



Thermal Engineering from Germany
Your partner in heat treatment

Company profile

The English word “welding” and the greek word “therm” for pure exchange of thermal radiation between two bodies form the key word for the trademark WELDOTHERM® which nowadays become a synonym for controlled heat treatment worldwide.

More than 40 years ago WELDOTHERM® started to specialize on the development and fabrication of practice oriented, site proven and largely supervision free heat treatment units, sturdy heating elements of high material quality and all required components for related measuring equipment.

For many years WELDOTHERM® fabricates heat treatment units in every required output ratings. Today they are used worldwide on many sites, in workshops and all places where high demands on accuracy and precision in heat treatment is required.

WELDOTHERM® has representatives and agents in many countries all over the world who are at your disposal at anytime.




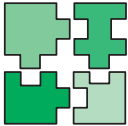
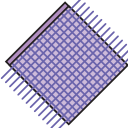
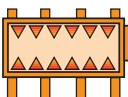
Over the years WELDOTHERM® extended its product range.

Today WELDOTHERM® is a universal developing and fabricating company of heat treatment units and offers customized solutions for almost any heat treatment task.

First class quality of all products and services under the WELDOTHERM® trademark has always been and remains our motto.



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WELDOTHERM®-VAS with DIGIT 700

WELDOTHERM® manufactures a standard program of fully automatic program controlled heat treatment units of all output ratings.

Within these output ratings, optimized according to the respective application, any number of control circuits, fully independent from each other, are available.



VAS 45-6

The big advantage consists in the fact that each control circuit possesses its own program controller, so utmost flexibility is guaranteed. It is possible to start identical or completely different programs at the same or at any different point of time. Each control circuit possesses a built in ammeter which serves the current drain control. Even an untrained user is able to operate the unit after a short introduction. The operational precision guarantees precise compliance with the annealing data.

The requirements on the accuracy of temperature registration devices is variable depending on the application. For this reason you can choose 6 or 12 channel temperature recorders with accuracy classes 0.5 and 0.1 according to DIN 43710.

In order to facilitate the operation, WELDOTHERM® heat treatment units work with secondary voltages of 30 and 60 Volts as standard. The possible dimensions of heating elements within this voltage range guarantees that a 1" circumferential

joint can be heat treated as well as a large vessel joint or any other workpiece. To connect a heating element to a wrong voltage is therefore almost impossible.

WELDOTHERM® heat treatment units are equipped with safety facilities for personnel and workpieces which widely transcend the valid VDE requirements!

Operating temperature monitoring of transformer core with reinforced - disconnection at over-temperature, a two-stage forced fan cooling of the transformer core in dependence on the temperature with separate power connection, an emergency off pushbutton, 300 mA RCD trip on the secondary voltage coil, phase input control indicator light, phase and voltage control monitoring with alarm siren (114 phon) with incident, individual protection of each circuit on power fuses.



VAS 130-12





If possible improvements become obvious during operation on sites or within the design and development department, these will immediately implemented into the running fabrication.

Should our standard VAS units not cover your specific requirements we will manufacture your custom-built WELDOTHERM® heat treatment unit!



Technical Data	12-2	45-6	82-6	82-12	130-6	130-12
Order No.	100100	100200	100300	100301	100400	100401
Power at 100% duty	12 kW	45 kW	82 kW	82 kW	130 kW	130 kW
Primary input	400 V, 32 A 500 V, 24 A	400 V, 63 A 500 V, 52 A	400 V, 119 A 500 V, 95 A	400 V, 119 A 500 V, 95 A	400 V, 188 A 500 V, 150 A	400 V, 188 A 500 V, 150 A
Control voltage	standard 230 V, 50 Hz	standard 230 V, 50 Hz	standard 230 V, 50 Hz	standard 230 V, 50 Hz	standard 230 V, 50 Hz	standard 230 V, 50 Hz
Primary connection	Cable 4 x 6 mm ² , 5 m, CEE-plug 32 A	Cable 4 x 16 mm ² , 5 m, CEE-plug 63 A	Cable 4 x 35 mm ² , 5 m, CEE-plug 125 A	Cable 4 x 35 mm ² , 5 m, CEE-plug 125 A	direct connection contactor	direct connection contactor
Program controller	Digit 700	Digit 700	Digit 700	Digit 700	Digit 700	Digit 700
Number of control circuits	2	6	6	12	6	12
Switching current per control circuit	90 A	135 A	225 A	6 x 90 A + 6 x 135 A	360 A	180 A
Temperature recorder	KL 60-6	KH 60-6	KH 60-6	KH 60-12	KH 60-6	KH 60-12
Dimensions W x H x D	500 x 510 x 525 mm	900 x 1300 x 800 mm	900 x 1300 x 800 mm	1150 x 1350 x 900 mm	1150 x 1350 x 900 mm	1150 x 1350 x 900 mm
Weight	120 kg	390 kg	490 kg	590 kg	670 kg	680 kg

**Required cables for commissioning (operating range 25 m)
– other cable lengths on request –**

Twin cables 	2 each 2 x 16 mm ² , 25 m Order No. 150100	6 each 2 x 25 mm ² , 25 m Order No. 150101	6 each 2 x 50 mm ² , 25 m Order No. 150103	12 each 2 x 25 mm ² , 25 m Order No. 150101	6 each 2 x 95 mm ² , 25 m Order No. 150105	12 each 2 x 35 mm ² , 25 m Order No. 150102
Splitter cables 	4 each 2-way, 3 m Order No. 150200	12 each 3-way, 3 m Order No. 150201	12 each 5-way, 3 m Order No. 150203	12 each 2-way, 3 m Order No. 150200 12 each 3-way, 3 m Order No. 150201	12 each 8-way, 3 m Order No. 150205	24 each 4-way, 3 m Order No. 150202
Compensating cables 	2 each, 25 m Order No. 150300	6 each, 25 m Order No. 150300	6 each, 25 m Order No. 150300	12 each, 25 m Order No. 150300	6 each, 25 m Order No. 150300	12 each, 25 m Order No. 150300
Control bridge cables 	2 each, 1 m Order No. 150400	6 each, 1 m Order No. 150400	6 each, 1 m Order No. 150400	12 each, 1 m Order No. 150400	6 each, 1 m Order No. 150400	12 each, 1 m Order No. 150400



WELDOTHERM®-VAS with DIGIT 1000

WELDOTHERM® VAS unit with multi zone temperature control system Digit 1000 offer you state-of-the-art technology. With this technology, the usual individual programmers are replaced with controller modules, which are operated via a touch panel. Up to 36 control zones can be programmed. The zones can be controlled individually, in groups or in a network and in a time- and temperature-independent manner. The Digit 1000 can be monitored and controlled at the PC.

The user can be informed per e-mail about all relevant data and can intervene in the process via GSM modem by mobile phone.

The heating current monitoring detects defective heating elements and with the extended contactor monitoring contributes to the highest process reliability.

All measured values are recorded digitally and saved on a CF-card. They can be transmitted via USB connection.



Calculator for suitable heaters



Operation



Temperature/Time diagram



	A	B	C	D	E	F	G	H
1	Menu	Glühdaten Weldotherm Digit 1000						
2		Zone	1	2	3	4	5	6
3		Vorlauf	0	0	0	0	0	0
4		Rampe	700	310	320	330	340	350
5		Temp	700	310	320	330	340	350
6		Zeit	60	30	30	30	30	30
7		Rampe	700	300	300	300	300	300
8		Temp	0	610	620	630	640	650
9		Zeit	0	30	30	30	30	30
10		Rampe	0	300	300	300	300	300
11		Temp	0	310	320	330	340	350
12	Glühdaten ausgelesen	Zeit	0	30	30	30	30	30
13	am:	Rampe	0	310	320	330	340	350
14	24.02.2011 09:29	Temp	0	25	25	25	25	25
15								
16								
17								
18								
19								
20								
21		Prozessdaten Weldotherm Digit 1000						
22		Zone	0	0	0	0	0	0
23		Soll	455	464	475	483	494	504
24		Ist	455	464	475	483	494	504
25		Zeit	29	29	29	29	29	29
26	Prozessdaten	Stellwert	43	44	45	46	47	48
27	ausgelesen am:	Heizstrom						
28	24.02.2011 09:33	Status						
29								

Display of actual data of Digit 1000 in Excel

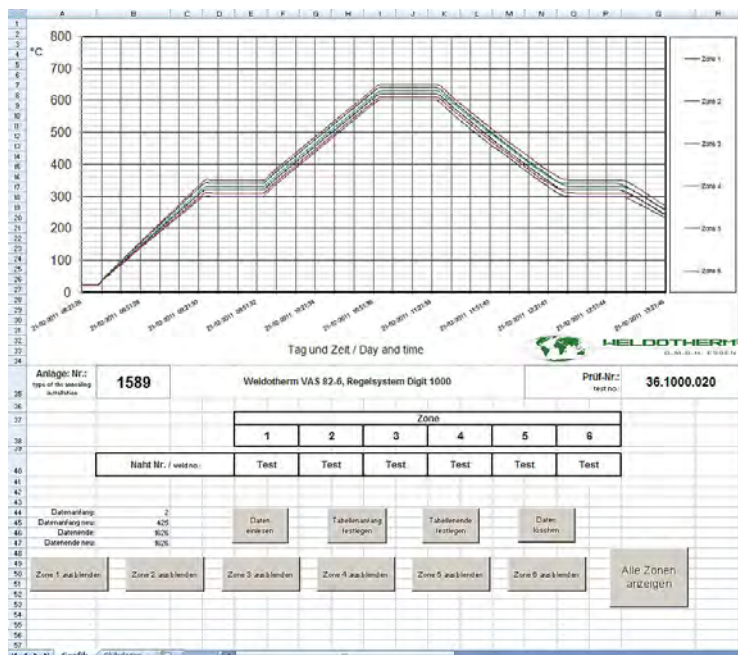


Chart display in Excel

Technical specifications

Program controller

Basic design: 6 independent control zones, model K, NiCrNi, relay output
12 independent control zones, type K, NiCrNi, relay output

Programmable characteristics:

Start temperature –100 to 1200 °C
Heating-up gradient 0 to 9998 K/h (9999 = step)
Cooling-down gradient 0 to 9998 K/h (9999 = step)
Holding time 0 to 9998 minutes (9999 = infinite)
Holding temperature –50 to 1200 °C
Program length 7 program phases and a lead time
Storable programs 20 program memories, several thousand via recipe function

Program linking

Program input Touch screen, USB keyboard or USB mouse
Program correction at any time, even during running program
Program back-up exchangeable Lithium battery, data preservation for approx. 5 years

Control parameters

all relevant parameters can be adjusted in the controller set-up

Control behaviour

Two-point controller, PID controller with self-optimisation, P-controller

Controller input

Thermocouple type K, J, R, S, E, T, B, N, PLII, WRe5-26, U, L

Controller output

Resistance thermometer model Pt100, JPt100
floating relay output, 240 V AC, 2 A

Overall error

± 0.5 % of the input range, ± 1 digit

Configuration

Control system consists of the components touch screen, function modules for 35 mm rail acc. to DIN 46277

Power supply

100 – 240 V AC + 10 %/–15 %, 50/60 Hz 70 VA

Environmental conditions

0 – 55 °C, atmospheric humidity 5 – 95 % without condensation

Dimensions touch screen

10.4" 12.1"

Visible diagonal

26.4 cm 30.7 cm

Dimensions

303.8 x 231.0 x 69.0

326.4 x 259.6 x 69.0

Front panel cut-out

289.0 x 216.2

313.0 x 246.2

Type of protection

Front touch screen IP65; built-in parts IP20

Order No.

