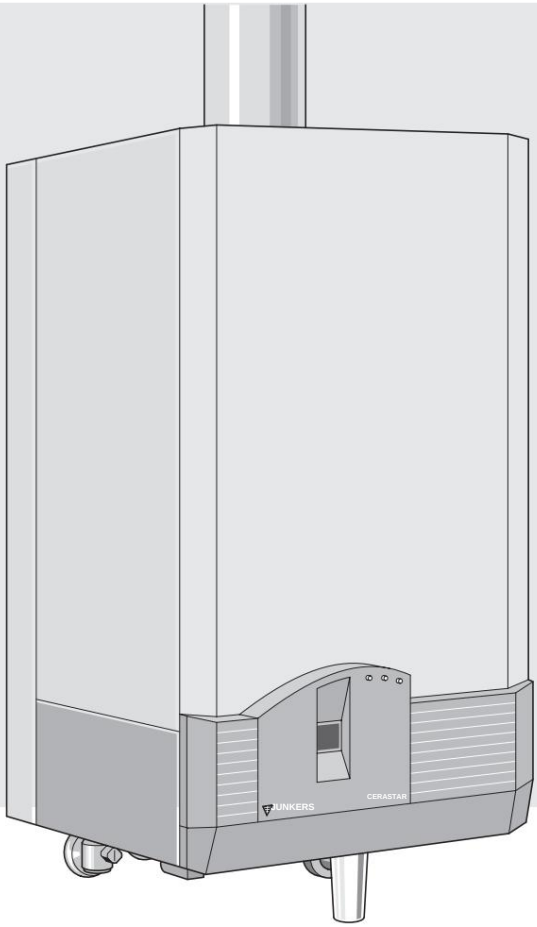
Gas-Kesseltherme

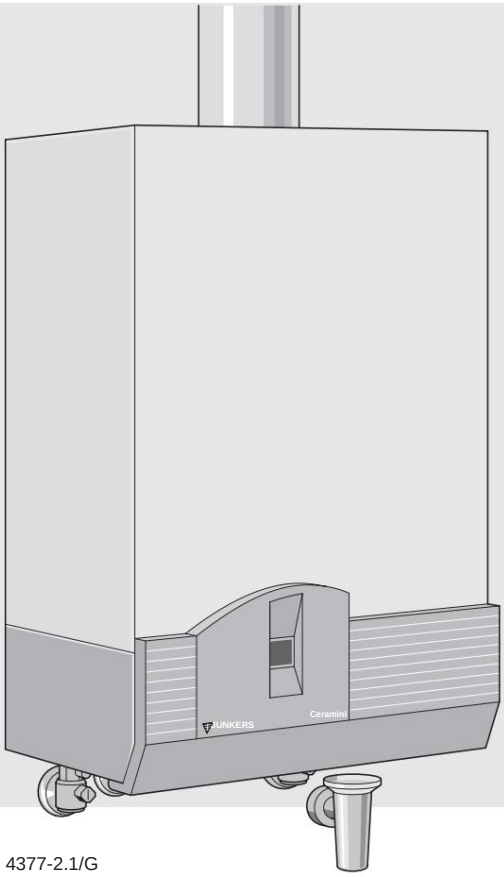
CERASTAR CERAMINI

Low temperature boiler with water-cooled burner

6 720 604 377
(98.08) PCK



4377-1.1/G **ZSR 18-5 KE...**
ZSR 24-5 KE...
ZWR 18-5 KE ...
ZWR 24-5 KE ...



4377-2.1/G

ZSR 5/11-5 KE...

If you smell gas:

- **Close the gas valve (see page 17, item 172)**
- **open window,**
- **do not operate any electrical switches,**
- **extinguish open flames,**
- **Immediately call the gas supply company and installation company from outside.**

More safety information on page 2.

- Installation and maintenance may only be carried out by a approved specialist company.
- The specialist explains to the customer how the device works and how it is operated.
- Proper functioning is only guaranteed if if these installation instructions and the operating instructions are observed.

JUNKERS
Bosch Thermotechnik

installation Guide

SAFETY INSTRUCTIONS

If you smell exhaust gas:

– Switch off the device see page 18,

– **open windows and doors,**

– **Notify specialist company.**

Lineup, Changes

• The installation and changes to your device may only be carried out by an authorized specialist company.

• Ventilation openings in doors, windows and walls must not be closed or reduced.

• Exhaust-carrying parts must not be modified the.

• When retrofitting joint-tight windows the combustion air supply must remain guaranteed.

Explosive and highly flammable substances

• Do not store or use flammables Materials (paper, thinner, paints etc.) in near the device.

maintenance

• According to § 9 of the heating system regulation the operator has a duty to clean the system regularly serviced to ensure reliable and safe functioning of the device.

• According to the Federal Immission Control Act setz is the operator for safety and for the responsible for the environmental compatibility of the system.

• Maintenance of the device is required annually.

• We recommend concluding a maintenance contract with an approved specialist company.

combustion air

To avoid corrosion, the combustion air must be free of aggressive substances.
Halogenated hydrocarbons containing chlorine or fluorine compounds are considered to be highly corrosive. B. in solvents, paints,
Adhesives, propellants and household cleaning agents.

Clean the jacket shell

Rub the shell of the jacket with a damp cloth. No Use harsh or caustic cleaning agents.

contents

1 Device information

EC Type Conformity Declaration:
This device complies with the applicable requirements of the European directives 90/396/EEC, 92/42/EWG, 73/23/EWG, 89/336/EWG and the in type described in the EC Type Examination Certificate.

It meets the requirements for low-temperature boilers.

The nitrogen oxide content in the exhaust gas determined under test conditions in accordance with DIN 4702 T8, March 1990 edition, is below 80 mg/kWh.

Prod.-ID-Nr. **Z.. 5/11, 18, 24 K...**	CE-0085AS0407
Category: **Germany DE** **Austria AT**	II 2ELL3B/P II 2H3B/P
device type	B 11BS

2 Device Description

- Gas boiler for central heating.
- Hot water preparation at ZWR.
- With ZSR storage connection possible without modification.
- Multifunctional display (display)
- Water-cooled atmospheric premix brine down.
- For operation as a standard boiler, the flue gas temperature screen can be removed.
- Two flue gas monitors.
- With automatic ignition.
- Continuously regulated power.
- Fully secured via control unit with ionization monitoring and solenoid valves.
- Device for wall mounting and chimney connection.
- A minimum amount of circulating water is not required to operate the boiler boiler.
- Temperature limiter
- Two-stage circulation pump with air separator.
- Automatic air vent, Expansion tank, safety valve, manometer.
- Hot water priority circuit
- Hydraulic switch
- Notification of demand for hot water (ZWR).
- Warmwasser-NTC (ZWR)
- Temperature controller for hot water.
- Minimum pressure switch (ZWR)

2.1 Connection accessories (see price list)

- Mounting connection plate
- Flush-mounted installation service package
- Surface installation service package
- Accessory No. 508 (bridging arch) for the Operation without indirectly heated tank.
- Installation regulations (weather-dependent)
- Heating control
- Built-in timer

2.2 Type overview

Z .. 5/11, 18, 24	K	AND	21/23 31	S...

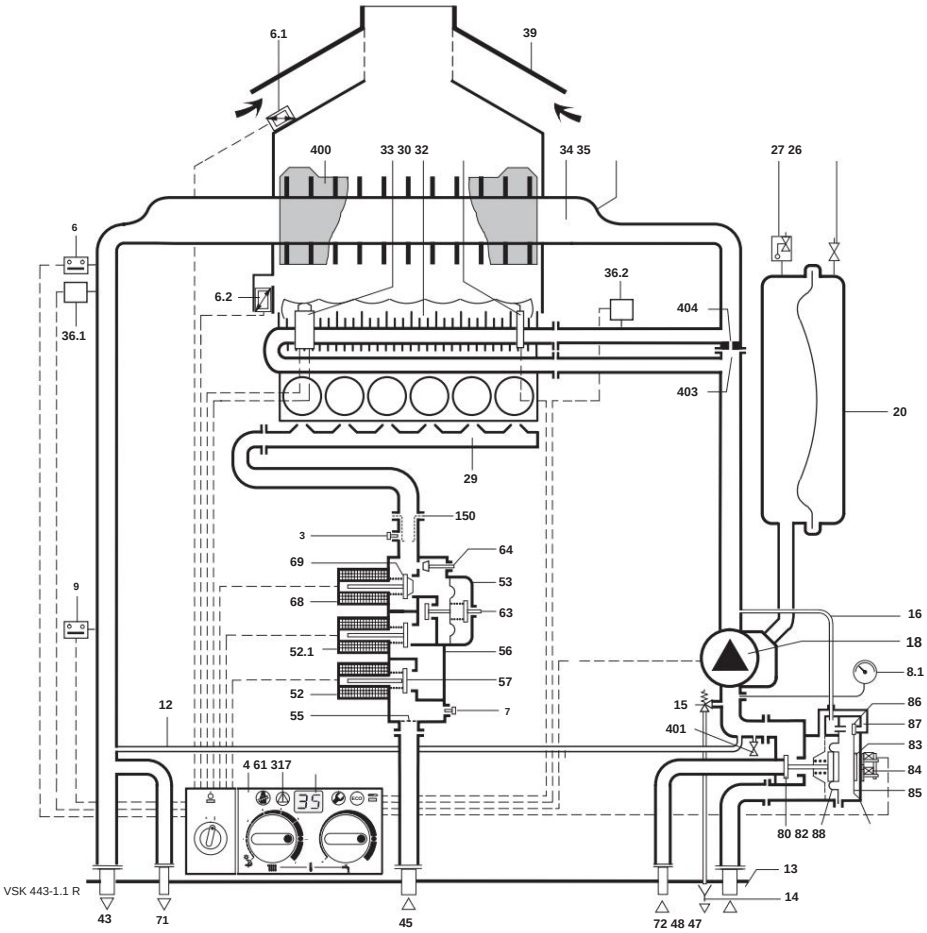
= central heating device
ZW = heat exchanger for hot water preparation

S = memory port
R = continuous control
5/11-5 = 11 kW nominal heat output
18-5 = 18 kW nominal heat output
24-5 = 24 kW nominal heat output
K = fireplace appliance
E = automatic ignition
21 = natural gas L/LL
23 = natural gas H
31 = LPG
S.... = special number

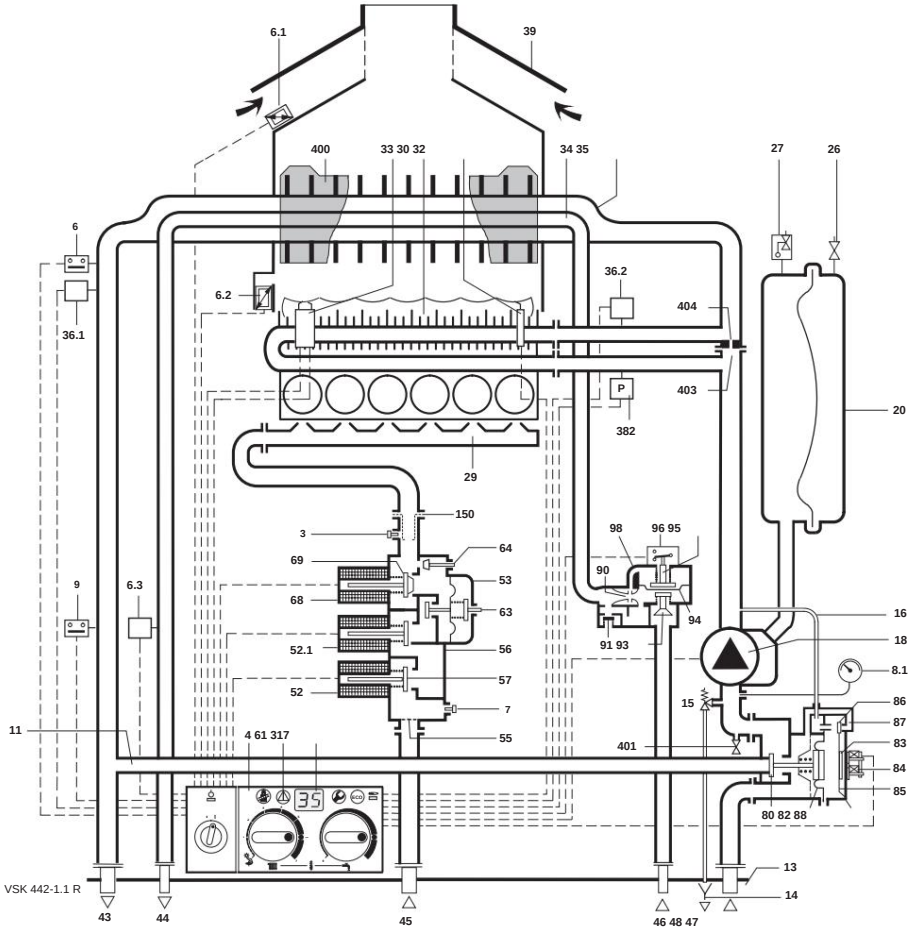
The type formula is supplemented by code numbers. You enter the gas family according to DVGW worksheet G 260 an.

code number	Wobbe Index	gas family
21	10.5-13 kWh/m3 natural	and petroleum gases, Group L / LL
23	12.8-15.7 kWh/m3 natural	and petroleum gases, Group H
31	22,6-25,6 kWh/kg	Propan/Butan

2.3 Structure



Picture 3 ZSR



Picture 4 ZWR

3 Measuring connection for nozzle
pressure limiter 6 Temperature
Flue gas monitoring, flow protection
chamber 6.3 Hot water NTC (ZWR) 7 Measuring
connection for connection flow pressure 8.1
Manometer 9 Temperature limiter (flow) 11
Reversing line (ZWR) 12 Function line (ZSR)

13 Mounting connection plate
14 Funnel siphon 15 Safety
valve 16 Circulation pump 18
separator

and two speeds

20 expansion tank
26 Nitrogen charge valve
27 Automatic air vent
29 burner tray with injector nozzles
30 burner deck 32
monitoring electrode
33 ignition electrode
34 hot water line (ZWR)
35 Heat block for heating and hot water 36.1 Flow
NTC 36.2 Burner NTC (Z..18/24-5...)

39 Flow protection 43
Heating flow 44 Hot water
(ZWR)
45 gas 46
chilled water (CWR)
47 heating return 48
drain
52 Solenoid valve 1
52.1 Solenoid valve
2 53 Pressure
regulator 55 Filter 56
Gas fitting 57 Main
valve disc 61 Reset
button 63 Adjusting
gas volume 64 Adjusting screw for min.

