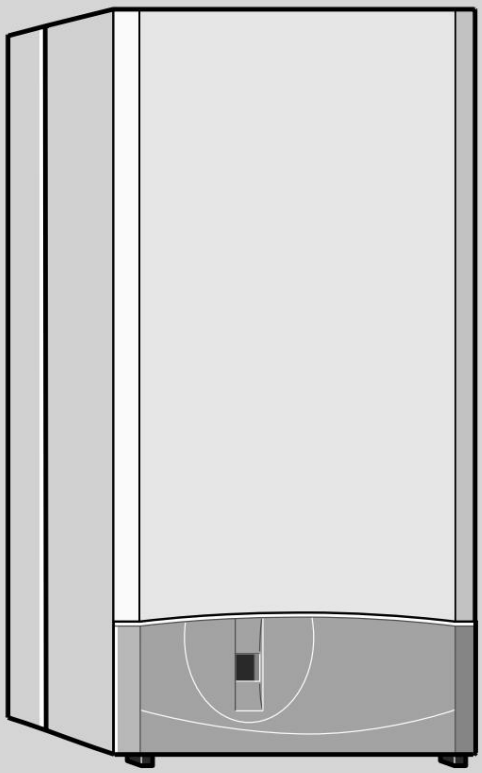
Gas wall-mounted boiler with horizontal connection device

Junkers Euromaxx



6 720 610 421- 00.1O

ZWC 24-1 MF2A 23
ZWC 24-1 MF2A 31
ZWC 28-1 MF2A 23
ZWC 28-1 MF2A 31

ZC 24-1 MFA 23
ZC 24-1 MFA 31
ZC 28-1 MFA 23
ZC 28-1 MFA 31

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content

In case of gas odor:

If you smell gas:
ÿ Close the gas valve, page 18;
ÿ Open the windows;
ÿ Do not operate the electrical switches;
ÿ Close any open flame sources;
ÿ Immediately call the gas distribution company and the authorized service company from outside.

If you smell flue gas:
ÿ Switch off the boiler, page 19;
ÿ Open windows and doors;
ÿ Notify the authorized specialist company.

Installation, modification of the appliance
ÿ The appliance must only be installed or modified by an authorized specialist.
ÿ Do not use other types of flue pipes than the original ones.
ÿ In **exhaust pipes - inlet according to B32:** Do not even partially block the sockets and openings with the doors, windows and walls.
If the room is fitted with airtight windows, you will need to use a different type of ventilation.

Maintenance
ÿ **Recommendations for the beneficiary:** the maintenance contract must be concluded with a specialized company, and the appliance must be checked annually.
ÿ The user is responsible for the safety and compatibility of the boiler with the environment.
ÿ Only original spare parts will be used!

Flammable and potentially explosive materials
ÿ Flammable materials (paper, thinner, paints, etc.) should not be stored near the appliance.

Burning air and room air
ÿ The air required for combustion and the air in the room must not contain aggressive substances (such as halogenated hydrocarbons containing compounds chlorine and fluorine). This prevents corrosion.

Beneficiary information
ÿ The beneficiary must be informed of the operation and operation of the boiler.
ÿ The beneficiary will be notified of the ban on carrying out any repairs or modifications to the appliance.

Explanation of symbols

The safety instructions will be marked with a triangle with the exclamation mark inside, on a gray background.

The warning terms used indicate the seriousness of the hazard if no fault-taking measures are taken.

! **Caution** indicates the possibility of minor malfunctions.

! **Warning** indicates the risk of minor injuries or major plant failures.
! **Danger** indicates the risk of major personal injury that could be fatal.

The indications in the text are marked by the adjacent symbol. They will be delimited by text in horizontal lines.

The instructions contain important information for cases where there is no risk of personal injury or damage to the plant.

1 Power plant information

1.1 Declaration of Conformity with CE approved construction model

This plant meets the requirements and European regulations in force 90/396 / EEC, 92/42 / EEC, 73/23 / EEC, 89/336 / EEC and those of the construction models presented in the corresponding EC type-approval certificate.

Nº Prod ID: ZWC 24-1 MF2A CE-0049 BL 3185	
Nº Prod ID: ZWC 28-1 MF2A CE-0049 BL 3186	
Nº Prod ID: ZC 24-1 MFA	CE-0049 BL 3720
Nº Prod ID: ZC 28-1 MFA	CE-0049 BL 3721
Categories	II2H 3+
Tip	C12, C32, C42, C52, C82, B32

Table 1

1.2 Overview of types

ZWC 24-1 MF2	A	23
ZWC 24-1 MF2	A	31
ZWC 28-1 MF2	A	23
ZWC 28-1 MF2	A	31
ZC 24-1 MF	A	23
ZC 24-1 MF	A	31
ZC 28-1 MF	A	23
ZC 28-1 MF	A	31

Table 2

FROM Central heating appliance
W Instant domestic hot water preparation
C Euromaxx series devices
24 Heating power 24 kW
28 Heating power 28 kW
MF Multifunction display
A Central with sealed combustion chamber and forced draft
23 Natural gas index H
31 Liquefied gas index

The index represents the type of gas according to the norm EN437:

WOMEN indicator	Wobbe Index (15°C)	Type of gas
23	3 11,4-15,2 kWh/m	Natural gas, group 2H
31	20,2-21,3 kWh/kg	Propan/Butan group 3+

Table 3

1.3 Delivery kit

The materials needed to install the boiler are included in a package.
! It contains the boiler itself, clamping materials (screws and related accessories), choke discs to fit the accessory, appliance documentation and fitting plate.

1.4 Description of the device

! Wall mounting device, regardless of the type of basket and the size of the room! Domestic water heat exchanger (ZWC)

! Heatronic with collector and display system multifunctional!

Heating circuit pressure gauge

! Continuously modulated power

! Possibility to reduce the heating power, while maintaining the maximum heating power of domestic water

! Complete protection by means of the Heatronic system with ionization control and solenoid valves according to the EN 298 standard.

! Integrated frost protection system only for the heating circuit and protection against blocking the circulation pump

! Temperature probe and thermostat for Heating

! 24 V electrical circuit temperature limiter

! Hydraulic return block with: 3-stage circulation pump, deaerator, particle separator, 3-way valve, heating valve (3 bar), drain valve

! ZWC: Hydraulic flow block with:

plate heat exchanger / heat exchanger with thermal insulation, domestic hot water temperature probe, domestic water filter, water flow sensor, water flow limiter, domestic water safety valve (10 bar), connection for domestic water circulation (accessory).

! ZC: Connection provided for the NTC system of BATTERY

! Automatic deaerator

! Expansion tank !

Refill valve

! Water temperature potentiometer warm housewives

! Hot water priority device DOMESTIC

! Ventilator

! Double flue gas / flue gas inlet with CO2 / CO measuring nozzle.

1.5 Special accessories (see also price list)

! Accessory 80/110

! 80/80 accessory

! Temperature regulator with outdoor probe

! Room thermostat

! Programmer's watch

! Special accessory 949 for connection to the battery

! Hot water accumulator (ZC)

! Gas type change set

! Connection plate for horizontal connection technology with shut-off valves

! JUNKERS connection fitting plate for the vertical connection technology, belonging to the ***JUNKERS brand,*** on the connection plate with the horizontal connection technology (for replacing older control panels).

1.6 Dimensions

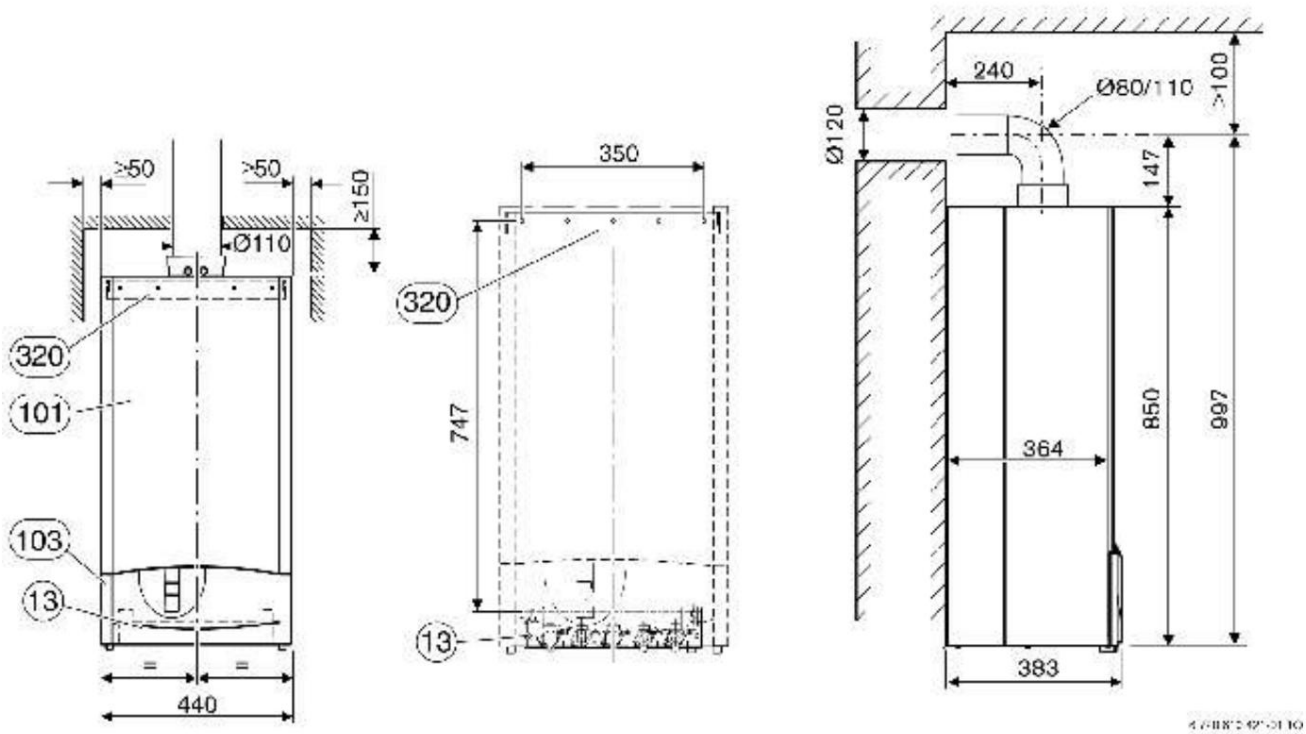


Fig. 1

13 Connection plate for horizontal connection technology
101 Forget
103 Flap
320

Clamping rail

1.7 Boiler construction / operating diagram

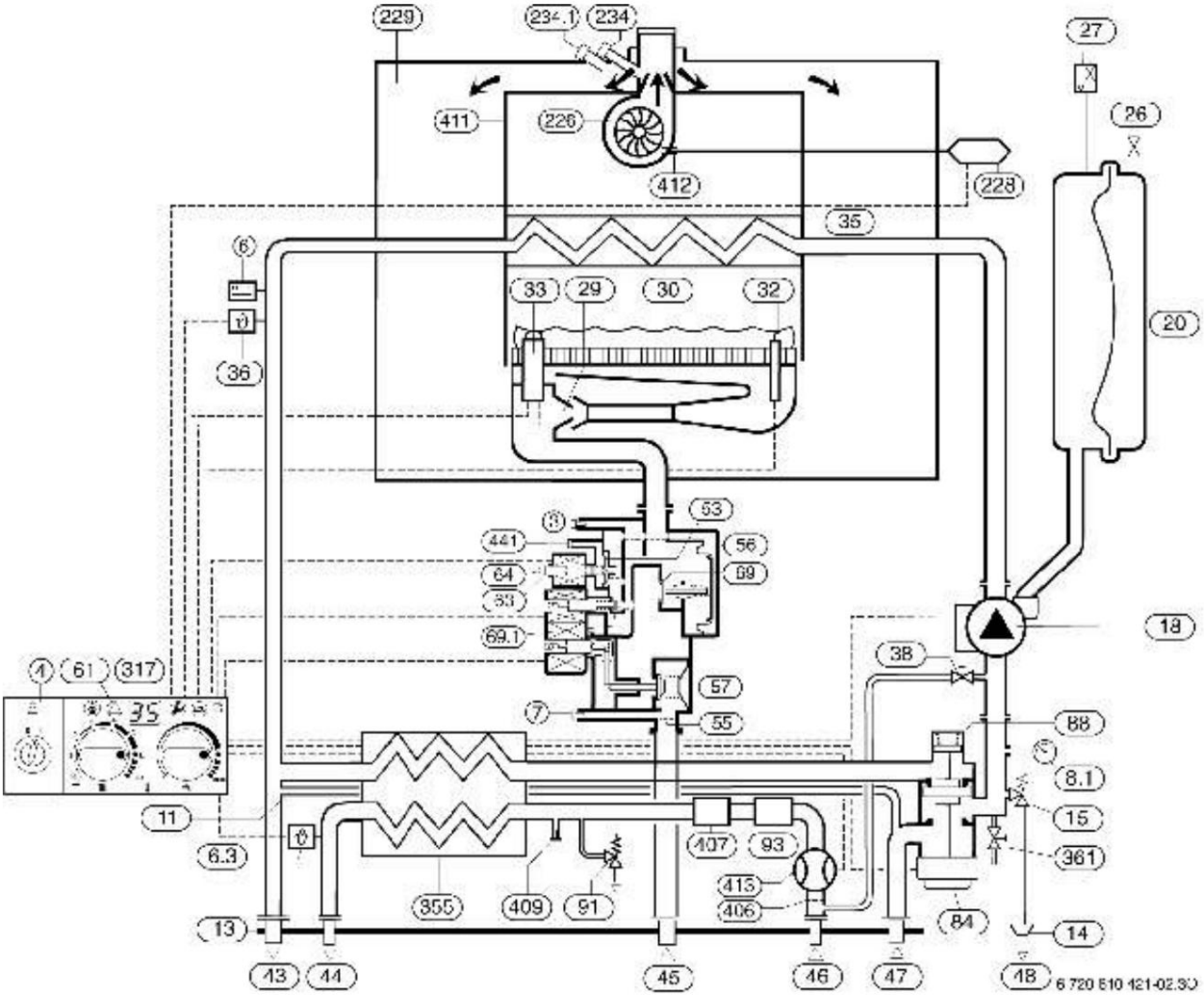


FIG. 2 ZWC operating diagram

3 Nozzle pressure measuring nozzle
4 Heatronic
6 Main heat exchanger temperature limiter
6.3 Domestic hot water temperature probe
7 Inlet pressure measuring nozzle **8.1** Manometer