Item

100600	VAS 45-6 with DIGIT 1000 and temperature recorder KH60-6
100700	VAS 82-6 with DIGIT 1000 and temperature recorder KH60-6
100701	VAS 82-12 with DIGIT 1000 and temperature recorder KH60-12
100800	VAS 130-6 with DIGIT 1000 and temperature recorder KH60-6
100801	VAS 130-12 with DIGIT 1000 and temperature recorder KH60-12
100900	Modem, antenna, heating current monitoring, 6-channel
100901	Modem, antenna, heating current monitoring, 12-channel



WELDOTHERM® STANDARD EUROPA

The STANDARD EUROPA series was developed to meet the needs of most customers who want to do preheating and annealing jobs with high precision but without having the requirements of complex program profiles.

These demands led to the heat treatment unit STANDARD EUROPA which unite the familiar WELDOTHERM® quality with a unique price-performance ratio.

By standard, 6 or 12 fully automatic program controller TC 80 control the STANDARD EUROPA unit, as an option the TC 1000 touch screen control system is available.

Both program controls are very easy to program and have several locations in which different programs can be saved to repeat at any time. The programs can be linked mutually, so that even sophisticated heat treatments can be performed. Built-in ammeters serve to monitor the current of each control circuit.



STANDARD EUROPA 82-12



STANDARD EUROPA 82-12 with TC 1000

STANDARD EUROPA heat treatment units are equipped with the following safety facilities: Operating temperature monitoring of transformer core with reinforced - disconnection at over-temperature, a two-stage forced fan cooling of the transformer core in dependence on the temperature with separate power connection, an emergency off pushbutton, 300 mA RCD trip on the secondary voltage coil, individual protection of each circuit on power fuses.




These sturdy heat treatment units have proved themselves all over the world.

These units can also be manufactured according to your specific requirements.



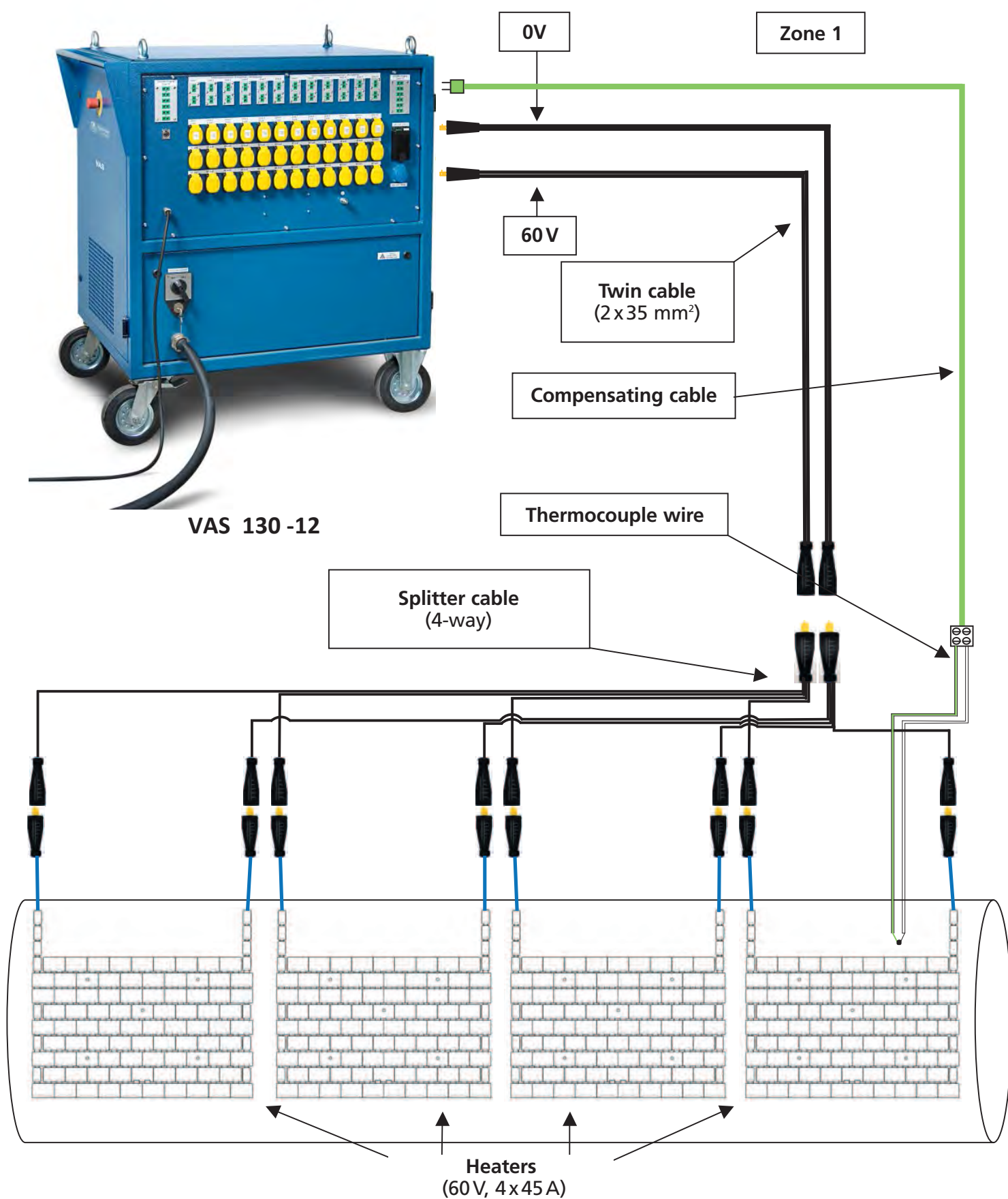
Technical Data	45-6	70-6	70-12	82-6	82-12	130-6	130-12
Order No.	101100	101200	101201	101300	101301	101400	101401
Power at 100% duty	45 kW	70 kW	70 kW	82 kW	82 kW	130 kW	130 kW
Primary input	400 V, 63 A 500 V, 52 A	400 V, 95 A 500 V, 75 A	400 V, 95 A 500 V, 75 A	400 V, 119 A 500 V, 95 A	400 V, 119 A 500 V, 95 A	400 V, 188 A 500 V, 151 A	400 V, 188 A 500 V, 151 A
Control voltage	standard 230 V, 50 Hz	standard 230 V, 50 Hz	standard 230 V, 50 Hz	standard 230 V, 50 Hz	standard 230 V, 50 Hz	standard 230 V, 50 Hz	standard 230 V, 50 Hz
Primary connection	Cable 4 x 16 mm ² , 5 m, CEE-plug 63 A	Cable 4 x 35 mm ² , 5 m, CEE-plug 125 A	Cable 4 x 35 mm ² , 5 m, CEE-plug 125 A	Cable 4 x 35 mm ² , 5 m, CEE-plug 125 A	Cable 4 x 35 mm ² , 5 m, CEE-plug 125 A	direct connection contactor	direct connection contactor
Program controller	TC 80/ TC 1000	TC 80/ TC 1000	TC 80/ TC 1000	TC 80/ TC 1000	TC 80/ TC 1000	TC 80/ TC 1000	TC 80/ TC 1000
Number of control circuits	6	6	12	6	12	6	12
Switching current per control circuit	135 A	180 A	90 A	225 A	6 x 135 A + 6 x 90 A	360 A	180 A
Temperature recorder	KH 60-6	KH 60-6	KH 60-12	KH 60-6	KH 60-12	KH 60-6	KH 60-12
Dimensions W x H x D	900 x 1300 x 800 mm	900 x 1300 x 800 mm	900 x 1300 x 800 mm	900 x 1300 x 800 mm	900 x 1300 x 800 mm	1150 x 1350 x 900 mm	1150 x 1350 x 900 mm
Weight	380 kg	410 kg	445 kg	450 kg	490 kg	590 kg	640 kg

**Required cables for commissioning (operating range 25 m)
– other cable lengths on request –**

Twin cables 	6 each 2 x 25 mm ² , 25 m Order No. 150101	6 each 2 x 35 mm ² , 25 m Order No. 150102	12 each 2 x 16 mm ² , 25 m Order No. 150100	6 each 2 x 50 mm ² , 25 m Order No. 150103	12 each 2 x 25 mm ² , 25 m Order No. 150101	6 each 2 x 95 mm ² , 25 m Order No. 150105	12 each 2 x 35 mm ² , 25 m Order No. 150102
Splitter cables 	12 each 3-way, 3 m Order No. 150201	12 each 4-way, 3 m Order No. 150202	24 each 2-way, 3 m Order No. 150200	12 each 5-way, 3 m Order No. 150203	12 each 2-way, 3 m Order No. 150200 12 each 3-way, 3 m Order No. 150201	12 each 8-way, 3 m Order No. 150205	24 each 4-way, 3 m Order No. 150202
Compensation cables 	6 each, 25 m Order No. 150300	6 each, 25 m Order No. 150300	12 each, 25 m Order No. 150300	6 each, 25 m Order No. 150300	12 each, 25 m Order No. 150300	6 each, 25 m Order No. 150300	12 each, 25 m Order No. 150300



Schematical Connection of one Control Zone of the VAS 130-12





Spare Parts



Zone contactor CWM 50

Order No.	Item
109000	Zone contactor CWM 50
109001	Zone contactor CWM 65
109002	Zone contactor CWM 95



Main contactor CWM 150

Order No.	Item
109003	Main contactor CWM 150
109004	Main contactor CWM 250



Fan complete

Order No.	Item
109010	Fan, complete



Manual/automatic switch

Order No.	Item
109020	Manual/automatic switch for VAS units with DIGIT 1000
109021	Manual/automatic switch for STE units
109022	Manual/automatic switch for VAS units with DIGIT 700



Emergency off switch

Order No.	Item
109023	Emergency off switch for STE units
109024	Emergency off switch for VAS units



Plug + socket type DINSE

Order No.	Item
290012	Plug K25 type DINSE
190004	Socket K25 type DINSE
190000	Plug K50 type DINSE
190005	Socket K50 type DINSE
190001	Plug K70 type DINSE
190006	Socket K70 type DINSE
190002	Plug K95 type DINSE
190007	Socket K95 type DINSE



Plug + socket type CAMLOCK

Order No.	Item
290018	Plug 60 A type CAMLOCK
190009	Socket 60 A type CAMLOCK
190010	Plug 300 A type CAMLOCK
190011	Socket 300 A type CAMLOCK



Panel mounted sockets

Order No.	Item
109030	Panel mounted socket K35 – K70 without hinged cover
109031	Panel mounted socket K35 – K70 with hinged cover



Thermocouple panel

Order No.	Item
109040	Single thermocouple panel type K
109041	6-way thermocouple panel type K horizontal
109042	6-way thermocouple panel type K vertical
490008	Thermocouple plug
490009	Thermocouple socket



WELDOTHERM®-Induction Heat Treatment Unit VAI

The induction heat treatment unit VAI works according to the principle of inductive heating in the medium frequency range from 4 to 10 kHz. With this type of heat input, the heating energy is transferred to the workpiece by means of an inductor. The heat is generated inside the component, i.e. the workpiece is heated from the inside.