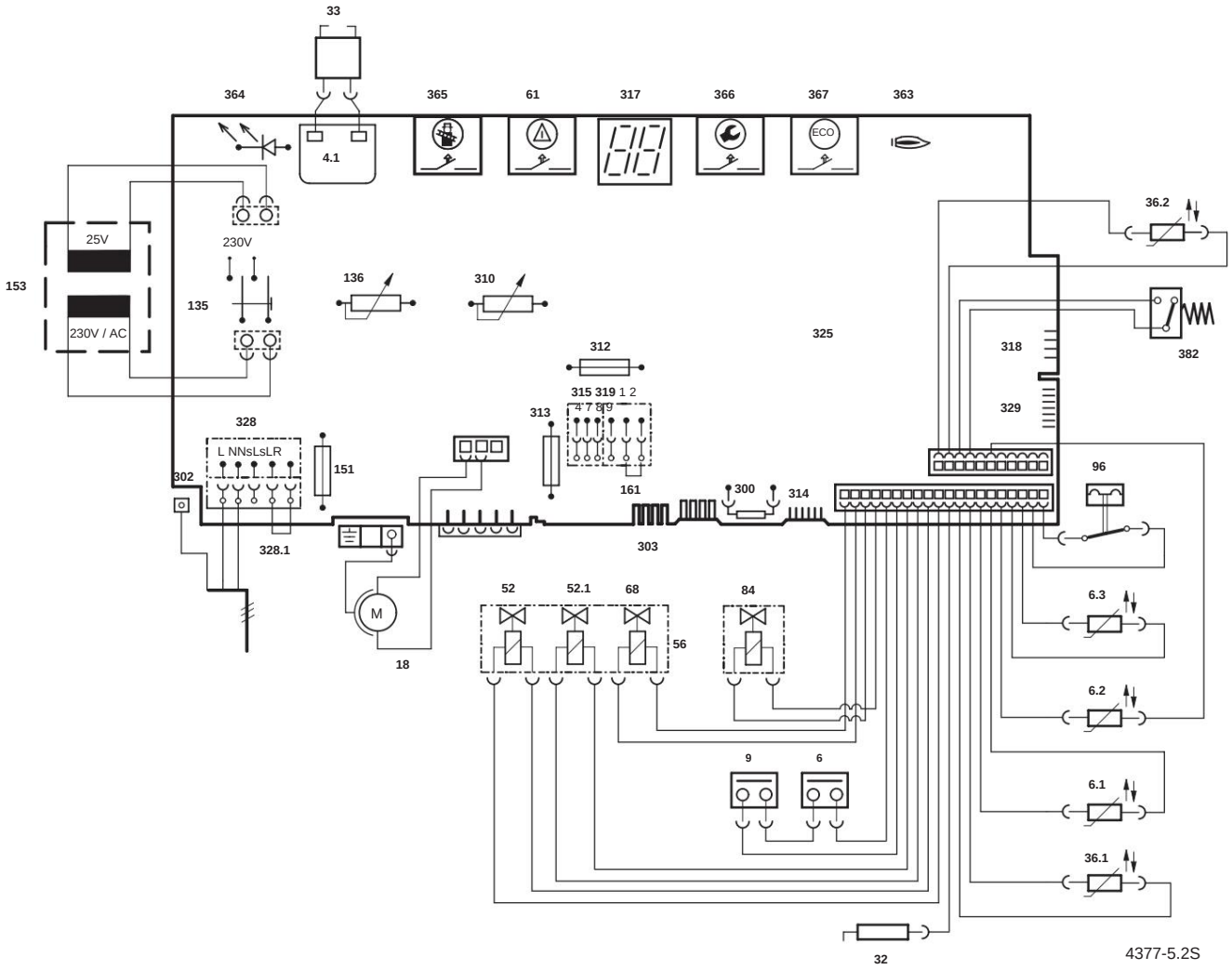
72 return memory (ZSR)
80 double seat valve plate
82 diaphragm 83 magnet
armature 84 control magnet
85 leaf spring 86 control
valve plate 87 equalizing
opening (ZWR/ZSR)

88 Hydraulic switch 90
Venturi (ZWR) Pressure
93 Water flow meter (ZWR)

94 Membrane (ZWR)
95 tappet with switching cam (ZWR)
96 micro switch (ZWR)
98 water switch (ZWR)
150 LPG throttle bushing 317 Display
382 Minimum pressure switch (PWR)

400 Exhaust gas temperature
screen 401 Drain cock 403
Function line Z.. 18/24 404
Throttle Z.. 18/24

2.4 Electrical wiring



picture 5

4.1 Ignition transformer 6 Temperature limiter, heating block 6.1 Flue gas monitoring, flow safeguard 6.2 Flue gas monitoring, combustion chamber 6.3 Hot water NTC (ZWR) 9 Temperature limiter, flow 18 Circulation pump 32 Monitoring electrode

33 Ignition electrode 36.1 Flow NTC 36.2 Burner NTC (Z..18/24-5...) 52 Solenoid valve 1 52.1 Solenoid valve 2 56 Gas fitting 61 Reset button 68 Control magnet 84 Hydraulic switch control magnet 96 Microswitch (ZWR)

135 Main switch 136 Temperature controller for heating flow 151 Fuse T 2.5A, AC 230 V 153 Transformer

161 Jumper 300 Coding plug 302 Connection for protective conductor 303 Plug strip for NTC storage tank 310 Temperature controller for hot water 312 Fuse T 1.6 A 313 Fuse T 0.5 A 314 Plug strip for built-in controller 315 Terminal strip for controller 317 Display 318 Plug strip for timer 319 Terminal strip for storage tank 325 Printed circuit board 328 Terminal strip AC 230 V 328.1 Jumper 329 Plug strip LSM 363 Control lamp burner operation 364 Control lamp off/on (0/I)

365 Chimney sweep - button 366 Service button 367 “ECO” button 382 Minimum pressure switch (PWR)

3 Technical data Z..18, 24-5...

	Unit	ZSR / ZWR 18-5 ...		ZSR / ZWR 24-5 ...	
perfomance		with ATB1)	without ATB1) 18.2	with ATB1)	without ATB1)
rated heat output	kW	17.8		24,3	23,8
nominal heat load	kW	20,2		27,0	
Smallest heat output	kW	9,1	8,9	10,9	10,7
Smallest heat load	kW	10,1		12,1	
Heat output adjustable	kW	9,1-18,2	8,9-17,818,2 17,8	10,9-24,3	10,7-23,8
DHW output (ZWR)	kW			24,3	23,8
Gas connection value					
Erdgas L/LL (HUB = 8.5 kWh/m3)	m3 /h	2,5		3,3	
Erdgas H (HUB = 9.4 kWh/m3)	m3 /h	2,2		3,0	
LPG (HU = 12.8 kWh/kg)	kg/h	1,6		2,2	
Permissible gas connection flow pressure					
Natural gas L/LL and H	mbar	18-24		18-24	
LPG	mbar	42,5-57,5		42,5-57,5	
expansion tank					
form	bar l	0,75		0,75	
Overall content		11		11	
Emission values2)					
Zugbedarf	mbar	0,015		0,015	
Exhaust gas temperature at nominal load	°C g/s	142	163	132	146
Exhaust gas mass flow at rated power	%	12,2	12,5	17,6	17,9
CO2 at nominal load		6,8	6,6	6,2	6,1
Flue gas temperature at lowest load °C		95	108	89	95
Exhaust gas mass flow at the lowest power g/s		10,4	10,7	14,3	14,7
CO2 at the lowest power	%	3,8	3,7	3,3	3,2
Kombi (ZWR)					
DHW temperature Factory setting of	°C	40-60		40-60	
Hot water quantity max. hot water quantity with acc. no. 521l/	l/min	2,0 - 5,5		3 - 8	
min max. permissible hot water pressure bar minimum flow pressure bar		10,5 10 0,2		14 10 0,2	
General					
Nominal capacity (ZWR) (hot water/heating water)		0,5 / 1,6		0,6 / 1,7	
Nominal capacity (ZSR) (Heat.)		1,9 41		2,0	
Weight, without packaging Voltage	l l kg	230 50		44	
Frequency Power consumption	V-AC	100		230	
Degree of protection tested	Hz			50	
according to max. delivery rate at ÿt=20o C	ln			100	
	IP	X 4 D		X 4 D	
	IN	297		297	
	l/h	780		1040	
Residual head for the pipe network ZSR/ZWR	bar	0,27/0,25		0,15/0,13	
Max. flow temperature	O C	88 3,0		88	
permissible operating pressure	bar			3,0	

Boiler heaters are DVGW and VDE tested and comply with the Equipment Safety Act.
Tested in Austria ÖVGW.

[1] Exhaust gas temperature
screen 2) After the flow control with the specified draft requirement, tV/tR = 80/60.

3.1 Technical data Z..5/11-5...

	Unit	ZSR 5/11-5...	
perfomance		with ATB1)	without ATB1)
rated heat output	kW	10.9	10,6
nominal heat load	kW	12,1	
Smallest heat output	kW	5,5	5,4
Smallest heat load	kW	6,1	
Heat output adjustable	kW	5,5-10,9	5,4-10,6
Gas connection value			
Erdgas L/LL (HUB = 8.5 kWh/m3)	m3 /	1,4	
Erdgas H (HUB = 9.4 kWh/m3)	h m3 /	1,3	
LPG (HUB = 12.8 kWh/kg)	h kg/h	1,0	
Permissible gas connection flow pressure			
Natural gas L/LL and H	mbar	18-24	
LPG	mbar	42,5-57,5	
expansion tank			
form	bar l	0,75	
Overall content		7,5	
Emission values2)			
Zugbedarf	mbar	0,015	
Exhaust gas temperature at nominal load	°C g/s	115	137
Exhaust gas mass flow at rated power	%	7,4	7,8
CO2 at rated load		6,7	6,3
Flue gas temperature at lowest load °C		85	101
Exhaust gas mass flow at the lowest power g/s		6,6	7,0
CO2 at the lowest power	%	3,6	3,4
General			
Nominal content (heating water)		1,2	
Weight without packaging Electrical	l kg	33	
voltage Frequency Power	V-AC	230	
consumption Protection class	Hz	50	
tested according to max. flow rate	In	100	
at ÿt=20o C Residual head for the	IP	X 4 D	
pipe network Max. flow temperature	IN	297	
Permissible operating pressure	l /	470	
	h bar	0,24	
	°C	88	
	bar	3,0	

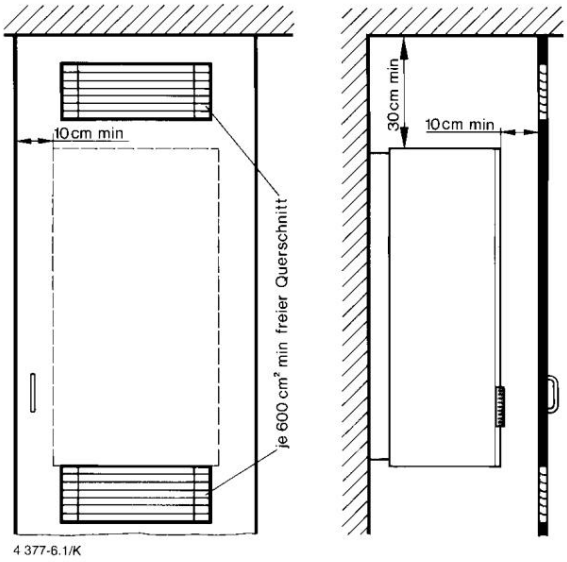
Boiler heaters are DVGW and VDE tested and comply with the Equipment Safety Act.
Tested in Austria ÖVGW

[1)] flue gas temperature screen
2) After the flow control at the specified draft requirement, tV/tR = 80/60.

4 location

installation room

The DVGW-TRGI apply to systems up to 50 kW, for
LPG appliances the TRF.
Observe the regulations of the individual countries.
Required ventilation openings, distance between the cladding
and the device casing
For minimum ceiling clearance, see Figure 6

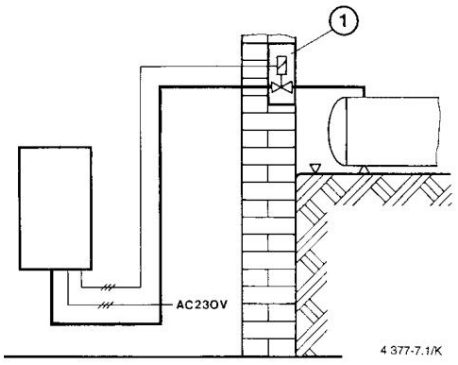


picture 6

installation dimensions

For maintenance, a lateral minimum distance of
10 cm and a ceiling distance of 30 cm.

LPG Solenoid Valve



picture 7

ÿ House connection box

Lt. TRF, the boiler therme may only be operated in rooms below
ground level if, with the device switched off, the gas supply can
be switched on

Solenoid valve in house connection box prevented
becomes.

In such systems, the fan switching module LSM 5
to use.

The above circuit is not necessary
if the installation room ventilation systems as for
has boiler rooms.

combustion air

To avoid corrosion, the combustion air must be free of aggressive substances. as
Halogenated hydrocarbons, which contain chlorine or fluorine compounds, are highly corrosive
contain genes that e.g. B. in solvents, Far ben, adhesives, propellants and household cleaning can be included.

If the boiler therme is mounted above the bathtub,
no massage shower heads may be used.
The maximum surface temperature is below
85 °C. As a result, according to TRGI or TRF, there are no special protective measures for combustible
Building materials and built-in furniture required. Differing regulations in individual countries must be observed.

5 regulations

The following guidelines and regulations must be observed.

- **State building regulations and regulations of the gas supply company.**
- **EnEG** (Energy Saving Act) with
  the ordinances issued for this purpose HeizAnIV
  (Heating Systems Ordinance).
- **Boiler room guidelines** or the building regulations
  Countries, guidelines for the installation and facilities of central
  heating rooms and their
  fuel compartments.

  Beuth Verlag GmbH
  Burggrafenstraße 6
  10787 Berlin
- **DVGW worksheet G 600,** TRGI 1996 (technical rules for gas installations).
- **DVGW worksheet G 670** (Installation of gas fireplaces in rooms with mechanical ventilation systems).

  business and publishing company
  Gas and Water Ltd
  Josef-Wirmer-Str. 1 - 3
  53123 Bonn
- **TRF 1996** (Technical Rules for LPG)
  business and publishing company
  Gas and Water Ltd
  Josef-Wirmer-Str. 1 - 3
  53123 Bonn
- **DIN standards:**
  DIN 1988, TRWI (Technical rules for drinking water installations)

  DIN VDE 0100, part 701 (construction of power systems
  with nominal voltages up to 1000 V
  rooms with bath or shower)
  DIN 4751 (heating systems; safety-related equipment of hot water heating systems with
  Flow temperatures up to 110 °C)
  DIN 4807 (expansion tanks)
  Beuth Verlag GmbH
  Burggrafenstraße 6
  10787 Berlin

In **Austria** ÖVGW guideline G1 and G2 as well

Observe regional building regulations.

In **Switzerland ,** observe the SVGW and VKF guidelines,
cantonal and local regulations, as well as Part 2 of the liquid gas guideline.