11 Bypass
13 Horizontal connection technology connection plate
14 Funnel siphon
15 Safety valve (for heating circuit)
18 Circulation pump
20 Expansion vessel
26 Nitrogen filling valve
27 Automatic deaerator
29 Burner nozzles
30 Burner
32 Ionization electrode
33 Ignition electrode
35 Main heat exchanger **36** Flow temperature sensor
38 Refill valve
43 Heating system tour
44 Domestic hot water outlet
45 Gas inlet
46 Cold water inlet
47 Heating system return
48 Exhaust **53** Pressure regulator

55 Gas filter
56 Three-valve gas valve
57 Main magnetic valve plate
61 Fault indicator and reset key
63 Maximum gas flow adjustment screw
64 Minimum gas flow adjustment screw
69 Magnetic control valve plate
69.1 Control valve control pressure
84 Engine (three-way valve)
88 Hydraulic switch (three-way valve)
91 Safety valve (domestic hot water)
93 Water flow regulator (adjustable)
226 Ventilator
228 Differential pressure switch
229 Sealed combustion chamber
234 Flue gas measuring nozzle
234.1 Measuring nozzle for air required for combustion
317 Multifunction display
355 Domestic hot water heat exchanger
361 Drain valve
406 Domestic water filter **407** Filter flow limiter
409 Sewage connection
411 Combustion Chamber
412 Differential pressure switch connection
413 Water flow sensor (Turbine)
441 Opening for pressure compensation

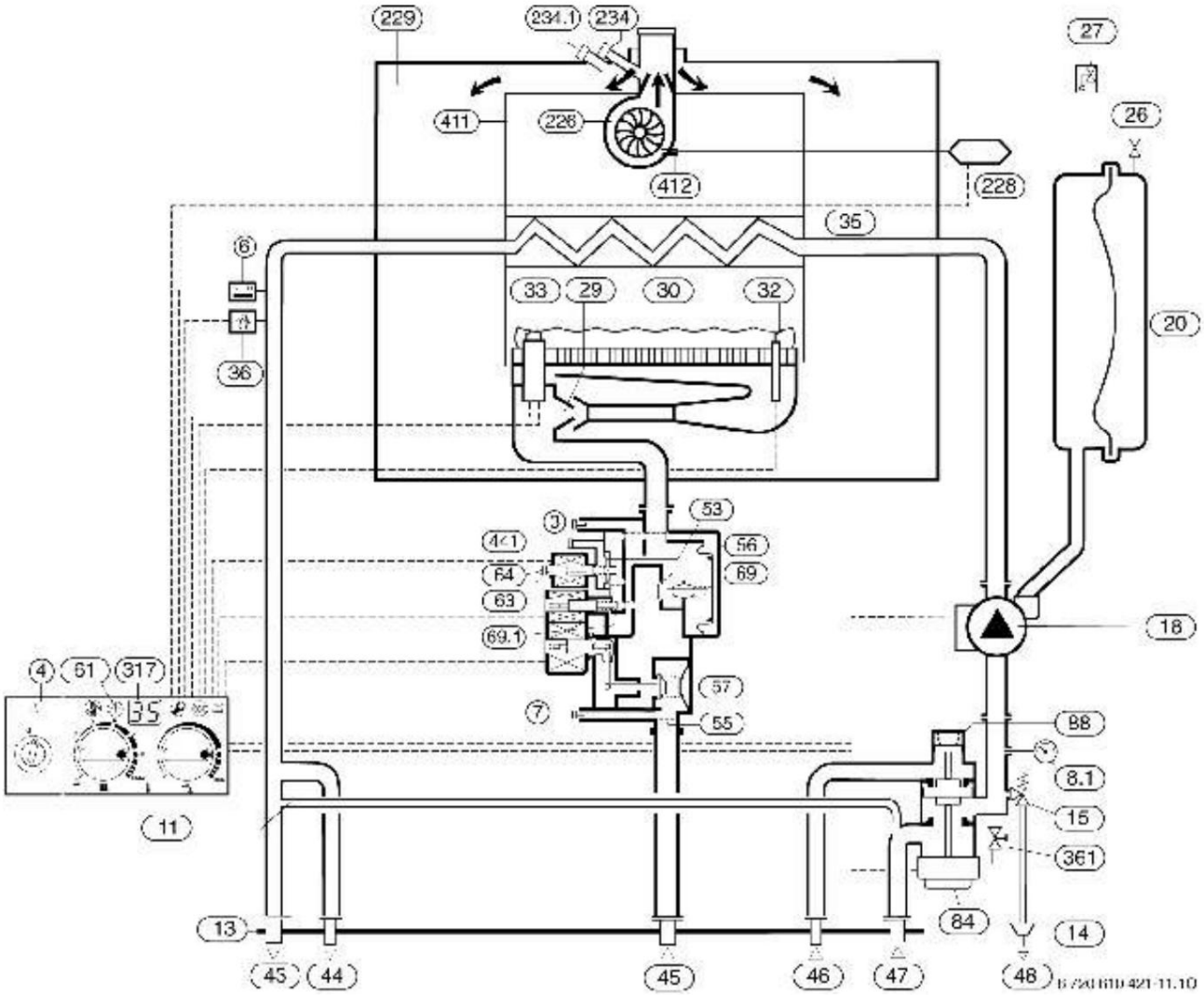


FIG. 3 ZC wiring diagram with accessory No. 949 for connection to the battery

3 Nozzle pressure measuring nozzle
4 Heatronic
6 Main heat exchanger temperature limiter Inlet pressure measuring nozzle
7
8.1 Manometer
11 Bypass
13 Connection plate for horizontal connection technology
14 Funnel siphon
15 Safety valve (for heating circuit)
18 Circulation pump
20 Expansion tank
26 Nitrogen filling valve
27 Automatic deaerator
29 Burner nozzles
30 Burner
32 Ionization electrode
33 Ignition electrode
35 The main heat exchanger
36 Flow temperature probe
43 Heating system tour
44 Battery input
45 Gas inlet
46 Exit the battery
47 Heating system return
48 Evacuation
53 Pressure regulator
55 Gas filter
56 Gas valve with three solenoid valves
57 Main magnetic valve plate
61 Fault indicator and reset key
63 Maximum gas flow adjustment screw
64 Minimum gas flow adjustment screw
69 Magnetic control valve plate
69.1 Control solenoid valve control pressure
84 Engine (three-way valve, accessory no. 949)
88 Hydraulic switch (three-way valve)
91 Safety valve (domestic hot water)
93 Water flow regulator (adjustable)
226 Ventilator
228 Differential pressure switch
229 Waterproof combustion chamber
234 Flue gas measuring **nozzle 234.1** Flue gas measuring nozzle
317 Multifunction display
361 Drain valve
411 Combustion Chamber
412 Differential pressure switch connection
441 Pressure compensation opening

1.8 Electrical connections

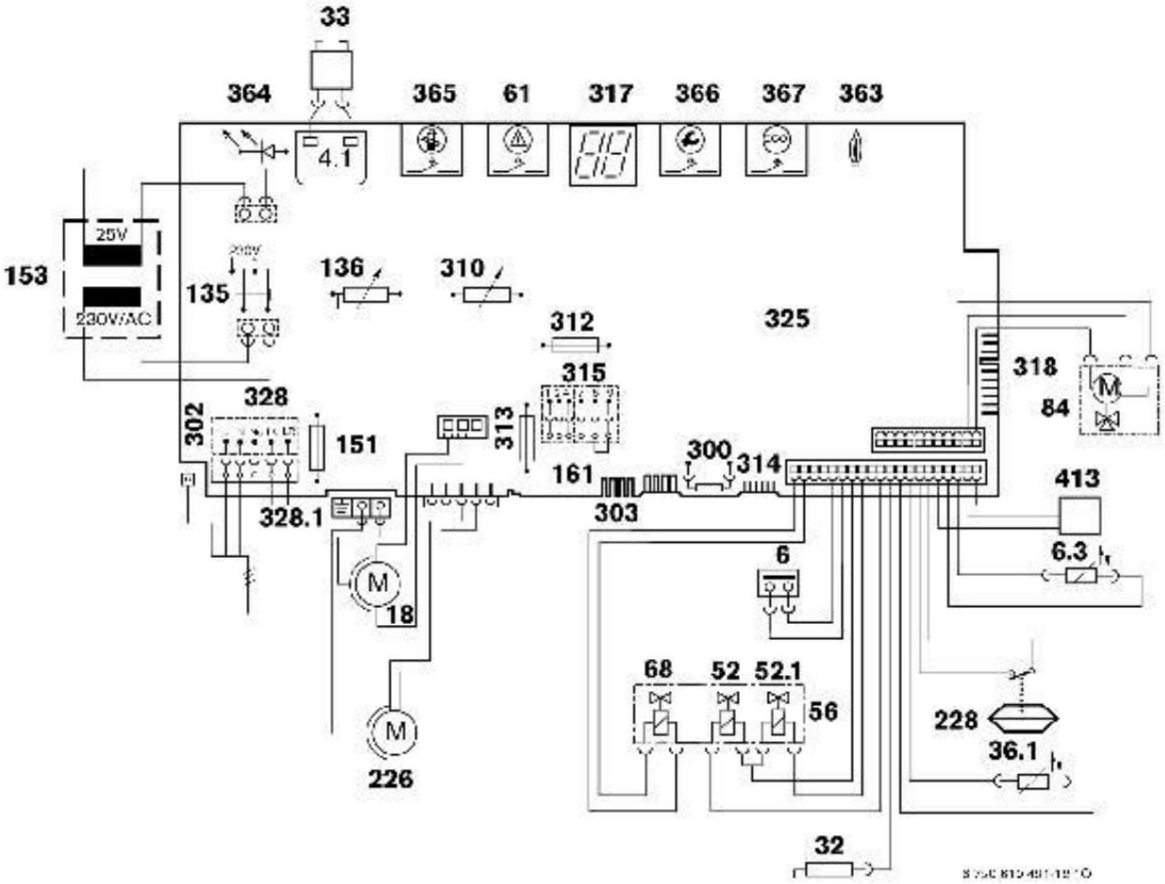


Fig. 4

Ignition transformer
Temperature limiter of the main heat exchanger
4.1 6 6.3 NTC for hot water (ZWC)
18 Circulation pump
32 Ionization electrode
33 Ignition electrode
36.1 Flow temperature probe
52 Magnetic valve 1 (safety)
52.1 Magnetic valve 2 (safety and modulation)
56 Gas valve
61 Reset key
68 Magnetic control valve
84 Engine (three way valve)
135 Main switch
136 Heating circuit potentiometer

151 Fuse T 2.5 A, AC 230 V
153 Transformer
161 Points
226 Ventilator
228 Differential pressure switch
300 Coded sticker
302 Connection for protection null
303 Battery NTC (ZC) connection
310 Potentiometer of the domestic hot water circuit
312 Safety T 1.6 A
313 Safety T 0.5 A
314 Plug for electronic regulator plug TA 211 E
315 Room thermostat strip
317 Display digital

318 Plug for DT 1/2 adjustable timer plug

325 Electronic board
328 230 V AC strip
328.1 230 V thermostat strip (LS / LR deck removed)
363 Control LED for burner operation
364 Control LED for connection to the mains
365 Tasta rejoice
366 Service key
367 ECO key
413 Water flow sensor (turbine, ZWC)

1.9 Technical data

	Unit of measure	ZWC / ZC 24-1		ZWC / ZC 28-1	
		"23" Gas methane (G 20)	"31" GPL (G 31)	"23" Gas methane (G 20)	"31" GPL (G 31)
Rated power max.	kW	24,0	24,0	28,0	28,0
Rated thermal output max. at the hearth Nominal	kW	26,5	26,5	31	31
thermal power min.	kW	10,0	10,0	11,5	11,5
Rated thermal output min. at the hearth Nominal	kW	11,5	11,5	13,5	13,5
thermal power max. (hot water)	kW	24,0	24,0	28,0	28,0
Rated thermal output max. at the hearth (hot water)	kW	26,5	26,5	31	31
Rated thermal output min. (hot water)	kW	8	8	8 9,5	8
Rated thermal output min. at the hearth (hot water)	kW	9,5	9,5		9,5
Gas connection					
"23" Gas methane (G20)	m3 /	2,8	-	3,28	-
"31" Bhutan (G30) / Propane (G31)	h kg /h	-	2,06	-	2,41
Permissible gas supply pressure					
"23" Gas methane (G20)	mbar	20	-	20	-
"31" Bhutan (G30) / Propane (G31)	mbar	-	28-30/37	-	28-30/37
Expansion tank					
Preload pressure Total capacity	bar l	0,5			
Volume used Total permissible	l	8			
volume of the heating system at a		4,2			
flow temperature of up to 75 ° C Heating	,	120			
Nominal heating volume Max. per flow		2,0		2,0	
Temperature min. per flow Max. allowed	l °	90		90	
(heating)	C °	45		45	
	C	3		3	
Min. Pressure allowed (heating)	bar bar	0,5		0,5	
Domestic hot water (ZWC)					
Debit min. hot water Max. hot	l/min l/	2			
water outlet temperature max. of	min °C	10		12	
allowable domestic water Min. of		40 - 60			
domestic water bar Values required for the calculation of	bar	10			
average values according to DIN 4705		0,3			
Flue gas flow / power min. Nominal value / min. heating power Flue gas	g/s	15,47/17,02		15,94/17,7	
temperature at rated power max./min.	°C	136/110		154/122	
CO2 at max. Power	%	7,6	8,5	7,6	8,8
CO2 at power min.	%	2,6	3	2,7	3,2
Flue gas connection NOx class Electrical values	mm	Ø 80/110			
Electrical voltage		3		2	
	AC ... V	230			
Frequency	Hz	50			
Power: Circulation pump in position 1	In	100			
Circulation pump in position 2	In	130			
Circulation pump in position 3	In	150			
Protection class	IP	44			
Connectable room thermostat		24 V or 230 V ON/OFF continuous regulator			
Diverse					
Weight (without packaging) + connection plate	kg	44 + 2			
Height	mm	850			
Width	mm	440			
Depth	mm	383			

Table 4

2 Regulations

When installing this appliance, the following requirements and regulations will be taken into account:

! Regulation on gas installations for domestic, collective or commercial gas supply systems

! Regulation on thermal installations in buildings.