Areas of application for the induction machine VAI are processes which involve a fast and even heating of metal materials. It is for instance possible to preheat welding joints within seconds. Thanks to the use of the rigid or flexible inductors, the heat inside the component can be generated contact-free. Set-up times can be minimised, as the fastening of inductive annealing cables or conventional heating mats on the component is dispensed with.

Used in conjunction with these inductors, the VAI is excellently suited for heating rotating and linearly moving parts. The TC 1000 program controller displays a temperature time chart on its touchscreen. These data are being stored on a USB stick and can then be processed using Excel on any computer. According to different applications the VAI unit can be operated air- or water-cooled.



VAI 80 water-cooled



Induction coil heater,
air-cooled



Induction coil heater,
water-cooled



Rotating device with inductor



Positioners with custom-designed inductor



Technical Data	40 kW		80 kW	
Order No.	102600	102700	102601	102701
VAI- Machine and Inductor:	air-cooled	water-cooled	air-cooled	water-cooled
Induction circuits:	1	1	1	1
Input / Sensor:	6 x Typ K	6 x Typ K	6x Typ K	6 x Typ K
Power supply:	400V / 63A / 50,60Hz	400V / 63A / 50,60Hz	400V / 125A / 50,60Hz	400V / 125A / 50,60Hz
Power:	40 kVA	40 kVA	80 kVA	80 kVA
Max. tension to inductor:	max. 500V	max. 500V	max. 1000V	max. 1000V
Secondary power:	max. 400A	max. 400A	max. 700A	max. 750A
Frequency range:	4....10 kHz	4....10 kHz	4....10 kHz	4....10 kHz
Sound level:	<70dB	<70dB	<70dB	<70dB
Dimensions (H x B x T) / Weight:	1500 x 560 x 750mm 219kg	1690 x 560 x 750mm 239kg	1500 x 560 x 750mm 259kg	1690 x 560 x 750mm 279kg
Integrated controller:	TC 1000-VAI	TC 1000-VAI	TC 1000-VAI	TC 1000-VAI
Temperature recording:	Digital TC 1000	Digital TC 1000	Digital TC 1000	Digital TC 1000

Necessary cables for commissioning of VAI induction units

Power cable, water-cooled 7,5 m	—	1 pair	—	1 pair
	—	Order No. 102710	—	Order No. 102710



Other lengths on request

Weldotherm induction units have a parallel port which offers the possibility to connect two pairs of power cables and more than one induction heater.

Power cable, air-cooled 7,5 m	1 pair	—	2 pair	—
	Order No. 102610	—	Order No. 102610	—



Other lengths on request

Weldotherm induction units have a parallel port which offers the possibility to connect two pairs of power cables and more than one induction heater.

Compensation cable	4 each, 15m	4 each, 15m	4 each, 15m	4 each, 15m
	Order No. 103202	Order No. 103202	Order No. 103202	Order No. 103202





Accessories



Magnetic thermocouple MOS 450



Sliding thermocouple OS 450



Magnetic holder, single



Magnetic holder, twofold



Radio transmission thermocouple RTX 200



Infrared thermocouple DM 201

Order No.	Item
102620	Induction coil heater, air-cooled, 15 m
102720	Induction coil heater, water-cooled, 10 m
102721	Induction coil heater, water-cooled, 15 m
102730	2-way splitter cable, one pair
102800	Custom-designed induction heater
102900	Positioner for custom-designed induction heater
102901	Magnetic thermocouple MOS 450
102902	Sliding thermocouple OS 450
102903	Radio transmission thermocouple RTX 200
102904	Infrared thermocouple DM 201
102905	Magnetic holder, single
102906	Magnetic holder, twofold



WELDOTHERM®-Inverter Heat Treatment Unit WR 10,5

The WELDOTHERM® Inverter heat treatment unit WR 10,5 is a high performance 1-channel device with compact dimensions in the size of a pilot's case. With its low weight it is easy to transport and thus perfectly suitable for minor repair and preheating jobs as well as for heat treatment on work places that are difficult to access. The output voltage is variable at will to allow for connection of heating elements with different voltages. Status messages are signalized, both optically and acoustically. The integrated data logger record the relevant data such as nominal value, actual value, output power, status messages etc. and makes them available at the PC. The scope of supply includes a CD with software for data transmission to the PC, an adapter cable with USB connector and a manual in print version.



Inverter WR 10,5



Inverter in composite circuit

Technical Data

Number of control circuits:	1
Output voltage:	Automatic operation: 24...65 VDC (adjustable in 1 V steps)
Output current:	Maximum 180 A at 60 VDC, Maximum 160 A at 65 VDC
Output rating:	max. 10,8 kVA
Number of sensor inputs:	1 x thermocouple type K (NiCr-Ni)
Program controller/Operation:	1, integrated/6 keys on front
Number of programs/Segments:	0 (Manual), 1 (Easy Prog), 2...49 with 49 segments each
Displays:	3 x 4-digit, 7 segment display for nominal value, actual value, parameter, 6 x LED, status displays and alarms
Measuring range/Control range:	- 40...1350 °C/- 25...1200 °C
Accuracy:	± 0,3 % of measuring range ± 1 digit
Data logger:	Nominal value, actual value, output voltage, output current, output rating, status
Power switch/Cable:	On rear/3m
Primary connection values:	3 PE, 400 V, 50/60 Hz, 23 A
Fuses internal/external:	25 A/32 A
Dimensions (H x W x D)/Weight:	370 mm x 170 mm x 405 mm/17 kg
Accessories:	CD with service instructions, software for transmission of data to PC, adapter cable WR 10,5 <-> USB interface PC

Order No.

Item

103100	Inverter Heat treatment unit WR 10,5
103200	Twin cable 2 x 35 m2, 15 m long
103201	4-way splitter cable, 2 m long
103202	Compensating cable, 15 m long
103902	Multizone cable for 3 devices (Standard)



WELDOTHERM® Special Heat Treatment Units



Heat treatment units in heated containers on vats

Operation field: Preheating and post heat treatment of pipeline joints in oil and gas fields at outside temperatures between -40°C and $+40^{\circ}\text{C}$.



Heat treatment unit 216 kW, build inside an air-conditioned sea container with chassis for truck transportation



VAS 130-6 with control system DIGIT 1000 build in a walkable 20 feet sea container with 160 KVA Diesel generator

Everywhere else where steel constructions in the upper strength ranges are being built in unexploited areas, heat treatment processes must still be carried out, even though there is no electric power source.

Here is just one example:

The construction of natural gas pipelines often takes place under extreme climatic conditions – at hot weather in tropical areas as well as in icy regions. The heat treatment of pipeline welds such as carried out under normal conditions is therefore not possible.

WELDOTHERM® has designed a range of special mobile and completely self contained heat treatment units which can cope well with the above mentioned conditions.

No matter where and which power is required for your heat treatment job, WELDOTHERM® has the solution for you.

20 and 40 feet containers equipped with heat treatment units from 24 to 220 kW, according to requirements, are powered by Diesel generators with their requisite three phase A.C. Depending on their size, the containers are divided into either 2 or 3 compartments or they are made up of separate sections so the Diesel generator and the heat treatment unit can be used independently from each. The connections for the heat treatment unit supplemented by two power current connections for welding equipment are accessible from outside and are protected against unauthorized access by a flap.

WELDOTHERM® offers various locomotion solutions for various application areas: Container undercarriage with tired steel-disc wires for normal terrain, transport carriages equipped with runners for soft ground or trailers which are permitted for road traffic up to 80 km/h.



Self-conditioned heat treatment unit with Diesel generator on trailer

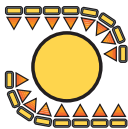
Rating of generator: 130 kW

Rating of heat treatment unit: 120 kW

allowed for roads with max. 80 km/h

Operation field: Preheating of gas pipelines when welding t-shaped pipes



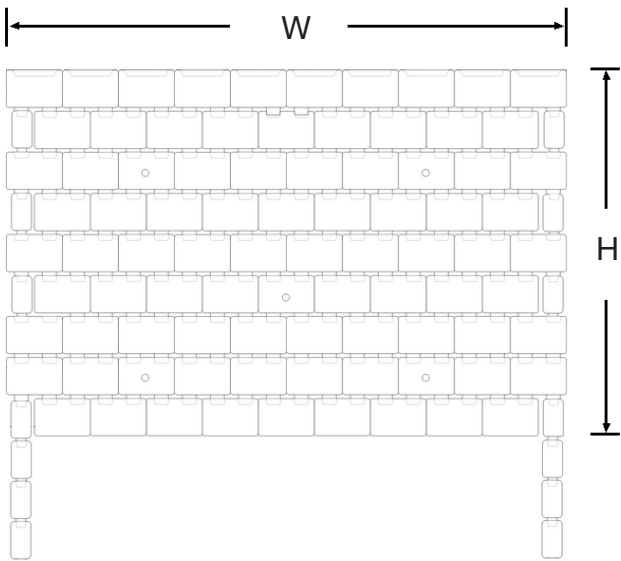


WELDOTHERM® Ceramic Pad Heater

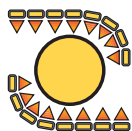
WELDOTHERM® annealing and preheat elements are extremely robust and stable multipurpose heating elements, which can be used without difficulty for almost every application. The heating tapes and cables in particular thanks to their high flexibility can be used for very small pipe diameters and also on penetrators, branch welds and pipe walls. WELDOTHERM® furnace heating elements are particularly suitable for preheating and postheating of workpieces, which because of their size or other reasons cannot be pre- or postheated in stationary furnaces. The high quality of the aluminium oxide ceramic (96 %) used and of the heating wire materials (NiCr 80/20) has been proven in years of use on the toughest job sites.

WELDOTHERM® offers all heating elements standard-wise including “DINSE” plugs. For customers who use english heating units we equip our heating elements alternatively on special request with the english Camlock system.

Application range: pipe and circumferential welds, flange welds, longitudinal welds, connecting piece welds, area heating
Application limit: 1050 °C material temperature



Order No.	CERAMIC PAD HEATER 30 V; 1,35 kW; 45 A			
	Ceramic beads (qty.)		Dimensions (mm)	
	Width	Height	Width	Height
200100	2	25	50	525
200101	2	26	50	546
200103	3	17	75	357
200105	4	11	100	231
200106	4	12	100	252
200107	4	13	100	273
200109	5	9	125	189
200110	5	10	125	210
200112	6	7	150	147
200113	6	8	150	168
200115	7	6	175	126
200116	7	7	175	147
200118	8	5	200	105
200119	8	6	200	126
200121	9	5	225	105
200123	10	4	250	84
200124	10	5	250	105
200125	11	4	275	84
200127	12	4	300	84
200128	13	4	325	84