6 Installation

6.1 General information

Before installing the boiler boiler, the opinion of the gas supply company and of the district master chimney sweep.
The installation, the gas and flue gas side connection, the commissioning and the power connection may only be carried out by a gas supply company or electricity supply company registered installation company.

Flush the heating network before installing the device.

mounting connection plate
It is for pre-installation of all piping and the installation accessories are required for plastered or tiled walls. With the mounting template as an accessory (Figs. 10 and 11, item 122), order number 8 719 918 020, the pipe connections (end fitting installation) are created.

Use a G 12 mm hole for liquid gas appliances.
Mounting template before installing the accessories and remove the connection plate.
The seals hang at the bottom of the device.
The screws (6 x 50 mm) with accessories are in the packaging of the connection board.

gas supply
Determine pipe size according to DVGW-TRGI or TRF.

The connection nipple R 3/4 is installed in each assembly connection plate. An enclosed nipple R 1/2 (Fig. 12, item 115) can also be used with the device and mounting plate preassembled after loosening the spring and the tab, to be replaced.
Install a gas tap with a thermal shut-off device* or membrane valve* in front of the device.
For LPG there is a transition piece of R 1/2 on Ermeto 12 mm (Fig. 12, item 113), accessory no. 252 to order.
For safety reasons, LPG must have a Pressure regulator with safety shut-off valve can be installed (protection of the device from impermissibly high pressure, see TRF).

Maximum test pressure 150 mbar
To avoid excess pressure damage to the gas fitting, the gas tap (Fig. 12, item 172) must be closed when the gas line is pressure tested will. The pressure relief before opening the the gas shut-off valve.

Safety valve is included in the scope of delivery Kesseltherme.

funnel siphon*
Hole “A” in the mounting template gives the Connection of the funnel siphon to the drain line.

Filling and emptying of the system
For filling and emptying the system, on-site at the lowest point, a fill and drain cock is required.

device attachment
The screws with accessories are the device packaging. The location of the holes is shown in Figures 10 and 11.

parallel circuit
Two or three boiler therms can be combined with the sequential circuit TAS 21 (accessories) and be connected in parallel with a weather-compensated continuous control. The sequential circuit TAS 21 is only with the weather-compensated continuous controllers TA 21 A1 and TA 213 A1 can be combined.

heating
The boiler therme can only be installed in closed hot water heating systems
DIN 4751, part 3, permissible.
A minimum amount of circulating water for operation the boiler boiler is not required.

Due to the constant regulation in the power range between the starting load and the nominal heat output, it adjusts itself the heat output of the gas boiler boiler automatically to the respective heat requirement.
Advantage: Improved efficiency, lower gas consumption.

A particularly economical way of working ensure the JUNKERS continuous controller.
When using a room temperature controller no thermostatic radiator valve can be installed on the radiator of the lead room.
The boiler boiler is equipped with all safety and control devices. In order to avoid fault shutdowns even under unfavorable operating conditions avoid, a temperature monitor triggers in the flow
If the heating water temperatures are too high, a regular shutdown is switched off.
The automatic air separation and the quick air vent simplify the commissioning of the system.

Open heating systems and gravity heaters
Open heating systems must be converted into closed systems. For gravity heaters is the boiler boiler via a hydraulic switch connected to the existing pipe network.

underfloor heating
See leaflet on the use of Junkers gas boiler boilers in underfloor heating systems 7 181 465 172.

Flow and return (heating)
The installation of a maintenance tap* is recommended.

pipes and radiators
Use of galvanized radiators and pipes not recommended as gas formation may occur.

sealant
The addition of sealants to the heating water In our experience, this can lead to problems (Deposits in the heat block). We therefore advise from their use.
Damage caused by the admixture of sealants is not covered by our guarantee.

* installation accessories

flow noise
This can be avoided by installing an overflow valve
or in the case of two-pipe heating systems by installing a
three-way valve on the furthest radiator
be avoided.

Cold and hot water (ZWR)
Observe DIN 1988 and the regulations of the local waterworks.

In the “flush-mounted” installation, the cold water connection is made with the corner valve* R 1/2, the hot water connection with the knee suction cup* R 1/2, respectively via a copper pipe connection. The connection dimensions of the mounting template - bores K and W - are tailored to it.
For “surface” installation, a straight-through valve* R 1/2 and the screw connection * R 1/2 available.

In order to avoid pitting, a pre-filter must be installed for water with solid suspended matter.

In **comfort mode** (ECO button does not light up) the hot water temperature is constantly maintained, therefore short waiting time for hot water.
By installing the time switch EU 8 T or
EU 2 D, in the control panel of the boiler boiler the comfort mode can be timed.
This is possible in **economy mode** (ECO button lights up).
Device only operates when hot water is drawn off.

When there is a **demand** (short hot water withdrawal), hot water is supplied once for approx. 2 minutes heated up.

The outlet temperature can be set on the temperature controller for hot water between 40 C. ^{O}C and 60 ^{O}

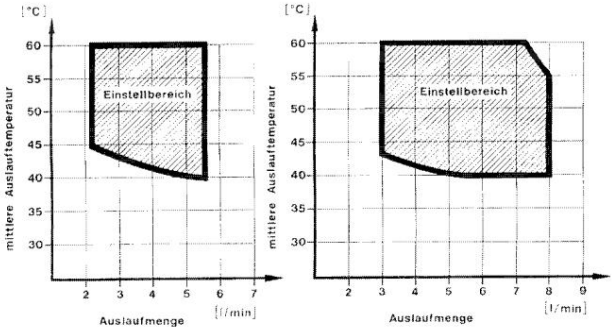


Figure 8a: ZWR 18 **Figure 8b: ZWR 24**

The amount of hot water is factory set at ZWR 18 set to 5.5 l/min and for ZWR 24 to 8.0 l/min.

With the accessory no. 521 (7 719 001 054) can Amount of hot water at ZWR 18 to max. 10.5 l/min and increased to a maximum of 14 l/min for ZWR 24.
This reduces the outlet temperature.
The continuous regulation of the device adapts to this Hot water demand automatically.
All single-lever fittings and thermostatic mixer taps can be connected.

* installation accessories

exhaust duct
To avoid corrosion, only exhaust pipes use aluminum. Exhaust pipes tightly closing Lay according to DVGW-TRGI or TRF.
The chimney cross-section is to be determined according to DIN 4705; B. chimney lining, carry out insulation measures etc. Because of the longer running time of continuously controlled devices the installation of exhaust flaps is only necessary if they are required by building regulations.
Motorized exhaust flaps may be used.
In Austria, only motorized exhaust flaps are allowed be used in connection with LSM.

For thermal exhaust flaps, only use Diermayer flaps of the GWR T series.
When installing, the bridge at Z..18, 24-5.. parallel and with ZSR 5/11-5... at right angles to the jacket shell, see picture.

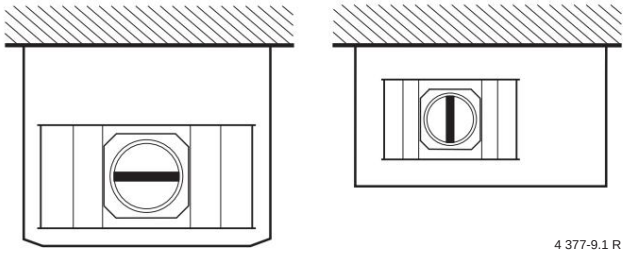


Fig. 9 Z..18, 24-5... **ZSR 5/11-5...**

Pump
The pump has a ceramic shaft, therefore not run dry

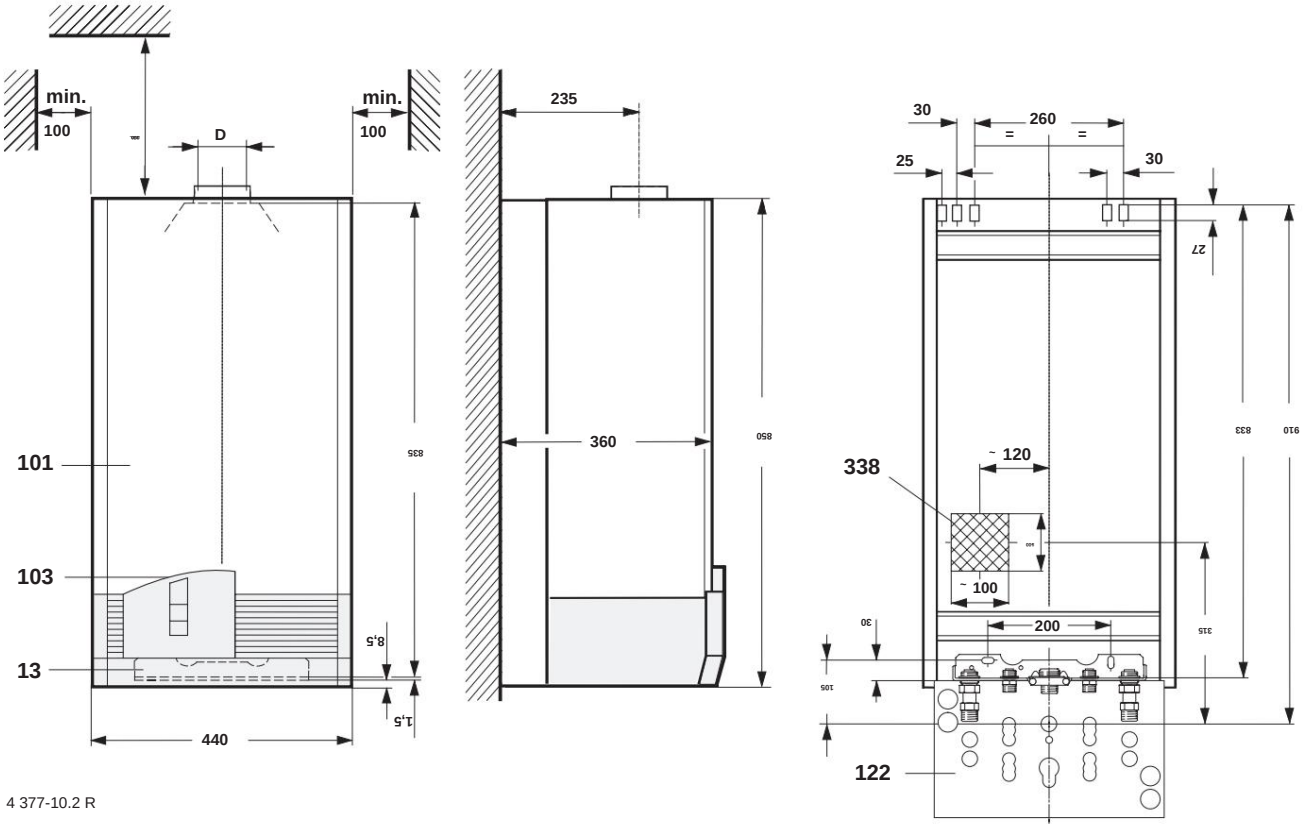
Start level in heating mode
In heating mode, each start takes 1.5 minutes power kept at “min.” power.

Secure the jacket shell
For reasons of electrical safety, the mantle shell must be secured against unauthorized removal.
For this purpose, the screw is on the bottom right on the locking lever, screwed in, see figure 15 or 16.

Flap to cover the control panel
The flap to cover the control panel is in the packaging of the boiler boiler.

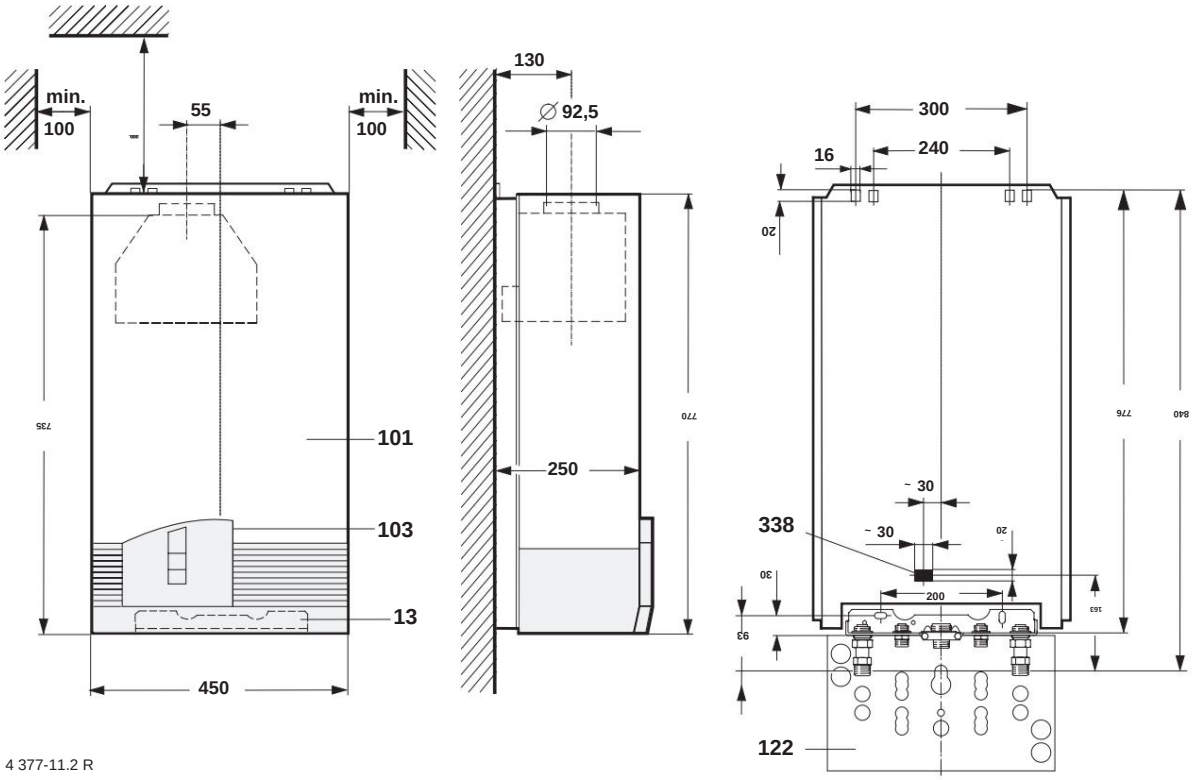
to inform customers
The refilling and venting of the system as well as the Check the water pressure on the manometer to show the customer.

