200	1000	1850	3800	2000	160	235	-	400 V/50 Hz	4500
HWE 6000/13	1300	1250	4000	1200	1850	4600	2200	200	290	-	400 V/50 Hz	6600
HWE 7000/13	1300	1250	4000	1400	1850	4600	2400	240	350	_	400 V/50 Hz	8000





Electrically operated truck





Active cooling system





Optional accessories for Truck Furnaces HWE series



Automatic exhaust air flaps



Loading station



Automatic air supply and exhaust air flaps



Multi-zone control

Air Circulating Truck Furnaces HWU series

ROHDE Air Circulating Truck Furnaces from the HWU series comprise models with furnace volumes between 1000 and 7000 litres and are suitable for temperature ranges up to 650°C or 850°C.

3-side heating provides the best possible transfer of energy to the firing chamber. ROHDE-designed air circulating fans are decoupled from the drive motor and are quiet, durable and easy to service.

KANTHAL-A1 heating elements and a 2-layer insulation structure ensure an ideal temperature rise even in the upper temperature range resulting in very low energy consumption. Other product characteristics are corrosion protection due to the fully in-frame ventilated steel construction and the mortar-free ceiling of lightweight firebricks with R-SiC ceiling supports.

③ 3-side heating

34

Heating elements recessed into bricks

- (III) 2-layer insulation structure
- Deverful air circulating fan





2-layer wall structure, heating elements mounted in protected position recessed into bricks

Powerful air circulation allows for high temperature accuracy





Air Circulating Truck Furnaces **HWU** series to 850°C

Model	Tmax		l dimens		External			Output		Connector		
										Plug		kg
HWU 1000/65	650	850	1200	1000	1450	1800	2000	45	65	-	400 V/50 Hz	1200
HWU 1500/65	650	1000	1500	1000	1600	2100	2000	60	90	-	400 V/50 Hz	1800
HWU 2000/65	650	1000	2000	1000	1600	2600	2000	80	116	-	400 V/50 Hz	2300
HWU 3000/65	650	1250	2400	1000	1850	3000	2000	100	145	-	400 V/50 Hz	3500
HWU 4000/65	650	1250	3200	1000	1850	3800	2000	120	175	-	400 V/50 Hz	4500
HWU 6000/65	650	1250	4000	1200	1850	4600	2200	140	205	-	400 V/50 Hz	6600
HWU 7000/65	650	1250	4000	1400	1850	4600	2400	160	235	-	400 V/50 Hz	8000
HWU 1000/85	850	850	1200	1000	1450	1800	2000	45	65	_	400 V/50 Hz	1200
HWU 1500/85	850	1000	1500	1000	1600	2100	2000	60	90	-	400 V/50 Hz	1800
HWU 2000/85	850	1000	2000	1000	1600	2600	2000	80	116	-	400 V/50 Hz	2300
HWU 3000/85	850	1250	2400	1000	1850	3000	2000	100	145	-	400 V/50 Hz	3500
HWU 4000/85	850	1250	3200	1000	1850	3800	2000	120	175	-	400 V/50 Hz	4500
HWU 6000/85	850	1250	4000	1200	1850	4600	2200	140	205	-	400 V/50 Hz	6600
HWU 7000/85	850	1250	4000	1400	1850	4600	2400	160	235	-	400 V/50 Hz	8000

Optional accessories for Air Circulating Truck Furnaces HWU series



HWU 1000/65



Electrically operated truck

Hydraulic lifting door





Active cooling system







Automatic exhaust air flaps



Loading station



Automatic air supply and exhaust air flaps



Individual measuring and control technology

Gas-fired Truck Furnaces HWG series

ROHDE Gas-fired Truck Furnaces from the HWG series comprise models with furnace volumes between 1000 and 10000 litres and are suitable for temperature ranges up to 1000°C and 1300°C.

ROHDE uses the HWG series to combine the versatility of truck furnaces with the performance of modern forced draught burners. The burner system is very efficient and its high power density allows connected loads that if performed electrically, required much more expense.

Gas-fired truck furnaces can be used for annealing of heavy castings or firing of ceramics and meet the highest requirements imposed on the atmosphere. Depending on the required application, the burner position can be adapted to individual processes.