! Regional normative acts from each Autonomous Community.

! Internal normative acts of the company gas distributors.

! Local legislation.

3 Installing

Installation, electrical connection, connection to the gas network, connection of exhaust pipes, as well as commissioning will be carried out exclusively by
JUNKERS Authorized Technical Department .

3.1 Important information

ÿ If necessary, consult gas and water distribution companies before installation;
ÿ Only install the appliance in a closed heating system in accordance with DIN 4751, part three.
A minimum flow rate is not required for operation
the water.
ÿ Transform heating systems with open expansion vessels into closed systems.
ÿ For high-power installations: connect the appliance via a hydraulic separator to the mains existing pipelines.
ÿ Do not use radiators, heaters with galvanized pipes to prevent the formation of gas.
ÿ When using a room thermostat: do not install a thermostatic valve on the radiator in the room where the room thermostat is installed.

ÿ Noise from water circulation can be prevented by using a water valve overpressure (accessory no. 687) or, in the case of two-tube heating systems, by using a three-way valve attached to the farthest radiator.

ÿ The boiler is suitable for heating systems with plastic pipes (PER).
ÿ When underfloor heating: set the flow temperature to the maximum permissible temperature.
ÿ Each radiator must be equipped with a deaerator (manual or automatic), as well as filling and draining valves at the lowest points of the installation.

Before commissioning the boiler:
ÿ Clean the system by circulating water to remove any foreign matter or grease particles that could affect the operation of the appliance.

Thinner should not be used for cleaning or solvents.

ÿ For older installations or underfloor heating, you can use Varidos 1 + 1 or Cillit HS as a corrosive agent.

3.2 Choice of location

Location recommendations

ÿ Observe the specific rules and regulations each country.
ÿ Observe the minimum installation distances presented in the installation instructions for accessories.

Air required for combustion

To prevent corrosion, the air required for combustion must not contain aggressive substances.
Halogenated hydrocarbons containing chlorine and fluorine compounds are considered to be extremely corrosive.
These may be contained, for example, in thinners, paints, adhesives, fuels and household cleaners.

Temperature at the boiler surface

The maximum temperature at the boiler surface is below 85 ° C. No special protective measures are required for flammable building materials or furniture. However, you will need to take into account the country-specific legislation in which the appliances are installed.

LPG installations below ground level

The appliance complies with the provisions of TRF1996, paragraph 7.7, for installations located below ground level.
It is recommended to install a valve in the building magnetic inlet so that the liquefied gas is supplied only at the desired time.

3.3 Montarea şinei de prindere şi a plăcii de racorduri

La alegerea locului de amplasare a aparatului trebuie respectate următoarele condiţii:

- Trebuie respectate distanţele maxime faţă de toate suprafeţele denivelate, cum sunt furtunuri, conducte, nişe, etc.
- Trebuie asigurate spaţii necesare pentru efectuarea lucrărilor de întreţinere (dacă este posibil, trebuie asigurată o distanţă minimă de 50 mm în jurul centralei).

Este necesar un spaţiu liber de 200 mm sub centrală pentru îndepărtarea panoului de comandă.

Prinderea pe perete

► Fixaţi şablonul de montare într-o poziţie corespunzătoare în încăperea în care urmează a fi amplasată centrala.
► Practicaţi găuri (Ø 8mm) pentru şuruburile de fixare.
► Realizaţi o deschizătură în perete pentru accesoriile de evacuare.
► Fixaţi placa de racorduri pe perete cu ajutorul şuruburilor şi diblurilor livrate împreună cu aparatul.
► Fixaţi pe perete placa de racorduri cu şuruburile şi diblurile existente.
► Aliniaţi şina şi placa de racorduri şi strângeţi şuruburile.

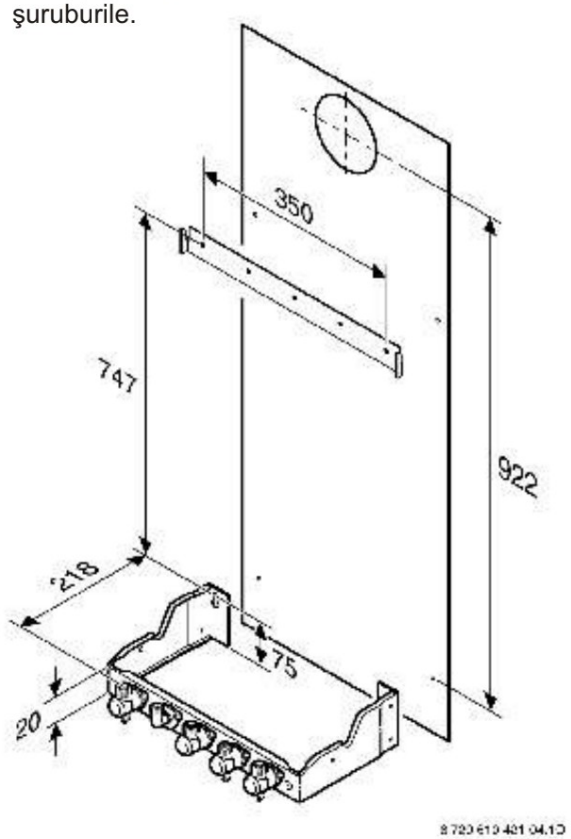


Fig. 5

Racordarea la reţelele de gaz şi apă

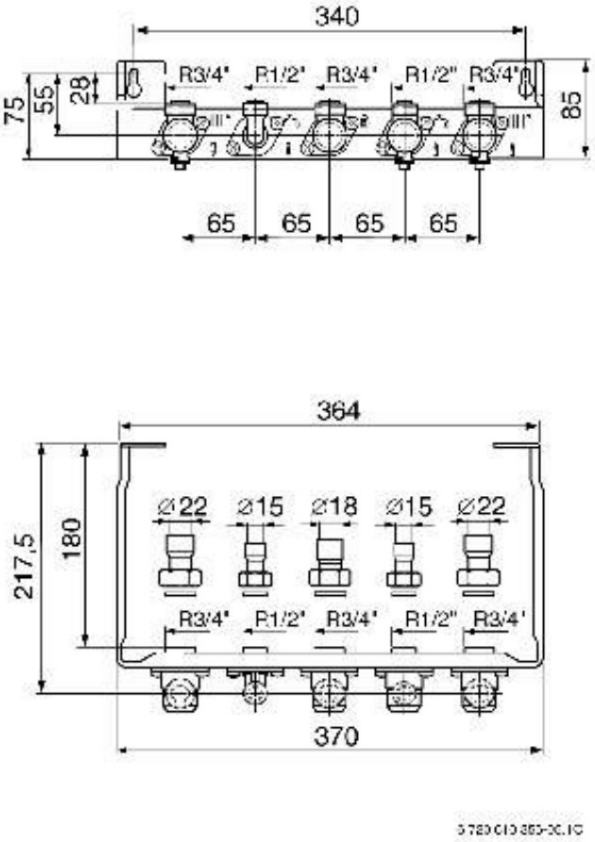


Fig. 6 Racordarea conductelor de alimentare

Trebuie neapărat avut în vedere prinderea conductelor cu console în apropierea centralei, astfel încât racordurile să nu fie suprasolicitate.

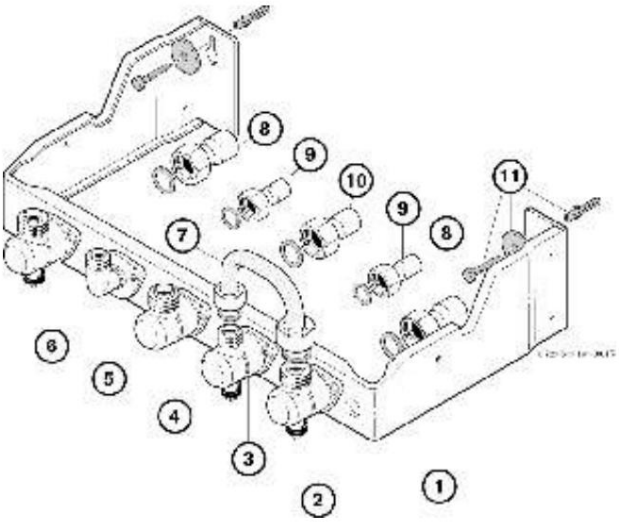


FIG. 7 Connection plate

1	Connection plate
2	Heating system return
3	Cold water inlet (ZWC), Battery output (ZC)
4	Gas connection
5	Hot water connection (1/2 ") (ZWC), Battery input (1/2 ") (ZC)
6	Heating system tour
7	Flexible connection for carrying out the hydraulic test of the heating system
8	Ø 22 mm plug with Dutch G 3/4 ”
9	Ø 15 mm plug with Dutch G 1/2 ”
10	Ø 18 mm plug with Dutch G 3/4 ”
11	Dowels and screws

3.4 Installation of pipes

3.4.1 Domestic hot water (ZWC)

When all valves are closed, the static pressure must not exceed 10 bar.

Otherwise:

ÿ The system must be equipped with a pressure reducer.

If the system is equipped with a non-return valve or a pressure reducer at the inlet of the domestic water system: ÿ Install a safety unit with a connection to a drain system in the event of an overpressure in the circuit.

Domestic water pipes and fittings must be calibrated to ensure a sufficient flow of water at the points of consumption according to the prevailing pressure.

3.4.2 ZC devices without battery

If the device operates without a battery:

ÿ Close the battery inlet and outlet with the supplied plugs.

3.4.3 Heating

Safety valve on the heating circuit

Its purpose is to protect the heating circuit and the entire installation against possible damage overpressures. The valve is set at the factory to open when the circuit pressure reaches approximately 3 bar.

A drain pipe mounted next to the valve allows excess water to drain out.

To open the valve manually: ÿ Press the lever.

To close: ÿ

Release the lever.

3.4.4 Gas connection

Gas connection pipes must properly sized for insurance powering all connected devices.

ÿ Install the gas valve in a suitable place.

3.5 Mounting the device

Caution: Flush the mains to remove any debris that could damage the installation.

ÿ Remove the packaging according to the instructions.

Take off your coat

For electrical safety reasons, the jacket is secured with two screws to prevent unauthorized removal. **Always fasten the jacket with these screws.**

ÿ Remove the flap.
ÿ Remove the safety screws (4) from the side lower, right and left.
ÿ Pull the housing forward and remove it by lifting it.

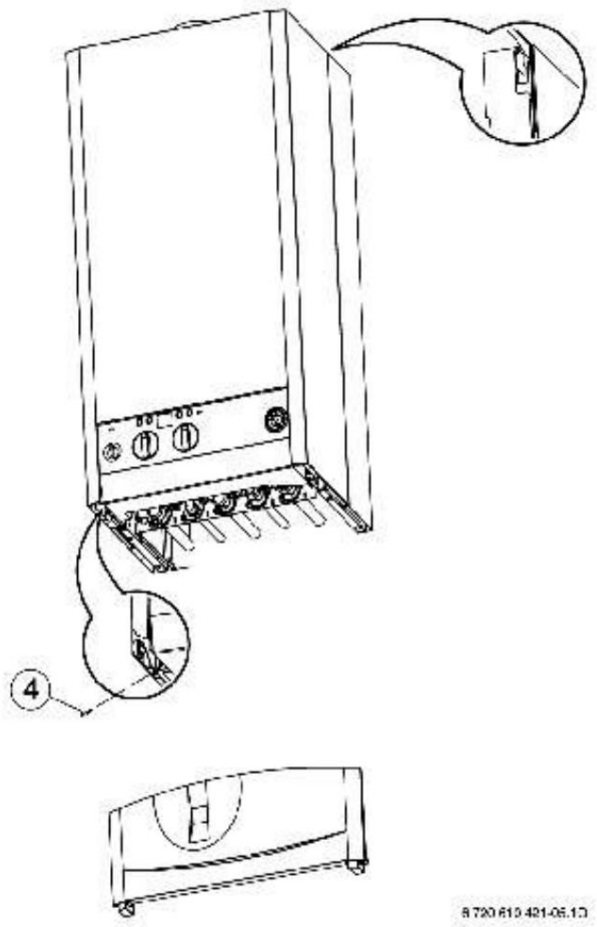


Fig. 8

Before fixing

ÿ Remove all protection plugs and install the original gaskets supplied with the appliance.

Fixing the appliance

ÿ Place the appliance on the connection board. ÿ Lift the appliance and then slowly lower it along the wall to hang it from the rail.
ÿ Make sure that all gaskets are correctly mounted on the connection plate and tighten all pipe connections with the help of the hoses.

Installation of flue gas accessories

For more information on installation, read the installation instructions for that accessory.

ÿ Insert the exhaust elbow through the flue pipe in the appliance and push it all the way down. ÿ Align the elbow and press the flap firmly.

-or

ÿ Center the exhaust elbow, drill two 3 mm diameter holes in the exhaust fitting and on the gas outlet flange and secure the exhaust fitting with the supplied screws.