6.2 Connection dimensions



4 377-10.2 R

Picture 10 CERASTAR

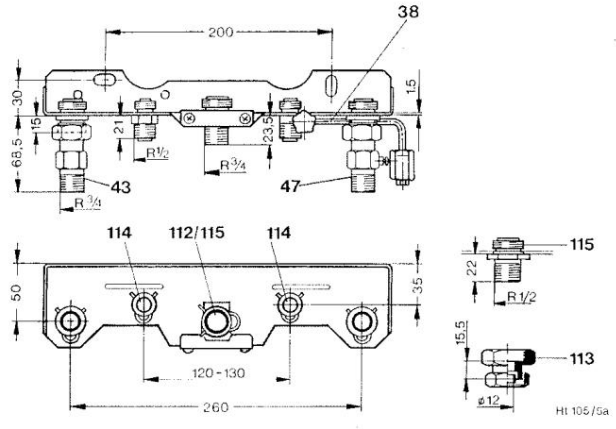


4 377-11.2 R

Picture 11 CERAMINI

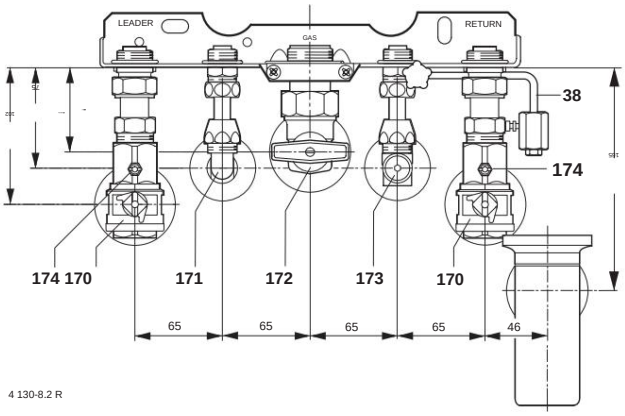
Legend for Fig. 10 and 11 D
Z..18-5, 140, Z..24-5, 130
13 Mounting connection plate
101 Jacket shell
103 flap
122 mounting template (accessories)
338 location electric wire from the wall

Mounting connection plate, delivery condition



picture 12

Mounting connection plate, fully assembled



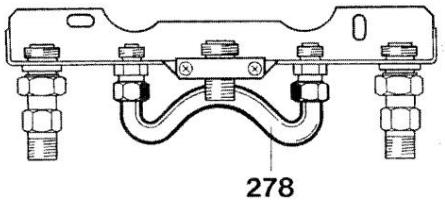
picture 13

38 refill device (Austria)
43 heating flow
47 heating return
112 Connection nipple R 3/4 for gas
113 Transition piece R 1/2 to Ermeto (Accesories)
114 Connection nipple R 1/2 for cold and hot water
115 Connection nipple R 1/2 for gas (attached)
170 maintenance taps (inlet and return, corner shape)
171 Kniesauger warm water (ZWR), or flow Storage at ZSR
172 gas tap with thermal shut-off device or diaphragm valve
173 angle valve cold water (ZWR), or return Storage at ZSR
174 emptying

Operation of ZSR devices without hot water tank

Will the boiler boiler without a hot water tank operated, the bridging arc (278) between to be installed as shown in Fig. 14.

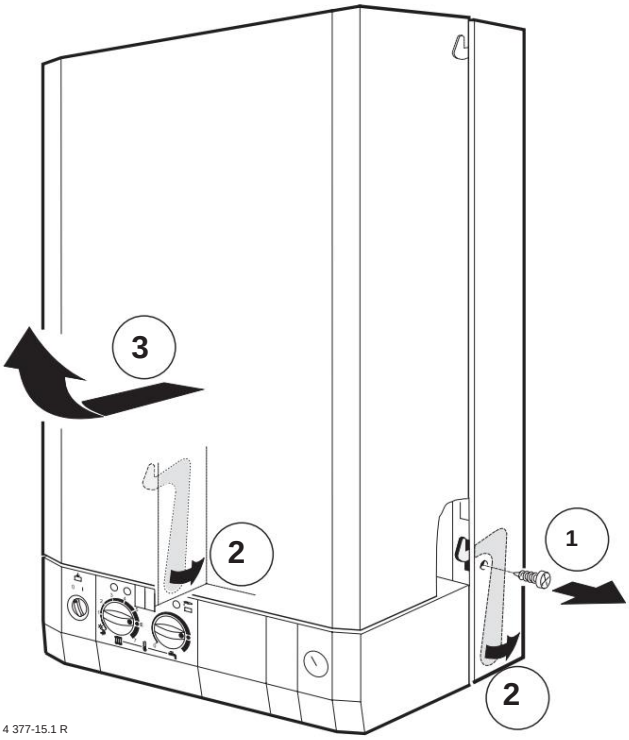
The bridging arch is available under accessory no. 508 (7 719 000 990) available.



picture 14

6.3 Montage

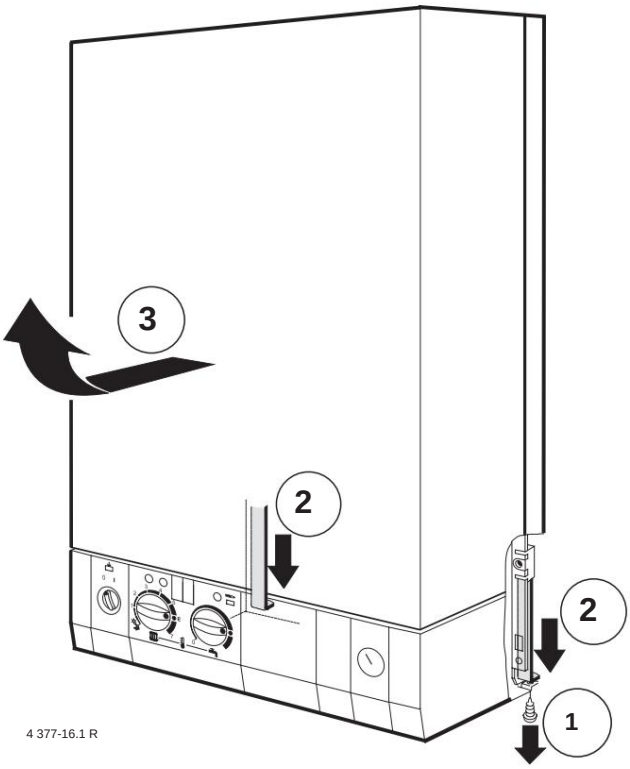
Remove the shell of the CERASTAR



picture 15

– If necessary, unscrew the screw at the bottom right ÿ, press the lever backwards ÿ, casing shell Swivel forward and lift off ÿ.

Remove the jacket shell, at CERAMINI



picture 16

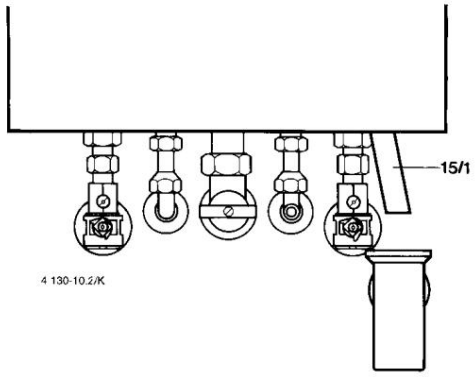
– If necessary, unscrew the screw at the bottom right ÿ, press
the lever down ÿ, casing shell
Swivel forward and lift up ÿ.

– Mounting connection plate, service cocks, gas
tap, connection accessories for cold and hot water
and mount the funnel siphon, Figure 13.

– Flush the heating system pipe network.

– Remove the seals at the bottom of the gas boiler therme and
attach them to the corresponding double nipples
Lay the assembly connection plate.

– Hang up the gas boiler therme and tighten the screw connections.



picture 17

– Screw the outlet pipe (15/1) into the safety valve,
picture 17

– Check all screw connections for leaks, max
average pressure in the heating circuit 2.5 bar, in the hot
water circuit 10 bar.

6.4 Electrical connection

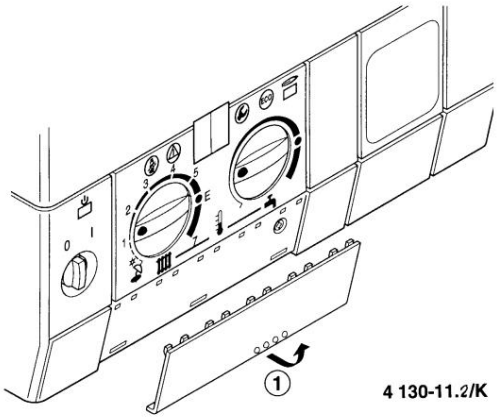
The regulation, control and safety devices
are fully wired and tested. It just has to
the on-site mains connection AC 230 V/50Hz must be established.

The hole of the cable bushings no larger
select as the cable diameter, otherwise the
Splash water protection (IP) no longer guaranteed.

All protective measures according to the VDE
Regulations 0100 and any special regulations
(TAB) of the local energy supply company.

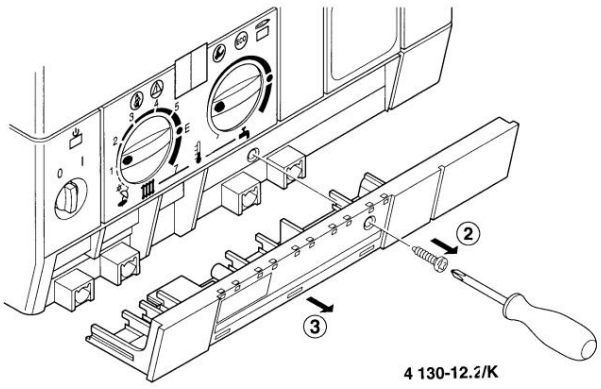
According to VDE 0700 Part 1, the mains connection must be fixed
to the terminal strip of the control box (no Schuko plug) and via a
disconnecting device with min.
3 mm contact distance (e.g. fuses, circuit breakers). Other
consumers
must not be diverted.
The location of the cable connection for the mains and controller
can be seen in Figure 10 or 11 (dark area).
It is recommended that the cable routed from the wall should
protrude by at least 50 cm.

Before working on the electrical part, connect
always switch off the power supply.



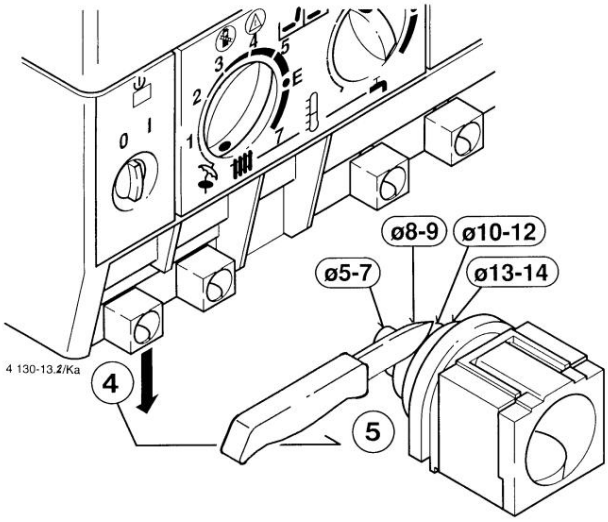
Picture 18

– Fold out the cover at the bottom and remove it ÿ.



picture 19

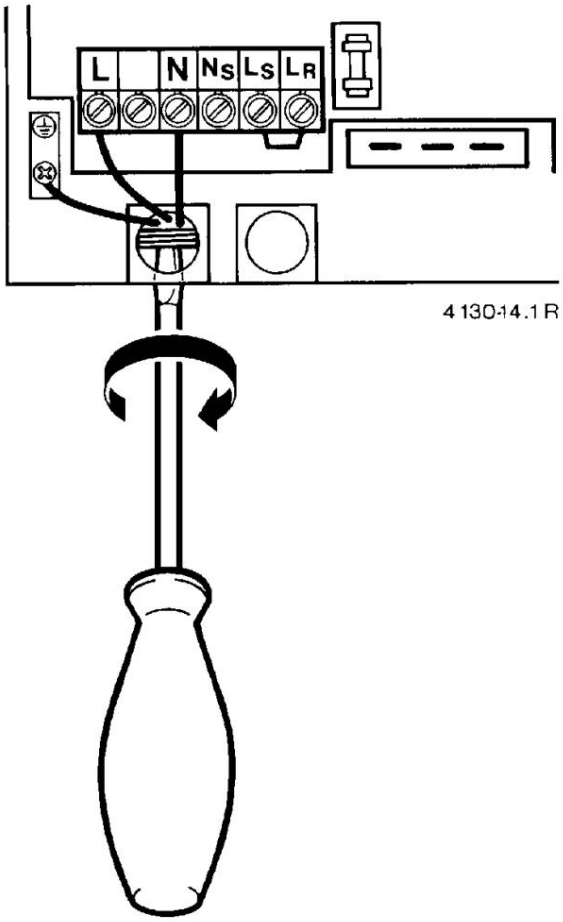
– Unscrew the screw ÿ and cover
pull out at the front ÿ.



picture 20

– Push out the strain relief downwards ÿ and cut it off according to the cable cross-section ÿ.

mains connection



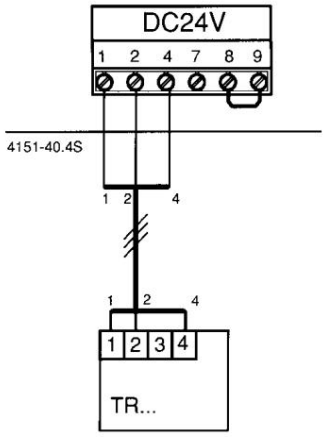
picture 21

– Guide the cable through the strain relief and connect as shown in Fig. 21.

– Reattach the strain relief and see the cable chern.

6.5 Heating control connection The boiler therme can only be operated in conjunction with a JUNKERS controller.

Connection of continuous room temperature controller, TR100, 200, TRQ 21.., TRP 31 The connection of the TRP 41/51 is only possible with a controller connection module RAM.

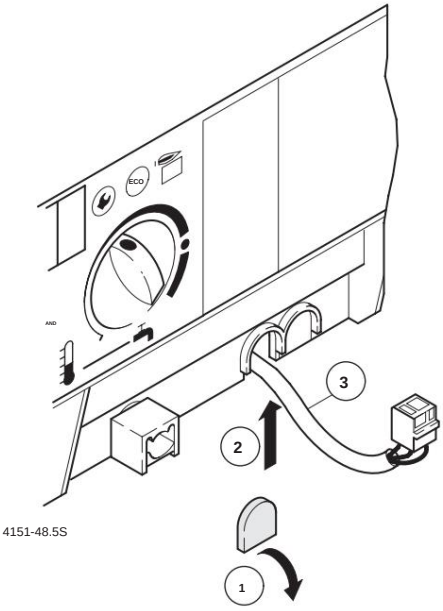


picture 22

Connection of weather-compensated controllers TA 211 E, TA 21 A1 or TA 213 A1, as well as remote controls TW 2, TFP 3 or TFQ 2T/W as well as time switches EU 2 D, EU 3 T or EU 8 T.

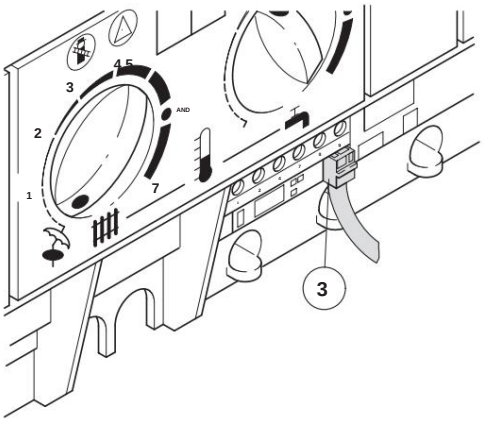
The electrical connection is to be made according to the relevant installation instructions for the controller, as described for CERAPUR Z...7-25....
The controllers TA 21 A and TA 213 A can only be connected with a controller connection module RAM.