WELDOTHERM® Ceramic Pad Heater

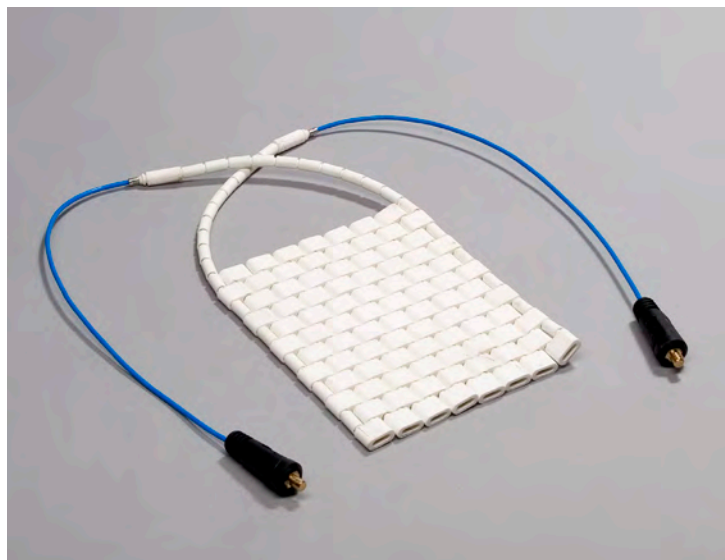
Order No.	CERAMIC PAD HEATER 60 V; 2,7 kW; 45 A			
	Ceramic beads (qty.)		Dimensions (mm)	
	Width	Height	Width	Height
200206	3	34	75	714
200207	3	35	75	735
200208	3	36	75	756
200209	4	25	100	525
200210	4	26	100	546
200211	4	27	100	567
200212	5	20	125	420
200213	5	21	125	441
200214	5	22	125	462
200215	6	16	150	336
200216	6	17	150	357
200217	6	18	150	378
200218	7	14	175	294
200219	7	15	175	315
200220	8	12	200	252
200221	8	13	200	273
200222	9	11	225	231
200223	9	12	225	252
200224	10	10	250	210
200226	11	9	275	189
200228	12	8	300	168

Order No.	CERAMIC PAD HEATER 60 V; 2,7 kW; 45 A			
	Ceramic beads (qty.)		Dimensions (mm)	
	Width	Height	Width	Height
200229	12	9	300	189
200230	13	7	325	147
200231	13	8	325	168
200232	14	7	350	147
200233	15	6	375	126
200234	15	7	375	147
200235	16	6	400	126
200236	17	5	425	105
200237	17	6	425	126
200238	18	5	450	105
200239	18	6	450	126
200240	19	5	475	105
200241	20	5	500	105
200242	21	4	525	84
200243	21	5	525	105
200244	22	4	550	84
200246	23	4	575	84
200248	24	4	600	84
200249	25	4	625	84
200251	26	4	650	84
200253	27	4	675	84

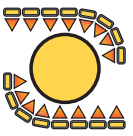
Other dimensions available on request

Heater in standard design with teflon insulated connectors.

On request we will supply all heaters with ceramic bead insulated connectors.



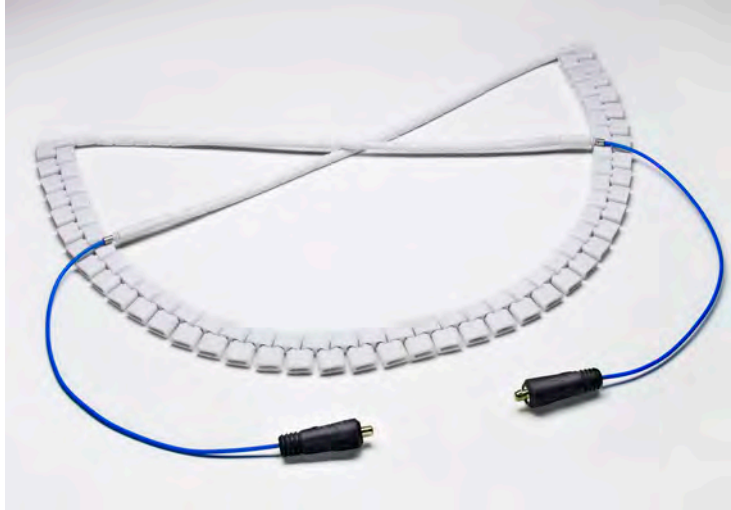
Order No. 205000



WELDOTHERM®-Heating Tapes

Application range: Circumferential welds on pipes, pipe walls, bends, elbows, welds with poor accessibility, heating of flanges and formed part connections

Application limit: 1050 °C material temperature



Heating tape

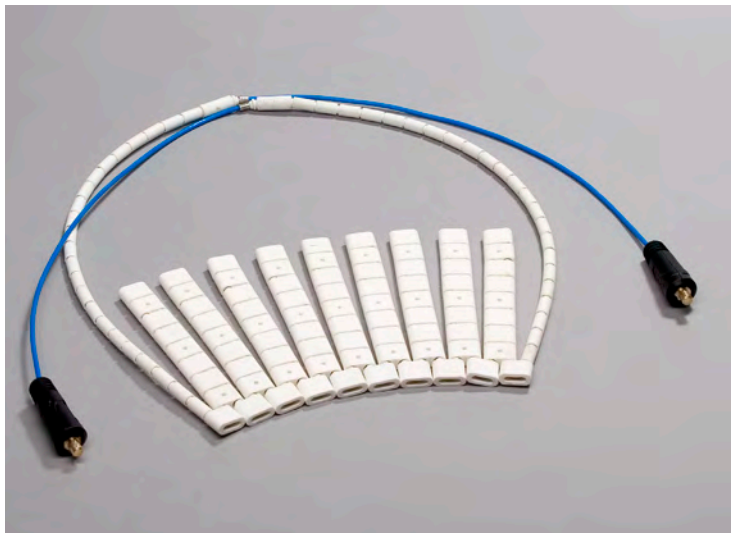
Order No.	HEATING TAPES 30/60 V						
	Rating	Voltage	Current	Ceramic beads (qty.)		Dimensions (mm)	
	kW	V	A	Width	Height	Width	Height
200300	1,35	30	45	21	2	525	42
200301	1,35	30	45	22	2	550	42
200302	1,35	30	45	23	2	575	42
200303	2,7	60	45	38	2	950	42
200304	2,7	60	45	39	2	975	42
200305	2,7	60	45	40	2	1000	42
200306	2,7	60	45	41	2	1025	42
200307	2,7	60	45	42	2	1050	42

Other dimensions available on request

WELDOTHERM®-Spreader Mats

Application range: Circumferential welds on pipes, flange welds, fitting welds, connection piece welds in containers, conical and crowned workpieces, formed parts

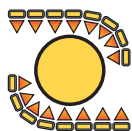
Application limit: 1050 °C material temperature



Spreader mat

Order No.	SPREADER MATS 30/60 V						
	Rating	Voltage	Current	Ceramic beads (qty.)		Dimensions (mm)	
	kW	V	A	Width	Height	Width	Height
200400	1,35	30	45	7	7	175	147
200401	1,35	30	45	8	5	200	105
200402	1,35	30	45	8	6	200	126
200403	1,35	30	45	9	5	225	105
200404	1,35	30	45	10	5	250	105
200405	1,35	30	45	11	4	275	84
200406	1,35	30	45	12	4	300	84
200407	1,35	30	45	13	4	325	84
200408	2,7	60	45	14	7	350	147
200409	2,7	60	45	15	6	375	126
200410	2,7	60	45	16	6	400	126
200411	2,7	60	45	17	6	425	126
200412	2,7	60	45	18	5	450	105
200413	2,7	60	45	19	5	475	105
200414	2,7	60	45	20	5	500	105

Other dimensions available on request



WELDOTHERM® One-Line-Heating Cable/Two-Line-Heating Cable

Design: Outer coating made of austenite wire mesh

Application range: Collector welds, flange connection welds, fittings and shaped part connection welds, super-heating pipes, boiler walls, small pipes, connecting piece welds

Application limit: 1050 °C material temperature



One-Line-Heating Cable



Two-Line Heating Cable

One-Line-Heating Cable

Order No.	Rating kW	Voltage V	Current A	Dimensions W x H mm
200500	1,35	30	45	2450 x 13 Ø
200501	2,7	60	45	4550 x 13 Ø
200502	2,7	60	45	5390 x 13 Ø

Two-Line-Heating Cable

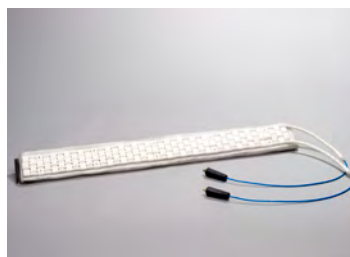
Order No.	Rating kW	Voltage V	Current A	Dimensions W x H mm
200600	1,35	30	45	924 x 25
200601	2,7	60	45	1953 x 25
200602	2,7	60	45	2394 x 25

WELDOTHERM® Preheaters

Design: Back insulation made of 1" ceramic fiber insulation in Inconel wire mesh, back protection made of stainless steel.

Application range: Circumferential tank welds, longitudinal tank welds, repair points

Application limit: 450 °C material temperature

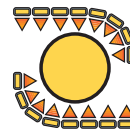


Preheater



Pot magnet with spring-loaded thermocouple

Order No.	Item	Rating kW	Voltage V	Current A	Dimensions L x W mm
200700	Preheater long design 30 V	1,35	30	45	500 x 100
200703	Preheater long design 60 V	2,7	60	45	900 x 100
200706	Preheater lateral design 30 V	1,35	30	45	500 x 100
200709	Preheater lateral design 60 V	2,7	60	45	900 x 100
200801	Clamp with 2 magnets, max. 450 °C	—	—	—	—
900035	Pot magnet with spring-loaded thermocouple	—	—	—	—

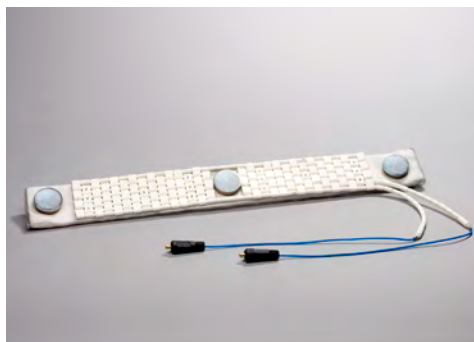


WELDOTHERM® Preheater with Magnets

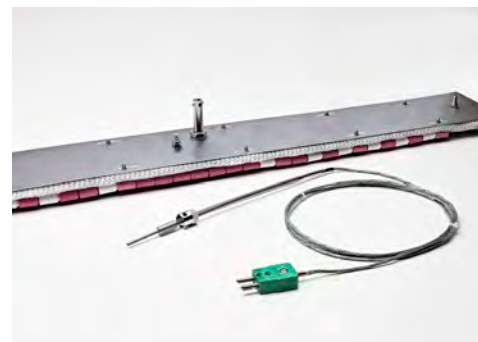
Design: Back insulation made of 1" ceramic fiber insulation in Inconel wire mesh, back protection made of stainless steel, with magnetic clamps: 3 high temperature resistant special magnets.

Application range: Circumferential tank welds, longitudinal tank welds, repair points

Application limit: 450 °C material temperature



Preheater with magnets, long design



Preheater with bayonet sleeve and thermocouple

Order No.	Item	Rating kW	Voltage V	Current A	Dimensions L x W mm
200900	Preheater with magnets long design 30 V	1,35	30	45	500 x 100
200901	Preheater with magnets long design 30 V with bayonet sleeve	1,35	30	45	500 x 100
200902	Preheater with magnets long design 30 V with bayonet sleeve and thermocouple element	1,35	30	45	500 x 100
200903	Preheater with magnets long design 60 V	2,7	60	45	900 x 100
200904	Preheater with magnets long design 60 V with bayonet sleeve	2,7	60	45	900 x 100
200905	Preheater with magnets long design 60 V with bayonet sleeve and thermocouple element	2,7	60	45	900 x 100
200906	Preheater with magnets lateral design 30 V	1,35	30	45	500 x 100
200907	Preheater with magnets lateral design 30 V with bayonet sleeve	1,35	30	45	500 x 100
200908	Preheater with magnets lateral design 30 V with bayonet sleeve and thermocouple element	1,35	30	45	500 x 100
200909	Preheater with magnets lateral design 60 V	2,7	60	45	900 x 100
200910	Preheater with magnets lateral design 60 V with bayonet sleeve	2,7	60	45	900 x 100
200911	Preheater with magnets lateral design 60 V with bayonet sleeve and thermocouple element	2,7	60	45	900 x 100

WELDOTHERM® Heating Box with Magnets

Design: Back insulation made of 1" ceramic fiber insulation in Inconel wire mesh, back protection made of stainless steel equipped with attached handholds for easy use, magnetic clamps: 3 high temperature resistant special magnets.