Caution: Maximum hole depth 8 mm. The exhaust pipe must not be damaged!

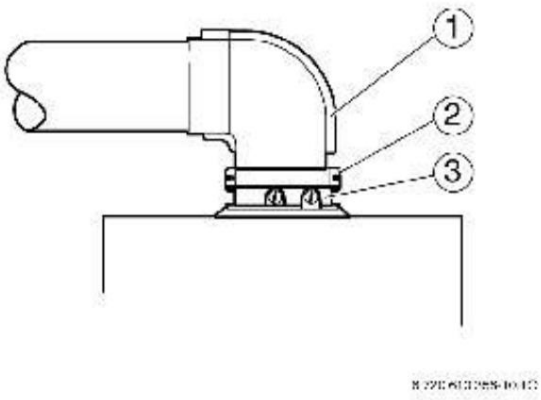


FIG. 9 Securing the drain elbow with the flap

Flue gas accessory
1 Flap
2 3 Outlet flange

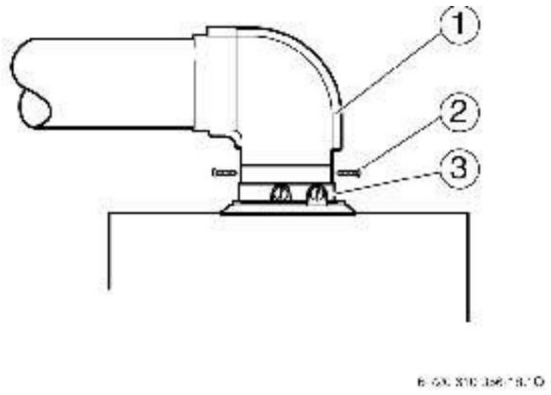


FIG. 10 Securing the drain elbow with screws

Flue gas accessory
1 Screws
2 3 Outlet flange

Attention: the boiler must be adapted to accessory with the help of discs appropriate strangulation (see installation instructions for the flue gas accessory used).

Mounting the throttle disc in the exhaust segment

ÿ Remove the housing.
ÿ Remove the combustion chamber cover.
ÿ Disconnect the fan cable.
ÿ Remove the fan.
ÿ Install the throttle disc (2) on the side fan outlet.

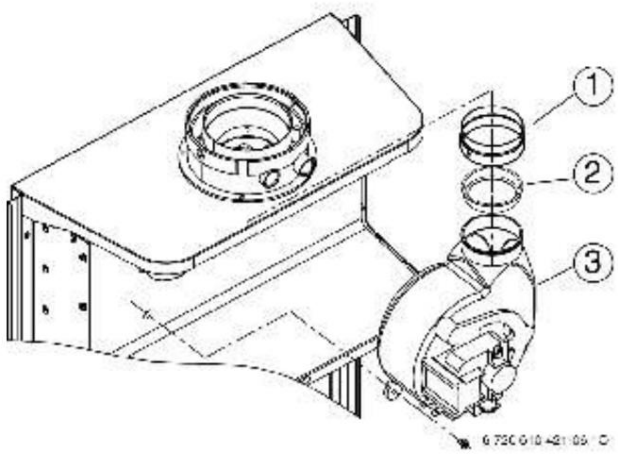


FIG. 11 Removing the fan

Gasket
1 Choke disc
2 3 Ventilator

ÿ Install the fan and connect it.
ÿ Install the combustion chamber cover and housing.

3.6 Checking the connections

Connection to the water mains

ÿ For ZWCs: Open the cold water tap and charge the hot water circuit (test pressure: max. 10 bar).

ÿ Open the shut-off valves on the flow and return of the system and fill the heating system with water.
ÿ Check the seals and connections for leaks (test pressure: max. 3 bar on pressure gauge).
ÿ Drain the air from the appliance using the deaerator quickly incorporated.
ÿ Check all boiler joints for leaks.

Ventilation of the installation

The heaters are equipped, on the return of the installation, with a deaerating system (air separator and deaerator with float). It is still necessary connecting appliances to an airtight and dirt-free heating circuit.

To simplify ventilation, when commissioning: ÿ Fill the heating circuit to a pressure of 1.5 bar.

Failure to follow these installation instructions may result in a decrease in power or an increase in installation noise.

Gas pipelines

ÿ Check the gas line for the gas valve for leaks.

ÿ Close the gas valve to protect the gas valve against damage caused by it overpressure (max. pressure 150 mbar).
ÿ Check the gas system.
ÿ Depressurize.

Exhaust pipe - intake

ÿ Check that the exhaust pipe connection and the air inlet are not blocked.

4 Electrical connections

Danger: Danger of electric shock!
Before performing work on electrical components, disconnect the appliance from any electrical source (safety, LS switch).

The control, control and safety components are fully wired and checked at the factory.

ÿ The appliance is supplied with a fixed network cable with a mains plug.

ÿ In biphasic networks (IT networks):
To optimize power supply electrical, insert a resistor (order no. 8900431516) between conductor N and the connection of the protective conductor (earth).

4.1 Connecting the device

The electrical connection must be made according to the rules in force regarding household electrical installations.
ÿ Grounding is absolutely necessary.

ÿ The electrical connection must be made with a separator of min. 3 mm distance between contacts (eg fuses, LS switch).

When replacing the network cable:

! Use an insulated (IP) cable and always run it through the stuffing box, choosing a suitable hole its outer diameter.

! The following cable type is suitable: NYM-I 3 x 1.5 mm2

ÿ The control panel opens, page 17, figures 14 and 15.

ÿ Cut the gland according to the diameter of the cable.

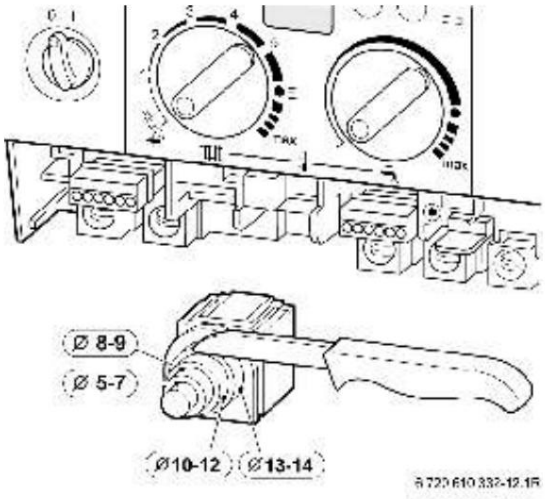


Fig. 12

ÿ Pass the cable through the gland and connect it, figure 13.

ÿ Secure the power cord with the plastic retaining screw.

The ground conductor must remain free until the other cables are secured.

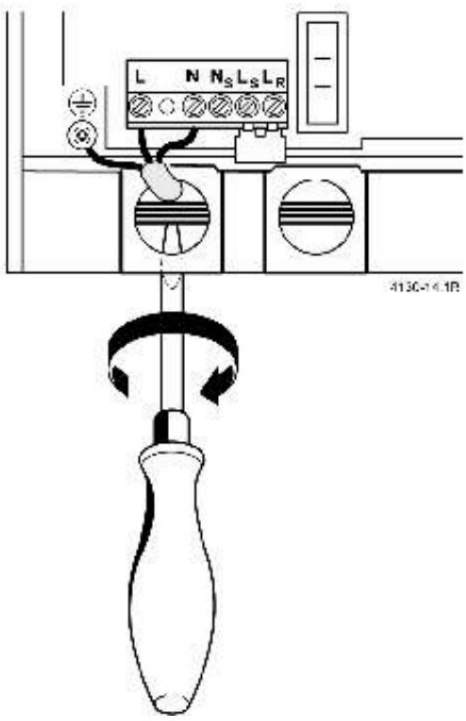


Fig. 13

4.2 Connecting the thermostats, remote controls or watches programmatic

The boiler can only be controlled with ***JUNKERS controllers.***

Opening the control panel
ÿ Pull the cover down and remove it.

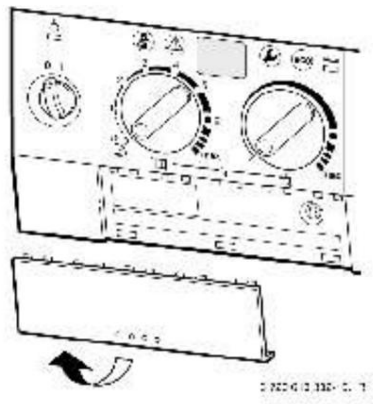


Fig. 14

ÿ Loosen the screw and pull the cover forward.

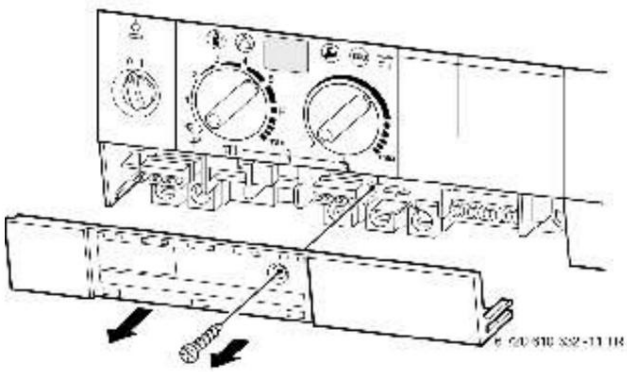


Fig. 15

Thermostat with outdoor probe
TR 220, TA 250, TA 270

ÿ Make the connection according to the instructions installation of the regulator.

Temperature regulator with outdoor probe
TA 211 E

ÿ Connect it to the appliance according to the controller installation instructions.

24V room thermostats with continuous adjustment ÿ Install the TR 100, TR 200 room thermostats as follows:

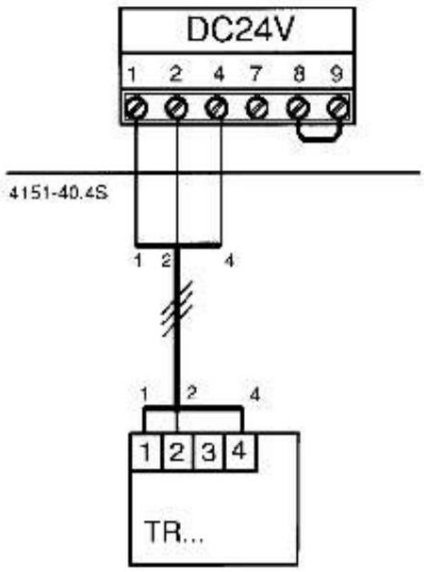


Fig. 16

Remote controls and programming clocks

ÿ Install the TF 20, TW 2, TFQ 2T / W remote controls or DT 1, DT 2 programming clocks according to the installation instructions.

4.3 ZC: Connecting the battery

Indirect heating battery provided with NTC

JUNKERS batteries with NTC connect directly to the electronic board of the device. The cable and connector are attached to the battery.
ÿ Break the plastic flap.
ÿ Insert the battery NTC cable. ÿ Mount the connector on the electronic board.

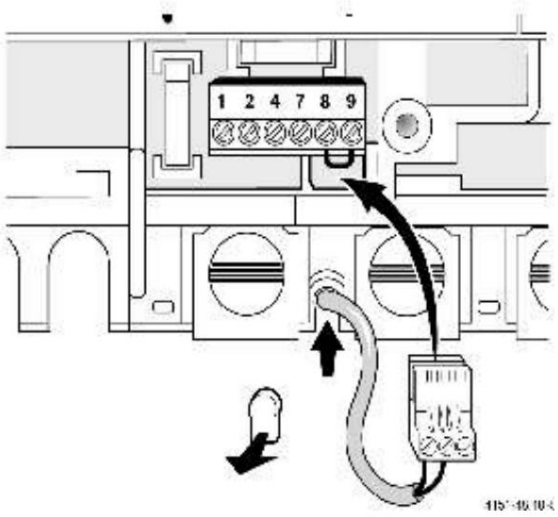


Fig. 17

5 Commissioning

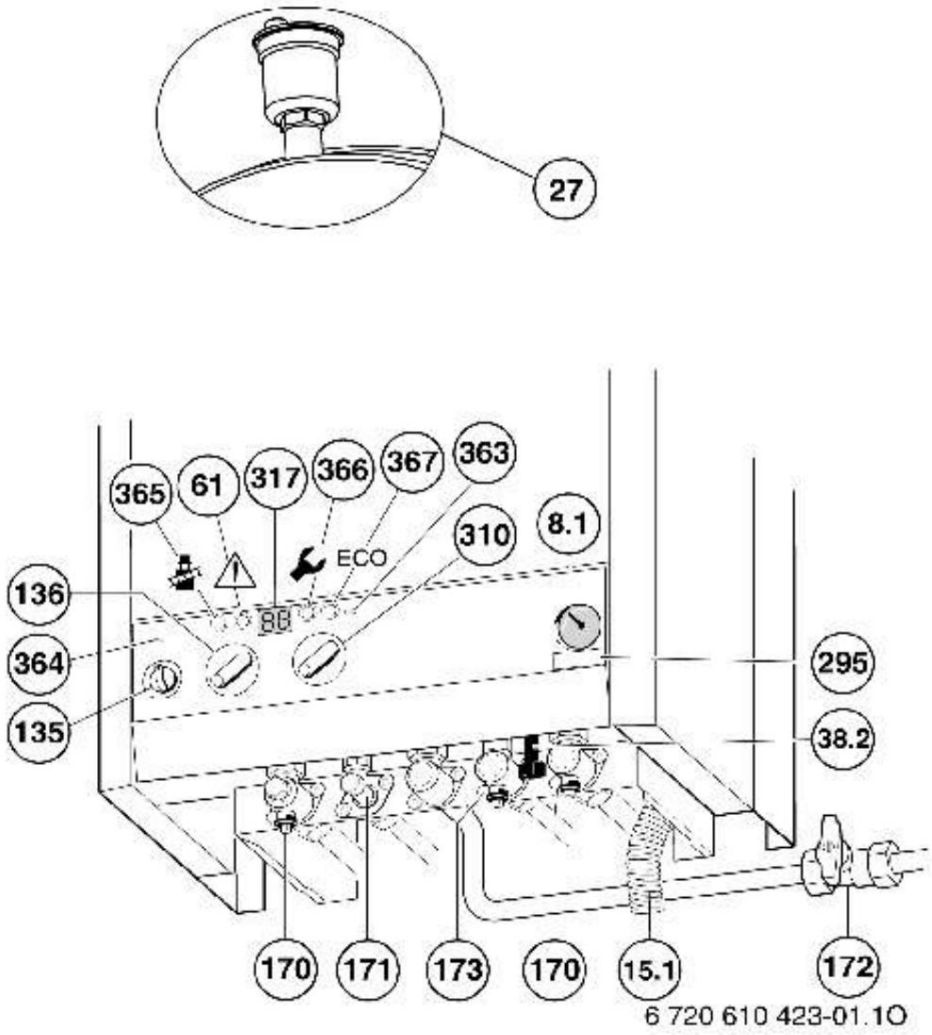


Fig. 18

Manometer
8.1 Exhaust hose
15.1 Automatic deaerator
27 38.2 Installation filling valve
61 Emergency key
135 Main switch
136 Temperature selector for heating system flow circuit and summer position (hot water only)
170 Heating system return and return shut-off valves
171 Domestic hot water drain valve (ZWC)
Battery inlet valve (ZC)
172 Gas tap (closed)
173 Cold water shut-off valve (ZWC),
Battery drain (ZC)
295 Identification plate
310 Hot water temperature selector
317 Multifunction display
363 Burner operation control LED
364 Control LED for mains connection
365 Tasta rejoice
366 Service key
367 ECO key

5.1 Before commissioning

Caution: Never operate the boiler without water. Never open the gas supply valve without pre-filling the installation with water.