6.6 Connection of an indirectly heated tank (all JUNKERS tanks with NTC sensor)



picture 23

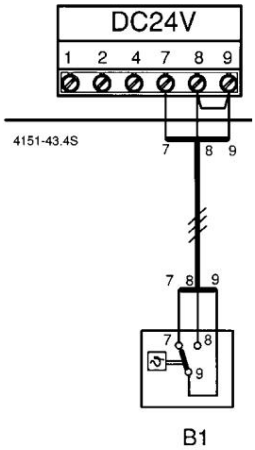
– Break out tongue ÿ and insert cable ÿ ÿ.



picture 24

– Plug from storage NTC to printed circuit board
ken ÿ.

6.7 Connection of an indirectly heated storage tank with storage tank thermostat



picture 25

– Connection to terminals 7 and 9.

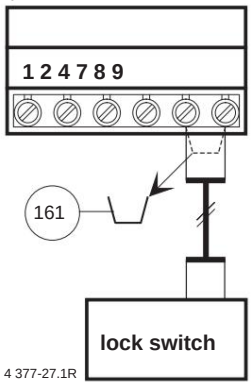
The bridge 8 - 9 must not be removed.

When using third-party storage tanks or on-site relays on terminals 7 and 9, a relay with gold-plated contacts must be used.

Alternatively, a storage tank thermostat with changeover contact can be used.

6.8 Connection of blocking switch DC 24 V

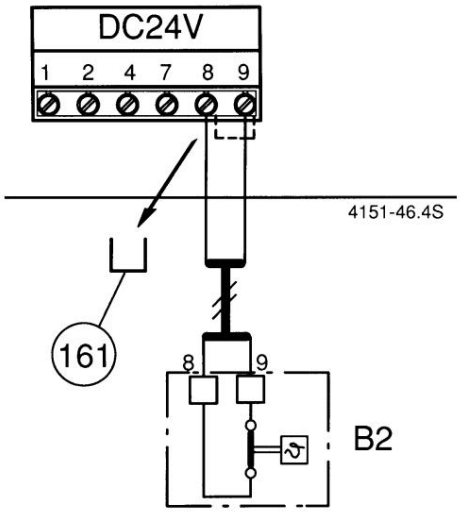
Remove jumper (161) between 8 - 9 DC 24 V



picture 26

6.9 Connection of a temperature limiter (B2) in pure underfloor heating systems (1-circuit system)

– Remove bridge (161) between 8 - 9



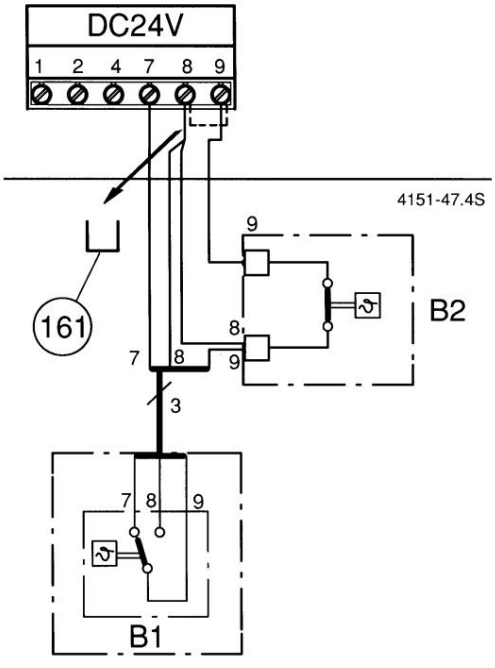
picture 27

When the limiter responds, both heating and hot water operation are interrupted. It doesn't matter whether it's a ZWR.. or ZSR...

device.

6.10 Connection of a temperature limiter (B2) in 1-circuit systems with hot water storage tank and storage tank thermostat (B1).

– Remove bridge (161) between 8 - 9

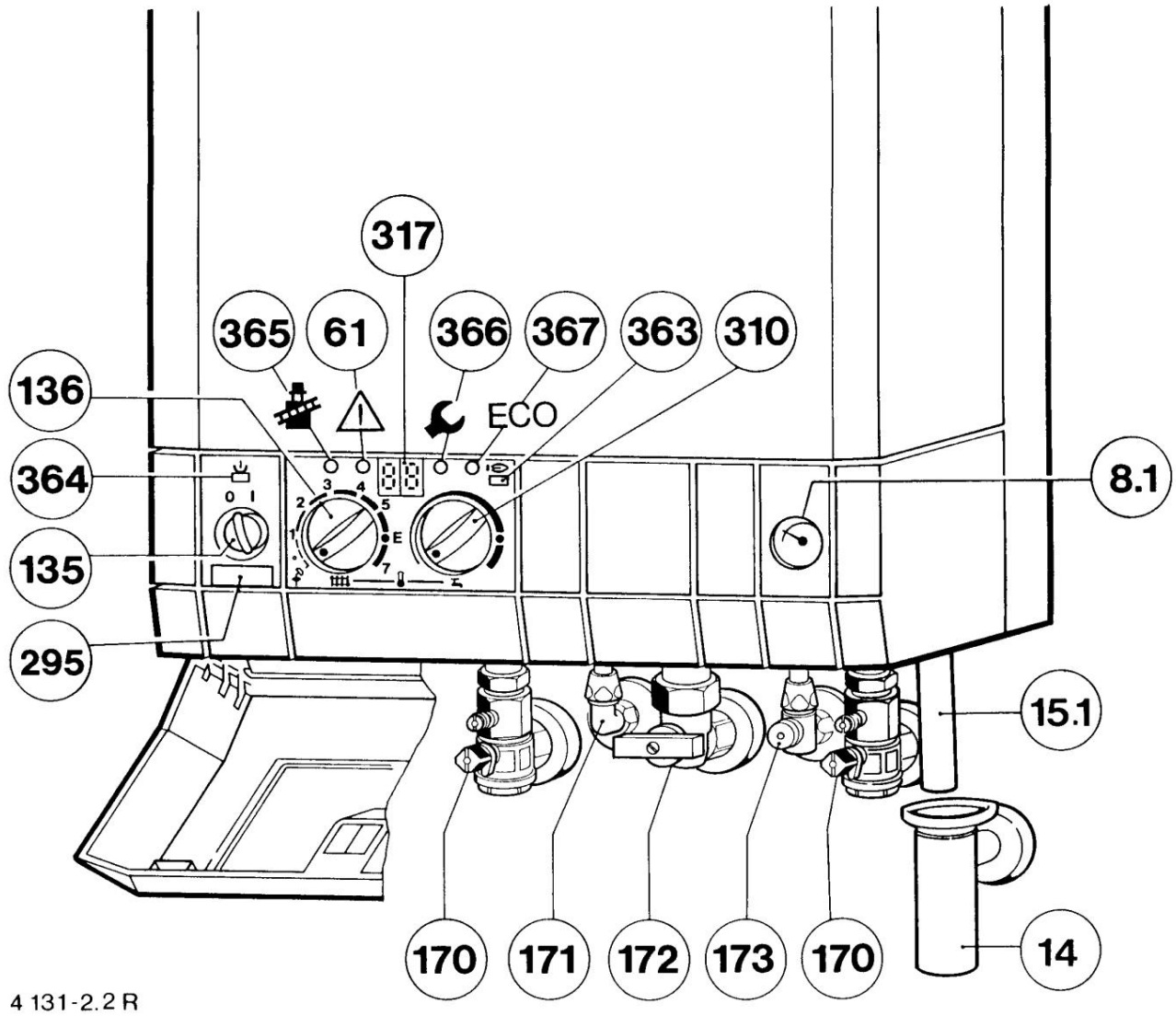


picture 28

When the limiter responds, both heating and hot water operation are interrupted.

7 Commissioning with factory setting

It is essential to comply with the commissioning protocol "9 Commissioning report" page 28, fill out.



picture 29

8.1 Pressure gauge
14 Funnel siphon 15.1
Outlet pipe 61 Reset
button 135 Main switch
136 Temperature
controller for heating
flow 170 Maintenance cocks in the flow and return
171 Hot water knee vacuum cleaner 172 Gas tap
173 Cold water angle valve (ZWR)

295 Device type sticker 310
Temperature controller for hot water 317
Display 363 Control lamp for burner operation
364 Control lamp 0/I (off/on)

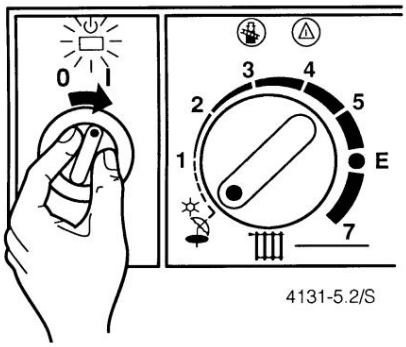
365 Chimney sweep button 366
Service button 367 "ECO" button

– Adjust the pre-pressure of the expansion vessel to the static height of the heating system, see page 21.

– Open radiator valves.
– Open the service cocks (170) and fill the heating system to 1 to 2 bar.
– Bleed the radiator.
– Gas boiler therme on the automatic air vent vent.
– Fill the heating system again to 1 to 2 bar.
– Open the corner valve of the cold water connection (173) and fill and bleed the hot water circuit.
– Check whether the type of gas specified on the type plate corresponds to that supplied by the gas company.

– Open the gas valve (172).

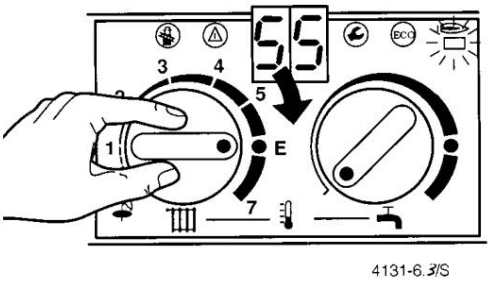
turn on



picture 30

The control lamp lights up **green.**

switch on the heating



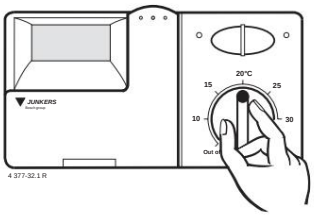
Picture 31

When the burner is in operation, the control lamp lights up **red.**
The current one appears in the display
temperature of the heating water

Depending on the respective heating system, the following settings may be possible:

– Underfloor heating, for example position “3”, maximum temperature around 50 °C – Low-temperature heating, for example position “E”: max. Temperature approx. 75 °C.
– heating system for temperatures up to 88 °C, eg position “7”.

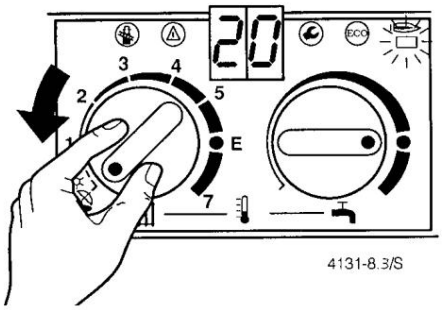
heating control



Picture 32

– Room temperature controller (TR ...) to the required one Turn room temperature.
– Set the weather-compensated controller (TA 21 ...) to the corresponding heating curve and mode of operation.

Hot water only (summer mode)



Picture 33

In this position, only the hot water supply is activated. The heating is switched off.
The power supply for heating control and timer remains.

DHW temperature at ZWR

The hot water temperature can be between 40 °C and 60 °C can be set and does not appear in the Display.

Picture 34

ECO button, Figure 29, item 367
You can choose between **comfort mode** and **ECO mode** by pressing and holding until the display shows “- -” .

Comfort mode, button does not light up (factory setting)

The hot water is heated inside the gas boiler boiler
kept at constant temperature. This shortens the waiting time when hot water is drawn off.
The device therefore switches on even if no hot water is drawn off.

ECO mode with request notification, button lights up
The requirement notification allows maximum
Gas and water saving.
By briefly opening and closing the hot water tap, the water heats up until the am
temperature controller for hot water is reached.

After approx. 1 minute warm water is available.

ECO operation without notification of need, button shines
When hot water is removed, the water is on the
temperature set on the temperature controller. This means longer waiting times for hot water.

DHW temperature storage tank at ZSR

For hot water tanks with **NTC sensor:**

Picture 35

At the • mark, the storage tank temperature is approx. 60ÿ This temperature should be in normal operation not be exceeded. When right stop is

the storage tank temperature is approx. 70 °C, risk of scalding. This position is only for the short term Suitable for operation, eg for regular thermal disinfection.

None when the temperature controller is turned to the left water heating

For hot water storage tanks with **their own temperature controller:**

The temperature controller of the boiler boiler is functionless.

ECO button, Figure 29, item 367

By pressing and holding until "—" appears in the display, you can choose between **comfort mode** and **ECO mode .**

Comfort mode, button does not light up (factory setting)

Memory priority, ie first is the

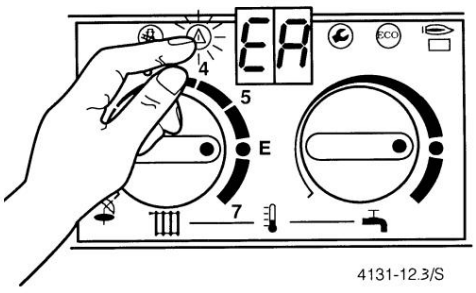
The hot water storage tank is heated to the set temperature, after which the device switches back to heating mode.

ECO mode (button lights up)

Alternately 10 minutes memory-then heating mode.

Disturbance

During operation, disturbances e.g. B. by burner contamination, pressure drop in the gas pipe, etc. occur. appears in the display **"EA"** or **"E9"** the reset button lights up and the Gas boiler therme is locked.



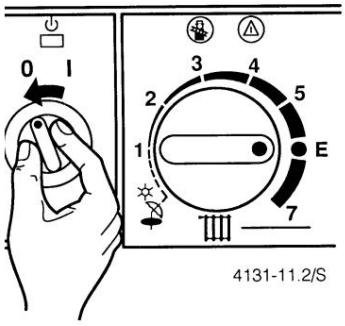
Picture 36

After the reset button has been pressed, the flow temperature and

the device is in operation.

If the fault cannot be eliminated, please call customer service.

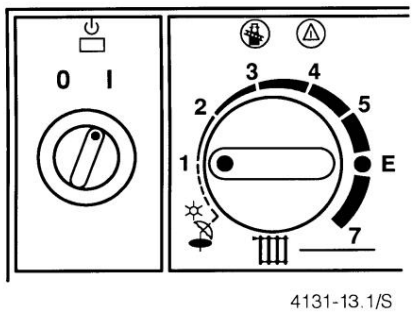
Switch off



Picture 37

The green control lamp goes out, the timer stops after the power reserve.

antifreeze



Picture 38

During the frost period, the heating system should stay on and the temperature controller for Heating flow set to at least "1".