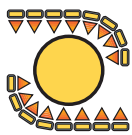
Application range: Circumferential tank welds, longitudinal tank welds, repair points

Application limit: 450 °C material temperature



Heating box with magnets

Order No.	Item	Rating kW	Voltage V	Current A	Dimensions L x W mm
201000	Heating box with magnets 60 V, long design	2,7	60	45	865 x 155
201001	Heating box with magnets 60 V with bayonet thermocouple element, long design	2,7	60	45	865 x 155
201002	Heating box with magnets 60 V, lateral design	2,7	60	45	495 x 305
201003	Heating box with magnets 60 V with bayonet thermocouple element, lateral design	2,7	60	45	495 x 305



WELDOTHERM® Channel Heater

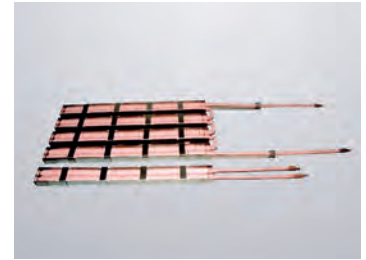
Design: built in sturdy stainless steel metal boxes

Application range: Annealing of collector floor welds and large circumferential welds, heating of temporary and stationary furnaces

Application limit: 850 °C material temperature



Channel heater 60 V



4-bank channel heater 220 V

Order No.	Item	Rating kW	Voltage V	Current A	Dimensions L x W x H mm
201100	Channel heater 60 V	3,5	60	57	725 x 70 x 35
201200	4-bank channel heater 220 V	12	220	55	725 x 350 x 35

WELDOTHERM® Wraparound Heater

Just check your set-up times! If you frequently preheat and postheat pipes of the same diameter, you save time and money using our wraparounds. Individually manufactured for the required diameter you are able to reduce your set-up times to a third and you save the costs for insulation materials.

Design: Outer jacket made of stainless steel sheet, handles facilitate transport and assembly, adjustable stainless steel turnbuckles, heating mats made of high temperature resistant 96 % aluminium oxide ceramic, ceramic fiber insulation with Inconel wire mesh

Application range: Preheating and Post heat treatment of circumferential joints

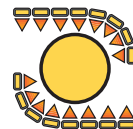
Application limit: 950 °C material temperature; wraparound heater with bayonet-thermocouple element max. 800 °C

A hint for people in hurry: annealing wraparound heater with built-in bayonet thermocouples are closed by springs firmly pressed onto the work-surface!

Order No.	Wraparound Heater 30/60 V				
	Outer Ø (inch)	Outer Ø (mm)	Voltage V	Heater width (mm)	Power KW
201300	2"	60,3	30	126	1,35
201301	3"	88,9	60	168	2,7
201302	4"	114,3	60	147	2,7
201303	5"	141,3	60	126	2,7
201304	6"	168,3	60	189	5,4
201306	8"	219,1	60	147	5,4
201308	10"	273,0	60	189	8,1
201310	12"	323,8	60	189	10,8
201312	14"	355,6	60	189	10,8
201314	16"	406,4	60	168	10,8
201316	18"	457,2	60	189	13,5
201318	20"	508,0	60	168	13,5
201320	22"	558,8	60	189	16,2
201322	24"	609,6	60	189	18,9
201325	36"	914,4	60	168	24,3
201328	48"	1220,0	60	168	32,4
201350	Spring-loaded thermocouple up to 800 °C, built-in				



Wraparound



WELDOTHERM® Spare Parts

Spare parts for WELDOTHERM® heating elements

Order No.	Item
290000	End bead male, bale = 100 pieces
290001	End bead female, bale = 100 pieces
290002	Main body bead, bale = 100 pieces
290003	Main body bead with hole, bale = 100 pieces
290004	Single hole bead, bale = 100 pieces
290005	Junction bead, bale = 100 pieces
290006	Olive bead, bale = 100 pieces
290007	Ceramic bead for one-line-heating cables, bale = 100 pcs.
290008	Nickel-Connector, per piece
290009	Safety bead, bale = 100 pieces
290010	Teflon cable, per 1 m
290011	NiCr heating wire, per 1 m
290012	Plug K 25 System DINSE
290013	Pot Magnet for Preheaters with Magnetic Clamps
290014	Counter-Sunk Screw including Wing Nut for Preheaters with Magnetic Clamps
290015	Bayonet - Thermocouple Element until 800 °C
290016	Special-Notching Pliers for Nickel-Connectors
290017	Heating Mat Connection, complete
290018	Camlock Plug 60 A

Spare parts for WELDOTHERM® cables

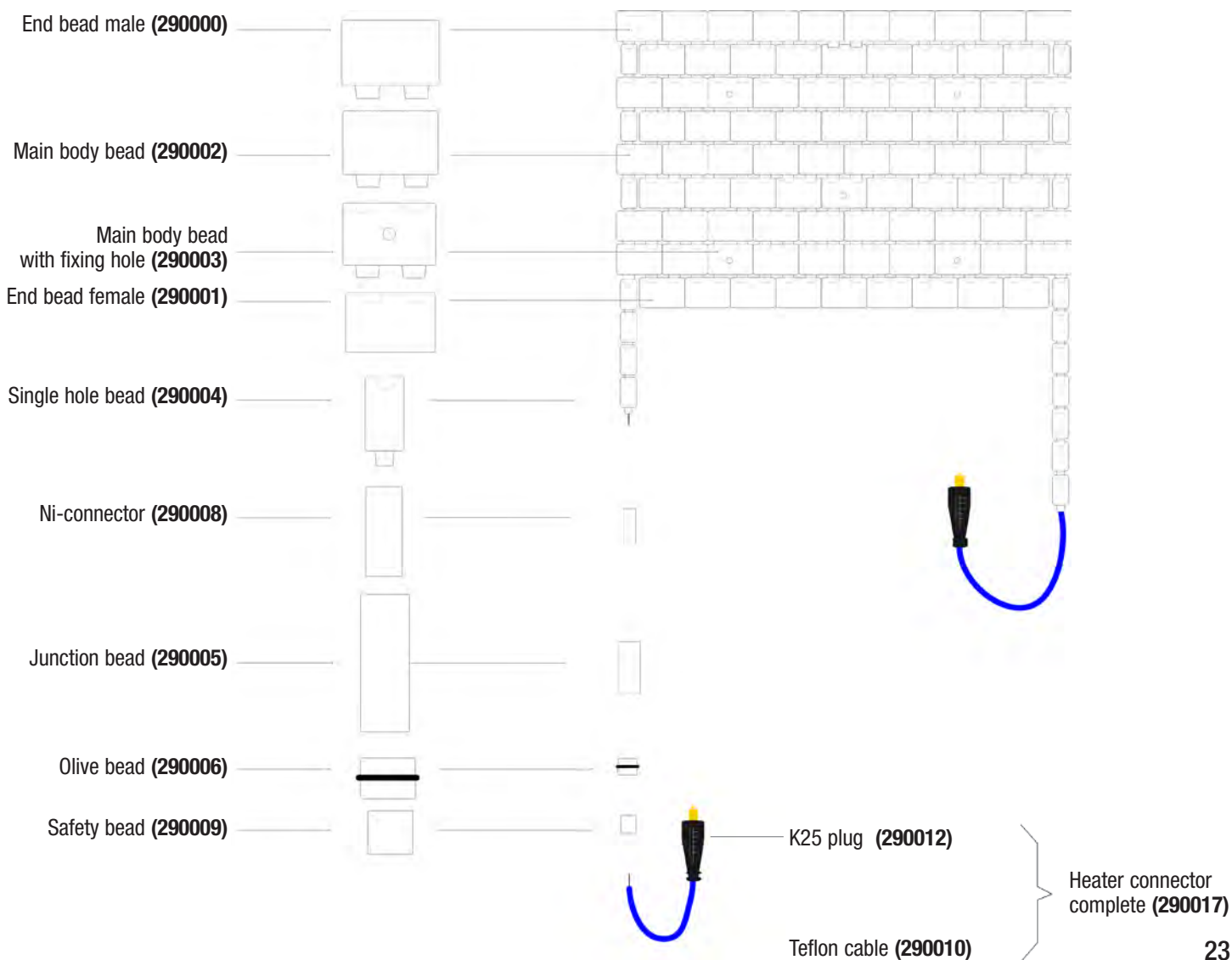
Order No.	Item
190000	Plug K 50 type DINSE
190001	Plug K 70 type DINSE
190002	Plug K 95 type DINSE
190003	Plug K 120 type DINSE
190004	Socket K 25 type DINSE
190005	Socket K 50 type DINSE
190006	Socket K 70 type DINSE
190007	Socket K 95 type DINSE
190008	Socket K 120 type DINSE
190009	Camlock Socket 60 A
190010	Camlock Plug 300 A
190011	Camlock Socket 300 A



Plug and socket K 25 type DINSE



Plug and socket 60 A type CAMLOCK





WELDOTHERM® Program Controller DIGIT 700

The program controller DIGIT 700 constitutes a consistent enhancement of the DIGIT series and has been specially optimised for the requirements in annealing technology. The proven ten-digit keyboard enables a convenient input of program parameters. Five additional function keys facilitate operation and program input. The graphic display indicates at a glance

all the important information such as target value, actual value, graphic program sequence, switching status of the outputs, etc. at any time. The DIGIT 700 offers the possibility of controlling three channels with one program. If more control channels are required, there is a possibility of establishing a master / slave link for several DIGIT 700 controllers.



DIGIT 700

Technical specifications

Program input/operation:	Ten-digit keyboard and 5 function keys
Display:	LCD, 256 colours 320 x 240 dots
No. of sensor inputs:	3 (configurable)
No. of relay outputs:	3 (configurable)
No. of analogue outputs (option):	max. 3 (configurable)
No. of programs:	50
No. of sections per program:	7 + lead time
Dimensions (W x H x D):	96 x 96 x 205 mm incl. plug-in terminals
Weight :	0.7 kg

Order No.

Item

400000

Program controller DIGIT 700

WELDOTHERM® Program Controller TC 80

The program controller TC 80 is the enhancement of the controller TC 60. Programming and operation are effected via 5 function keys and can be checked via two easy to read 7-segment displays. During program input, the display shows the entered parameters and during the program sequence the actual

value and the target value as well as the remaining holding time. The program sequence is in addition depicted schematically. 6 different programs can be saved and linked with each other if required.



TC 80

Technical specifications

Program input/operation:	5 keys
Display actual value:	7-segment displays, red
Display target value:	7-segment displays, green
Display program sequence:	4 LEDs, green
Display technical units:	3 LEDs, green
No. of sensor inputs:	1 x model K
No. of relay outputs:	1
No. of programs:	6 (connectable)
No. of sections per program:	3 + lead time
Dimensions (W x H x D):	70 x 130 x 75 mm incl. plug-in terminal
Weight:	0.21 kg

Order No.