ÿ ZWC: Open the cold domestic tap (173) and vent the system.
ÿ Adjust the pressure of the expansion vessel to the static height of the heating system (see page 22).
ÿ Open the radiator valves. ÿ Open the flow valves for flow and return (170).
ÿ Slowly fill the heating system with the filling valve (38.2, ZWC).

i It is recommended to fill the system with heating to a pressure of 1.5 bar.

ÿ Vent the radiators.
ÿ Open the automatic circuit breaker (27) of the heating circuit and then close it immediately after venting.
ÿ Fill the heating system with the filling valve (38) until it reaches a pressure of 1-2 bar. ÿ Check that the type of gas mentioned on the boiler plate corresponds to that of the appliance supply.

ÿ Open the gas valve (172).

5.2 Switching the appliance on and off

Switching

ÿ Move the main switch to position (I).
The control LED lights up green and the display shows the boiler flow temperature.

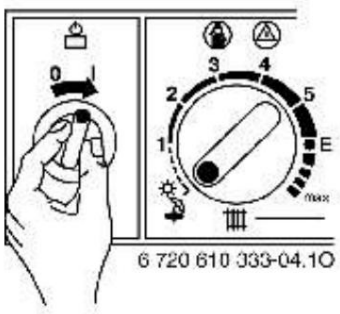


Fig. 19

i After starting, for approx. 10 s on the display show **P1** to **P6.**

stop

ÿ Set the main switch to position (0).
The programming clock (if any) stops if the operating range is exceeded.

Danger of electric shock!
Safety (151), page 8, is still live.

Always disconnect the appliance from the mains (safety, LS switch) before working on electrical components.

5.3 Switching on the heating

ÿ Turn the thermostat knob [...] to adjust the flow temperature to the heating requirement:
- low temperature: position E (approx. 75 ° C)
- flow temperatures up to 90 ° C: max. (see page 22, Canceling the lower temperature limit ”).

During burner operation, the red control LED lights up.

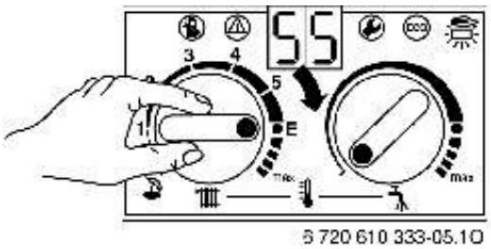


Fig. 20

5.4 Heating adjustment

ÿ Set the temperature probes with external probes **(TA [...])** to the heating curve and the corresponding operating mode.
ÿ Set the room thermostat (TR **[...])** to the desired room temperature.

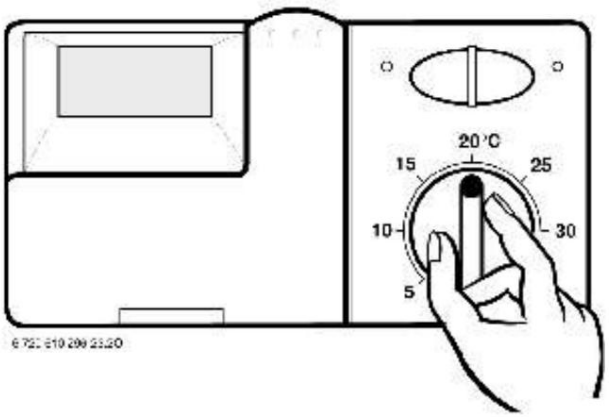


Fig. 21

5.5 ZC appliances with hot water accumulators: Domestic hot water temperature

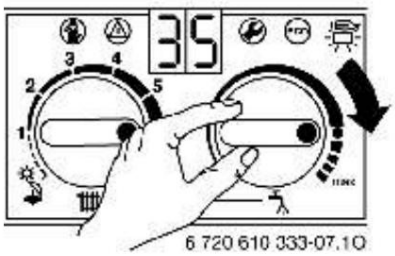
Warning: Danger of burns!

ÿ In the case of normal operation, a temperature higher than 60 ° C must not be set.

ÿ Temperatures up to 70 ° C should only be selected for short periods of time in order to perform thermal disinfection.

Battery without thermostat (with NTC)

ÿ Set the hot water temperature in the thermostat. In batteries with thermometer indicated the temperature of the hot water inside them.



picture 22

Selector position	Temperature water
Maximum left	aprox. 10°C (frost protection)
[...]	aprox. 60°C
Maximum right	aprox. 70°C

Tab. 5

Thermostat battery

If the battery is equipped with its own thermostat, it is necessary to deactivate the thermostat [] of the appliance (cancel the frost protection function).

ÿ Set the hot water temperature in the thermostat battery. In a battery with a thermometer it is indicated hot water temperature in the battery.

ECO key

Pressing the ECO key until it lights up switches between the **Comfort** and **ECO operating modes.**

Comfort mode, the key does not light up (factory default)

In Comfort mode, priority is given to the battery. First, the battery water is heated to the set temperature. Then the water in the heating system is heated.

ECO operating mode, the key illuminates

In ECO mode, the water in the heating system and in the battery is heated alternately every twelve minutes.

5.6 ZWC appliances: Domestic hot water temperature

The hot water temperature can be adjusted with the thermostat […] to values between approx. 40 ° C and 60 ° C. The set temperature is not shown on the display.

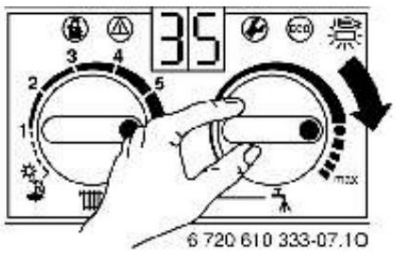


Fig. 23

Selector position	Temperature water
Maximum left	aprox. 40 °C
[...]	aprox. 55 °C
Maximum right	aprox. 60 °C

Table 6

ECO key

By pressing the ECO key until it lights up, you will be able to choose between Comfort and ECO operating modes.

Comfort mode, key does not light (factory setting)

The boiler constantly maintains the set temperature. The waiting time for hot water is therefore minimal. The appliance switches on even when no hot water tap is open.

ECO operating mode, key illuminates

The boiler is not permanently maintained at the set temperature. The hot water heating process remains activated.

! **With hot water tap opening**
Briefly opening and closing the water tap hot, the water is heated to the set temperature. After a while, you will have hot water.

! **Without opening the hot water tap**
The heating process comes to an end when the hot water tap is opened. The waiting time for hot water is therefore longer. By opening the hot water tap, you save maximum gas and water.

5.7 Hot water flow and temperature

The hot water temperature can be adjusted between 40 ° C and 60 ° C. If the hot water flow is high, then the water temperature is reduced according to Figure 24.

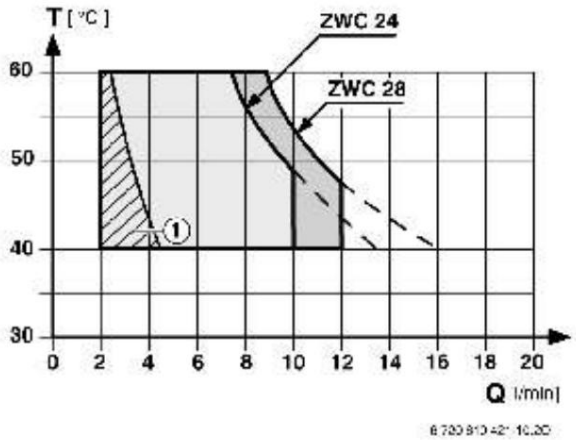


Fig. 24

[1] The machine is blinking (alternating switch between OPEN and CLOSED)

5.8 Summer operation (hot water preparation only)

With temperature controller with outdoor probe

ÿ **Do not** change the thermostat . The regulator automatically shuts off the heating circuit pump to a certain outside temperature and thereby causes the heating to stop.

With room thermostat

ÿ Turn the thermostat the device completely to the left. Heating is turned off. During this time, both the hot water supply and the room supply of the room thermostat and the same programmer are maintained.

5.9 Frost protection

ÿ Leave the heating system switched on.
-or
ÿ Add FSK - Schilling Chemie antifreeze (22% - 55%), Glythermin N BASF (20% - 62%), or Antifrogen N - Hoechst / Ticona (20% - 40%).

5.10 Faults

??????????????????????????????

It may appear during operation
various faults. The display will show the fault and the [...] key will flash.

If this [...] flashes:
ÿ Press and hold until the display shows -.
The boiler restarts and the flow temperature in the heating system will be displayed.

If does not flash:
ÿ Switch off and restart the device:
The boiler restarts and the flow temperature in the heating system will be displayed.

If the defect cannot be remedied:
ÿ Call an authorized service center

5.11 Protection against pump blockage

This function prevents the circulation pump and the hydraulic switch from locking if they do not operate for a long time.

After each disconnection of the pump, a time measurement is made, so that after 24 hours of non-operation, the hydraulic switch and the circulation pump are put into operation for five minutes.

6 Adjusting the appliance

6.1 Mechanical adjustment

6.1.1 Checking the size of the vessel expansion

Using the diagrams below, you can estimate the size of the factory-installed expansion vessel or, if necessary, attach an additional expansion vessel (not required for underfloor heating). The characteristic curves indicated are based on the following data:

! There is 1% water or 20% in the expansion vessel from the nominal volume.

! The differential pressure of the safety valve is 0.5 bar, according to the regulations.

! Vessel preload pressure expansion corresponds to the static height of installation above the boiler.

! Maximum operating pressure: 3 bar.

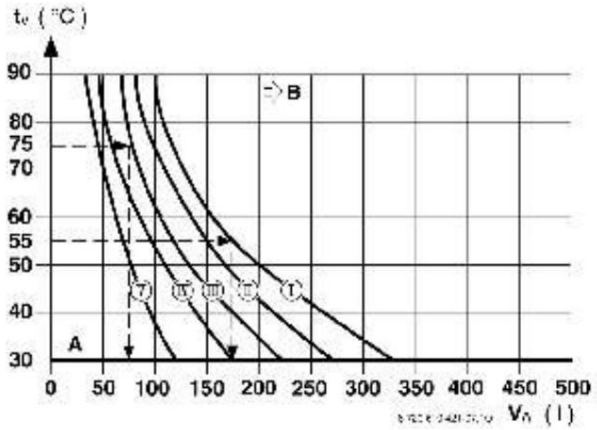


Fig. 25

'	Preload pressure 0.2 bar
II	Preload pressure 0.5 bar
III	Preload pressure 0.75 bar
IV	Preload pressure 1.0 bar
	Preload pressure 1.3 bar
V tv	The temperature is reasonable
VA	Installation volume, in liters
A	Expansion vessel operating range
B	An additional expansion vessel is required

ÿ In the field: determine the exact size of vessel according to the norm.

ÿ If the point of intersection is to the right of the curve: an additional expansion vessel is fitted.

6.1.2 Adjusting the flow temperature

The flow temperature can be adjusted between 45 ° C and 90 °C.

i When heating the floor, observe the maximum value of the flow temperature. These installations will only be connected by means of a hydraulic separator.

Lower temperature limiter In position **E** the thermostat is set at the factory for a maximum heating temperature of 75 ° C.

It is not necessary to adjust the heating power to the magnitude of the calculated heat demand.

Canceling the lower temperature limitation

For heating systems that require higher flow temperatures, this limitation may be removed.

ÿ Remove the yellow button from the button thermostat with a screwdriver.

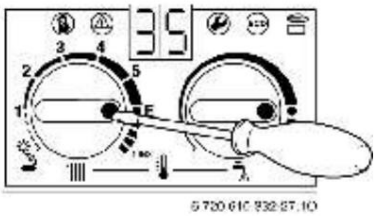


Fig. 26

ÿ Replace the yellow knob, but turn it 180 ° (point must remain inward).

The flow temperature is no longer so limited.

The position	The temperature is reasonable
1	aprox. 45 °C
2	aprox. 51 °C
3	aprox. 57 °C
4	aprox. 63 °C
5	aprox. 69 °C
AND	**aprox. 75 °C**
max	aprox. 90 °C

Table 7

6.1.3 Changing the flow curve of the circulation pump

ÿ Circulation pump speed changes from its terminal box.