Combined with a wide range of optional equipment, ROHDE develops customised solutions to meet different requirements.

O Heating using powerful forced draught burners

- 💮 Elster-Kromschröder Low NOx Burners
- (III) 3-layer insulation structure
- (a) All relevant functions combined in one system





Safe and clear valve section, easy-to-read instruments

> Effective labyrinth seal, easy to re-adjust





Gas-fired Truck Furnaces **HWG** series to 1300°C

	Tmax				External	l dimens		Output		Connector		
HWG 1000/10	1000	850	1000	1200	1300	1800	2200	110	-	-	400 V/50 Hz	1600
HWG 2000/10	1000	1000	2100	1200	1450	2900	2200	160	-	-	400 V/50 Hz	2400
HWG 5000/10	1000	1500	2500	1350	1950	3300	2350	200	-	-	400 V/50 Hz	4500
HWG 10000/10	1000	1600	4500	1400	2050	5300	2400	240	-	-	400 V/50 Hz	9600
HWG 1000/13	1300	850	1000	1200	1300	1800	2200	130	_	-	400 V/50 Hz	1600
HWG 2000/13	1300	1000	2100	1200	1450	2900	2200	200	-	-	400 V/50 Hz	2400
HWG 5000/13	1300	1500	2500	1350	1950	3300	2350	300	-	-	400 V/50 Hz	4500
HWG 10000/13	1300	1600	4500	1400	2050	5300	2400	360	-	-	400 V/50 Hz	9600

Optional accessories for Gas-fired Truck Furnaces HWG series





Atmosphere control



Designed for use

at 1400°C Tmax



Electrically operated truck

Hydraulic lifting door





Reduction-resistant insulation structure



Loading station



Subsequent treatment of exhaust gases



Individual measuring and control technology



CUSTOM-DESIGNED **TRUCK FURNACES**





Debinding-Sintering Furnace HWE 4700/14 DB

- 1900 x 1900 x 1300 mm (wxdxh)
- () 300 kW
- © 1400°C
- Debinding package including air preheating, negative pressure control, second truck, process documentation

Annealing Furnace HWU 3300/75

- 1450 x 2100 x 1100 mm (wxdxh)
- 🕲 100 kW
- © 750°C
- ᢙ Automatic exhaust air flaps, two hydraulic lifting doors, second truck, fully-automated process



Sintering Furnace HWE 2400/14 SG

- 🕃 1550 x 1500 x 980 mm (wxdxh)
- 🕲 190 kW
- © 1400°C
- ☺ Semi-gas tight construction, hydraulic lifting door, automatic air supply and exhaust air flaps, controlled cooling system

Preheating Furnace HWU 12500/65

- 2500 x 2500 x 2000 mm (wxdxh)
- () 350 kW
- © 560°C
- ᢙ Automatic air supply and exhaust air flaps, controlled cooling system, electrically operated truck,



2912





ROHDE HOOD FURNACES







Hood Furnaces HE series

ROHDE Hood Furnaces from the HE series comprise models with furnace volumes between 60 and 630 litres and are suitable for temperature ranges up to 1000°C and 1300°C.

This type of construction is characterised by a hood with linear movement allowing safe and easy loading on several sides even for heavy charges. The highquality insulation structure combined with 5-side heating make ROHDE Hood Furnaces ideally suitable for applications imposing high requirements on loading.

A linear guide rail allows precise hydraulic lifting and lowering of the robust hood. The in-frame ventilated furnace housing provides effective protection against corrosion. Like all ROHDE industrial furnaces, KANTHAL heating elements have been calculated with a minimal surface load minimising wear and ensuring a long service life.

On request, ROHDE develops customised solutions to meet your production requirements, such as the addition of an extendable floor (ELS Ergo Load System) to the hood construction.

◎ 5-side heating

44

- Heating elements on support rods
- (III) 3-layer insulation structure
- ☆ Easy loading on three sides

Robust linear guide for continuous hood lifting

Easy-to-maintain switchgear at the back of furnace, easily accessible





Electric Hood Furnaces **HE** series to 1300°C

		Tmax				External	l dimens		Output		Connector		
HE	60/10	1000	400	400	400	800	1500	2150	7	16	CEE 16 A	400 V/50 Hz	360
HE	120/10	1000	500	500	500	900	1600	2250	11	16	CEE 16 A	400 V/50 Hz	650
HE	200/10	1000	600	600	600	1000	1700	2350	15	22	CEE 32 A	400 V/50 Hz	1000
HE	360/10	1000	1000	600	600	1400	1700	2350	22	32	CEE 32 A	400 V/50 Hz	1400
HE	630/10	1000	1300	700	700	1750	1850	2450	32	47	CEE 63 A	400 V/50 Hz	1800
HE	60/13	1300	400	400	400	800	1500	2125	11	16	CEE 16 A	400 V/50 Hz	360
HE	120/13	1300	500	500	500	900	1600	2250	15	22	CEE 32 A	400 V/50 Hz	650
HE	200/13	1300	600	600	600	1000	1700	2350	22	32	CEE 32 A	400 V/50 Hz	1000
HE	360/13	1300	1000	600	600	1400	1700	2350	40	58	CEE 63 A	400 V/50 Hz	1400
HE	630/13	1300	1300	700	700	1750	1850	2450	60	86	-	400 V/50 Hz	1800





Optional accessories for Electric Hood Furnaces HE series





Automatic air supply and exhaust air flaps





Electrically extendable furnace floor (ELS)

Replacement floor, adjustable in height





Active cooling system



Multi-zone control



Semi gas-tight construction with protective gas connection



Individual measuring and control technology







Preheating Furnace HE 335/80

- 🕄 ø 610 x 1100 mm (øxh)
- 🕲 25 kW
- © 800°C
- 🕸 Hydraulic lifting table, separate storage area, automated movement, special voltage (480 V)



IDEES

Fusing Furnace FE 5200/10

- 6000 x 2650 x 330 mm (wxdxh)
- 🕑 110 kW

48

- © 1000°C
- 🕸 Hydraulic hood movement, furnace floor can be moved, automatic exhaust air flaps



- 2410 x 1410 x 360 mm (wxdxh)
- 🕲 80 kW
- © 1000°C
- Pneumatic hood lifting, integration into robot cell, comprising transport castors

Annealing Furnace HE 210/80

- (Image: 300 x 600 x 600 mm (wxdxh)
- 🕲 22 kW
- © 800°C
- 🕸 Extendable furnace floor (ELS), hydraulic hood lifting









ROHDE TOPLOADERS







Regeneration Furnaces TE-DPF series

ROHDE Regeneration Furnaces from the TE-DPF series comprise models with furnace volumes between 100 and 220 litres and are suitable for temperature ranges up to 800°C.

This series has been designed for controlled and reliable burning-off of Diesel Particulate Filters (DPF) from exhaust systems in buses, construction machines, trucks, cars or generators.

The robust furnaces are ideally suited for heavy use in vehicle depots, on construction sites and in workshops. The TE-DPF series is characterised by a stable base frame with large, easy-to-move transport castors and a high-quality and energyefficient lightweight firebrick lining.

Particular importance was attached to the safe and especially intuitive control of thermal cleaning processes. The easy-to-operate process controller is pre-programmed but can be adjusted manually to suit different particulate filter sizes with just a few steps. This ensures a very quick and closed cleaning process.

- O All-around heating with floor heating
- Heating elements recessed into bricks
- 2-layer insulation structure
- ᢙ Easy burning-off of particulate filters



Easy-to-operate using preset programs Stable and robust transport castors

Electric Toploaders **TE-DPF** series to 800°C

	Tmax				External dimensions mm			Output		Connector		
TE 100/80 DPF	800	ø 4	70	570	750	750	900	5.0	8	CEE 16 A	400 V/50 Hz	95
TE 200/80 DPF	800	ø 59	90	800	830	880	1140	9.0	13	CEE 16 A	400 V/50 Hz	150

Shaft Furnace BT series

ROHDE Shaft Furnaces from the BT series comprise two models with furnace volumes between 300 and 500 litres and are suitable for the temperature range up to 1300°C.

This series combines 5-side heating in a robust chamber furnace construction with all the advantages of a toploader. The high-quality insulation structure and the even temperature distribution make the shaft furnace suitable for applications where as many goods as possible must be placed and processed in one firing process. The shaft furnace offers an excellent overview during charging.

The in-frame ventilated lid and the use of galvanized steel sheet in the furnace casing provide effective protection against corrosion. Another feature of this design is the carefully manufactured furnace lid. It is provided with a gas pressure spring that allows easy opening of the lid. KANTHAL heating elements have been calculated with minimal surface load to minimise wear and to ensure a long service life.

- ◎ 5-side heating
- Heating elements recessed into bricks
- (III) 2-layer insulation structure
- Easy top loading

2-layer wall structure, heating elements mounted in protected position recessed into bricks

Easy lid opening and closing using gas pressure springs

Electric Toploaders **BT** series to 1300°C

		Tmax Internal dimensions ma				External			Output	Supply	Connector		
BT	300/13	1300	920	570	610	1360	970	1070	15.0	25	CEE 32 A	400 V/50 Hz	400
BT	500/13	1300	1150	650	690	1620	1050	1150	24.0	34	CEE 63 A	400 V/50 Hz	535





BT 300/13







CUSTOM-DESIGNED TOPLOADERS





Curing Furnace TE 585/12

- 🕄 ø 990 x 760 mm (ø x h)
- (b) 33 kW
- © 1250°C

Pneumatic lid opening



ROHDE®

56

Preheating Furnace BT 290/10

- 3 1400 x 600 x 600 mm (wxdxh)
- 🕲 22 kW
- © 1000°C
- ② 2 heating zones, customised device to collect components

Vertical Furnace S 40/10

☺ 500 x 500 x 630 mm (wxdxh)

Tin Bath Furnace ZT 250/50

🕲 30 kW

© 550°C

🕄 770 x 580 x 730 mm (wxdxh)

🕸 Melting tank, cascade control

- 🕲 24 kW
- © 1050°C
- Pneumatic lifting gear











ROHDE EXHAUST AIR CLEANING





Catalytic Post-Combustion CPC

Many thermal processes generate exhaust air components that cannot be directed into the environment without treatment thus requiring suitable exhaust air cleaning. ROHDE cooperates with well-known experts for catalytic post-combustion to meet these requirements.

Catalytic treatment of exhaust air is mainly used in small to medium exhaust gas flow rates and its energy is ideally suited to meet requirements imposed exclusively from cleaning of hydrocarbon compounds. When using catalytic post-combustion, exhaust air treatment can be effected at low temperatures – depending on the composition of the noxious gases, oxidation occurs between 250°C and 400°C in the catalyser. In many cases, the low reaction temperature allows cleaning without performing an additional heating of the noxious gas and thus a very efficient operation.

We are able to offer exhaust air treatment in one compact system comprising a furnace and CPC or in a stand-alone variant that can be installed in existing furnace concepts later.

The advantage of a solution from a single source: we customise the complete system comprising furnace, catalyst and shared process controller if needed to suit your required process thus allowing the best possible synergies.

The entire system i.e. furnace and catalytic exhaust air treatment is controlled along with the firing process inside the chamber taking into account a safe and energy-efficient manufacturing process.





KEU 600/75 with integrated catalytic exhaust air cleaning

Thermal Post-Combustion TPC

We are also able to offer solutions for processes that generate noxious gases and require thermal postcombustion (TPC).

Thermal post-combustion is especially used for higher exhaust gas flow rates generated during cleaning or burning-out of plastics from moulds used for Rapid Prototyping.

The functional principle of thermal post-combustion is based on oxidation. With the exception of some substances such as halogens or sulphur that do not undergo thermal decomposition, all substances in the exhaust gas volume are converted to H₂O (water) and CO_a (carbon dioxide). The system is therefore ideally suited for debinding processes generating high volumes of exhaust gases or damaging the catalyser with noxious gas components.

We are able to offer complete solutions that meet your requirements and integrate thermal postcombustion from well-known manufacturers in our furnace concepts to avoid unnecessary interfaces. You receive a complete system with a compact control unit for measuring and monitoring.





Thermal post-combustion TPC, vertical (Birk Wärmetechnische Anlagen)



Thermal post-combustion TPC, horizontal (Birk Wärmetechnische Anlagen)

ROHDE **MEASURING AND CONTROL TECHNOLOGY**

CONTROLLERS TO SUIT YOUR REQUIREMENTS.







Manual Controller Bentrup TC 504

High-performance control unit with the highest security standard and high operating comfort. Clear presentation of actual and setpoint values in demanding workshop and laboratory applications.

- Units displayed on easy-to-read LED display (actual and setpoint values)
- · Clear and easy-to-read display, intuitive operating layout
- 10 freely programmable firing programs,
 2 segments each
- · Available with zone control

Manual Controller Bentrup TC 88e

High-performance control unit with the highest security standard and high operating comfort.

Clear presentation of actual and setpoint values in demanding workshop and laboratory applications.

- Units displayed on easy-to-read LED display (actual and setpoint values)
- · Clear and easy-to-read display, intuitive operating layout
- · 3 freely programmable firing programs,
 9 segments each
- Program time delay or program start delay can be adjusted
- Optional version with 20 programs and up to 15 segments available

Manual Controller Bentrup TC 507

64

High-performance control unit with the highest security standard and high operating comfort.

Clear presentation of actual and setpoint values in demanding workshop and laboratory applications.

- Units displayed on easy-to-read LED display (actual and setpoint values)
- · Clear and easy-to-read display, intuitive operating layout
- 50 freely programmable firing programs,
 2 segments each
- · Available with zone control
- Program time delay or program start delay can be adjusted
- · Additional switch outputs (optional)







Compact Controller JUMO dTRON

High-performance panel-mounted control unit with the highest security standard and high operating comfort. Clear presentation of actual and setpoint values in demanding workshop and laboratory applications.

- Compact controller can be integrated into the kiln casing, saving space
- · Including ramp function, timer start, manual mode
- Configurable user level enables setting of the most important parameters
- Individual controller optimisation to adjust to furnace requirements
- · Clear presentation of actual and setpoint values

Compact Controller Bentrup TC 2088

High-performance panel-mounted control unit with the highest security standard and high operating comfort. Clear presentation of actual and setpoint values in demanding workshop and laboratory applications.

- Units displayed on easy-to-read LED display (actual and setpoint values)
- · Clear and easy-to-read display, intuitive operating layout
- · 3 freely programmable firing programs,
 9 segments each
- Program time delay or program start delay can be adjusted
- Optional version with 20 programs and up to 15 segments available

Comfort Controller JUMO Dicon Touch

Universal process and program controller using brilliant TFT colour graphic screen visualisation, intuitive to operate with touch screen.

- Alphanumeric display saves 10 programs with up to 50 program segments, 2 events (e.g. air supply and exhaust air flap) individually programmable
- · Clear presentation of relevant process values
- Integrated paperless recorder, tamper-resistant data storage
- Process data can be collected using USB stick or Ethernet connection and exported to the PC using software
- Integrated timer and time switch for program start
- \cdot Available as completely attachable controller









Comfort Controller JUMO IMAGO 500

Comfortable program controller, clear program input and individual editing of program names.

- Multi-channel process and program controller
- · 5" colour graphic display (27 colours)
- 144 x 130 mm format (92 x 92 mm installation dimensions)
- 50 programs with up to 100 program steps (segments)
- Freely configurable screen masks allow intuitive operation
- \cdot Clear presentation of relevant process values
- · Program start programmable using real time clock
- · Configuration using software or display

Paperless Recorder JUMO Logoscreen nt

66

Records and files up to 18 process values using different media with batch reporting via barcode scanner. A colour display ensures clear presentation of process values.

- To be operated using one operating element (push and turn)
- Presentation of measured values in different diagrams
- · Batch reporting on 5.5" TFT colour graphics screen
- · Ethernet, integrated web server
- Evaluation of firing curves using PC

Paperless Recorder JUMO LOGOSCREEN 600

Records and stores different process values using different media with batch reporting.