Item

400100

Program controller TC 80



WELDOTHERM® Temperature Recorder Type KH 60-6 + KH 60-12 + KL 60-6

The temperature recorder KH 60 is an electronical hybrid printer equipped with a digital display showing the measuring point numbers and the current temperature, appropriate to measure all established input values. It is equipped with a large and well readable digital display for the actual measured value and for the related channel number. The registration width of 180 mm allows a precise analysis of the recorded figures. The print out of the actual time, paper feed etc. can be switched on if required. For customers who intend to store all heat treatment parameters in a personal computer, WELDOTHERM® offers temperature recorders with memory card or interface. We also offer you the WELDOTHERM® temperature recorder KL 60-6 which possesses the same technical characteristics as the KH 60, but has an installation dimension of only 144 x 144 mm.



KH 60-6



KH 60-6 built into site housing

Technical Data

Measuring range:	0–1200 °C
Number of measuring points:	6 or 12 (24 channels on request)
Accuracy:	Registration analog: $\pm 0,3\%$ of measuring range
Paper feed:	Programmable
Measuring value transmitter:	Thermocouple element NiCr-Ni, type "K"
Recording width:	180 mm folded paper (KH 60-6/12) 100 mm folded paper (KL 60-6)
Dimensions:	W 288 x H 288 x D 195 mm (KH 60-6/12) W 144 x H 144 x D 195 mm (KL 60-6)
Weight:	approx. 7 kg (KH 60-6/12) approx. 2,5 kg (KL 60-6)
Ambient temperature:	0...50 °C
Humidity:	20...80 % rF

Order No.

Item

400200	WELDOTHERM® KH 60-6, 6-channel recorder, as described above, built-in type
400201	WELDOTHERM® KH 60-12, 12-channel recorder, as described above, built-in type
400202	WELDOTHERM® KL 60-6, 6-channel recorder, as described above, built-in type
400300	WELDOTHERM® KH 60-6, built into steel site-housing, with handholds, rubber feet, connection cable 3 m long, input NiCr-Ni, type "K" thermocouple panels
400301	WELDOTHERM® KH 60-12, built into steel site-housing, with handholds, rubber feet, connection cable 3 m long, input NiCr-Ni, type "K" thermocouple panels
490000	Folded paper for KH 60-6/12, bale = 16 m
490001	Folding paper for KL 60-6, bale = 16 m
490002	Cartridge for KH recorder
490004	Cartridge for KL Recorder
490005	Compensating cable 2 x 1,5 mm ² , 100 m
490006	Compensating cable 2 x 1,5 mm ² , plug-coupling, 25 m
490007	Connection clamp ceramic 2-poles
490008	Thermocouple plug male
490009	Thermocouple plug female



WELDOTHERM® Electronic Temperature Recorder RSG 35 + RSG 40

The electronic screen recorder RSG 35 and RSG 40 are a good alternative or a good addition to our traditional chart recorder KH 60 or KL 60. The RSG 35 is capable to record 4, 8 or 12 thermocouples and our RSG 40 can record up to 20 thermocouples. Both recorder have multi-lingual operator guidance available, data storage on Compact Flash cards up to 1 GB, visualization software, RS232/RS485 inter-faces and with an accuracy of $\pm 0,1\%$ these recorder are very precise measuring devices.



RSG 35

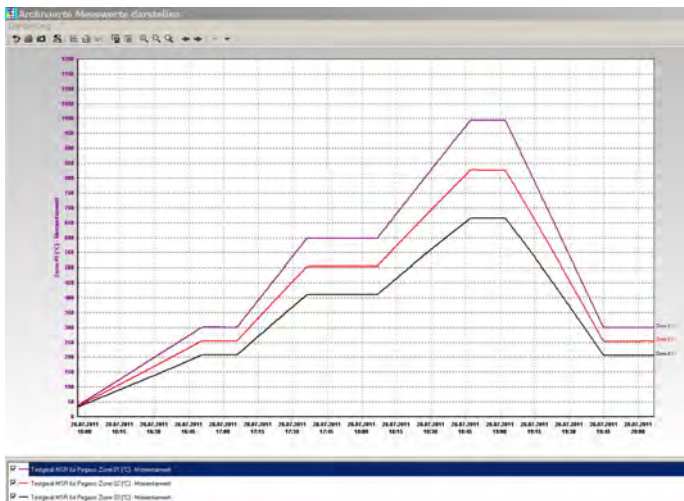
Technical Data

Measuring range:	0 – 1200°C (Thermocouple type "K")
Measuring points RSG 35:	4, 8 or 12
Measuring points RSG 40:	4, 8, 12, 16, 20
Thermocouples:	K, J, T, N, L, D, C, B, S, R
TFT Colour-Display RSG 35:	4,7 inch
TFT Colour-Display RSG 40:	7 inch
Accuracy:	$\pm 0,1\%$ of measuring range
Interfaces:	USB, RS232, RS485, Ethernet
Voltage:	115...230 VAC (50/60Hz)
Dimension RSG 35:	144 x 144 x 180 mm
Dimension RSG 40:	144 x 190 x 180 mm
Weight RSG 35:	approx. 0,7 kg
Weight RSG 40:	approx. 2 kg
Available languages:	German, Englisch, French, Spanish, Italian, Dutch, Polish, Russian, Czech, Slovakian, Portuguese, Japanese, Chinese

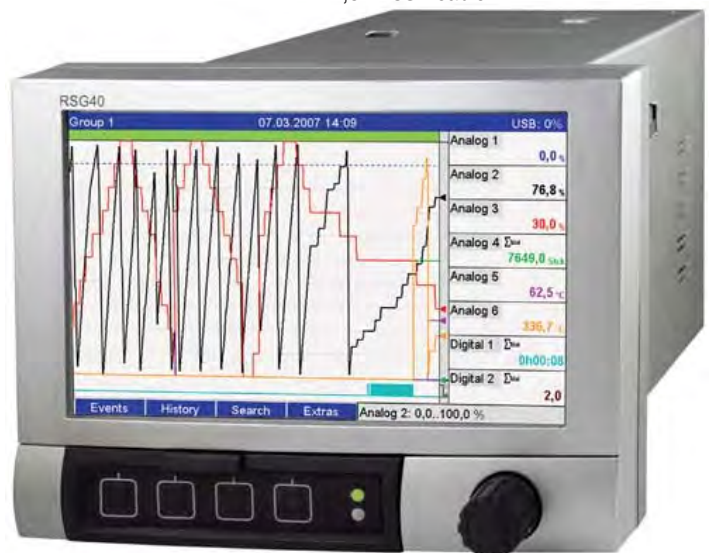
Order No.

Item

400350	WELDOTHERM® RSG 35 built-in type incl. visualization software on CD and 1,5 m USB cable
400351	WELDOTHERM® RSG 35 in site housing, complete with handholds, rubber feet, connection cable 3 m long, input NiCr-Ni, type „K“ thermocouple panels incl. visualization software on CD and 1,5 m USB cable
400360	WELDOTHERM® RSG 40 built-in type incl. visualization software on CD and 1,5 m USB cable
400361	WELDOTHERM® RSG 40 in site housing, complete with handholds, rubber feet, connection cable 3 m long, input NiCr-Ni, type „K“ thermocouple panels incl. visualization software on CD and 1,5 m USB cable



Screenshot visualization software



RSG 40



WELDOTHERM® Large Temperature Display

The large WELDOTHERM® temperature display makes it possible to read the temperatures from a great distance. It is used in locations where the heat treatment parameters cannot be read off directly.



Large temperature display

The standard character height is 50 mm, other heights are possible, so that max. 64 inputs (standard 6 x type K) can be read off.
The large display is equipped with a RS232/485 interface.

Technical specifications

Character height:	50 mm
Reading distance:	25 m
Dimensions (W x H x D):	479 x 121 x 70 mm
Weight:	1.3 kg

Order No.	Item
400800	WELDOTHERM® large temperature display

WELDOTHERM® Welding Signal Lights

The WELDOTHERM® welding signal lights enable an easy monitoring of temperature limits during the welding process. Three sets of signal lights can be connected to the control device.
The limits can be individually configured via the touch panel.
The WELDOTHERM® welding signal lights can be used with

any conventional heat treatment unit or for monitoring a furnace control system.

When using a machine with Digit 1000 control system, the signal light can be connected directly to the system without touch panel and control device.



The picture shows (from left to right):
Touch panel model TP-LED, control device model SG-LED, welding signal lights model S-LED

Order No.	Item
400900	Touch panel TP-LED
400901	Control device SG-LED
400902	Welding signal lights S-LED



WELDOTHERM® Measuring Device MK 1300

WELDOTHERM® MK 1300 is a handy, quick and precise temperature measuring device. This can also be used as a precision voltage transmitter for the measuring range of NiCr-Ni 0–1200 °C. The device is equipped with a comparison measuring point! The accuracy is $\pm 0,15\%$ of the measuring

range! In combination with a surface sensor the MK 1300 can be used for measuring surface temperatures.



MK 1300

Technical Data

Display temperature:	7 segments, red
Display operating mode	
Calibrating/measuring:	1 x LED, blue
Display battery status:	1 x LED, red
Dimensions (W x H x D):	180 x 80 x 180 mm
Weight:	3,1 kg

Order No.

Item

400400	WELDOTHERM® MK 1300, NiCr-Ni
400401	Spare charging cable
400402	Hard-top case
400403	Multi-Quick-Plug for presetting of 6 measuring points during temperature recorder calibration
400404	Surface Temperature Sensor NiCr-Ni, 300 mm long, handheld, 1 m connection cable, thermocouple plug

WELDOTHERM® Measuring Device BP 21

WELDOTHERM® BP 21 is an infrared temperature measuring device, cell phone sized. It is equipped with a dual target laser for focusing the measuring point. The emission factor can be adjusted.

The LCD display is well readable because of its size and its backlight. The infrared measuring range is $-35^{\circ}\text{C} \dots +800^{\circ}\text{C}$.



BP 21

Technical Data

Measuring range infrared:	$-35^{\circ}\text{C} \dots +800^{\circ}\text{C}$
Accuracy IR-sensor:	$-35^{\circ}\text{C} \dots +20^{\circ}\text{C} = \pm 2,5^{\circ}\text{C}$ $+21^{\circ}\text{C} \dots +300^{\circ}\text{C} = \pm 1\%$ of indicated value $+301^{\circ}\text{C} \dots +800^{\circ}\text{C} = \pm 1,5\%$ of indicated value
Working temperature:	$0 \dots 50^{\circ}\text{C}$
Dimension:	82 x 42 x 160 mm
Weight:	180 g
Scope of supply:	Device with batteries, hand strap, protection case, operation manual

Order No.

Item

400500	BP21
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WELDOTHERM® Measuring Device OF 305

WELDOTHERM® OF 305 is a portable compact sized digital surface temperature measuring device for application with NiCr-Ni thermocouple elements. The temperature indication corresponds to IEC 584 temperature/voltage tables for NiCr-Ni thermocouple elements.



OF 305

Technical Data

Display:	3 1/2 digits LCD
Dimensions (W x H x D):	70 x 147 x 39 mm
Weight:	0,35 kg

Order No.