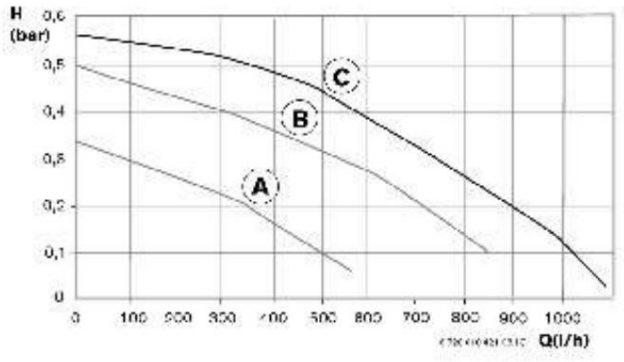


Fig. 27

A Curve for position 1 of the pump switch
B Pump switch position 2 curve
C Pump switch position 3 curve
H Pump height
Q Pump flow

6.2 Programming the control system Bosch Heatronic

6.2.1 Using the Bosch Heatronic system

The Bosch Heatronic system allows easy adjustment and verification of many parameters of the unit's control panel. This description is limited to the functions required to operate the appliance. You can consult a detailed presentation in the JUNKERS ***diagnostic booklet.***

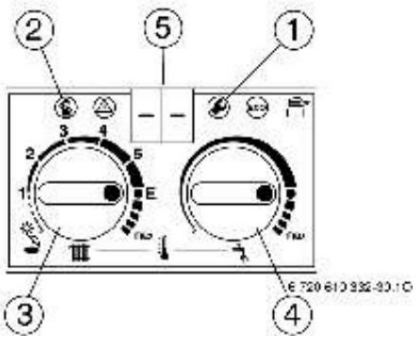


FIG. 28 Control Overview

Service key
1 Coÿar key
2 Flow thermostat
3 Domestic hot water thermostat
4 5 Display

Selecting the service function:

Note the positions [...] and [...] of the thermostats. After setting, turn the thermostats to the home positions.

The service functions are structured in two groups: the **first group** includes the service functions **up to 4.9, the second** includes the service functions **from 5.0 onwards.**

ÿ To select a service function from the first group: press and hold the key until it appears on the display - ÿ function from the second group: press and hold the

and until == appears on the display

Rotate the desired service the thermostat the function ÿ

Service function	Index	See page
How the pump works	2.2	24
Battery water heating power	2.3	25
Tact signal	2.4	25
Max. per lap Coupling difference	2.5	26
	2.6	26
Max power warming up	5.0	27

Table 8

Adjusting values

ÿ To set a parameter, turn the thermostat knob

Storing values

ÿ First level: press and hold , until [] appears on the display.

ÿ Second level: Press and hold the buttons simultaneously until **[]** appears on the display .

After making adjustments

ÿ Turn the thermostat knobs to the and the initial values.

6.2.2 Selecting the operating mode of the pump during heating (Service function 2.2)

i When connecting an external probe controller, the control mode is automatically installed pump operation 3.

The following operating modes can be selected:

! **Operating mode 1** for non-adjustable heating systems.

The thermostat on the flow of the heating system controls the pump.

! **Operating mode 2 (factory setting)** for heating systems with room thermostat.

The thermostat on the heating system tower only controls the gas, the pump continues to run. The room thermostat controls both the gas and the circulation pump.
After the gas has stopped, the pump continues to run for 3 minutes and the fan for 35 seconds.

! **Operating mode 3** for heating systems with outdoor temperature controller.

The regulator controls the pump. During in summer operation the pump is activated only for domestic hot water preparation.

ÿ Press and hold the key until the display shows - it lights up.

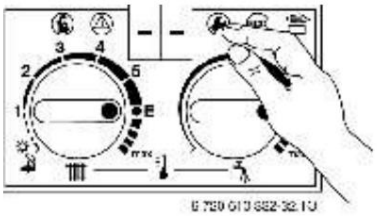


Fig. 29

ÿ Turn the thermostat knob until 2.2 appears on the display. After a short time, the display shows how the pump is operating.

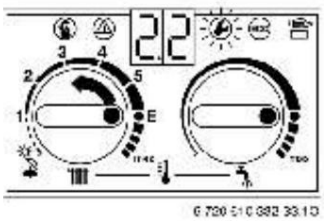


Fig. 30

ÿ Turn the thermostat knob until on the code from 1 to 3 appears on the display .
The display and key flash.

ÿ Press and hold until appears on the display
The operating mode is thus stored.

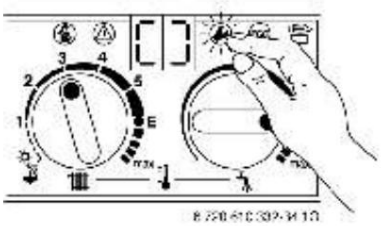


Fig. 31

ÿ Turn the thermostat knobs and next to the initial values.
The display shows the flow temperature.

6.2.3 Setting the battery heating power (operating function 2.3) (ZC)

The heating power of the battery can be adjusted between the minimum and maximum values of the rated power for the cooler.

The factory setting corresponds to the max. of hot water: 99.

ÿ Loosen the plug screw (3) (see page 29) and connect the manometer of the connecting pipes in the U.

ÿ Press and hold the key when - - until it lights up.

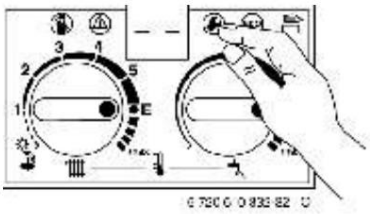


Fig. 32

ÿ Turn the thermostat knob until appears on the display. After a short time, the display shows the heating power set in the battery.

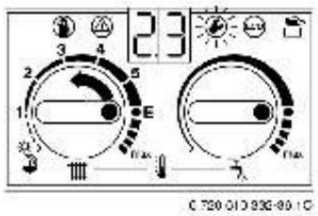


Fig. 33

ÿ Select the battery heating power in kW and the corresponding nozzle pressure in the tables shown, starting on page 36.

ÿ turn the thermostat knob until get the desired nozzle pressure.
The display and key Report intermittent.

ÿ Press and hold the key when [] appears until on the display .
The value has been saved.

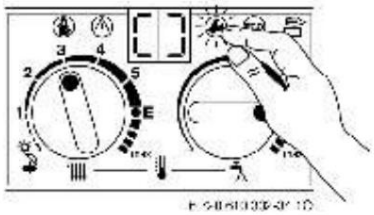


Fig. 34

ÿ Turn the thermostat knobs and th in the positions corresponding to the initial values.
The display shows the flow temperature.

6.2.4 Tactile signal adjustment (Service function 2.4)

The touch can be adjusted from 0 to 15 minutes (factory setting: 3 minutes).
The minimum tripping time is 1 minute (recommended for monotubular and air heating systems).

i It is not necessary to adjust the control of the boiler when installing an external probe controller.
Touch adjustment will be optimized by via the controller.

ÿ Press and hold the key when appears on until the display-- .
Key it lights up.

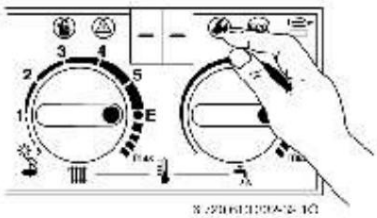


Fig. 35

ÿ Turn the thermostat knob the until on display shows **2.4.**
After a short time, the installed clock signal can be seen on the display.

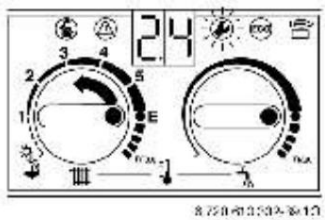


Fig. 36

ÿ Turn the thermostat knob until the desired clock signal between 0 and **15 is shown on the display.**
The display and key flash.

ÿ Press and hold the key until display appears **[] .**
The touch signal has been saved.

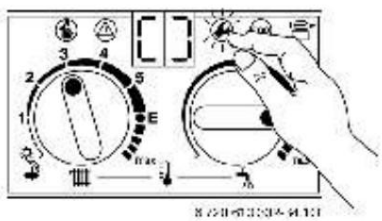


Fig. 37

ÿ Turn the thermostat knobs to the and in the initial values.
The display shows the flow temperature.

6.2.5 Setting the maximum flow temperature (Service function 2.5)

The maximum flow temperature can be set between 45 ° C and 90 ° C (factory setting).

ÿ Press and hold the key until the display shows **-**

it lights up.

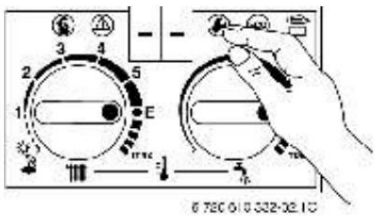


Fig. 38

ÿ Turn the thermostat knob the until on display shows **2.5.**

After a while, the display shows maximum flow temperature set.

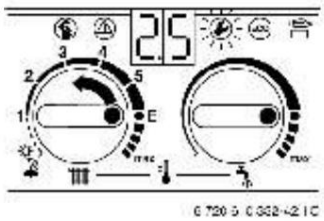


Fig. 39

ÿ Turn the thermostat knob until the maximum desired temperature appears on the display on tour, between 45 and **90.**

The display and key flashes. ÿ Press and hold until **[]** appears on the display .

The maximum flow temperature was stored.

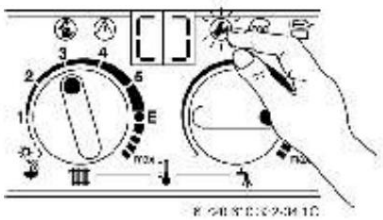


Fig. 40

ÿ Turn the initial thermostat knob and to the values

The display will show the flow temperature.

6.2.6 Adjusting the starting deviation (ÿt) (Service function 2.6)

When connecting a temperature with outdoor probe, no starting gap adjustment is required.

The adjustment of the deviation will be optimized by the regulator.

The starting deviation is the permissible deviation of the flow temperature from the temperature required by the flow thermostat. It can be adjusted in 1 K increments. The starting deviation can be adjusted between 0 and 30 K (factory setting: 0 K). The minimum flow temperature is 45 ° C.

ÿ Switch off the clock signal (setting 0, (see section 6.2.4)).

ÿ Press and hold until appears on the display - **[...]**

it lights up.

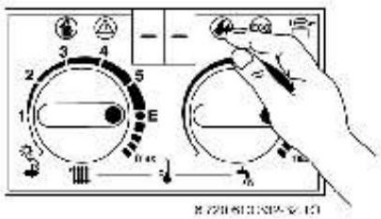


Fig. 41

ÿ Turn the thermostat knob until on display appears **2.6.**

After a short time, the setting value of the starting deviation appears on the display.

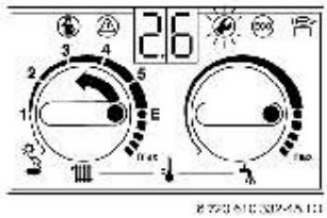


Fig. 42

ÿ Turn the thermostat knob until on

The display shows the desired starting distance between 0 and **30.**

The display and key flashes.

ÿ Press and hold until **[]** appears on the display .

The starting deviation is thus stored.

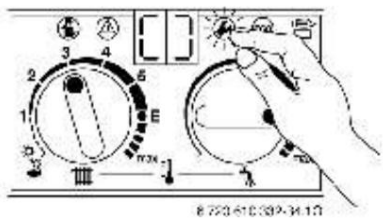


Fig. 43

ÿ Turn the thermostat knobs to the and in the initial values.

The display shows the flow temperature.

6.2.7 Adjusting the heating power (Service function 5.0)

The heating power of the boiler can be limited to the desired heat demand, between the minimum rated power and the maximum rated power.

Regardless of the capacity limitation on the flow, the full rated power is available for hot water preparation.

The factory setting corresponds to the rated power indicated on the display as **99.**

ÿ Press and hold the keys simultaneously. and until the display shows == The keys light up.

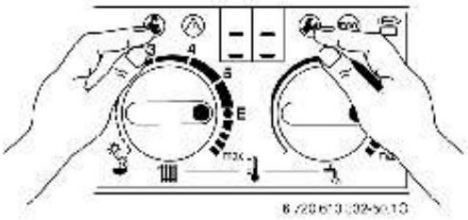


Fig. 44

ÿ Turn the thermostat knob the display until on shows **5.0.**
After a short time, the display shows the percentage of the set heating power **(99.** = power nominal).

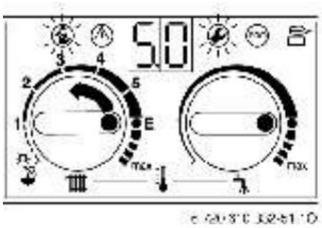


Fig. 45

ÿ Select the heating power in kW and the corresponding index in the tables for adjusting the heating power (see page 36 or 37).

ÿ Turn the thermostat knob until the desired index is shown on the display.
Display and keys flashing. and Report

ÿ Measure the required gas flow and compare it with the data indicated next to the index. If there are any inconsistencies, correct the index!

ÿ Press and hold the keys until **[]** appears on the display . and
Thus, the heating power is stored.

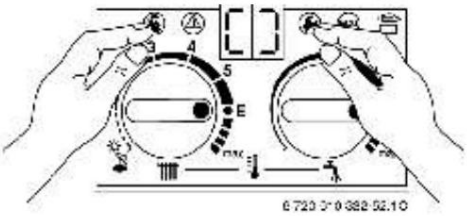


Fig. 46

ÿ Turn the thermostat knobs to the initial and in the values.
The display shows the flow temperature.

6.2.8 Reading system values

Bosch Heatronic

When performing a repair job, this makes the adjustment considerably easier.

ÿ Read the set values (see table 9) and record them in the commissioning report.

ÿ Keep the commissioning report in a place visible on the device.

After reading:

ÿ the minutes n[illegible]t to the initial value.