When the boiler therme is switched off and there is a risk of frost should add antifreeze to the heating water Antifrogen N with 30% or antifreeze Glythermin NF or FSK added with 20-30% otherwise the boiler therme must be emptied and the heating water drained.

The emptying of the heating system is dem to show customers.

exhaust gas monitoring

The gas boiler is equipped with two **flue gas monitors .** When exhaust gas escapes from the Draft safety device switches off the flue gas monitoring of the draft safety device. In the Display appears A4.

When exhaust gas exits the combustion chamber, the Flue gas monitoring of the combustion chamber the device away. A2 appears in the display.

After approx. 20 minutes the device starts up again automatically.

If this shutdown occurs more frequently, a specialist should be commissioned to check the device or the exhaust gas system.

Pump blocking protection

This automatic function prevents the heating pump from seizing up after a long period of non-use. After each pump switch-off, a time measurement takes place and after 24 hours the pump is switched on for 1 minute.

8 Set the gas boiler to the local plant conditions

8.1 Mechanical settings

expansion tank

The initial pressure of the expansion tank should correspond to the static height of the system.

At a maximum heating water flow temperature of 88 °C can be the maximum water content (l) of plant from the static height (m) above the device determine:

An increase in capacity can be achieved if the admission pressure drops to 0.5 bar by loosening the Cap and open the valve (picture 3 and 4, item 26) is diminished.

m	8	9	10 11		12 13 14		
l (Z.. 5/11) 85 76 69 63 56 49 42							
l (Z..18, 24) 122 112 102 92 82 71							61

Limitation of the maximum temperature for the heating flow

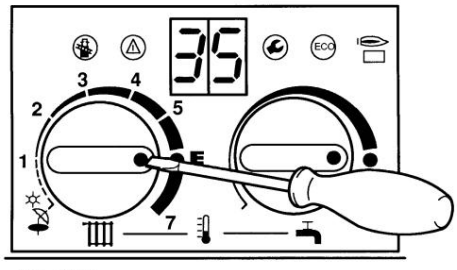
The temperature for the heating flow is between 35°C and 88°C adjustable. With low temperature limitation, the temperature controller (136) is limited to position E.

This corresponds to a maximum flow temperature of 75°C and does not require any according to 2. Heiz-AnIV Setting the heating output to the calculated one heat demand of the building.

Cancellation of the low temperature limit E

The limitation can be removed for heating systems for higher flow temperatures, see Fig. 39.

– Lift the yellow knob on the heating flow temperature controller and turn it 180o again indent (lobe outwards, constrained to E, lofted point inwards, no constraint).



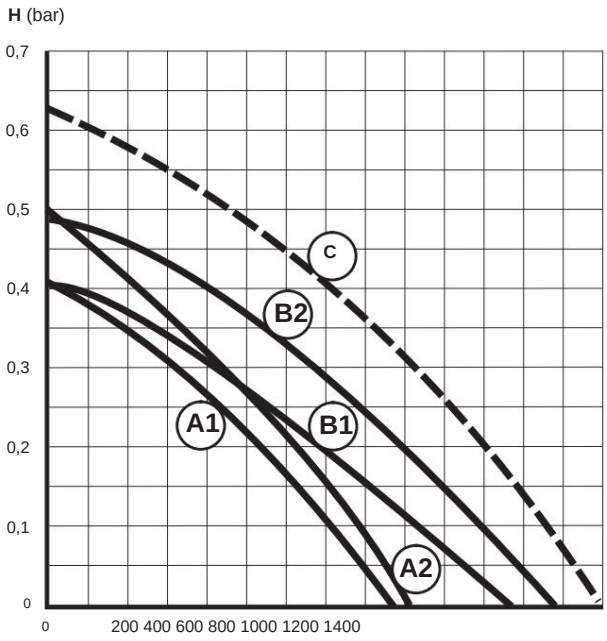
4130-26.2S

Picture 39

Temperature controller position for heating flow	flow temperature approx.
1	35 °C
2	43 °C
3	51 °C
4	59 °C
5	67 °C
AND	75 °C
7	88 °C

pump diagram

At the terminal box of the pump between two pump characteristics can be selected.



4 377-62.1 R

picture 40

A1: Z.. 5/11..., switch position 1
A2: Z.. 5/11..., switch position 2
B1: Z..18, 24..., switch position 1
B2: Z.. 18, 24..., switch position 2
C: Z.. 18, 24..., stronger pump
H: Residual height
Q: Amount of circulating water

8.2 Settings on the Bosch Heatronic

8.2.1 Increased starting power, service function 9.0 (only for natural gas)

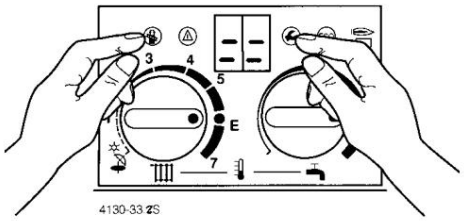
To even under unfavorable operating conditions (e.g. increased chimney draught) the device automatically increases the starting performance after several starting attempts.

The increased starting power does not need to be set, it is only shown on the display in the enclosed commissioning report

to enter. In the event of a printed circuit board replacement, this makes the setting much easier.

Factory setting is 65% of natural gas rated heat output. No increased for LPG starting power.

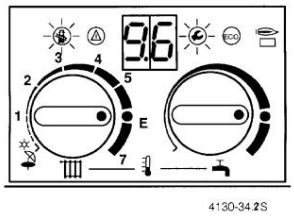
Reading the display for the increased starting power.



Picture 41

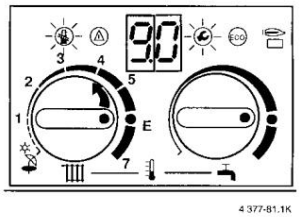
– Turn the temperature controller for the heating flow to “E”. hen.

– Press and hold the chimney sweep button and the service button until “==” appears in the display.



Picture 42

– After releasing the keys, “9.6” appears for 5 seconds, then “0.” and the buttons to shine.



Picture 43

– Turn the temperature controller for the heating flow until "9.0" appears, after 5 seconds the setting for the increased starting power is shown on the display.

Commissioning report

Date of commissioning_____

Calorific value HuB_____kWh/m3 , gas volume_____l/min

Low Temp Boiler___, Standard Boiler___

Settings on the Bosch Heatronic		
service function		Display Wert
Increased starting power	9.0	___
Max. heating power	5.0	_____ _____kW
Min. power (only Z... K..) 5.5		_____ _____kW
memory charging performance	2.3	_____ _____kW
		Display = Wert
Max. flow temperature	2.5	_____°C
pump switching mode	2.2	_____
Roof lock	2.4	_____min
switching differential (ÿt)	2.6	_____K
Type of lower power limit (Austria, only Z... K..)	5.3	_____

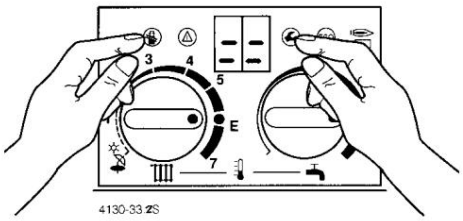
creator of the plant

6 720 604 525 (5.98)

JUNKERS
Bosch Thermotechnik

Picture 44

– Shown in the display for the increased starting power enter it on the enclosed commissioning report.



Picture 45

– Press and hold the chimney sweep button and the service button until “==” appears in the display.

– Temperature controller for heating flow up again turn the originally set value.

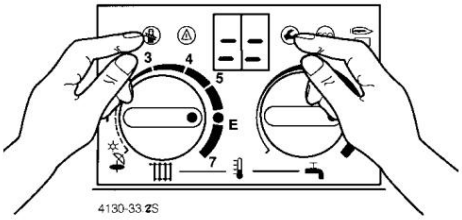
8.2.2 Max. heating output, service function 5.0

Some gas utilities require one
performance-related basic price. It therefore makes sense to
set the heating output to the heat requirement. The heating
output can be between the smallest
Heat output and nominal heat output can be adjusted to the
specific heat demand.
The full nominal heat output is available for hot water preparation.

Factory setting see technical data.

Changing the maximum heating output

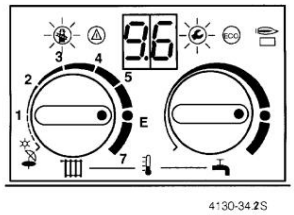
– Loosen sealing screw 3 (Fig. 67) and U-tube manoeuvre
connect meters.



Picture 46

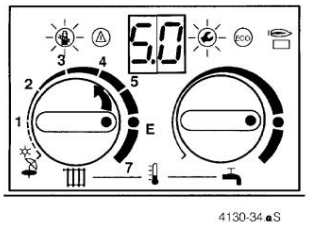
– Turn the temperature controller for the heating flow to “E”.
hen.

– Press and hold the chimney sweep button and the service
button until “==” appears in the display.



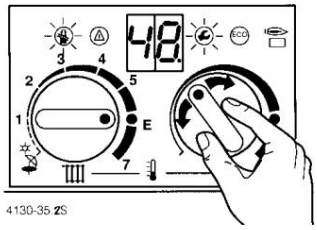
Picture 47

– After releasing the keys, “9.6” appears for 5 seconds, then
“0.” and the buttons
to shine.



Picture 48

– Turn the temperature controller for the heating flow until
“5.0" appears, after 5 seconds the setting for the maximum
heating power ”99." displayed.

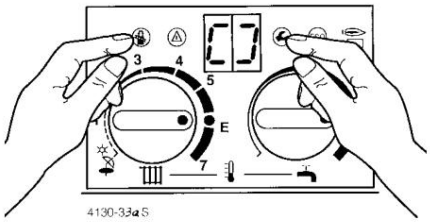


Picture 49

– Turn the temperature control for hot water all the way to
the left. Chimney sweep button and service button flash.

– Temperature controller for hot water slowly
turn to the right and set the heating output according to the
nozzle pressure, table on page 35.

– Heat output, in kW and shown on the display
the enclosed commissioning report,
Picture 44, enter.



picture 50

– Press the chimney sweep button and the service button and
hold them down until “[ ]” appears.

The heating output is saved, the buttons go out
and the flow temperature is displayed again.

– Temperature controller for heating flow and hot water to the
originally set values
turn and tighten the sealing screw.

8.2.3 Min. power, service function 5.5

The minimum output of the gas boiler
ZSR 5/11-5 is limited at the factory, see technical data.

For a moisture-insensitive
chimney for flue gas temperatures below 80°C,
whose cross-section is calculated according to DIN 4705 and
was designed, the minimum output can be reduced
will.

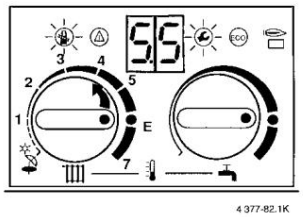
Changing the minimum power

– Loosen sealing screw 3 (Figure 67) and U-tube mano
connect meters

– Turn the temperature controller for the heating flow to “E”,
Figure 46.

– Press and hold the chimney sweep button and the service
button until “==” appears in the display,
Picture 46.

– After releasing the keys, “9.6” appears for 5 seconds, then
“0.” and the buttons
shine, Figure 47.



Picture 51

– Turn the temperature controller for the heating flow until
“5.5" appears, after 5 seconds the setting for the minimum
power is displayed.

– Turn the temperature control for hot water all the way to
the left. The chimney sweep button and the service button
flash, Figure 49.

– Temperature controller for hot water slowly
turn to the right and set the output according to the corresponding
nozzle pressure, table on page 35, Figure 49.

– Min. power, in kW and shown on the display
the enclosed commissioning report,
Picture 44, enter.

– Press the chimney sweep button and the service button
and hold it until “[ ]” appears, Figure 50.

The minimum power is saved. The buttons go out and the
flow temperature is displayed again.

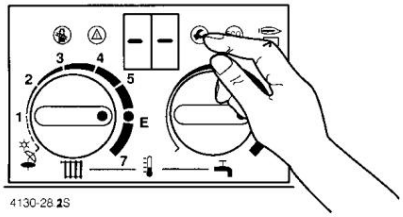
– Temperature controller for heating flow and hot water to the
originally set values
turn and tighten the sealing screw.

8.2.4 Storage charging capacity, service function 2.3

The storage charging power can be between the smallest
Heat output and nominal heat output on the
Transmission capacity of the hot water tank
to be set.
The factory setting is the nominal heat output, shown on the
display as 99.

Changing the memory charging power

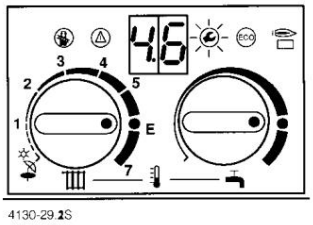
– Loosen sealing screw 3 (Figure 67) and U-tube mano
connect meters.



Picture 52

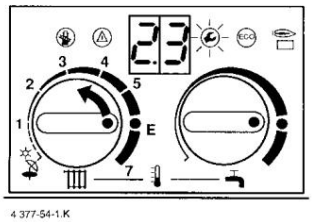
– Turn the temperature controller for the heating flow to “E”.
hen.

– Press and hold the service button until appears on the display
“—” appears.



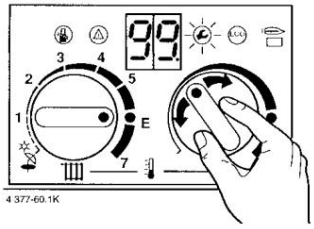
Picture 53

– After releasing the service button appears
“4.6” for 5 seconds, then ”00.” or "01."
and the button lights up.



Picture 54

– Turn the temperature controller for the heating flow until
"2.3" appears, after 5 seconds the setting for the storage
charging power is displayed.

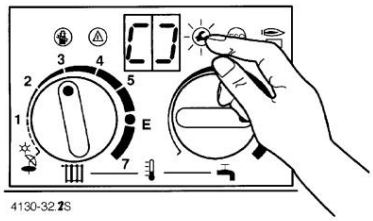


Picture 55

– Temperature controller for hot water on Linksan
turn beat. Service button and display flash.

– Temperature controller for hot water slowly
turn to the right and set the accumulator charging capacity
according to the corresponding nozzle pressure, table on
page 35.

– Enter the storage charging power, in kW and what is
shown on the display, on the enclosed commissioning
report, Figure 44



Picture 56

– Press and hold the service button until
"[ ]" appears.

The accumulator charging power is saved. The key
goes out and the flow temperature is displayed again.

– Temperature controller for heating flow and hot water
to the originally set values
turn and tighten the sealing screw.

8.2.5 Max. flow temperature, service function 2.5

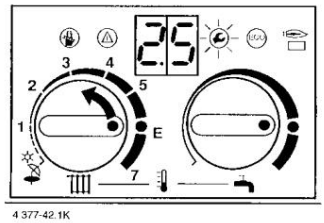
The maximum flow temperature can be between
35°C and 88°C.
Factory setting is 88°C.

Changing the max. flow temperature

– Turn the temperature controller for the heating flow to
"E", Figure 52.

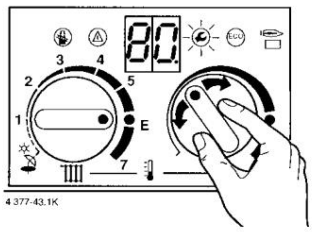
– Press and hold the service button until appears on the display
"—" appears, Figure 52.

– After releasing the service button appears
"4.6" for 5 seconds, then "00." or "01."
and the button lights up, Figure 53.



Picture 57

– Turn the temperature controller for the heating flow until
"2.5" appears, after 5 seconds "88." appears.



Picture 58

– Set the desired maximum flow temperature on the
temperature controller for hot water. Service button and
display flash, Figure 58.

– Maximum flow temperature on the enclosed
Enter the commissioning report, Figure 44.

– Press and hold the service button until
"[ ]" appears, Figure 56.

The maximum flow temperature is saved. the
The button goes out and the flow temperature is restored
displayed.

– Temperature controller for heating flow and hot water
to the originally set values
turn.

8.2.6 Pump switching mode, service function 2.2

When a weather-compensated controller is connected, pump switching mode 3 switched.

When connecting a room temperature controller TRP 41/51 with the controller connection module RAM is the change the pump switching mode to 2 manually.

Pump switching types in heating mode

switching type 1

For heating systems without control (in Germany not permitted).
The pump is switched on by the heating flow temperature controller (136).

switching type 2

For heating systems with room temperature controllers. The temperature controller for the heating flow switches just the gas, the pump keeps running. The room temperature controller switches gas and pump.

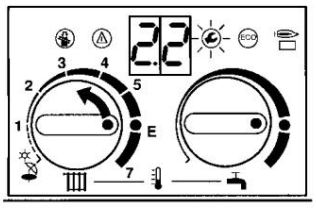
switching type 3

The pump is switched via the weather-compensated controller. The pump runs during summer operation only for hot water preparation.

Factory setting is 2.

Changing the pump switching mode

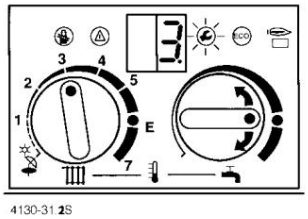
– Turn the temperature controller for the heating flow to "E", Figure 52
– Press and hold the service button until appears on the display "—" appears, Figure 52.
– After releasing the service button appears "4.6" for 5 seconds, then "00." or "01." and the button lights up, Figure 53.



4130-30.1S

Picture 59

– Turn the temperature controller for the heating flow until "2.2" appears, after 5 seconds the set pump switching mode "2." appears.



4130-31.2S

Picture 60

– Set the desired pump switching mode on the temperature controller for hot water, e.g. e.g. "3." for pump control mode 3. Service button and display flash.
– Enter the set pump switching mode on the enclosed commissioning report, Figure 44.
– Press and hold the service button until "[ ]" appears, Figure 56.

The pump switching mode is saved. The button goes out and the flow temperature is displayed again.

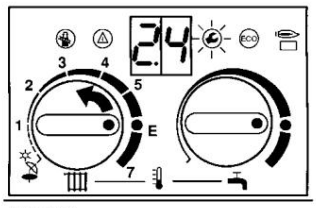
– Temperature controller for heating flow and hot water to the originally set values turn.

8.2.7 Speed lock, Service function 2.4

The clock block can be set individually on the switch box can be set in increments of 1 minute.
The setting range is between 0-15 min.
Factory setting is 3 minutes.

Changing the clock lock

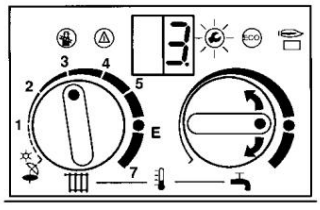
– Turn the temperature controller for the heating flow to "E", Figure 52.
– Press and hold the service button until appears on the display "—" appears, Figure 52.
– After releasing the service button appears "4.6" for 5 seconds, then "00." or "01." and the button lights up, Figure 53.



4130-40.2S

Picture 61

– Turn the temperature controller for the heating flow until "2.4" appears, after 5 seconds the set cycle lock appears.



4130-31.2S

Picture 62

– Set the cycle lock you want on the temperature controller for hot water, e.g. e.g. "3." for 3 minutes Service button and display flash.
– Enter cycle lock on the enclosed commissioning report, Figure 44.
– Press and hold the service button until "[ ]" appears, Figure 56.

The cycle lock is saved. The button goes out and the flow temperature is displayed again.

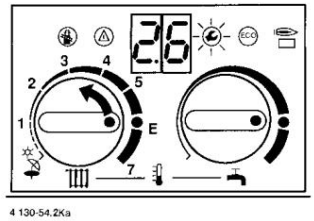
– Temperature controller for heating flow and hot water to the originally set values turn.

8.2.8 Switching differential (ÿt), service function 2.6

The switching differential can be set in steps of 1 K. The cycle lock must be set to 0 beforehand. The setting range is between 0-30 K.
Factory setting is 0 K.

Changing the switching differential

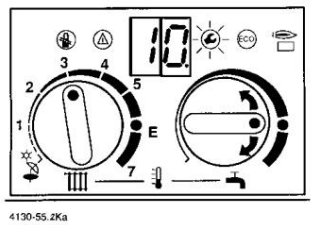
– Turn the temperature controller for the heating flow to “E”, Figure 52.
– Press and hold the service button until appears on the display “—” appears, Figure 52.
– After releasing the service button appears “4.6” for 5 seconds, then ”00.” or "01." and the button lights up, Figure 53.



4 130-54.2Ka

Picture 63

– Turn the temperature controller for the heating flow until "2.6" appears, after 5 seconds the set value appears.



4130-55.2Ka

Picture 64

– Set the required switching differential on the temperature controller for hot water, e.g. e.g. “10.” for 10K, Service button and display flash.
– Enter the switching differential on the enclosed commissioning report, Figure 44.
– Press and hold the service button until “[ ]” appears, Figure 56.

The switching differential is saved. The button goes out and the flow temperature is displayed again.

– Temperature controller for heating flow and hot water to the originally set values turn.

8.2.9 Type of lower power limitation (Austria), service function 5.3

When connecting to a **moisture-resistant flue gas collector** according to ÖNORM B 8200, version 1, there is when operating the boiler boiler no restrictions.
When connecting to a **conventional flue gas catcher** at part load, there is a minimum flow temperature of 55 °C is maintained, this is guaranteed by the service function 5.3, position "1"
Factory setting is 0.

– Boiler boiler of low-temperature boiler convert to standard boiler, see “12 Adaptation to the chimney”.
– Turn the temperature controller for the heating flow to “E”. hen, picture 52.
– Press the chimney sweep button and the service button and hold until “==” appears in the display, Figure 52.
– After releasing the keys, “9.6” appears for 5 seconds, then “0.” and the buttons shine, Figure 53.
– Turn the temperature controller for the heating flow until "5.3" appears, after 5 seconds the set value appears.

– Lean on the temperature controller for hot 1." set water, the service button and the display flash.
– Enter the type of lower power limitation on the enclosed commissioning report, Figure 44

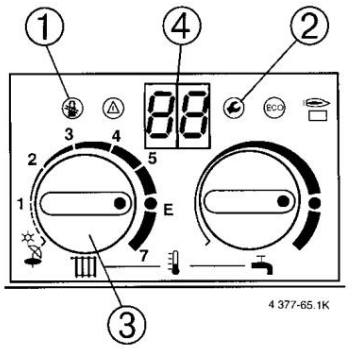
– Press the chimney sweep button and the service button and hold it until “[ ]” appears, Figure 56.

The type of lower power limitation is saved. The buttons go out and the flow temperature is displayed again.

– Temperature controller for heating flow and hot water to the originally set values turn.

9 Commissioning report

It is imperative that the enclosed commissioning report, Figure 44, be completed and visible on the device stick on. This simplifies the adjustment considerably in the event of a repair.



Picture 65

Reading out the set values of the Bosch Hea tronic

read when	service function		how to read		
always (for natural gas)	Increased starting power 9.0		Press ÿ and ÿ bis Display ÿ “==” indicates wait until ÿ “0.” indicates.	ÿ turn until ÿ = “9.0", wait until ÿ changes, Enter number.	Press ÿ and ÿ to ÿ displays ”==".
Z..5/11: always Z..18,24: only at deviation from the factory setting.	Max. heating power	5.0		ÿ turn until ÿ = “5.0", wait until ÿ changes, Enter number.	
	Minimum heat output	5.5		ÿ turn until ÿ = “5.5", wait until ÿ changes, Enter number.	
Only when deviating from the Factory setting*.	Storage charging performance	2.3	ÿ press until Display ÿ “—” indicates wait until ÿ “00.” or "01." indicates.	ÿ turn until ÿ = “2.3", wait until ÿ changes, Enter number.	Press ÿ until ÿ ”—" displays.
	Max. flow temperature 2.5			ÿ turn until ÿ = “2.5", wait until ÿ changes, Enter number.	
	pump switching mode	2.2		ÿ turn until ÿ = “2.2", wait until ÿ changes, Enter number.	
	Roof lock	2.4		ÿ turn until ÿ = “2.4", wait until ÿ changes, Enter number.	
	switching differential	2.6		ÿ turn until ÿ = “2.6", wait until ÿ changes, Enter number.	
	kind of bottom power limitation (Austria)	5.3	Press ÿ and ÿ bis Display ÿ “==” indicates wait until ÿ “0.” indicates.	ÿ turn until ÿ = “5.3", wait until ÿ changes, Enter number.	Press ÿ and ÿ to ÿ displays ”==".

ÿ Turn back to the originally set value.

*Values for the factory setting are from "8.2 Settings of the Bosch Heatronic" or "3 Technical Data" refer to.

10 Gas setting

According to TRGI Section 8.2, it is not necessary to set the nominal heat output.

It must be checked whether the type of gas specified on the type plate corresponds to the type of gas supplied by the gas supplier.

Natural gas: Natural gas H units are set and sealed ex works to a Wobbe index of 14.9 kWh/m3 and a connection pressure of 20 mbar.

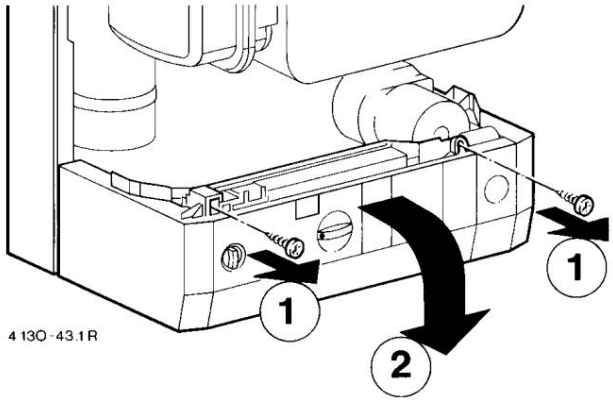
Natural gas L/LL units are set and sealed ex works to a Wobbe index of 12.2 kWh/m3 and a connection pressure of 20 mbar.

Liquid gas: Units for liquid gas are factory set to a connection pressure of 50 mbar and sealed.

If necessary (e.g. conversion to a different type of gas), the nominal heat output should be set using the nozzle pressure method or the volumetric method. A U-tube pressure gauge is required for both adjustment methods.

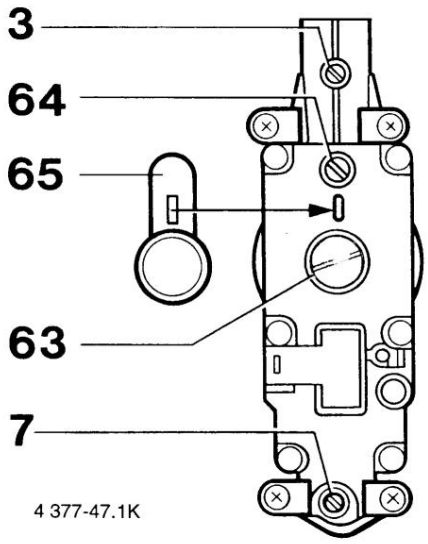
The nozzle pressure adjustment method saves time, so it is preferable.

If the boiler boiler is operated with gas from the same group with a lower Wobbe number, the output is reduced accordingly.



Picture 66

– Unhook the flap for the control panel cover.
– Remove the 2 screws on the control box ÿ and fold the control box down ÿ.



Picture 67

Gauge nozzle for nozzle pressure
Measuring socket for gas connection flow pressure
3 7 63 Maximum gas adjustment screw 64 Minimum gas adjustment screw 65 Cover

Nozzle pressure adjustment method

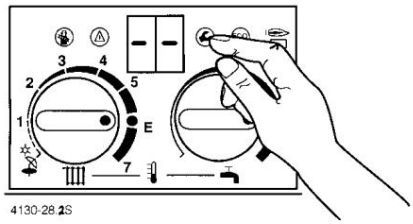
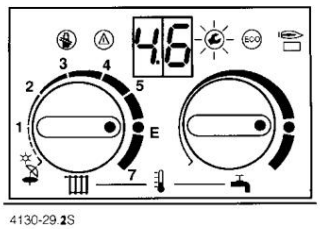


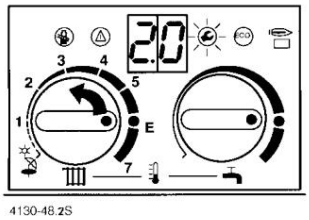
Fig. 68

– Turn the temperature controller for the heating flow to “E”.
– Press and hold the service button until “—” appears on the display.



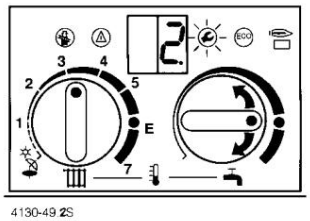
Picture 69

– After releasing the service button, "4.6" appears for 5 seconds, followed by "00." or "01." and the button lights up.



Picture 70

Turn the temperature controller for the heating flow until "2.0" appears, after 5 seconds the set operating mode "0." (normal operation).



Picture 71

– Loosen the sealing screw 3 and attach the U-tube pressure gauge shut down.

– On the temperature controller for hot water “2.” set len, ie maximum heat output.

– Sealed cover 65 (Figure 67) over the at remove the gas adjustment screws.

– Nozzle pressure (mbar) specified for “max”. See table on page 35. nozzle pressure over

Set adjusting screw 63. right turn more gas, turn left less gas.

For liquid gas appliances, screw in adjusting screw 63 as far as it will go.

– On the temperature controller for hot water “1.” set len, ie minimum heating output.

– Nozzle pressure (mbar) specified for “min”. See table on page 35. nozzle pressure over

Adjust gas adjustment screw 64. For liquid gas devices, adjusting screw 64 is up to the stop twisted.

– Check the set min. and max. values and possibly correct.

– Switch off the gas boiler boiler and the gas tap close, remove U-tube pressure gauge and Tighten sealing screw 3.

– Loosen sealing screw 7 and U-tube manometer on Connect measuring socket.

– Open the gas tap and switch on the gas boiler ten.

– Press and hold the service button until appears on the display “—” appears.

– After releasing the service button appears

5 seconds eg “4.6", then ”00." or “01.” and the button lights up.

– Turn the temperature controller for the heating flow until "2.0" appears, after 5 seconds the set operating mode "0." (normal operation).

– On the temperature controller for hot water “2.” set len, ie maximum heat output.

– Required connection flow pressure for natural gas between 18 and 24 mbar. **Under 18 or over 24**

mbar, neither an adjustment nor a start-up may take place, the cause must be determined and the error eliminated. Is this

not possible, block the device on the gas side and Notify gasworks.

– **On the temperature controller for hot water again “0.” set, ie normal operation.**

–Press the service button and hold it until “[ ]” appears.

Normal operation is saved again.

The button goes out and the flow temperature is displayed again.

– In the case of an unusual flame pattern, nozzle con make trolls.

– Close the gas tap, remove the U-tube manometer and tighten the sealing screw 7.

– Attach and seal cover 65 over the gas adjustment screws.

– Temperature controller for heating flow and hot water to the originally set values turn.

Volumetric adjustment method

When feeding liquid gas/air mixtures into Peak Demand Times Adjustment by Nozzle Pressure Check adjustment method.

Ask the gas works for the Wobbe index (Wo) and calorific value (Ho) or calorific value (HuB) .

– Remove the sealed cover 65, Fig. 67 over the two gas adjustment screws.

– For the further setting sequence, the device must be in a steady state, more than 5 minutes operating time.

– Press and hold the service button until appears on the display “—” appears, (Figure 68).

– After releasing the service button appears

5 seconds eg “4.6", then ”00." or “01.” and the button lights up (Figure 69).

– Turn the temperature controller for the heating flow until "2.0" appears, after 5 seconds the set operating mode "0." ie normal operation (Fig 70).

– On the temperature controller for hot water “2.” set, ie max. heat output, (Fig. 71).

– Off for max. specified flow rate (l/min). See table on page 35. gas flow rate set via the gas meter on the gas adjustment screw 63. Turn right more gas, turn left less gas. In the case of liquid gas devices, screw in the adjusting screw 63 as far as it will go.

– On the temperature controller for hot water “1.” set len, ie minimum heating output.

– For min. specified gas flow rate (l/min)
from the table on page 35. Set the gas flow rate using the gas adjustment screw 64.
For liquid gas appliances, screw in adjusting screw 64 as far as it will go.

– Check the set min. and max. values
and possibly correct.

– Switch off the gas boiler boiler and the gas tap
shut down.

– Loosen sealing screw 7 and U-tube manometer on
Connect measuring socket.

– Open the gas tap and switch on the gas boiler
ten.

– Press and hold the service button until appears on the display
"—" appears.

– After releasing the service button appears
5 seconds eg "4.6", then "00." or
"01." and the button lights up.

– Turn the temperature controller for the heating flow until
"2.0" appears, after 5 seconds the set operating mode "0." (normal operation).

– On the temperature controller for hot water "2." set
len, ie maximum heat output.

– Required connection flow pressure for natural gas between 18 and 24 mbar. If the connection flow pressure deviates, see nozzle pressure adjustment method.

– **On the temperature controller for hot water again**
"0." set, ie normal operation.

–Press the service button and hold it until
"[ ]" appears.
Normal operation is saved again.
The button goes out and the flow temperature is displayed again.

– Switch off the gas boiler therme, close the gas tap, remove the U-tube manometer and screw in the sealing screw 7 tightly.

– Check the nozzle pressure, see nozzle pressure setting method.

– Temperature controller for heating flow and hot water to the originally set values
turn.

11 Conversion to a different type of gas

The following conversion kits are available for conversion to a different type of gas:

device	from gas type in conversion kit order no.	
Z .. 5 / 11-5 ..	21/31 in 23	7 712 039 017
Z .. 5 / 11-5 ..	21/23 in 31	7 712 049 010
Z .. 5 / 11-5 ..	23/31 in 21	7 712 029 012
Z .. 18-5 ..	21/31 in 23	7 710 239 048
Z .. 18-5 ..	21/23 in 31	7 710 249 047
Z .. 18-5 ..	23/31 in 21	7 710 229 026
Z .. 24-5 ..	21/31 in 23	7 710 239 049
Z .. 24-5 ..	23/31 in 21	7 710 229 027
Z .. 24-5 ..	21/23 in 31	7 710 249 048

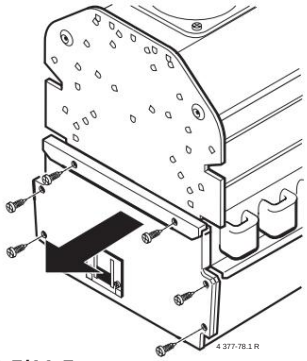
12 Adaptation to the chimney

The gas boiler is highly efficient and therefore has a low flue gas temperature.
In order to avoid moisture penetration in the chimney, it is important that this is suitable for the appropriate Exhaust temperature is designed.
In a replacement installation, the low-temperature boiler can be converted into a standard boiler, which increases the

Flue gas temperature (see “3 Technical data”).

Conversion of low-temperature boilers on Standard boiler

– Remove the front wall of the combustion chamber.



Picture 72 ZSR 5/11-5

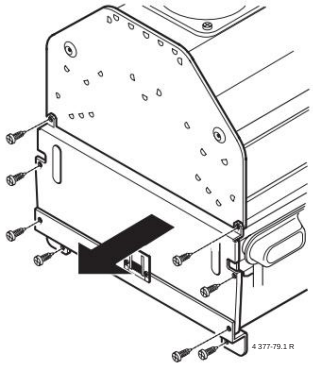
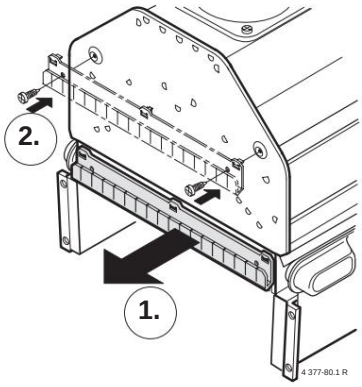


Fig. 73 Z.. 18, 24-5

– Take out the flue gas temperature screen ÿ and on screw the flow lock ÿ.



Picture 74

– Reassemble the front wall of the combustion chamber.

– Adhesive label enclosed with the publications “Converted to standard boiler”, accordingly of the device performance.

For **Austria ,** when connecting to a conventional flue gas collector, the type of lower power limitation can be changed, see 8.2.9.

13 Flue gas loss measurement

– Press and hold the chimney sweep button until the button lights up.

The boiler therme goes to the set heat output. After 15 minutes, the boiler boiler goes back to normal operation.

– After the measurements have been taken, press and hold the chimney sweep button until the button goes out.

14 Maintenance

Servicing may only be carried out by an authorized person specialist company.
See maintenance contract 6 720 600 919.

De-energize the device prior to any maintenance (Fuse, circuit breaker).

When replacing the coding plug, only one

Coding plugs with the same code can be used.

heat block

Check heat block for contamination.
Service taps when removing the heat block close and empty the device.

Temperature limiter (6) and temperature sensor pull off in advance (36.1) and block with a strong Rinse with a jet of water. In the case of heavy soiling, immerse the heating block with the fins facing downwards in hot water with washing-up liquid and rinse off.
Maximum pressure for leak testing 4 bar.
Install heat block with new gaskets.
Install temperature limiter and temperature sensor ren.

Brenner

Check the burner annually for dirt and possibly clean.
The burner seal is closed after each opening renew.

Close the gas tap, gas supply pipe between Remove gas fitting and burner. **opening of the Protect the gas fitting from contamination.** Remove the circlips of the toggle fasteners,
Open latches. Pull the burner pan forwards and clean it. front wall of
Remove combustion chamber. Clean the burner deck, ignition electrodes and monitoring electrode with a brush.

Hot water line combi (ZWR)

Remove water section. Install service set (guide bushing, O-ring, diaphragm plate). O ring and
Grease the diaphragm plate pin with Unisilkon L 641. Renew membrane.

If the specified outlet temperature is no longer reached, the device must be descaled; electric descaling pump and commercially available solvents use. The plastic water part must not be included come into contact with solvents. pump on connect to the hot water screw connections of the heating block.

Check the **expansion** tank, possibly with an air pump refill to approx. 1.1 bar.

An exact test is only possible when the device is depressurized.

Ignition and monitoring electrode every 3 years To deceive.

exhaust gas monitoring

The gas-fired boiler has two flue gas monitors. One flue gas monitor on the flow si fuse (6.1) and an exhaust gas monitor on the combustion chamber (6.2).
The exhaust gas monitors are maintenance-free. However, we recommend a functional test of the exhaust gas monitor.

Checking the flue gas monitoring 6.1 on the flow control:

– Set the boiler therme to max. heat output, see Nozzle pressure adjustment method page 29.
– Raise the exhaust pipe, exhaust nozzle with a Cover the tray and switch on the boiler therme. In this operating condition (exhaust gas jam) must switch off the device after max. 120 seconds.
A4 appears in the display.
– Remove the sheet metal and reinstall the exhaust pipe. After approx. 20 minutes, the boiler therme must go back into operation automatically.

Attention: The holder of the flue gas sensor must not be bent.

Note: The 20-minute restart time can be deleted by switching the main switch off and on again.

Checking the flue gas monitor 6.2 on the combustion chamber:

– Place the metal sheet between the flow guard and turn on the boiler heater. In this operating state (exhaust gas jam), the device must switch off for a maximum of 120 seconds.
A2 appears on the display.
– Remove the tray, after approx. 20 minutes the boiler therme must start operating again automatically.

Note: The 20-minute restart time can be deleted by switching the main switch off and on again.

– Set the boiler boiler back to normal operation, see nozzle pressure adjustment method page 29.

spare Parts

Request with designation and part number using the spare parts list.

maintenance greases
Water part: Unisilkon L 641.

Screw connections: HFt 1 v 5.

15 Overview of error codes

Display brief description	Hints
A2 Exhaust outlet at the combustion chamber.	Check the heat exchanger for dirt.
A3 Exhaust gas NTC on the flow control has open circuit or short circuit.	Check exhaust gas NTC and connection cable and replace if necessary.
A4 Exhaust outlet at the flow guard. Check exhaust path.	
A6 Exhaust gas NTC on the combustion chamber has an open circuit or short circuit.	Check exhaust gas NTC and connection cable and replace if necessary.
A7 Hot water NTC has an open circuit or short circuit.	Check hot water NTC and connection cable and replace if necessary.
Ad memory NTC has open circuit or short circuit.	Check memory NTC and connection cable and replace if necessary.
AC No signal detection between TA 211 E or RAM and circuit board.	Check cable
b1 Coding plug is not recognized by the printed circuit board.	Plug in the coding plug correctly, or measure it and replace if necessary.
CC outside sensor at TA 211 E has interruption.	Check outside sensor and cable.
d1 No feedback voltage from LSM 5. Check wiring of LSM 5 and exhaust flap.	
E0 Internal error on the circuit board.	Replace circuit board.
E2 Flow NTC has an open circuit or short circuit.	Check flow NTC and connection cable and replace if necessary.
E5 The temperature at the burner NTC exceeded.	Check burner NTC, is the heating system vented?
E7 Burner NTC has an interruption or short circuit.	Check burner NTC and connection cable and replace if necessary.
E8 Minimum pressure switch has triggered.	Heating system pressure less than 0.5 bar or minimum pressure switch defective. fill the heating system or Replace minimum pressure switch.
E9 STB has tripped.	Check flow NTC, pump and fuses.
EA No ionization current.	gas tap open? Check gas connection pressure, mains connection, ignition electrode with cable and ionization electrode with cable.
F7 Incorrect ionization signal.	Check the ionization electrode with cable for damage.
FA ionization current remains after controlled shutdown.	Check wiring to gas valve and gas valve.

Detailed documentation can be requested from customer service.

16 gas settings

		Nozzle pressure (mbar)			Gas flow rate (l/min)	
Gasart		21	23	31	21	23
Wobbeindex 0o C, 1013 mbar, kWh / m3		12,2	14,9	25,6		
Calorific **value 15°C, HuB (kWh/m3)**					8,1	9,5
Calorific value 0 ° C, Ho (kWh / m3)					9,5	11,1
Connection pressure in mbar		20	20	50	20	20
device	**Power kW**					
Z..5 / 11-5	5,5 min.	2,0	3,1	11,5	12,5	10,8
	6,0	2,4	3,7	12,9	13,7	11,8
	6,4	2,8	4,2	13,9	14,6	12,5
	7,1 (65%)	3,41)	5,21)	15,7	16,21)	13,91)
	8,41)	4,8	7,2	19,1	15,8	16,4
	9,0	5,5	8,3	20,7	20,5	17,6
	10,0	6,7	10,3	23,5	22,8	19,6
	10,9 max.	8,0	12,2	26,0	24,8	21,3
Z .. 18-5	9,1 min.	2,5	3,1	12,5	20,7	17,8
	10,0	3,0	3,8	14,1	22,8	19,6
	11,0	3,7	4,6	15,6	25,1	21,6
	11,7 (65%)	4,21)	5,31)	17,0	27,01)	23,21)
	13,0	5,1	6,4	18,8	29,6	25,5
	14,0	5,9	7,4	21,8	31,9	27,4
	15,0	6,8	8,5	25,0	34,2	29,4
	16,0	7,7	9,7	28,4	36,5	31,4
	17,0	8,7	10,9	32,1	38,7	33,3
	18,0 max.	10,0	12,5	36,0	41,5	35,7
Z..24-5	10,9 min.	2,0	2,5	8,0	24,8	21,4
	12,0	2,4	3,0	8,8	27,4	23,5
	13,0	2,9	3,6	9,6	29,6	25,5
	14,0	3,3	4,1	10,3	31,9	27,4
	15,0	3,8	4,8	11,8	34,2	29,4
	15,8 (65%)	4,21)	5,31)	13,1	36,01)	31,01)
	17,0	4,9	6,1	15,1	38,7	33,3
	18,0	5,5	6,9	17,0	41,0	35,3
	19,0	6,1	7,6	19,0	43,3	37,2
	20,0	6,8	8,5	21,0	45,6	39,2
	21,0	7,5	9,3	23,1	47,9	41,2
	22,0	8,2	10,2	25,4	50,1	43,1
	23,0	9,0	11,2	27,8	52,4	45,1
	24,3 max.	10,0	12,5	31,0	55,4	47,6

1) Value for increased starting power