Item

400600	OF 305, completely with surface sensor max. 400 °C, carrying strap, battery
400601	Spare surface touch sensor, max. 400 °C
400602	Spare surface touch sensor, max. 900 °C
400603	Battery IEC type 6 F 22, 9 V

WELDOTHERM® Measuring Device MOF

WELDOTHERM® MOF is a pointer thermometer which can be used for preheating jobs where a fixed thermocouple cannot be attached to the workpiece. 2 bar magnets on the back of the thermometer hold the thermometer to any ferritic material surfaces. The measuring unit is a fast reacting spiral shaped bimetal spring which is twisted on temperature influence. This twisting movement is conveyed by a shaft to the pointer and results the pointer deflection.

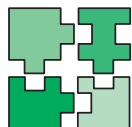


MOF

Order No.

Item

400700	MOF Magnet Pointer Thermometer, measuring range 0–200 °C
400701	MOF Magnet Pointer Thermometer, measuring range 0–300 °C
400702	MOF Magnet Pointer Thermometer, measuring range 0–400 °C
400703	MOF Magnet Pointer Thermometer, measuring range 0–500 °C



Thermocouple Welding Unit WELDOTHERM® TP 2 N

For secure and fast attachment of thermocouples with \varnothing 0.5 to 1 mm. Precise measuring results by firm connection between workpiece surface and thermocouple element are guaranteed by the use of the WELDOTHERM®-TP 2 N.



TP-2 N

Technical Data

Charging current:	90...264 V AC/47...63 Hz
Battery operating voltage:	12 V DC
Battery capacity:	3,0 Ah
Possible pointing sequence:	4 seconds, automatically
Charge condition display:	LED-display
Dimensions:	W 180 x H 70 x D 180 mm
Weight:	approx. 3,2 kg

Order No.

Item

500000	Thermocouple Welding Unit TP 2 N for \varnothing 0,5 mm to 1 mm, complete with hard-top case, pliers, pole magnet and cable set
500002	Complete spare set with pliers and pole magnet
500003	Spare cable set with plug, without pliers and pole magnet
500004	Spare pliers complete with plug set
500005	Spare pole magnet
500006	Spare charging cable

Thermocouple Welding Unit WELDOTHERM® TP 2 S

For secure and fast attachment of thermocouples continuous adjustable for diameters \varnothing 0,1 up to 1,8 mm.



TP 2 S

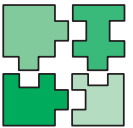
Technical Data

Charge current:	90...264 V AC/47...63 Hz
Adjustable:	20...99 V DC
Battery operating voltage:	12 V DC
Battery capacity:	3,0 Ah
Possible pointing sequence:	4 seconds, automatically
Charge condition display:	LED-display
Dimensions:	W 180 x H 70 x D 180 mm
Weight:	approx. 3,2 kg

Order No.

Item

500100	Thermocouple Welding Unit TP 2 S, complete with hard-top case, foot actuating switch, cable set with pole magnet and 2 pliers
500101	Complete spare set with pliers and pole magnet
500102	Spare Cable set with plug, without pliers and pole magnet
500103	Spare pliers complete with plug set
500104	Spare pole magnet
500105	Spare charging cable
500106	Spare foot actuating switch



Stud Welding Machine WELDOTHERM® TP 3

The ideal stud welding machine for fast welding of insulation pins and bolts of diameter \varnothing 2–8 mm made of steel and stainless steel by a positioning welding pistol. If, for example, heating mats, preheaters, insulation cannot be fixed by tightening strap band because the materials geometry does not allow so or if magnets do not adhere, then fast attachment by using insulating pins and clips help.



TP 3

Technical Data

Working range:	2 – 8 mm \varnothing
Material:	Steel, V2A, aluminium and brass
Welding sequence:	20–30 pins/min.
Charging capacity:	27 000 mF
Charging voltage:	100 V
Mains supply:	230 Volt - 50 Hz, protection 6.3 A
Dimensions:	W = 180, H = 150, D = 330 mm
Weight:	7,4 kg
Colour:	RAL 5009 azure

Order No.

Item

500200	Stud Welding Machine TP 3 for insulating pins 2 mm
500201	Stud Welding Machine TP 3 for bolts up to 8 mm

Tightening and Cutting Device RONDOFIX 1

The tightening and cutting device RONDOFIX 1 is a special tool for cutting and tightening steel strap band and is extremely easy to use. With this durable tool also the cap locks can be securely closed.

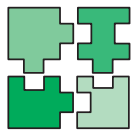


RONDOFIX 1

Order No.

Item

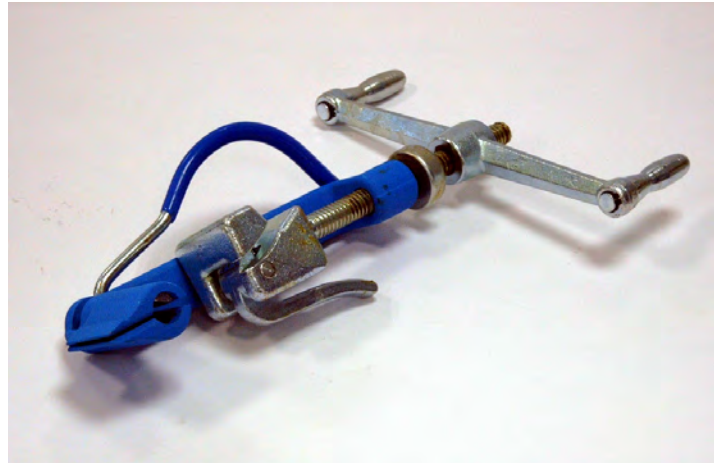
500300	Universal tightening and cutting device RONDOFIX 1
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Banding and Cutting Machine Band-it

The banding machine Band-it is a simple and safe tool for banding and cutting steel strap bands. This device has a tensioning length of approx. 120 mm. Therefore it is suitable especially for fastening heating elements to smaller circumferential joints.

Order No.	Item
500400	Banding machine Band-It



Band-It

Carriage for Tightening Strap Band

Tightening straps can easily be transported and easily reeled off to the end in the strap band carriage. The straps are protected and cannot get entangled. This strap band carriage saves strap band and thus finally money.

Order No.	Item
500500	Carriage for strap band



Carriage for strap band

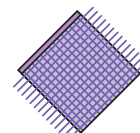
Special Rockwool Scissors

The special rockwool scissors is the ideal cutting tool with convolution cut for fast cutting of rockwool in galvanized wire mesh.

Order No.	Item
500600	Special rockwool scissors



Special rockwool scissors



WELDOTHERM® Ceramic Fiber Mats

In modern furnace technology ceramic fiber mats are essential for lining the interior of all types of industrial furnaces. They are also particularly suitable for the insulation of local heat treatment spots. With a thickness of 13 mm they protect the heating elements against sintering rockwool as first cover beneath the rockwool.



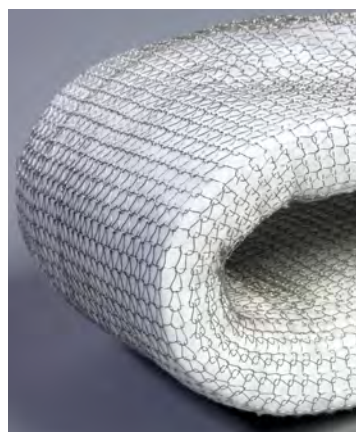
Ceramic fiber

Order No.	Item	Thickness mm	Width mm	Length mm	Bale m ²	Raw Density kg/m ³	Application Limit °C
600000	Ceramic fiber mat	13	610	14640	8,92	128	1200
600001	Ceramic fiber mat	25	610	7320	4,46	128	1200
600002	Ceramic fiber mat	50	610	3660	2,23	128	1200

WELDOTHERM® Ceramic Fiber in Wire Mesh

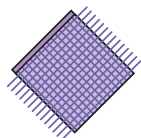
Ceramic fiber in wire mesh is a high-temperature resistant ceramic fiber mat, which is made from calcium magnesium silicate and exhibits similar insulation properties as fire-proof ceramic fiber up to 1200°C.

Ceramic fiber in wire mesh is available in different mat sizes and is protected by a stainless steel wire mesh to increase the insulation mats' service life.



Ceramic fiber in wire mesh

Order No.	Item	Order No.	Item
600050	Ceramic fiber in wire mesh, 96 kg/m ³ , 25 mm, 300 x 600 mm	600060	Ceramic fiber in wire mesh, 128 kg/m ³ , 25 mm, 300 x 600 mm
600051	Ceramic fiber in wire mesh, 96 kg/m ³ , 25 mm, 300 x 900 mm	600061	Ceramic fiber in wire mesh, 128 kg/m ³ , 25 mm, 300 x 900 mm
600052	Ceramic fiber in wire mesh, 96 kg/m ³ , 25 mm, 600 x 600 mm	600062	Ceramic fiber in wire mesh, 128 kg/m ³ , 25 mm, 600 x 600 mm
600053	Ceramic fiber in wire mesh, 96 kg/m ³ , 25 mm, 600 x 900 mm	600063	Ceramic fiber in wire mesh, 128 kg/m ³ , 25 mm, 600 x 900 mm
600054	Ceramic fiber in wire mesh, 96 kg/m ³ , 25 mm, 600 x 1200 mm	600064	Ceramic fiber in wire mesh, 128 kg/m ³ , 25 mm, 600 x 1200 mm
600055	Ceramic fiber in wire mesh, 96 kg/m ³ , 25 mm, 600 x 1800 mm	600065	Ceramic fiber in wire mesh, 128 kg/m ³ , 25 mm, 600 x 1800 mm



Consumables

WELDOTHERM® Rockwool

Rockwool in galvanized wire mesh is the standard type of insulation for local heat treatment. In combination with ceramic fiber mats which cover the heating elements it can be used several times.

The galvanized wire mesh ensures easy clamping for tightness and compactness when using the mat hooks. Cutting to required dimensions is simplified by the rockwool scissors.



Rockwool

Order No.	Item	Thick-ness mm	Width mm	Length mm	Bale m ²	Raw Density kg/m ³	Application Limit °C
600200	Rockwool in wire mesh	50	500	5000	2,5	100	750
600201	Rockwool in wire mesh	100	500	2500	1,25	100	750

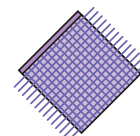
WELDOTHERM® TYGASIL Knitted Silica Fabrics

The ideal alternative to ceramic fiber mats and rockwool! TYGASIL is suitable as sole insulation during preheating and annealing processes on pipelines, apparatus, fittings, etc. It is mounted by wrapping it around the workpiece in required insulation thickness and fixed against slipping by heat resistant strap bands. In opposite to ceramic fiber and rockwool TYGASIL can be used many times and provides user-friendly handling.



TYGASIL

Order No.	Item	Order No.	Item
600100	TYGASIL 300 x 610 mm	600109	TYGASIL 4000 x 610 mm
600101	TYGASIL 600 x 610 mm	600110	TYGASIL 4500 x 610 mm
600102	TYGASIL 900 x 610 mm	600111	TYGASIL 5000 x 610 mm
600103	TYGASIL 1200 x 610 mm	600112	TYGASIL 5500 x 610 mm
600104	TYGASIL 1500 x 610 mm	600113	TYGASIL 6000 x 610 mm
600105	TYGASIL 1800 x 610 mm	600114	TYGASIL 6500 x 610 mm
600106	TYGASIL 2500 x 610 mm	600115	TYGASIL 7000 x 610 mm
600107	TYGASIL 3000 x 610 mm	600116	TYGASIL 7500 x 610 mm
600108	TYGASIL 3500 x 610 mm	600150	Strap bands for TYGASIL



WELDOTHERM® Glass Fiber Cloth

Temperature stable glass fiber cloth is mainly used during inductive heating for covering the workpiece to protect the heat sensitive heating cables from heat of the workpiece. It can also be used for preheating with flexible heating mats when these are covered by ceramic fiber. First it prevents fraying of the ceramic mats by working motions of the welder and second it prevents the contact of welding slag and swarf to the heating elements and therefore any failure is excluded.