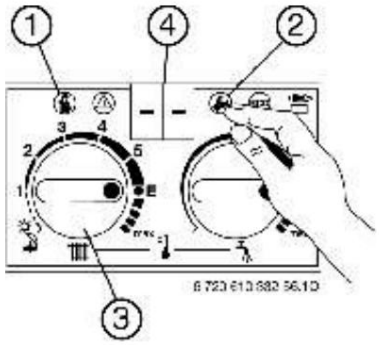


Fig. 47

Service function		How to read?		
How the pump works	**2.2**	Press (2) until (4) appears - Wait until (4) appears **00.** or **01 ..**	Turn (3) until **2.2** appears on (4) . Wait until (4) changes. Record the value.	Press (2) until (4) appears **-**
Tact signal	**2.3**		Rotate (3) until **2.3** appears on (4) . Wait until (4) changes. Record the value.	
??????? ????	**2.4**		Turn (3) until **2.4** appears on (4) . Wait until (4) changes. Record the value.	
Maximum flow temperature	**2.5**		Turn (3) until **2.5** appears on (4) . Wait until (4) changes. Record the value.	
Starting deviation	**2.6**		Turn (3) until **2.6** appears on (4) . Wait until (4) changes. Record the value.	
Max power warming up	**5.0**	Press (1) and (2) until (4) appears **==** Wait until **0.** appears on (4) .	Rotate (3) until **5.0** appears on (4) . Wait until (4) changes. Record the value.	Press (1) and (2) until (4) **==** appears

Table 9

7 Reglarea gazului

7.1 Reglarea gazului

ÎÎn special după efectuarea unei modificări, pentru a adapta aparatul la alt tip de gaz va trebui să verificați reglajul de maxim sau de minim.
Reglaje realizate în fabrică:

- **Gaz metan:** Centralele pe gaz metan sunt reglate şi sigilate din fabrică pentru o valoare a indicelui Wobbe de 14,9 kWh/m3 şi o presiune de intrare de 20 mbar.
- **GPL:** Centralele pe GPL sunt reglate şi sigilate din fabrică pentru o presiune de intrare de 35 mbar.

Pentru a seta regla de gaz utilizați o şurubelniță nemagnetică cu o lățime a capătului de 5 mm.

7.1.1 Pregătirea

► Demontați mantaua (vezi pagina 14).
► Scoateți clapeta de acoperire a panoului de comandă.
► Desfaceți cele două şuruburi ale panoului de comandă şi rabatați panoul în jos.

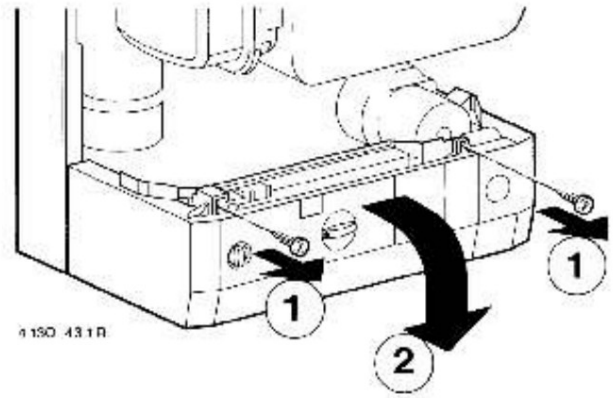


Fig. 48

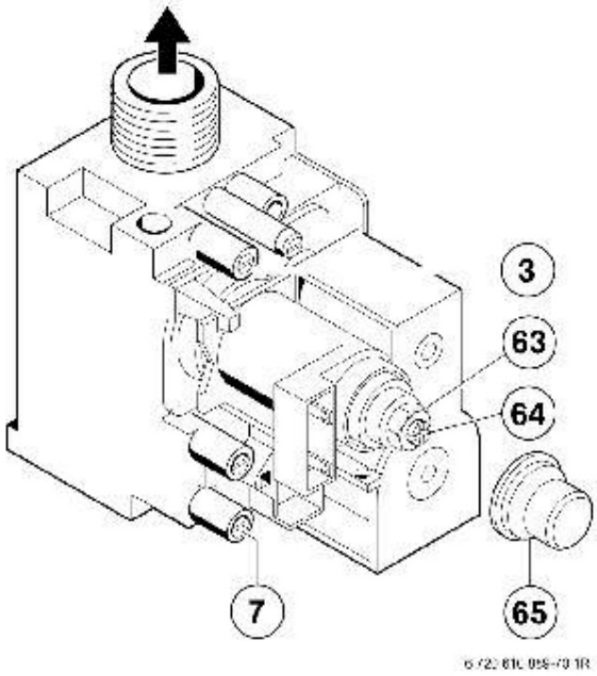


Fig. 49 Vana de gaz

3 Racord de măsurare a presiunii la duze
7 Racord de măsurare a presiunii la nivelul racordului
63 Şurub de setare a presiunii maxime
64 Şurub de setare a presiunii minime
65 Protecție

7.1.2 Metoda reglării presiunii la duze

Presiunea la duze la puterea maximă de încălzire

► Apăsați şi mențineți apăsată tasta până când pe display apare .
Tasta se aprinde.

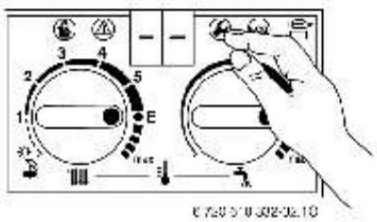


Fig. 50

► Rotiți butonul termostatului până când pe display apare **2.0.** După puțin timp, este afişat modul de funcționare setat (**0.** = funcționare normală).

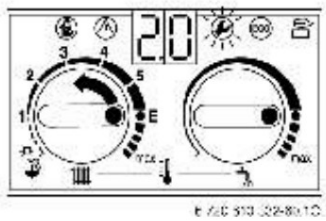


Fig. 51

ÿ Turn the thermostat knob until 2. (= rated power (hot water)) appears on the display.
The display and key flashes.

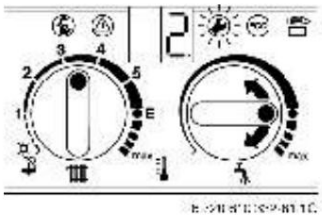


Fig. 52

ÿ Loosen the sealing screw (3) and install U-tube manometer.

ÿ Remove the sealed cover (figure 49) located above the gas adjusting screws.

ÿ From the tables on pages 38 to 39, select the “max.” Nozzle pressure. indicated (mbar). Adjust the nozzle pressure with the adjusting screw (63). Rotating it to the right increases the gas pressure and decreases it to the left.

Nozzle pressure at minimum heating power (hot water)

ÿ Turn the thermostat knob to the left until **1.** (= minimum rated heating power) appears on the display.
The display and key flashes.

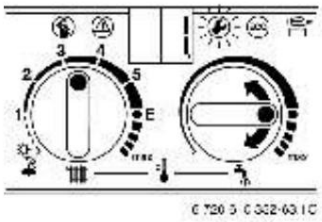


Fig. 53

ÿ From the tables on pages 38 to 39, select the “min.” Nozzle pressure. (mbar) indicated. Adjust the nozzle pressure with the gas adjusting screw (64).

ÿ Check the min. and max. adjusted and correct if necessary.

Connection pressure

ÿ Switch off the wall-mounted boiler and close the gas valve, remove the U-tube pressure gauge and tighten the sealing screw (3).

ÿ Loosen the sealing screw (7) and place the U-tube pressure gauge on the measuring nozzle.

ÿ Open the gas valve and switch on the boiler.

ÿ Press and hold the key until appears on the display.

The key lights up.

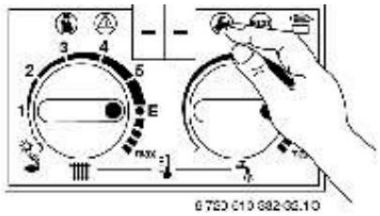


Fig. 54

ÿ Turn the thermostat knob until **2.0 appears on the display.** After a short time, the selected operating mode is displayed **(0.** = normal operation).

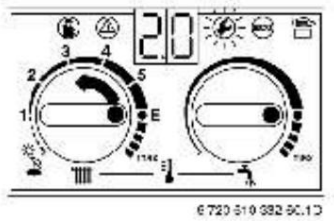


Fig. 55

ÿ Turn the display thermostat until on knob appears **2 ..**
(= rated power (hot water)). The display and key flash.

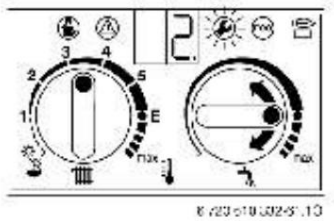


Fig. 56

ÿ Check the gas supply pressure.
- for methane gas between 18 and 24 mbar. - for GPL35 mbar.
When operating on methane gas, no adjustment will be made and the appliance will not be switched on, if the pressure value is below 18 mbar or above 24 mbar. In these cases, the cause will be established and the defect will be remedied. If this is not possible, switch off the appliance's gas valve and ask the gas distributor for assistance.

Reinstalling the normal operating mode ÿ Turn the thermostat knob all the way to the left until **0.** (= normal operation) appears on the display.
Display and key flashes.

ÿ Press and hold [...] until appears on the display.

ÿ Turn the thermostat knobs until to the initial values.
The flow temperature appears on the display.

ÿ If the flame shape is not suitable, check the nozzles.

ÿ Switch off the boiler, close the gas supply valve, remove the U-tube pressure gauge and tighten the sealing screw (7).

ÿ Secure and seal the protective elements a gas adjusting screws.

7.1.3 Volume adjustment method

When refueling with a LPG / air mixture during peak consumption, check the setting performed by the nozzle pressure method. ÿ Ask the gas distribution company for the Wobbe index (Wo) and the calorific value (Hs) or the operating calorific index (HiB).

i For the tuning sequence shown in then the appliance must be in working order for at least 5 minutes.

Gas flow at maximum heating power

ÿ Press and hold the display key. until

The key lights up.

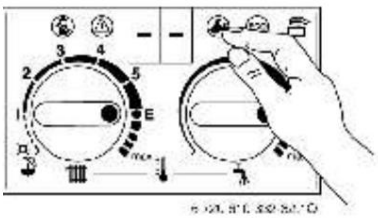


Fig. 57

ÿ Turn the thermostat knob until appears on the display . After a short time, the set operating mode **(0.** = normal operation) is indicated.

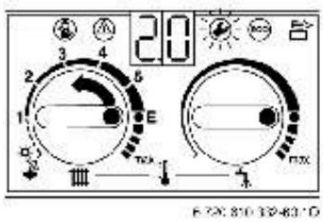


Fig. 58

ÿ Turn the thermostat knob until on display appears **2.** (= rated power (hot water)). The display and key flashes.

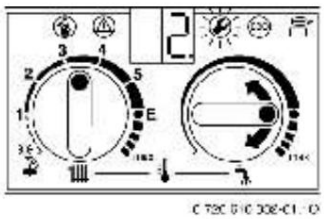


Fig. 59

ÿ Loosen the sealing screw (7) and fit the U-tube pressure gauge.

ÿ Loosen the sealed cover (figure 49) above the gas adjusting screws. ÿ Set the max. (l / min) indicated in the tables on pages 36 - 37. Adjust the flow with the gas adjusting screw (63). Rotating it to the right increases the gas flow and decreases it to the left.

Gas flow at minimum heating power (hot water)

ÿ Turn the thermostat knob to the left until **1.** (= rated power min.) appears on the display. The display and key flash.

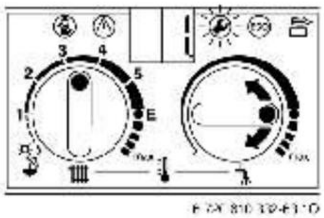


Fig. 60

ÿ Set the flow rate “min. (hot water) ”(l / min) indicated in the tables on pages 36 - 37. Adjust the gas flow with the adjusting screw (64). ÿ Check the min. and max. and correct them if necessary.

ÿ Check the gas pressure at the connection, see page 30.

ÿ Select the normal operating mode again, see page 30.

7.2 Switching to another type of gas

If you want to adapt the appliance to a different type of gas than the one for which it was intended, a set of the necessary parts can be obtained.
Observe the instructions included in the set for conversion to another type of gas.

plant	From the type of gas	In gas type "31"	Don't order
ZWC / ZC 24-1 MF.A	"23" natural gas G20	GPL G31	7 719 002 210
	"31" GPL G31	"23" natural gas G20	7 719 002 233
ZWC / ZC 28-1 MF.A	"23" natural gas G20	"31" GPL G31	7 719 002 211
	"31" GPL G31	"23" natural gas G20	7 719 002 233

Table 10

ÿ Switch off the boiler at the main switch and switch it off gas supply valve.
ÿ Remove the jacket.
ÿ Remove the combustion chamber cover.
ÿ Remove the burner.
ÿ Remove the nozzle holder.
ÿ Replace the nozzles (29).
ÿ The installation will be carried out following the same steps in order reverse.
ÿ Switch on the appliance and adjust the gas according to the instructions in section 7.1.

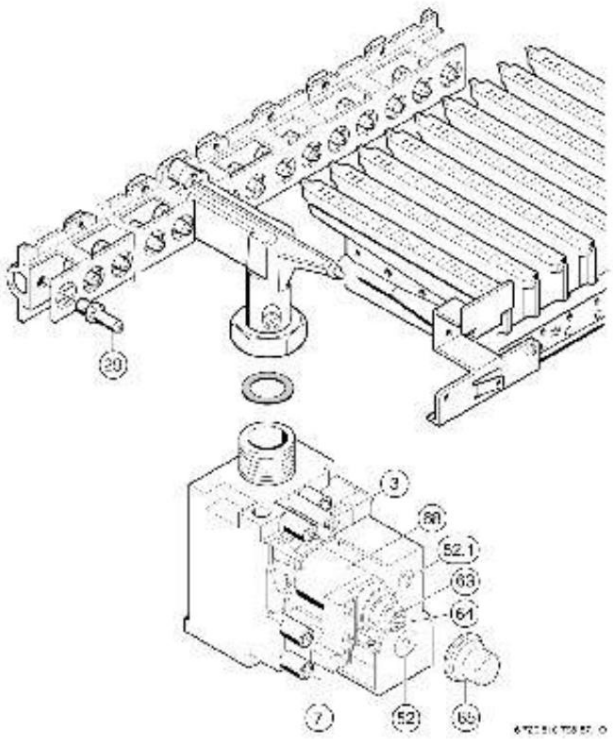


Fig. 61

3 Nozzle pressure measuring connection
7 Installation pressure measuring connection
29 nozzles
52 Magnetic valve 1 (safety)
52.1 Magnetic valve 2 (safety and modulation)
63 Maximum pressure adjusting screw
64 Minimum pressure adjusting screw
65 Protection
68 Magnetic control valve

8 Maintenance

Danger: Danger of electric shock!

ÿ Always switch off the appliance's power supply (fuse, LS switch) before carrying out any electrical work.

ÿ The maintenance of the appliance will only be carried out by the Authorized Technical Department JUNKERS.

ÿ Only original spare parts will be used.
When ordering spare parts, transcribe the part name and number at the bottom of the spare parts list.

ÿ Gaskets and O-rings removed must be removed

8.1 Revision works

Hot water (ZWC)

If the indicated flow temperatures are not reached: ÿ Remove the heat exchanger.

ÿ Decalcify the heat exchanger with commercially available cleaning agents by doing the following:
- Place the derailleur with the connections facing in their.
- Fully insert the heat exchanger into the limescale remover and allow it to act for 24 hours.

ÿ Recommendations: Replace the heat exchanger at every 7 years of operation.

Expansion vessel ÿ

Drain the boiler.

ÿ Check the expansion vessel and, if necessary, replace the air cushion (approx. 1 bar) with a pump.

ÿ Adjust the pre-loading pressure of the expansion vessel to the static height of the heating system.

Safety, adjustment and control elements ÿ

Check that all safety, adjustment and control elements are working correctly.

ÿ Replace the ionization electrode every 3 years.

Spare parts ÿ

When ordering spare parts, indicate the name, code and part number according to the spare parts list.

Vaseline

ÿ Only use the following Vaseline:
- For components in contact with water: Unisilcon L641 (8709918413)
- For threads: Hft 1 v 5 (8709918010).

8.2 Measurement of flue gas losses

ÿ Press and hold until the display shows -.
In this case, the operation of the basket is activated.

Key it lights up, and the flow temperature appears on the display.

This mode is maintained for 15 minutes. It then automatically switches to abnormal operating mode.

ÿ Remove the flue gas connection plug (1), figure 62.

ÿ Insert the probe approx. 60 mm in the connection and seal it.

ÿ Measure CO2 values and temperature of combustion products. If these flue gas values are not reached, clean the burner and the heat block, the throttle disc and the exhaust pipe.

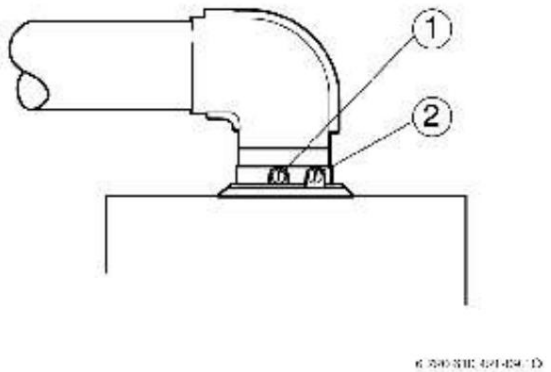


FIG. 62 Flue gas measurement

1 Flue gas measuring point
2 Burning air measurement point

ÿ Install the sealing screw.
Press and hold appears on the display -. until ÿ

The key turns off and the flow temperature appears on the display.

8.3 Draining the heating system

Domestic hot water circuit (ZWC)

ÿ Close the cold water tap in the appliance.
ÿ Open all hot water taps
housekeeping powered by the plant.

Heating circuit

ÿ Empty all radiators.
ÿ Drain the boiler by opening the drain valve on the return of the system.

i Install a hose to the drain valve so that water can drain from the heater to the desired location.

8.4 Convector heating (for monotubular installations)

Each convector has an adjusting flap.
By directing it, the heat radiated by the convector can be adjusted.

ÿ Never place any objects that could prevent hot air from spreading above or below the convectors.

ÿ Periodically clean the inside of the elements.

8.5 Heating with radiators or convectors (for two-tube installations)

Each radiator is equipped with a valve that allows the heat flow to be stopped or regulated.

i When underfloor heating: install a mixing device.

ÿ You must prevent all radiators from being switched off, as this would impede the flow of water, in which case the boiler would be damaged and switched off.

If the boiler is switched off due to a fault: ÿ
Cancel the fault by pressing the fault key (61) on the control panel.

9 Annex

9.1 Fault codes

Display	The cause of the fault	Solutions
A7	The domestic hot water probe is interrupted or short-circuited.	Check the domestic hot water probe or cable The connection is broken or short-circuited.
A8	Communication between BUSCAN module and controller is interrupted.	Check the connection cable between the BUS module and the controller.
AA	Excessive temperature difference between the flow circuit of the heating system and the domestic hot water outlet.	Check the heating and domestic water NTC. Check for limescale deposits in the tank / heat exchanger.
AC	Disconnection of the electrical connection between the main module and the Heatronic system.	Check the connection cable between the module and Heatronic.
Ad	Battery NTC not detected.	Check the battery NTC and connecting cable.
b1	The coding plug	Insert the coding plug correctly, take a measurement, and replace if necessary.
C1	The pressure switch operated during operation.	Check pressure switch, extractor and connecting pipes.
C4	The pressure switch does not open in the rest position.	Check the pressure switch.
C6	The pressure switch does not close.	Check pressure switch, extractor and connecting pipes.
THAT	Turbine speed too high.	Check the turbine.
CC	The outdoor probe of the TA 211 E or the BUS controller has interruptions.	Check the outdoor probe or connecting cable for interruptions.
d3	Clamp 8-9 is open.	The plug was not fitted; the deck is missing.
E2	The tour NTC is interrupted or shorted.	Check the tour NTC and connection cable.
E9	The STB temperature limiter has tripped.	Check the NTC of the flow, the operation of the pump, the fuses of the electronic board, ventilate the boiler.
EA	There is no ionization current.	Is the gas tap open? Check gas inlet pressure, mains connection, ionization electrode and cable, flue pipe and CO2 level.
F0	Internal fault on the electronic board	Make sure all electrical contacts, contacts through the socket, the RAM ignition cables and the collection module have been properly fixed; replace the electronic board or BUS module if necessary.
F7	Incorrect ionization signal.	Check the ionization electrode cable for cracks, cuts, etc. Check the inside of the Heatronic control panel for moisture.
FA	The ionization current is maintained after disconnecting the regulator.	Check the gas valve cables.
Fd	Emergency key pressed without any damage. Press the	emergency key again.

Table 11

9.2 Gas flow control values for ZWC / ZC 24-1 MF.A…

			“23” Gas methane G20										“31” GPL G31
		HiB (kWh/m3)	7,9	8,3	8,7	9,1	9,5	9,9	10,3	10,7	11.1		
Display	**Putere kW (a tV/t R = 80/ 60 °C)**	**Load kW**	**Gas output (l/min)**										**Debit of gaz (kg/h)**
99	24	26,5	55,9	53,2	50,8	48,5	46,5	44,6	42,9	41,3	39,8		2,06
95	22,6	25,0	52,7	50,2	47,9	45,8	43,9	42,1	40,5	38,9	37,5		1,94
90	21,2	23,5	49,6	47,2	45,0	43,0	41,2	39,6	38,0	36,6	35,3		1,83
85	19,8	22,0	46,4	44,2	42,1	40,3	38,6	37,0	35,6	34,3	33,0		1,71
80	18,4	20,5	43,2	41,2	39,3	37,5	36,0	34,5	33,2	31,9	30,8		1,59
75	17,0	19,0	40,1	38,2	36,4	34,8	33,3	32,0	30,7	29,6	28,5		1,48
70	15,6	17,5	36,9	35,1	33,5	32,1	30,7	29,5	28,3	27,3	26,3		1,36
65	14,2	16,0	33,8	32,1	30,7	29,3	28,1	26,9	25,9	24,9	24,0		1,24
60	12,8	14,5	30,6	29,1	27,8	26,6	25,4	24,4	23,5	22,6	21,8		1,13
55	11,4	13,0	27,4	26,1	24,9	23,8	22,8	21,9	21,0	20,2	19,5		1,01
Min (Heating)	10	11,5	24,3	23,1	22,0	21,1	20,2	19,4	18,6	17,9	17,3		0,89
Min (hot water)	8	9,5	20,0	19,1	18,2	17,4	16,7	16,0	15,4	14,8	14,3		0,74

Table 12

9.3 Gas flow control values for appliances
ZWC / ZC 28-1 MF.A ...

			“23” Gas methane G20										“31” GPL G31
		HiB (kWh/m3)	7,9	8,3	8,7	9,1	9,5	9,9	10,3	10,7	11.1		
Display	**Putere kW (a tV/t R = 80/ 60 °C)**	**The power to focus kW**	**Gas output (l/min)**										**Debit of gaz (kg/h)**
99	28	31,0	65,4	62,2	59,4	56,8	54,4	52,2	50,2	48,3	46,5		2,41
95	26,2	29,1	61,3	58,3	55,7	53,2	51,0	48,9	47,0	45,3	43,6		2,26
90	24,3	27,1	57,2	54,4	51,9	49,7	47,6	45,6	43,9	42,2	40,7		2,11
85	22,5	25,2	53,1	50,5	48,2	46,1	44,2	42,4	40,7	39,2	37,8		1,96
80	20,7	23,2	49,0	46,6	44,5	42,5	40,7	39,1	37,6	36,2	34,9		1,80
75	18,8	21,3	44,9	42,7	40,8	39,0	37,3	35,8	34,4	33,1	31,9		1,65
70	17,0	19,3	40,8	38,8	37,0	35,4	33,9	32,5	31,3	30,1	29,0		1,50
65	15,2	17,4	36,7	34,9	33,3	31,8	30,5	29,3	28,1	27,1	26,1		1,35
60	13,3	15,4	32,6	31,0	29,6	28,3	27,1	26,0	25,0	24,1	23,2		1,20
Min (Heating)	11,5	13,5	28,5	27,1	25,9	24,7	23,7	22,7	21,8	21,0	20,3		1,05
Min (hot water)	8	9,5	20,0	19,1	18,2	17,4	16,7	16,0	15,4	14,8	14,3		0,74

Table 13

9.4 Nozzle gas pressure control values for ZWC / ZC 24-1 MF.A…

			“23” Gas methane G20							“31” GPL G31
		Index Wobbe (kWh/m3)	13,5	13,8	14,2	14,5	15,0	15,2	15,6	
Display	Putere kW (a tV/t R = 80/ 60 °C)	The power to focus kW	Nozzle pressure (mbar)							
99	24,0	26,5	13,3	12,8	12,1	11,6	10,8	10,5	10,0	33,5
95	22,6	25,0	11,9	11,4	10,7	10,3	9,6	9,4		8,9 29,8
90	21,2	23,5	10,5	10,0	9,5	9,1		8,5	8,3	7,9 26,3
85	19,8	22,0	9,2	8,8	8,3		8,0	7,4	7,2	6,9 23,1
80	18,4	20,5	8,0	7,6	7,2		6,9	6,5	6,3	6,0 20,0
75	17,0	19,0	6,9	6,6	6,2		5,9	5,6	5,4	5,1 17,2
70	15,6	17,5	5,8	5,6	5,3		5,0	4,7	4,6	4,4 14,6
65	14,2	16,0	4,9	4,7	4,4		4,2	3,9	3,8	3,6 12,2
60	12,8	14,5	4,0	3,8	3,6		3,5	3,2	3,1	3,0 10,0
55	11,4	13,0	3,2	3,1		2,9	2,8	2,6	2,5	2,4 8,1
Min (Heating)	10,0	11,5	2,5	2,4		2,3	2,2	2,0		2,0 1,9 6,3
Min (hot water)	8,0	9,5	1,7	1,6	1,5	1,5	1,4	1,4	1,3	4,3

Table 14

9.5 Nozzle gas pressure control values for ZWC / ZC 28-1 MF.A…

			“23” Gas methane G20							“31” GPL G31
		Index Wobbe (kWh/m3)	13,5	13,8	14,2	14,5	15,0	15,2	15,6	
Display	Putere kW (a tV/t R = 80/ 60 °C)	The power to focus kW	Nozzle pressure (mbar)							
99	28,0	31,0	17,7	16,9	16,0	15,3	14,3	13,9	13,2	34,8
95	26,2	29,1	15,5	14,8	14,0	13,4	12,6	12,2	11,6	30,6
90	24,3	27,1	13,5	12,9	12,2	11,7	10,9	10,7	10,1	26,6
85	22,5	25,2	11,6	11,1	10,5	10,1	9,4	9,2		8,7 22,9
80	20,7	23,2	9,9	9,5	9,0	8,6		8,0	7,8	7,4 19,5
75	18,8	21,3	8,3	8,0	7,5		7,2	6,7	6,6	6,2 16,4
70	17,0	19,3	6,9	6,6	6,2	6,0		5,6	5,4	5,1 13,5
65	15,2	17,4	5,6	5,3	5,0	4,8		4,5	4,4	4,2 10,9
60	13,3	15,4	4,4	4,2	4,0		3,8	3,5	3,5	3,3 8,6
Min (Heating)	11,5	13,5	3,3	3,2	3,0		2,9	2,7	2,6	2,5 6,6
Min (hot water)	8,0	9,5	1,7	1,6	1,5	1,4	1,3	1,3	1,2	3,3

Table 15