- Paperless screen recorder with 5.7" TFT colour display
- Intuitive touch operation
- Up to 6 universal measurement inputs, up to 2 analogue outputs
- Up to 24 external analogue or digital measurement channels
- · Up to 6 customer-specific process screens
- \cdot Horizontal or vertical line diagram
- \cdot Batch report recording
- \cdot Efficient evaluation and setup software as accessory
- \cdot IP 65 protection







Comfort Controller Siemens S7-1200 with Panel TP 700

Freely programmable control system to meet individual customer requirements. Controller is operated using Siemens Comfort Touchpanel with customised layout.

- Siemens programmable logic controller to meet individual requirements
- ROHDE user interface, individually programmable to suit your requirements
- Controller operated using TP 700 Comfort Panel with 7" Touch TFT widescreen display
- Switch outputs can be set separately at every program segment
- Control zone offset can be set at every program segment
- Presentation of firing curves and message archive for plant status reports
- Clear presentation of processes and process information on display
- User administration and process storage using USB port
- · Data recording and storing using different media
- · Remote maintenance optional

Comfort Controller Siemens S7-1500 with Panel TP 900

Freely programmable control system to meet individual customer requirements. Controller is operated using Siemens Comfort Touchpanel with customised layout.

- Siemens programmable logic controller to meet individual requirements
- ROHDE user interface, individually programmable to suit your requirements
- Controller operated using TP 900 Comfort Panel 9" with Touch TFT widescreen display
- Switch outputs can be set separately at every program segment
- Control zone offset can be set at every program segment
- Presentation of firing curves and message archive for plant status reports
- Clear presentation of processes and process information on display
- · Data recording and storing using different media
- User administration
- · Remote maintenance optional







alu druckguss lübeck GmbH Black & Decker Deutschland GmbH Baker Hughes INTEQ GmbH CADdent GmbH Constellium Singen GmbH Continental Mechanical Components Germany GmbH Daimler AG Deutsche Solar GmbH Deutsches Zentrum für Luft und Raumfahrt e. V. Eberspächer Exhaust Technology GmbH & Co. KG ElringKlinger AG Federal-Mogul Nürnberg GmbH

OUR **BEST REFERENCE:** CUSTOMER SATISFACTION

Germanischer Lloyd Prüflabor GmbHHeraeus Quarzglas GmbH & Co. KGHase Kaminofenbau GmbHIMBA Institut für Molekulare Biotechnologie GmbHJenoptik Katasorb GmbHKPM Königliche Porzellan-Manufaktur Berlin GmbHLufthansa Technik AGMerck KGaANighTec Industries GmbHOCULUS Optikgeräte GmbHPolyOne Th. Bergmann GmbHQuality Analysis GmbHSensata Technologies Bulgaria EOODSalzgitter Bauelemente GmbHSchott Glas AGTreibacher Industrie AGTyrolit Schleifmittelwerke Swarovski K.G.Universität Bayreuth, Lehrstuhl Metallische WerkstoffeVoith Turbo BHS Getriebe GmbHvoestalpine Stahl GmbHWhitepeaks Dental Solutions GmbH & Co. KG

MISSION POSSIBLE.

Anything is possible. ROHDE provides the best solution for you either from its wide basic range of products or with a special customised construction. Contact ROHDE and see for yourself.









On-site instruction and initial operation

ROHDE provides project planning and is able to arrange for proper transportation, on-site instruction and initial operation of your furnace system if required.

This guarantees safe, fast and successful commencement of production from the start. Of course, ROHDE is your partner when it comes to service and on-site maintenance work.

Warranty and spare part service

ROHDE deliberately refuses to reduce the warranty period. Despite commercial furnaces being used intensely, ROHDE guarantees a 2-year warranty on all standard products excluding parts that are subject to wear.

ROHDE assures reliable and quick supply of spare parts when service is required. Spare parts are usually ready for dispatch 24 hours after receipt of order.

ROHDE always uses environmentally friendly materials and guarantees acceptance of each ROHDE product for the recycling of reusable parts or environmentally sound disposal.



Environmentally sound materials and recycling



COMMITTED TO SERVICE.

ROHDE

Helmut ROHDE GmbH Ried 9 83134 Prutting, Germany Phone +49 8036 674976-10 Fax +49 8036 674976-19 info@rohde-online.net www.rohde-online.net



broon.de