Glass fiber cloth

Order No.	Item	Thick-ness mm	Width mm	Length mm	Bale m ²	Application Limit °C
600300	Glass fiber cloth	2	1000	50000	50	750

WELDOTHERM® Tightening Strap Band and Locks

Quality tightening strap band has been found to be the safest and fastest method of fixing heating elements and insulation. In connection with an universal tightening tool and locks there is no cheaper solution. For annealing processes in high temperature ranges we alternatively offer our stainless steel strap band.

Order No.	Item
600500	Tightening strap band 16 x 0,5 mm complete with cap locks, 1 lock/m, bale = 400 m
600501	Cap locks, bale = 100 pieces
600502	Stainless steel strap band 3/8", bale = 30 m
600503	Stainless steel strap band 1/2", bale = 30 m
600504	Stainless steel cap locks, bale = 100 pieces



Tightening strap band



Locks

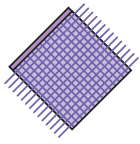
WELDOTHERM® Mat Hooks

When using rockwool in wire mesh mat hooks are required for economical use, either for connecting single rockwool layers, for tight clamping of sagging rockwool on large workpieces or simply for safe support of heating element connections.

Order No.	Item
600600	Mat hooks, bale = 100 pieces



Mat hooks



Consumables

WELDOTHERM® Glass Fiber Cord

Glass fiber cord can be used in many ways, e.g. supporting thermal cables and connections as strain relief as well as for fixing of ceramic fiber mats, glass fiber cloth and one-line-heating cables.

Order No.	Item
600400	Glass fiber cord 3 mm, bale = 100 m



Glass fiber cord

WELDOTHERM® Thermocouple Wire

WELDOTHERM® offers thermocouple wires of highest quality and of established diameters 0,5 mm, 0,711 mm and 1,0 mm.

Order No.	Item
600700	Thermocouple wire, glass fiber insulated, 2 x 0,5 mm ² , bale = 100 m
600701	Thermocouple wire, glass fiber insulated, 2 x 0,711 mm ² , bale = 100 m
600702	Thermocouple wire, glass fiber insulated, 2 x 1,0 mm ² , bale = 100 m



Thermocouple wire

WELDOTHERM® Thermocouple Putty

For fixing and protecting thermocouples.

Order No.	Item
600750	Thermocouple putty, bale = 0,5 kg



Thermocouple putty

WELDOTHERM® Insulating Pins and Clips

For the fastening of heating elements and insulation materials at vertical and overhead walls WELDOTHERM® offers insulating pins and clips.

Order No.	Item
600800	Insulating pins, bale = 100 pieces
600801	Clips for insulating pins, bale = 100 pieces



Insulation pins and clips



WELDOTHERM® Infrared Gas Burner

Wherever an electrical heating is not possible or too costly but still an optimum heat distribution with low emission is required, WELDOTHERM® infrared gas burners are to be applied. The use of high quality stainless steel for the entire construction makes the burner both light and robust.

WELDOTHERM® infrared gas burners are particularly suitable for tough conditions of site operation. Even when subjected to heavy impact, the burners are almost unbreakable and the radiation surface does not become clogged up – so these units are more or less indestructible. They are available with output ratings of 7 kW and 11 kW and the basic versions of these models are designed for operation with liquid gas and are therefore independent of any stationary energy source. After small refitting they can be operated by natural gas or propane.



MSS 11

Combinations and Variations:

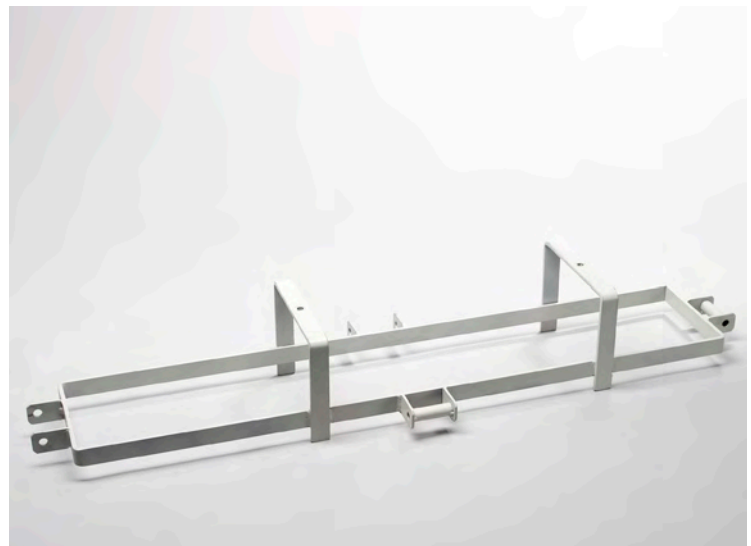
Two variations of the gas connection, lateral (type MSS) or at the rear (type MSR) ensure flexibility in assembly. Various mounting frames and mounting brackets with heat-resistant high-performance magnets allow the adjustment to any workpiece shapes or combination of several gas burners with each other. WELDOTHERM® infrared gas burners will be supplied with flame failure and a safety shut-down device. For optimum control there are several WELDOTHERM® control systems available as well as the complete range of accessories required for all applications. Naturally the WELDOTHERM® infrared gas burners are CE marked.



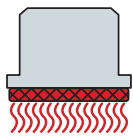
MSR 11

WELDOTHERM® infrared gas burners save energy and are kind to environment. Their full heating power only develops when hitting the workpiece so that valuable energy will not be wasted. Fume-free combustion ensures that there is no burden on the environment.

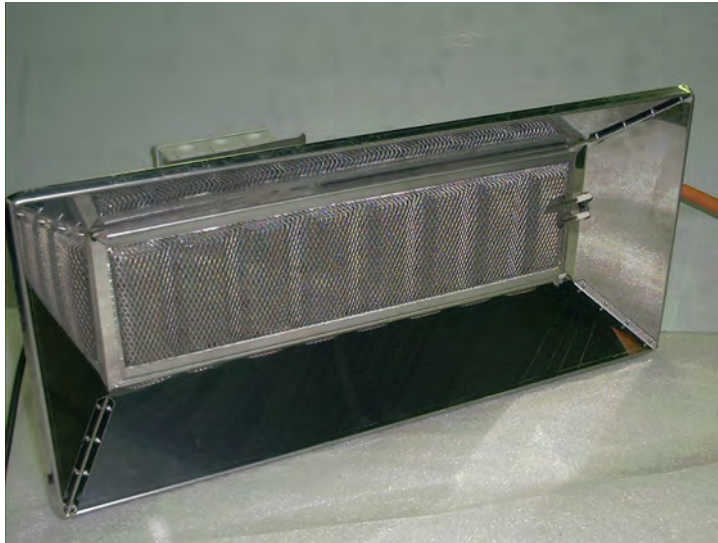
WELDOTHERM® infrared gas burners are excellently suitable for heating of halls or other premises which need to be heated. Besides the burners WELDOTHERM® also delivers any required accessories for fully automatic heating facilities.



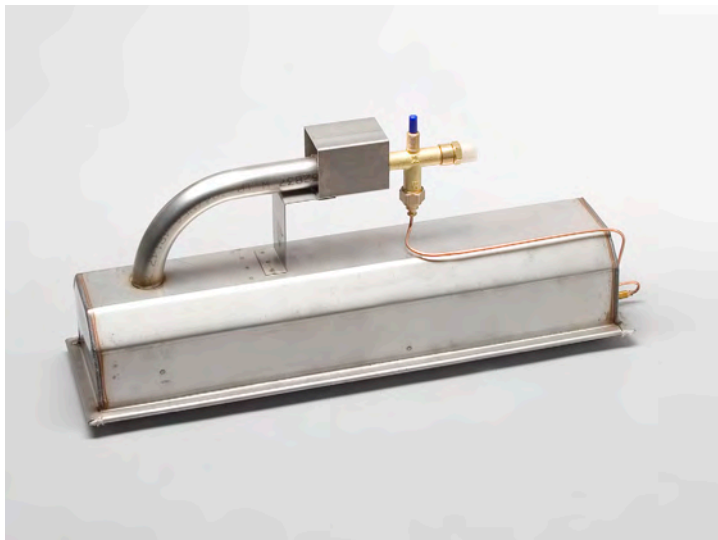
Mounting frame



WELDOTHERM® Infrared Gas Burners



Infrared gas heater with reflector



MSR 7

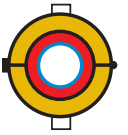


Infrared gas heater at vessel

Order No.	Item
700000	Gas burner MSS 7
700001	Flame failure for gas burner MSS 7
700002	Gas burner MSS 11
700003	Flame failure for gas burner MSS 11
700004	Gas burner MSR 7
700005	Flame failure for gas burner MSR 7
700006	Gas burner MSR 11
700007	Flame failure for gas burner MSR 11
790000	Spare valve for flame failure M1A
790001	Spare thermocouple sensor flame control MSS 7
790002	Spare thermocouple sensor flame control MSS 11
790003	Spare thermocouple sensor flame control MSR 7
790004	Spare thermocouple sensor flame control MSR 11
790005	Spare nozzle holder
790006	Spare nozzle "Propane" for MSS 7/MSR 7, 0,55mm
790007	Spare nozzle for MSS 11/MSR 11, 0,65 mm
790008	11-step pressure reducer until 3 kg/h consumption
790009	11-step pressure reducer until 10 kg/h consumption
790010	Mounting frame for MSS/MSR 7, 2 frame joints
790011	Mounting frame for MSS/MSR 11, 2 frame joints
790012	Mounting frame for MSS/MSR 7, 4 frame joints
790013	Mounting frame for MSS/MSR 11, 4 frame joints
790014	Mounting bracket with magnets, unit = 1 pair
790015	Variable support for MSR 7/MSR 11
790016	Reflector for MSS 7/MSR 7
790017	Reflector for MSS 11/MSR 11
790018	Wingnut
790019	Bolt for Mounting frame
790020	5-way distributor
790021	Connecting tube, 5-way distributor to gas burner, 5 m
790022	Connecting tube, 5-way distributor to gas burner, 10 m
790023	Connecting tube, pressure reducer to 5-way distributor, 5 m
790024	Connecting tube, pressure reducer to 5-way distributor, 10 m



Mounting bracket with magnets



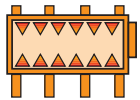
WELDOTHERM®-Special Heating Systems



Preheating- and Annealing boxes for the preheating and stress relieving of tools and forging dies



Elektrisch geheizter kreisförmiger Ofen



Industrial Furnaces

WELDOTHERM®-Industrieöfen



Elektrisch geheizter kreisförmiger Ofen

Inner diameter: 6000 mm
Internal height: 2000 mm
Installed power: 540 kW



Gas fired Annealing Furnace for stress relieving of large vessels

Internal width: 6000 mm
Internal height: 6000 mm
Internal length: 16000 mm



WELDOTHERM® Gesellschaft für Wärmetechnik m.b.H.

Westendhof 11a • 45143 Essen • GERMANY • Tel. +49 201 24724 0 • Fax +49 201 24724 42
info@weldotherm.de • www.weldotherm.com

Contact details: