

Junkers Ceraclass midi



ZS 24-2 DH AE 23
ZW 24-2 DH AE 23

ZS 24-2 DH AE 31
ZW 24-2 DH AE 31

1 Safety instructions and symbols

1.1 Safety instructions

The smell of gauze:

- B Close the gas supply valve.
- B The windows open.
- B Electric switches do not operate.
- B Extinguish all open flames.
- B **Immediately call** the gas distribution company and an authorized technician from outside.

The smell of flue gas:

- B The boiler switches off.
- B Windows and doors open.
- B Contact a technician.

Location, change

- B The boiler must be assembled and modified during installation only by an authorized technician.
- B Exhaust pipe not required modified.
- B Do not close or reduce the vents.

Maintenance

- B The user must perform maintenance and a regular inspection of the plant.
- B The user is responsible for the safety of the boiler and its compatibility with the environment in which it was located installed.
- B A check must be carried out every one year boiler routine.
- B **User Tips:** End a maintenance contract with an authorized technician, and the plant must be inspected annually.
- B Only original spare parts will be used.

Explosive or highly flammable materials

- B Do not use or store flammable materials (paper, thinner, paint, etc.) near the plant.

Combustion air and room air

- B Combustion air and room air must not contain hazardous substances (eg halogenated hydrocarbons containing chlorine or fluorine compounds) to prevent corrosion.

Customer information

- B The user must be informed of the operation and operation of the boiler.
- B Draws the user's attention to the fact that he is not allowed to make modifications or repair the installation himself.

1.2 Explanation of symbols



Warning:

The text **safety** instructions appear on a gray background and are marked on the side with an exclamation mark included in a triangle.

The warning words are used to characterize the seriousness of the danger in cases where risk mitigation measures are not followed.

- **Be careful** when using damage minor material.
- **Warning** is used when minor personal injury or serious property damage may occur.
- **Danger** is used when injuries may occur serious injuries to staff, including in cases of danger of death



The instructions in the text are marked with the adjacent symbol. These will be framed with a horizontal line above and below the text.

The instructions contain important information that does not endanger personnel or the plant.

2 Boiler information

2.1 EC declaration of conformity for type with approved sample / EC certification

This plant complies with the requirements of European Directives

90/396 / EEC, 92/42 / EEC, 73/23 /

EEC, 89/336 / EEC and corresponds to the approval sample described in the corresponding EC type - examination certificate.

| | |
|-----------------------|------------------------------|
| Nr. Product ID | CE 0085 BO 0216 |
| Category | II2H3+ |
| Central type | B22, C12, C32, C42, C52, C62 |

Tab. 1

2.2 Types of relationships

| | | | |
|--------------|-------------|--|--|
| ZS 24 | -2 DH AE 23 | | |
| ZS 24 | -2 DH AE 31 | | |
| ZW 24 | -2 DH AE 23 | | |
| ZW 24 | -2 DH AE 31 | | |

Tab. 2

| | |
|-----|--|
| --- | Central heating appliance |
| S | Hot water cylinder connections |
| W | Instant domestic hot water preparation |
| 24 | Heating power 24 kW |
| -2 | Boiler version |
| D | Digital display |
| H | Horizontal links |
| A | Blower with no draft |
| --- | Automatic ignition |
| 23 | Natural gas identification code H |
| 31 | Liquefied gas identification code |

The identification code indicates the type of gas according to EN 437:

| Cod identify Wobbe Index | Gas family (type) |
|--------------------------|---|
| 23 | 12.7-15.2 kWh / m ³ Natural gas, group H |
| 31 | 22.6-25.6 kWh/kg Propane/butane |

Tab. 3

2.3 Delivery package

- Wall-mounted gas boiler for heating plant
- Wall mounting bracket
- Mounting template
- Fasteners (screws and accessories)
- Mounting kit (gaskets)

- Flow restrictor set 74, 75, 76, 78, 80 and 83 mm

- Central documentation
www.imoca.ro
www.revizie-centrala-termica.ro

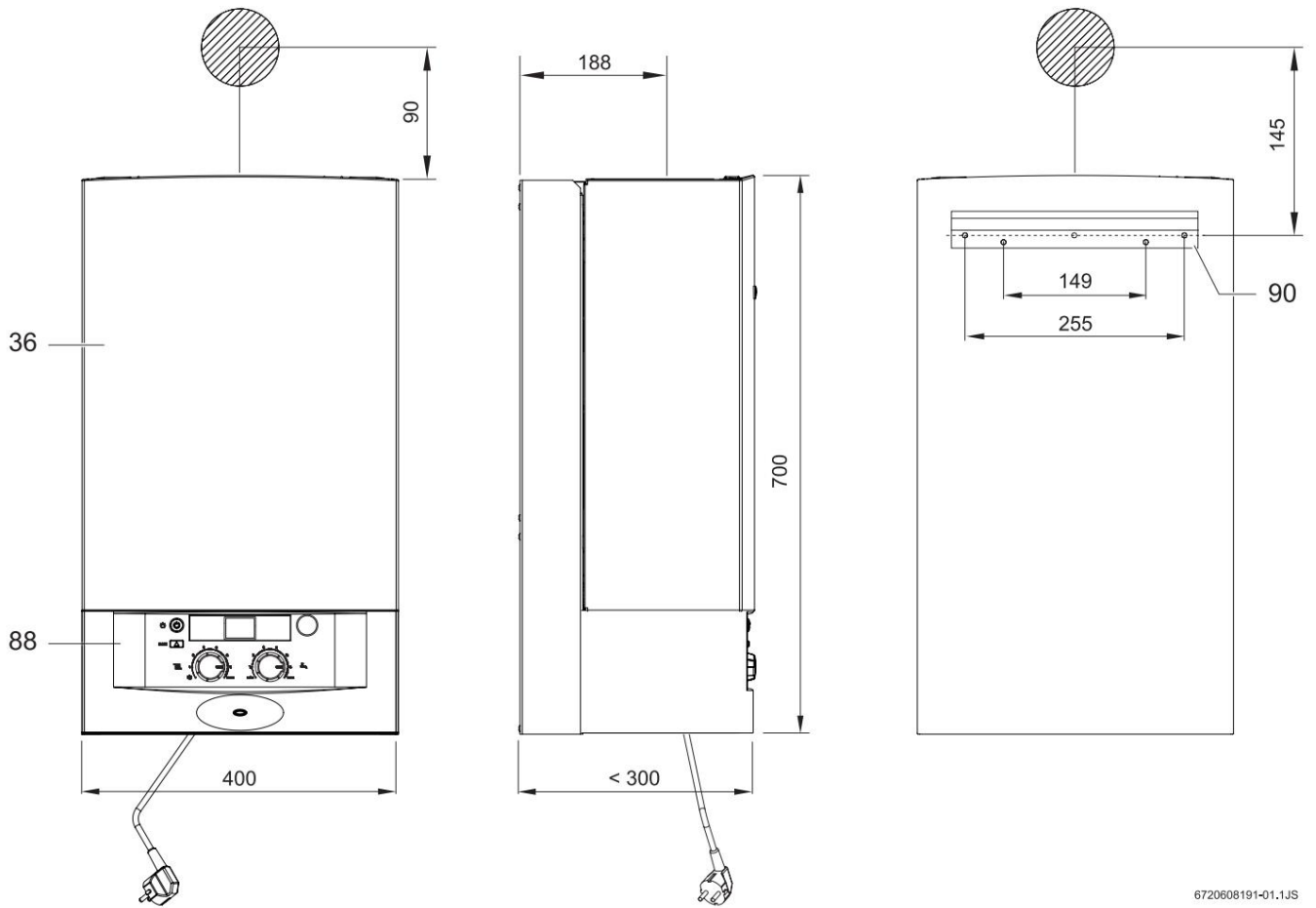
2.4 Central description

- Wall mounting unit
- LCD screen with temperature reading display, burner operation, faults, diagnostics and central operation.
- Atmospheric burner for natural gas / liquefied petroleum gas
- Electronic ignition
- Circulation pump with automatic aerator
- Variable heating power with minimum control / maximum independent of domestic water
- Variable heating power with minimum control / maximum independent of heating
- Expansion tank
- Sewage sensor and regulator
- Manometer
- Safety devices:
 - Ionization flame control
 - Safety valve (overpressure in the heating circuit).
 - Safety temperature limiter
- Electrical connection: 230 V, 50 Hz

2.5 Special accessories (see price list)

- Room thermostat: - TR 12 - TRZ
12 - 2 with weekly appointment
- TR 15 RF with weekly programming
- Transformation kit for another type of gas: from butane on propane and vice versa
- Assembly model
- Flue gas accessories
- Drawer for accessories
- EU 9 D daily scheduler watch

2.6 Dimensions



6720608191-01.1JS

Fig. 1

36 The face

88 Control panel

90 Wall mounting bracket

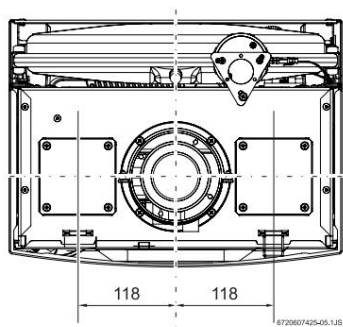


FIG. 2 Top view

2.7 Functional diagram ZS ...

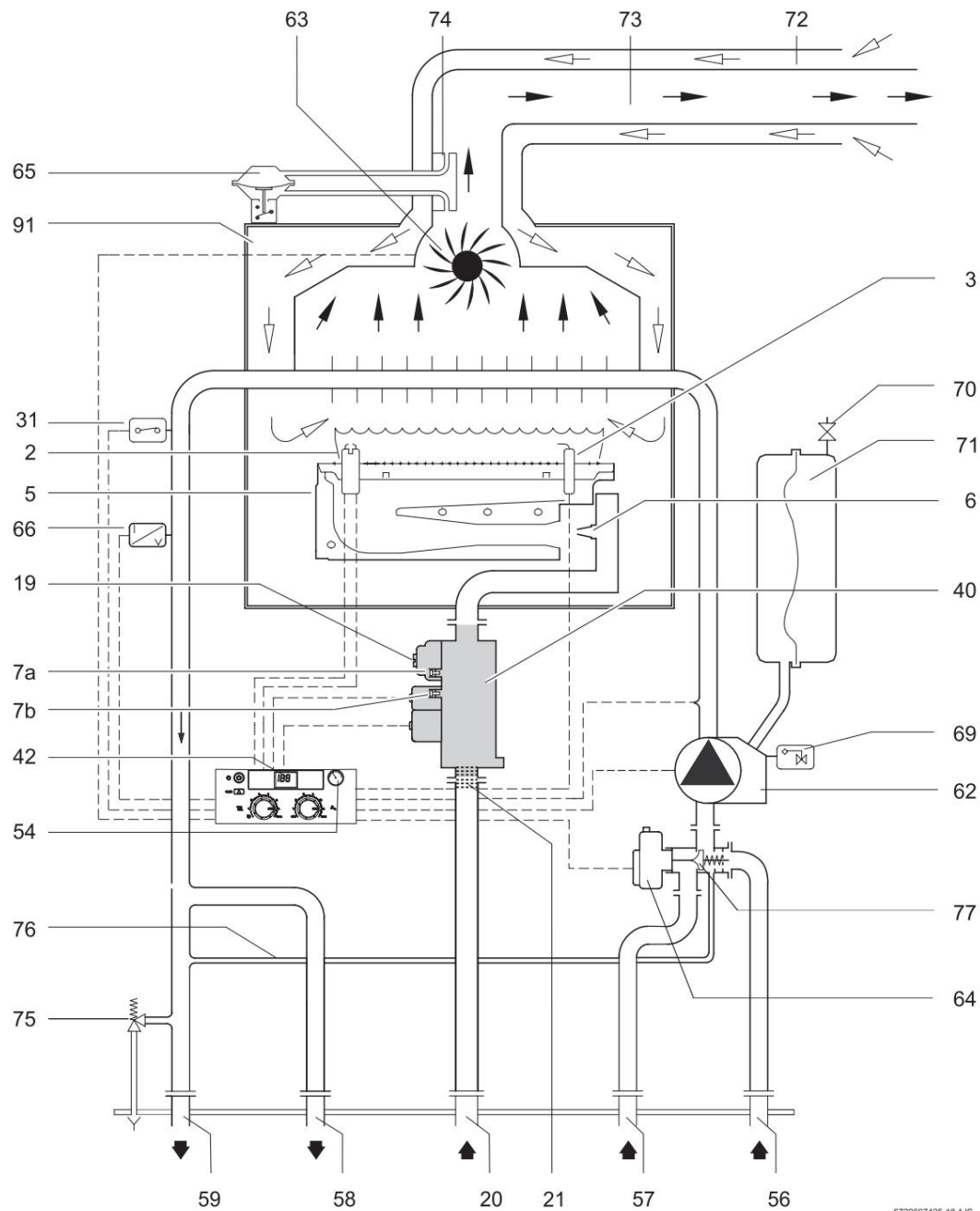


Fig. 3

| | | | |
|----|--|----|---|
| 2 | Ignition electrode | 59 | Heating system tour |
| 3 | Ionization electrode | 62 | Circulation pump with automatic aerator |
| 5 | Burner | 63 | Ventilator |
| 6 | Nozzle | 64 | 3-way motorized valve |
| 7a | Burner gas pressure measuring nozzle | 65 | Differential pressure switch |
| 7b | Gas connection pressure measuring nozzle | 66 | Flow temperature sensor |
| 19 | MAX gas adjusting screw | 69 | Automatic aerator |
| 20 | Gas | 70 | Nitrogen loading valve |
| 21 | Gas filter (attached to gas valve) | 71 | Expansion tank |
| 31 | Temperature limiter | 72 | Air intake duct |
| 40 | Gas valve | 73 | Flue gas pipe |
| 42 | Digital display | 74 | Differential pressure sensor |
| 54 | Manometer | 75 | Safety valve |
| 56 | Heating system return | 76 | Bypass pipe |
| 57 | ZW - cold water (ZS - boiler outlet) | 77 | 3-way valve motor |
| 58 | ZW - hot water (ZS - boiler inlet) | 91 | Static heat exchanger |

2.8 Functional diagram ZW ...

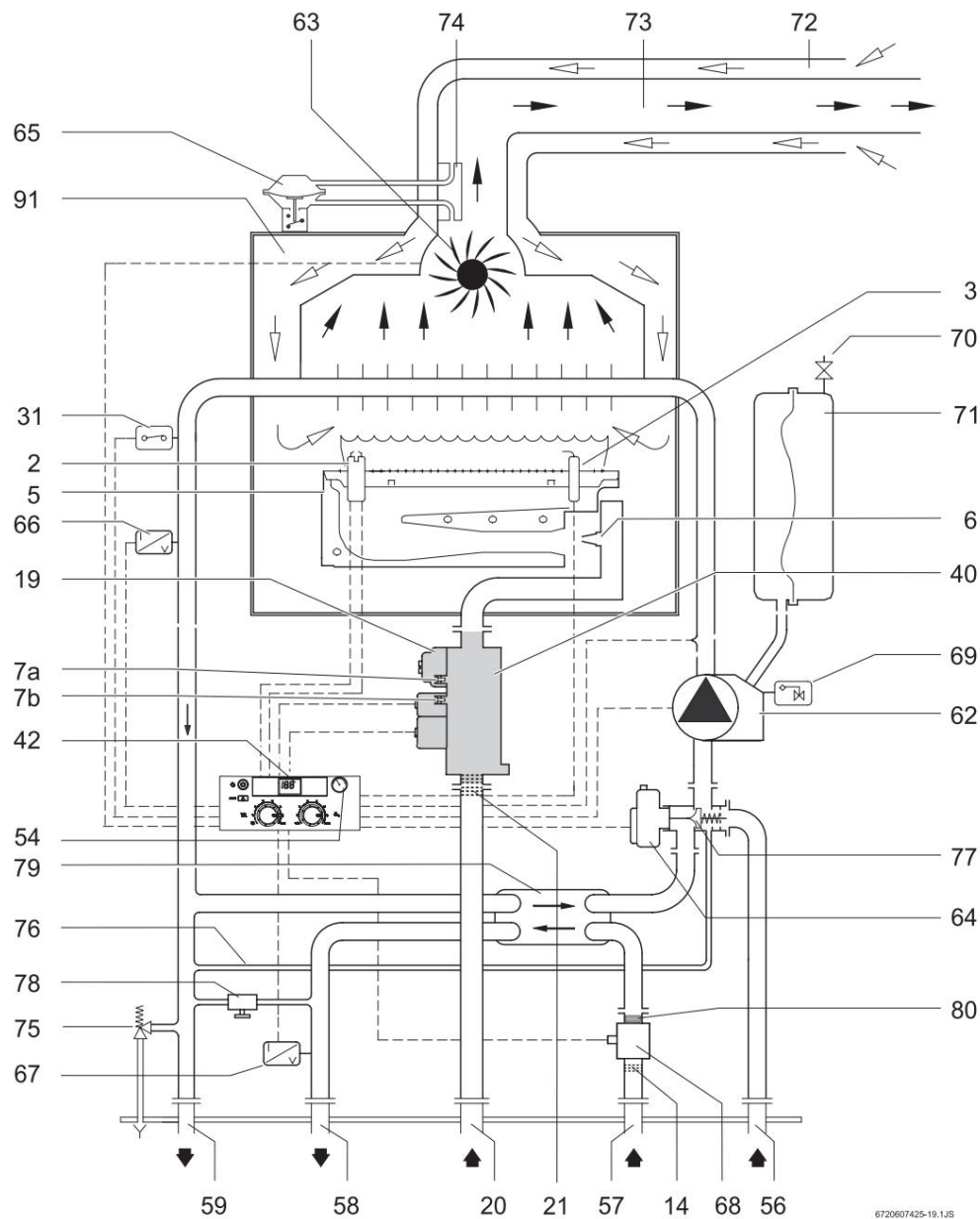


Fig. 4

| | | | |
|----|--|----|---------------------------------|
| 2 | Ignition electrode | 63 | Ventilator |
| 3 | Ionization electrode | 64 | Motorized 3-way valve |
| 5 | Burner | 65 | Differential pressure switch |
| 6 | Nozzle | 66 | Flow Temperature Sensor (NTC) |
| 7a | Burner gas pressure measuring nozzle | 67 | Return Temperature Sensor (NTC) |
| 7b | Gas connection pressure measuring nozzle | 68 | Detector debit |
| 14 | Water filter | 69 | Automatic aerator |
| 19 | MAX gas adjusting screw | 70 | Nitrogen loading valve |
| 20 | Gas | 71 | Expansion tank |
| 21 | Gas filter (attached to gas valve) | 72 | Air intake duct |
| 31 | Temperature limiter | 73 | Flue gas pipe |
| 40 | Gas valve | 74 | Differential pressure sensor |
| 42 | Digital display | 75 | Safety valve |
| 54 | Manometer | 76 | Bypass pipe |
| 56 | Heating system return | 77 | 3-way valve motor |
| 57 | ZW - cold water (ZS - boiler outlet) | 78 | Filling tap |
| 58 | ZW - hot water (ZS - boiler inlet) | 79 | Heat exchanger |
| 59 | Heating system tour | 80 | Flow limiter |
| 62 | Circulation pump with automatic aerator | 91 | Static heat exchanger |

2.9 Electrical wiring

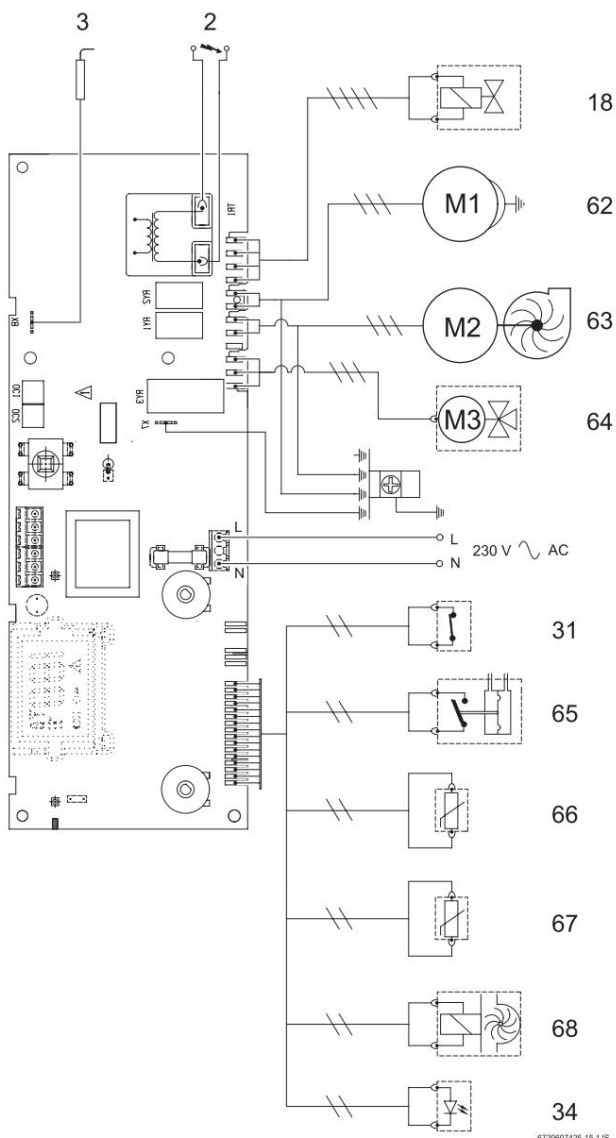


Fig. 5

- 2 Ignition electrode
- 3 Ionization electrode
- 18 Gas valve
- 31 Temperature limiter
- 34 LED
- 62 Circulation pump with automatic aerator
- 63 Ventilator
- 64 Motorized 3-way valve
- 65 Differential pressure switch
- 66 Flow Temperature Sensor (NTC)
- 67 Return Temperature Sensor (NTC)
- 68 Detector debit (ZW)

2.10 Description of the operating mode

2.10.1 Heating system

At the request of the heating regulator:

- start the circulation pump (62).
- The 3-way valve motor (64) opens heating circuit (56).

The control unit activates the ignition system when the gas valve (18) is opened:

- At the two ignition electrodes a high voltage spark (2), which ignites the gas-air mixture.
- An ionization electrode (3) takes over the monitoring flames.

Safety stop when the safety time has elapsed

If no flame is formed during the safety time (8s), a second and even a third ignition test will take place automatically. If this also fails, a safety stop follows.

Safety stop at too high flow temperature

The control device detects the flow temperature by the resistance of the flow NTC sensor (66). At an excessively high temperature, a safety shut-off is triggered by the command given by:

- temperature limiter (31)

The boiler restarts after the flow temperature drops below 96 ° C or below.

To switch on the boiler after a safety shutdown:

- B Press the emergency key 

2.10.2 Domestic hot water

Direct extraction (ZW ...)

If domestic water is extracted, the domestic water flow sensor (68) sends a signal to the control unit. The signal has the following effects:

- The pump (62) is started.
- The burner ignites.
- The 3-way valve (64) blocks the heating circuit

The control unit detects the water temperature via NTC (66) and adjusts the burner power to the required current.

Boiler filling (ZS ...)

If the boiler temperature sensor indicates a temperature that is too low:

- The pump (62) is started.
- The burner ignites.
- The 3-way valve (64) blocks the heating circuit

2.10.3 Pump

If no thermostat is connected to the boiler ambience or timer clock, the pump starts when the boiler is set to the heating operating mode.

In the presence of a timer or room thermostat, the pump will be started if:

- The room temperature is lower than that set in the room thermostat (TR12).
- The boiler is in operation and the room temperature is lower than that set in the thermostat ambient (TRZ12-2 / TR15RF).
- It is in the programming range (TRZ12-2 / TR15RF)

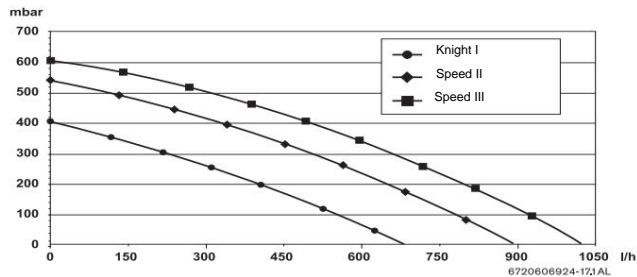


FIG. 6 Pump characteristic

2.11 Expansion vessel

The boiler has an expansion vessel with a capacity of 6 l and a preload pressure of 0.75 bar to compensate for pressure rises due to the temperature rise of the heating medium during operation.

At a flow temperature of 88 °C, the maximum water volume of the system can be determined according to the preload pressure in the expansion vessel.

| | | | | | | |
|-------------------------------|-----|-----|-----|-----|-----|-----|
| Maximum pressure (bar) | 0,5 | 0,6 | 0,7 | 0,8 | 0,9 | 1,0 |
| Water capacity (l) | 150 | 143 | 135 | 127 | 119 | 111 |

Tab. 4

To increase capacity:

B Open the nitrogen filling valve (70) and lower the preload pressure to 0.5 bar.

2.12 Technical data

| | unity | ZS / ZW 24 DH AE .. |
|---|-------------------|---------------------|
| Power | | |
| Domestic hot water | | |
| Rated payload | kW | 7,0 - 24,0 |
| Power supplied | kW | 8,4 - 26,5 |
| Central heating system | | |
| Rated payload at $\dot{y}t = 26$ grad. Celsius | kW | 10,0 - 24,0 |
| Power supplied | kW | 11,9 - 26,5 |
| Gas connection values | | |
| Maximum power consumption | | |
| Gas natural H (HuB = 9,5 kWh/m ³) | m ³ /h | 2,8 |
| GPL (Butan/Propan) (Hu = 12,8 kWh/m ³) | kg/h | 2,1 |
| Permissible connection pressure for gas | | |
| Natural gas H | mbar | 20 |
| GPL (Butan/Propan) | mbar | 28/30 - 37 |
| Expansion tank | | |
| Preload pressure | bar | 0,75 |
| Total capacity | | 6 |
| Flue gas values | | |
| Flue gas mass flow | kg/h | 53 |
| Flue gas temperature (at the measuring point) | °C | 185 |
| Flue gas temperature (4m from the exhaust pipe) | °C | 140 |
| Heating system | | |
| Temperature | °C | 45 - 88 |
| Maximum pressure | bar | 3 |
| Nominal water flow at $\dot{y}T = 20$ °C, 18 kW | l/h | 800 |
| Residual discharge pressure at nominal water flow | bar | 0,2 |
| Domestic hot water (ZW ...) | | |
| Domestic water thermostat at maximum position: | | |
| Temperature | °C | 60 |
| Backup flow | l/min | 1,8 - 6,9 |
| Domestic water thermostat at minimum position: | | |
| Temperature | °C | 40 |
| Backup flow | l/min | 1,8 - 10 |
| Maximum water flow at 60°C (water inlet temperature 10°C) | l/min | 6,9 |
| Maximum water pressure | bar | 10 |

Tab. 5

| | unity | ZS / ZW 24 DH AE .. |
|---|-------|---------------------|
| Minimum working pressure | bar | 0,35 |
| Water flow (D) for $\Delta T = 30K$, according to EN6251 | l/min | 11,8 |
| Overview | | |
| Dimensions (H x W x H) | mm | 700 x 400 x 298 |
| Weight, no packaging | kg | 33 |
| Electrical voltage | V ca | 230 |
| Frequency | Hz | 50 |
| Power absorbed | ln | 130 |
| Protection type | IP | X4D |
| Tested according to | IN | 483 |

Tab. 5

1. The domestic hot water flow declared by the manufacturer corresponds to an average temperature increase of 30K, which the boiler can supply in successive supply periods.

3 Standards

When installing the plant, the following directives and regulations will be observed:

- Normative for the design and execution of systems
natural gas supply I 6-98
- Norm for the operation of natural gas supply systems I 6 / 1-98

- Norm for the design and execution of installations
sanitary I 9-94
- Norm for the operation of sanitary installations I 9 /
1-96
- Norm for the design and execution of installations
central heating I 13-02
- Regulations for the operation of heating installations
central I 13 / 1-02
- Regulations for the design and execution of liquefied petroleum gas
(LPG) supply systems I 31-
99
- Regulations for the operation of liquefied petroleum gas (LPG) supply
systems I 33-99
- Fire safety regulations for buildings P 118-99
- Standard for the design and execution of electrical installations with
voltages up to 1000 V NP-17-02
- STAS 6793-69 chimneys
- Execution of chimneys STAS 3466-68
- Instantaneous hot water generators
using gaseous fuel SREN 625-2001
- Guide to the design, execution and operation of
small thermal power plants GP 051-2000
- Guidance on design, execution and operation
water supply and sewerage systems using PVC, PE, PP GP 043-99
pipes
- Design guide for electrical installations with voltages up to 1000
V GP 052-2000
- Order no. 29/2000 regarding the thermal rehabilitation of the existing
built fund and the stimulation of saving
thermal energy
- Framework solutions for water consumption metering,
natural gas and thermal energy related to the installations in the blocks
of flats NP 002-98
- Frame solutions for indoor heating systems
using new heating agent production systems - apartment heating,
staircase, block SC 005-2000

- Technical prescription PT-A1-2002 - Technical requirements for
the use of appliances consuming gaseous fuels

4 Installation



Location, connection to the electricity network, to the gas network, connection to the flue gas discharge and commissioning can only be carried out by specialized companies (gas or electricity) authorized.



The boiler can only be installed in the countries specified on the nameplate.

4.1 Important information

- B Before installation, the necessary approvals and approvals will be sought and obtained from the competent authorities.
- B The boiler will only be installed in heating systems with closed hot water and central heating according to DIN 4751, Part 3. No minimum flow is required for recirculated water.
- B Open heating systems will be transformed into closed systems.
- B Do not use heaters or galvanized pipes. This prevents the formation of gases.
- B If you are installing Junkers room thermostats (TR 12, TRZ 12-2, TR 15 RF, EU 9 D) and thermostatic faucets (TK1) in radiators you can get more economical operation.
- B When using a room thermostat: do not install any thermostatic valve on the heating element (radiator) of the control room.
- B Each heater shall be provided with a ventilation system (manual or automatic), as well as filling and draining valves at the lowest point of the installation.

Before starting the boiler:

- B Clean the system to remove any foreign matter or grease particles that could affect the proper operation of the boiler.



No solvents or aromatic hydrocarbons (petrol, mineral oil) should be used for cleaning.

- B Use detergent as needed, but then will rinse the entire installation thoroughly.
- B Install a gas valve in the position closest to the boiler.

B A leak test should be followed after installation of the gas network, apart from careful cleaning. Such a test shall be performed with the boiler gas valve closed in order to avoid damage due to overpressure.

B Check that the boiler is suitable for the type of gas available.

B Check the flow rate and pressure supplied by reducer are suitable for boiler requirements (see technical information in 2.12).

B It is mandatory to install a siphon drain under the boiler to allow water to drain from the boiler safety valve.

B If domestic water pipes are made of plastic, cold water inlet and hot water outlet (ZW ...) must be made of metal pipes with a minimum length of 1.5m.

B Where water contains a large amount of limestone, a treatment system is recommended limestone at the entrance to the network or filling the circuit with water treated by limestone.

4.2 Choosing the location

Provisions regarding the location of the plant

- B The rules and directives in force will be observed.
- B Check the minimum installation instructions in the accessory installation instructions.

Combustion air

- B To prevent corrosion, the combustion air must not be damaged contain corrosive substances.
- B To prevent corrosion, the combustion air must be free of hazardous substances. Halogenated acids containing chlorine or fluorine bonds are considered to be corrosion-promoting substances. They can be found, for example, in solvents, solvents, paints, adhesives, flue gases and cleaning products.

If it is not possible to meet these conditions, another location must be chosen for the gas inlet and outlet.

Surface temperature

The maximum temperature of the boiler surfaces is below 85°C. No special protective measures are required for constructions made of combustible materials or with built-in furniture. However, the different regional regulations in relation to these issues need to be taken into account.

4.3 Minimum distances

The following conditions will be taken into account when determining the location:

- B The maximum distances from all surface unevenness (hoses, pipes, wall protrusions, etc.) must be observed.
- B Ensure unobstructed access to the works installation and maintenance - for this, observe the information regarding the minimum distances specified in Fig. 7.

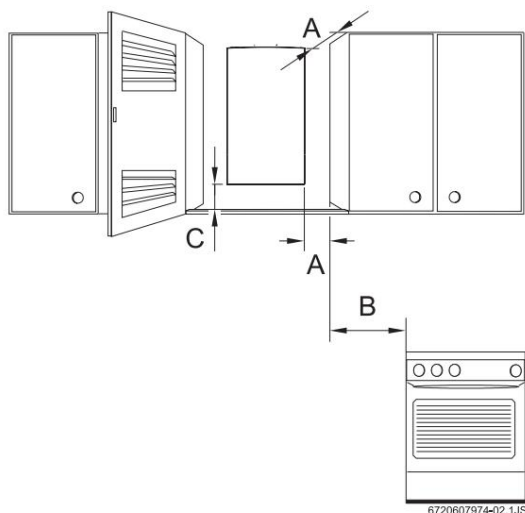


FIG. 7 Minimum distances

- A Front \dot{y} 0.5 cm, side \dot{y} 1 cm
- B \dot{y} 40 cm
- B \dot{y} 10 cm

4.4 Mounting the wall mount bracket

Wall mounting

- B Attach the wall bracket to the appropriate position in the room (see section 4.3).
- B Mark the positions and make holes for the wall mount bracket.
- B Remove the wall mount bracket.
- B Fix the wall mounting bracket to the wall with the supplied screws and dowels - the screws will not be tightened to the maximum.

- B Check the orientation and position of the stand for fixing to the wall, then tighten all screws.

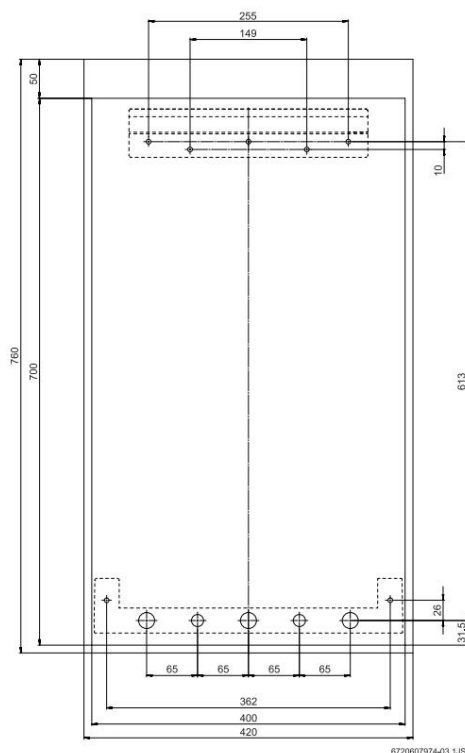


FIG. 8 Wall mounting assembly

4.5 Installing pipes

- B Domestic hot water pipes and taps will be dimensioned in such a way as to ensure a sufficient flow of water at the places of consumption depending on the supply pressure.
- B For filling and emptying the system on the side
 - A filling and drain valve shall be installed at the lowest point in the system.
- B The gas pipes must be dimensioned in such a way as to ensure the supply of all connected appliances.
- B The pipes will be connected without voltage.
- B Use the pre-assembly technique for the correct positioning of the pipes.

4.6 Installation of the boiler



Careful:

pipe waste residues
can damage the plant!

B Wash piping to remove debris.

- B Remove the package and follow the instructions on the package.
- B Check the contents of the package to see if it is complete.

B Remove the plugs from the gas and water connections.

Removing the control panel and jacket



For electrical safety reasons, the jacket and control panel are secured against unauthorized removal with two screws.

The jacket and control panel are always fastened with these screws.

B Loosen the safety screws on the power panel control.

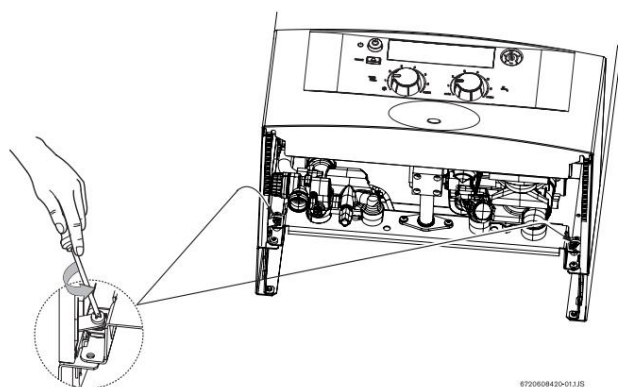


FIG. 9 Safety screws

B Fold the control panel up and then fold it down.

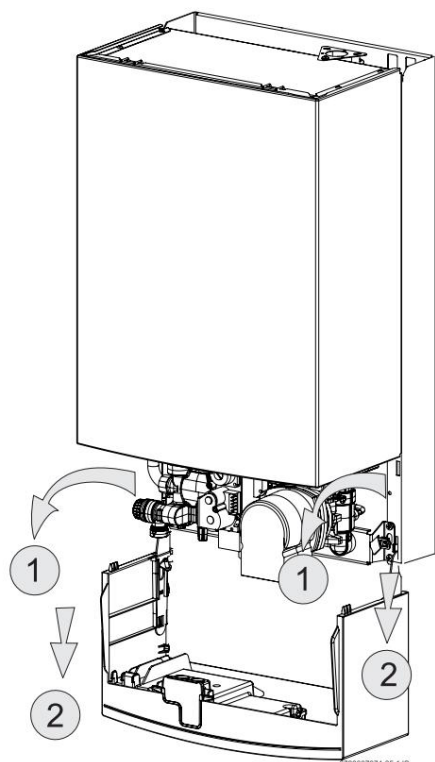


FIG. 10 Service position for access to water and electricity systems

B To remove the control panel completely, when it is positioned as in Fig. 10, get up and pull forward.

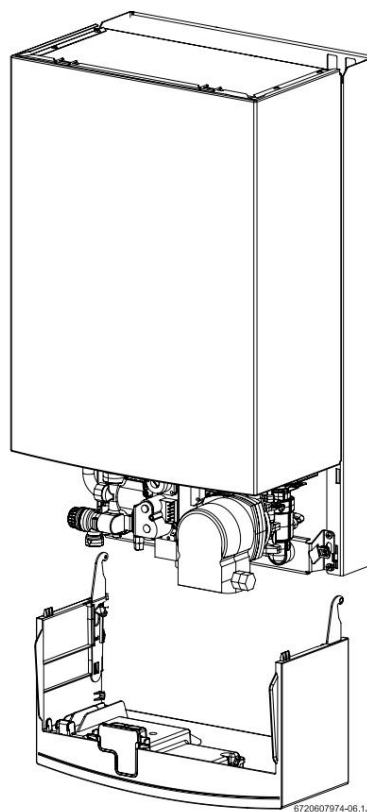


FIG. 11 Removing the control panel

B Loosen the jacket retaining bolts.

B Remove the bottom of the jacket and slide it into their.

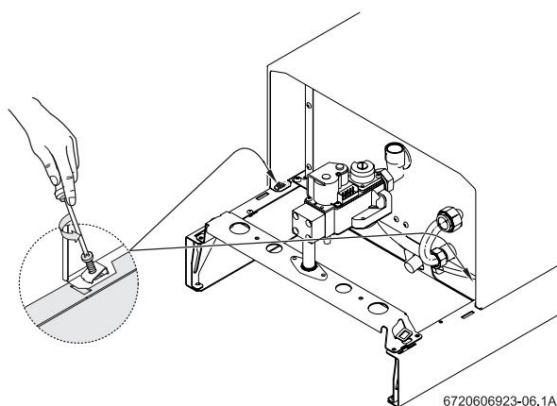


FIG. 12 Remove the jacket

Fixing the boiler

B Attach the gaskets to the double socket of the mounting fittings.

B Lift the boiler and attach it to the mounting bracket on the wall.

B Place the boiler on the connections of the prepared pipes In this regard.

Installing

B Check all gaskets for proper positioning - finally tighten the Dutch pipe connection nuts.

Connecting flue gas accessories



For more information on these installation accessories, check their instructions.

B Attach the flue gas elbow to the boiler outlet connection and push it all the way in.

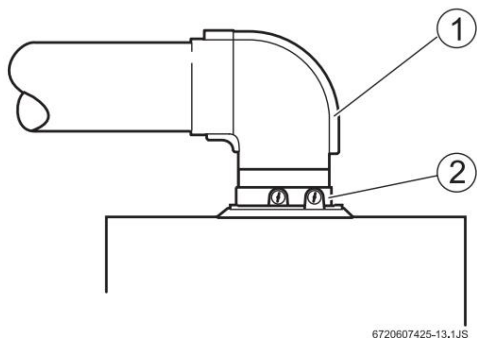


FIG. 13 Secure the flue gasket with a clamp

- 1 Flue gas elbow
- 2 Output connection

Rolling diaphragm mounting

B Install the diameter diaphragm (2) in diameter correspondingly on the inlet side of the flue gas fan.

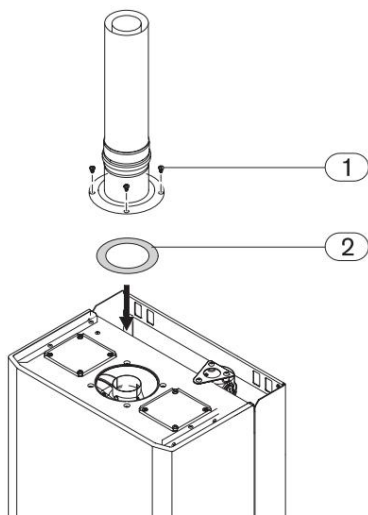


FIG. 14 Mounting the rolling diaphragm

- 1 Fixing screws
- 2 Lamination diaphragm



Warning:

Rolling diaphragm to be must be chosen according to flue gas length (see instructions for flue gas fittings).

The most suitable fit for the diaphragm

| | NG | GPL |
|-----------|-----------|------|
| CO2 (%) | 7,5% | 8,5% |
| ÿp (mbar) | 1,1 - 1,4 | |

Tab. 6

Binding accessories

B To install the accessories, follow the attached installation instructions.

4.7 Installing the accessory drawer



Warning:

The drawer must be installed after the boiler is fully installed.

B Lower the mounting levers according to Fig. 15.

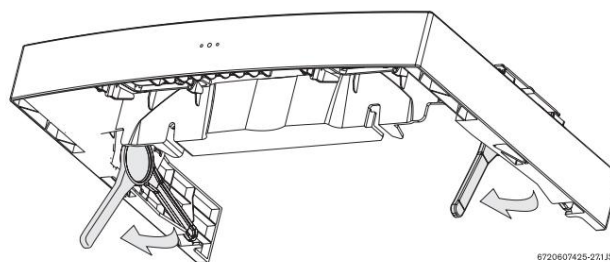


FIG. 15 Mounting the levers

B Place the mounting guides in the holes under the control panel according to Fig. 16.



In order to facilitate the installation of the drawer and to guarantee a correct service, the entire alignment must be carried out.

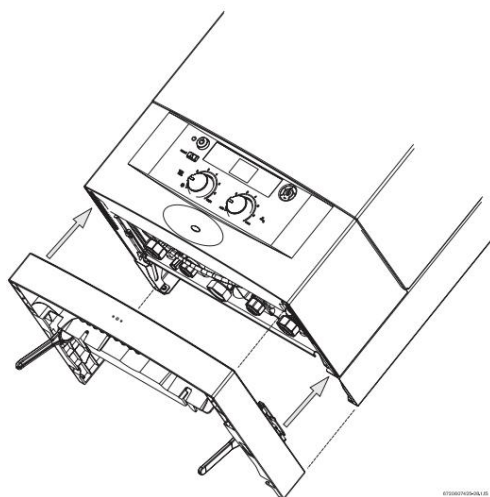


FIG. 16 Placing the drawer

B Secure the drawer to the boiler by placing the levers in position initial.

4.8 Checking the connections

Water connections

B For ZW models: open the shut-off valve for cold water and fill the hot water circuit (check pressure: max. 10 bar).

B Open the maintenance valves for the tour and return the heating system and fill the heating system by opening the filling valve.

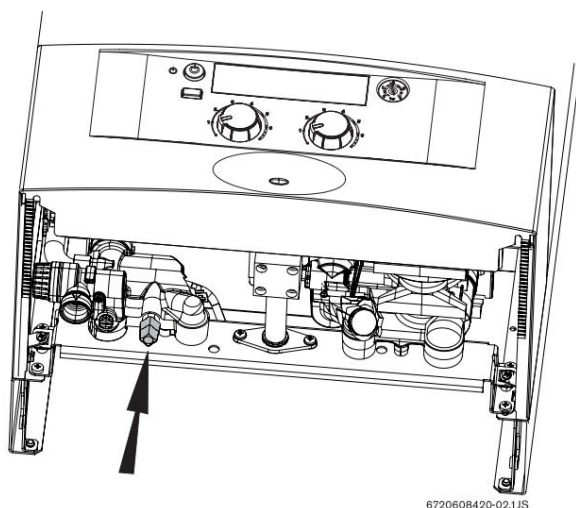


FIG. 17 Filling valve

B Check the tightness of all separation points / joints (max. 1.5 bar check pressure per manometer).

B Ventilate the boiler with the automatic aerator built-in (see Fig. Fig. 18).

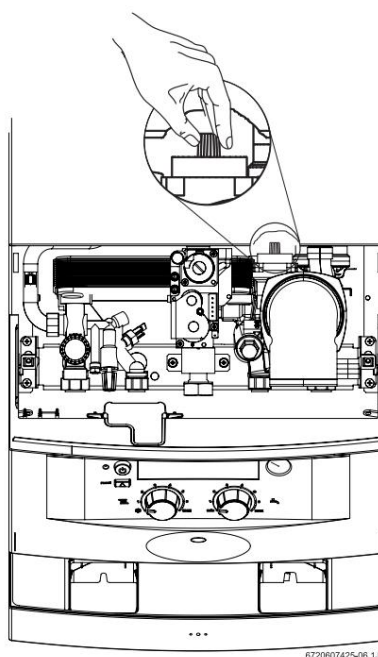


FIG. 18 Automatic aerator



After venting the boiler, leave the automatic vent cover open.

B Switch on the boiler and check the circuit pressure.

Pressure leaks may occur during boiler installation. In such cases, repeat the filling process until the prescribed pressure value is reached (1.5 bar).



All radiators will be ventilated, otherwise the performance will only be partially achieved and the boiler will operate with noise.

Gas piping

B Close the gas valve to protect the gas valve from damage due to overpressure (maximum pressure 150 mbar).

B Check gas line.

B Depressurize according to the procedure.

Flue gas exhaust

B Check the flue gas pipes for leaks.

B Check the end of the flue pipe and the flue terminal - they must be undamaged and undamaged.

Room thermostat

B Remove the jumper between terminals 1 - 4 (Fig. 19, item 83).

B Connect the room thermostat TR 12, TRZ 12-2.

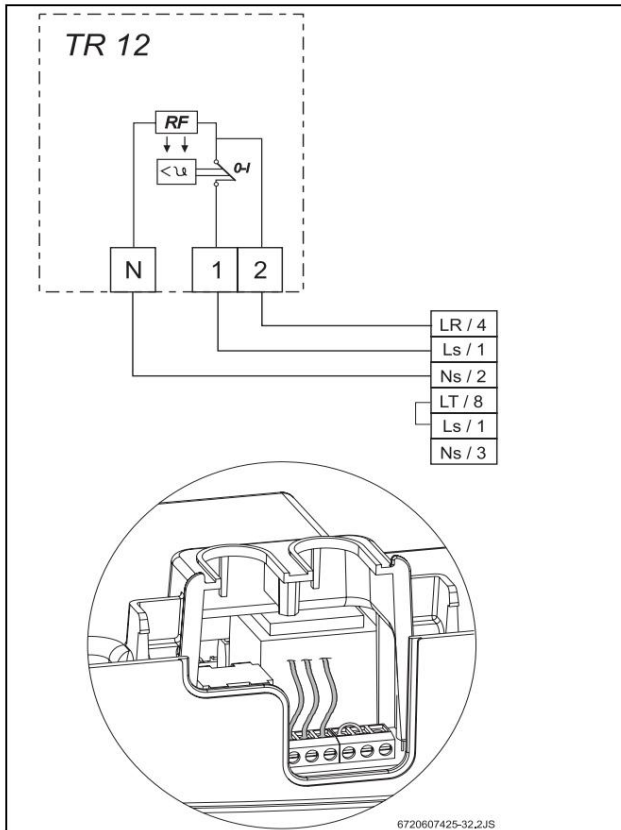


Fig. 20 TR 12

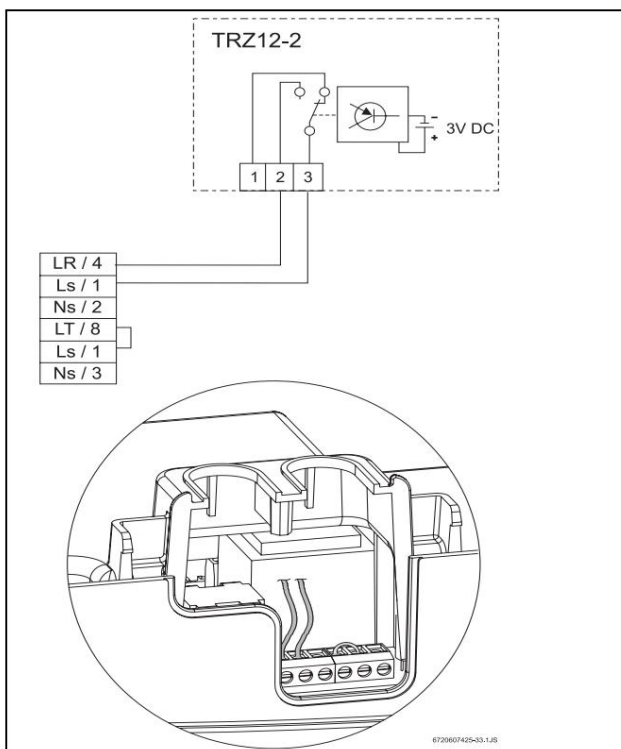


Fig. 21 TRZ 12-2

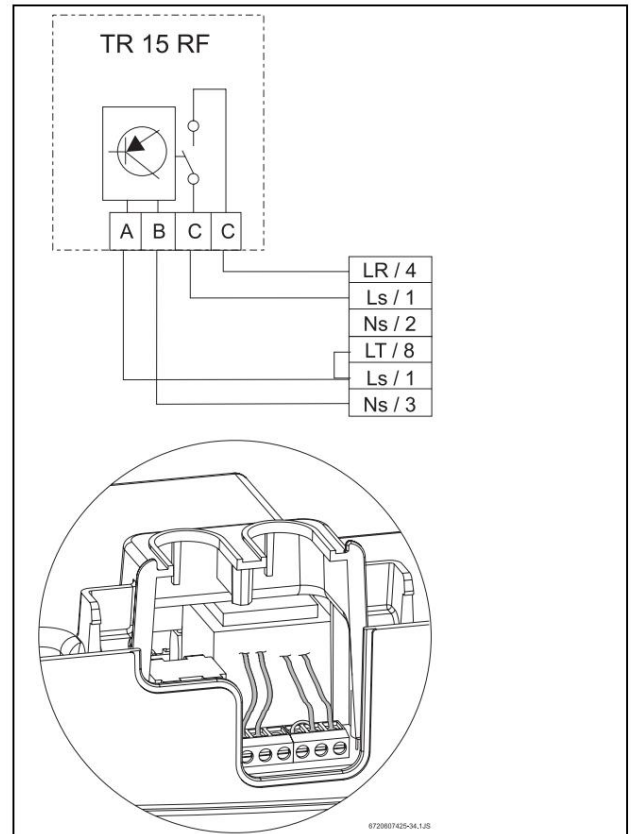


Fig. 22 TR 15 RF

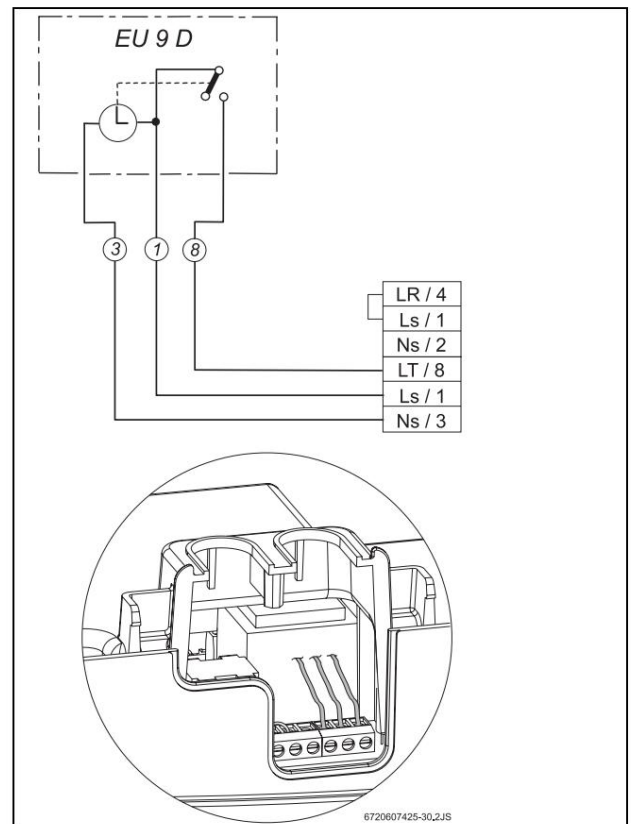


Fig. 23 EU 9 D

5.3 Connecting the hot water boiler (ZS models ..)

Indirectly heated boiler with NTC sensor

Junkers with NTC sensors connect directly to boiler flexible tubing. Connecting cable with the mounted connector is delivered with the boiler.

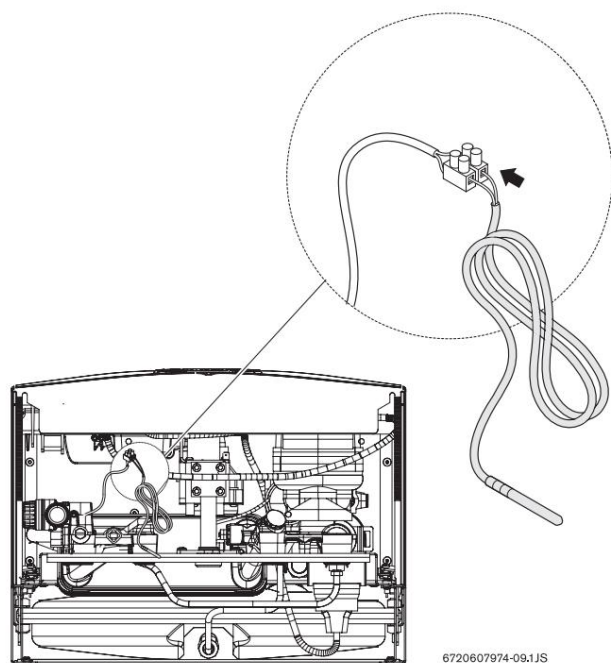


Fig. 24



There is also the possibility of connecting a regular boiler. For this, ask the Junkers service technicians for the kit adaptation required. The kit consists of an NTC sensor with a cable and a connection plug to the printed circuit board.

The sensor has a diameter of 6 mm and must be inserted into an immersion sheath.

6 Commissioning

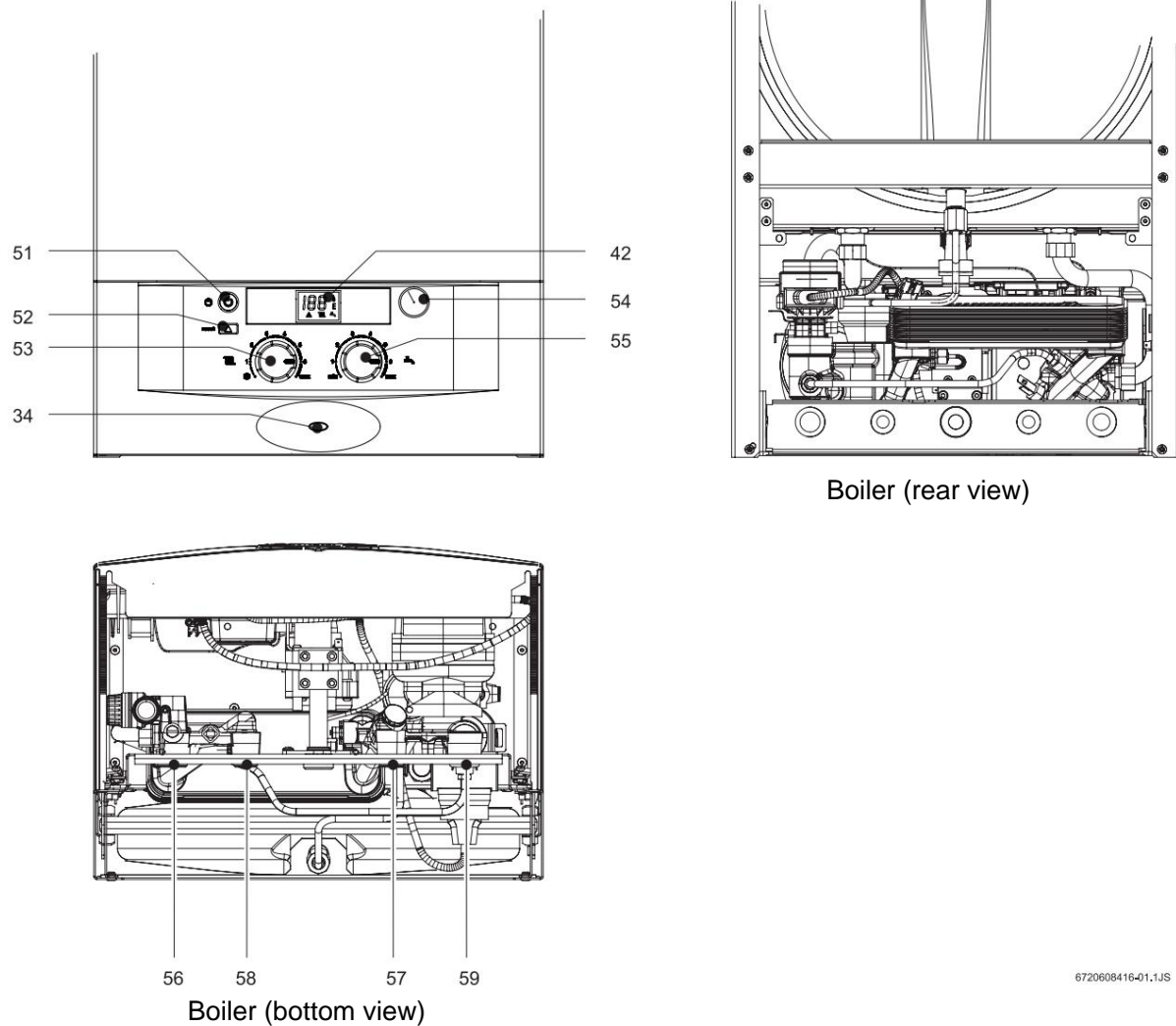


Fig. 25

34 LED - (ON) warning light (flashes in case of fault)

42 Digital display

51 Main switch
52 Emergency key

53 Central heating flow thermostat

54 Manometer

55 Hot water thermostat

56 Central heating return circuit

57 ZW - cold water (ZS - boiler outlet)

58 ZW - hot water (ZS - boiler inlet)

59 Heating system tour

6.1 Before commissioning



Caution:

B Do not use the boiler unless it has been filled with water.

B The first start-up must be carried out only by qualified personnel who ensure the proper quality of the work and, on the other hand, provide the customer with all the necessary information.

B In areas with water rich in limestone installs a softening system or the central heating system is filled with water without limescale.

B Adjust the pre - pressure of the expansion depending on the static height of the heating system.

B On ZW models: the shut-off valve opens for cold water.

Putting into service


- B The radiator valves open.
- B The maintenance valves open.
- B Open the filling valve (38) and fill slowly the heating system at a pressure between 1 and 2 bar.
- B Ventilate the radiators.
- B Check that the ventilation valve of the circuit is heating (69) is open.
- B Open the filling valve (78) to fill the heating system again so that a pressure of 1-2 bar is obtained.
- B Check that the type of gas indicated on the nameplate corresponds to that supplied.
- B The gas valve opens.


6.2 Switching on / off the boiler

Switching



At start-up, the control panel performs an internal test, during which the digital display shows some technical instructions.

- B Press the main power switch. 

The blue LED lights up and the display shows the flow temperature, the boiler is ready to operate. When the burner is started, the display shows this symbol . The display shows the flow temperature (heating).

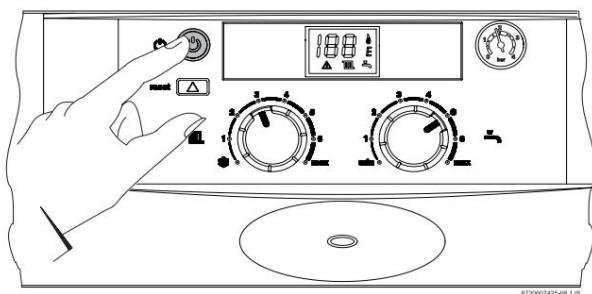


Fig. 26

stop

- B Press the main power switch. 





Warning:
Electric shock!

B Switch off the power supply before carrying out any work on the boiler.

6.3 Switching on the heating system

The flow temperature can be set to 45 °C to 88 °C. Automation continuously adapts the power of the burner to the heat demand.

- B Turn the thermostat on  to adjust the flow temperature to the heating system (between 45 °C and 88 °C).

The digital display now shows this flashing  and, symbol, the selected temperature.

If the burner is working, the digital display shows this symbol. The thermometer shows the flow temperature (heating).

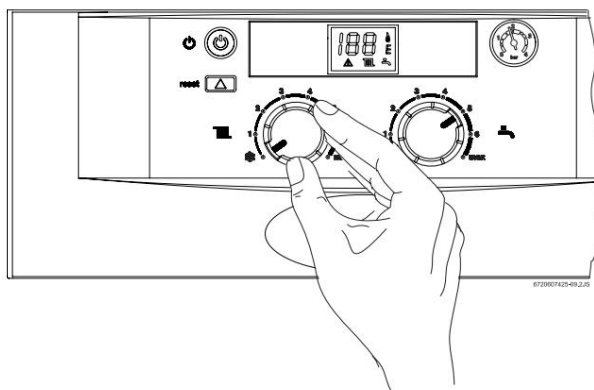



Fig. 27



 frost-free position - if the thermostat is in this position, a primary circuit temperature (heating) higher than 6°C is guaranteed.

6.4 Adjusting the heating system using the room thermostat

- B Set the room thermostat (TR ...) to the desired temperature.

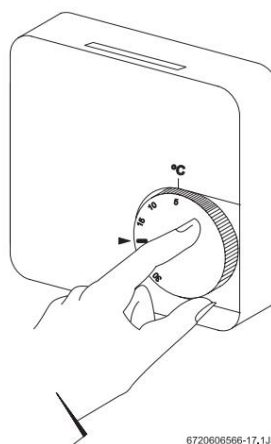


Fig. 28



For a normal level of comfort recommends setting the room thermostat to 20°C.

6.5 Adjusting the temperature of the hot water boiler (ZS models ..)



Warning:

risk of scalding!

B The temperature for the normal operating mode will not be set above 60°C.

B Temperatures up to 70°C will only be set for a short time (thermal disinfection).

Cylinders with NTC sensor

B Set the cylinder temperature using the boiler temperature controller.

The hot water temperature is indicated on the cylinder.

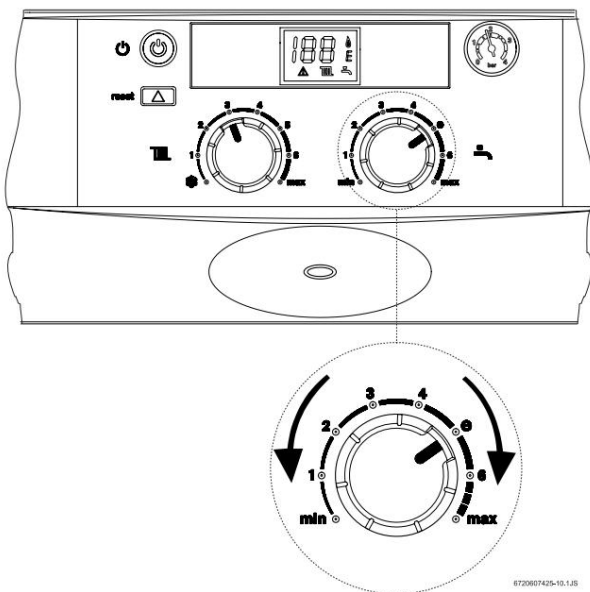


Fig. 29

| Setting the controller | Water temperature |
|-------------------------------------|-----------------------------------|
| It rotates counterclockwise pray | approx. 10 °C (frost protection). |
| It rotates clockwise | approx. 70 °C |

Tab. 7



It is recommended that the maximum temperature not be set above 60°C.

6.6 Domestic hot water flow and temperature (ZW models ..)

On ZW models, the domestic hot water temperature can be adjusted from the temperature controller between 40°C and 60°C (29).



The digital display indicates the selected temperature. The display flashes until the desired value is obtained.

The domestic hot water flow is approx. 10 l / min.

| Setting the controller | Water temperature |
|-------------------------------------|-------------------|
| It rotates counterclockwise pray | approx. 40 °C |
| It rotates clockwise | approx. 60 °C |

Tab. 8

6.7 Summer operation mode (domestic hot water preparation only)

B Turn the temperature control on the boiler counterclockwise until it stops.

The central heating is thus switched off. Domestic hot water supply, heat regulation and voltage supply for the timer clock are maintained.

The digital display indicating "Su" (summer) flashes for approx. 3 seconds.

6.8 Frost protection

B Do not switch off the boiler (gas and water connections OK).

6.9 Protection against pump blockage

Whenever the boiler is started in position I, the pump is activated every 24 hours for approx. 1 minute, to avoid blocking it.

6.10 Diagnosing faults

This plant has a system for diagnosing faults. A fault is indicated by an LED and an error code on the digital display. The boiler will return to normal operation after the fault has been rectified and after it has been switched off

emergency key.

B Check the chapter in this manual for troubleshooting 9.

1. After the last service

7 Gas adjustment



Danger:

B The settings described below can only be made by a authorized technician.

Nominal caloric consumption and rated power can be adjusted according to the method of adjusting the pressure at the burner nozzles or according to the volumetric method. It will be used in both cases a manometer.



It is recommended to adjust according to the method of adjusting the pressure at the burner nozzles, as it is faster.

7.1 Factory settings

Natural gas,

Boilers in **gas group H** (G 20) are regulated and sealed for a gas with a Wobbe index of 15 kWh / m³ and 20 mbar connection pressure.



Boilers must not be operated at a delivery pressure below 15 mbar and above 25 mbar.

GPL

Boilers intended for **propane / butane** (G 31 / G 30) are adjusted and sealed according to the data on the nameplate.

7.2 Service module


For adjusting the input / output thermal power rated mode must be activated.


Before activating the service mode:

B Heater valves open to heat dissipation is allowed.

Activating service mode:


B The boiler starts.

B Press and hold the emergency key  Turn the temperature controller first to the minimum limit and then to the maximum limit.

To confirm this, the display shows a  care flashes. The control panel is in mode service.

B Adjustments are made (see sections 7.3 and 7.4).

Storing settings (heating power):

B Press the emergency key  for at least 2 seconds to save the settings made. The LED and display flash. Other adjustments can be made in service mode.

Exit service mode:

B Shut down and restart the boiler again.



If the boiler does not switch off, it returns to normal operation after two hours.

7.3 Domestic water heating

7.3.1 Adjustment method by measuring the pressure at big

B Switch off the boiler at the main switch: 

B Loosen the safety panel screws order (see page 15).



Remember to remove the accessory drawer to place the control panel in the service position.

B Fold down the control panel to the service.

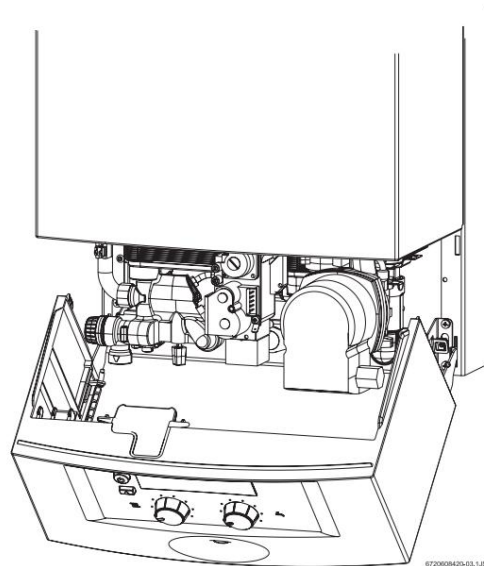


FIG. 30 Gas adjustment service position

B Loosen the sealing screw (7a) and connect the pressure gauge to the measuring nozzle.

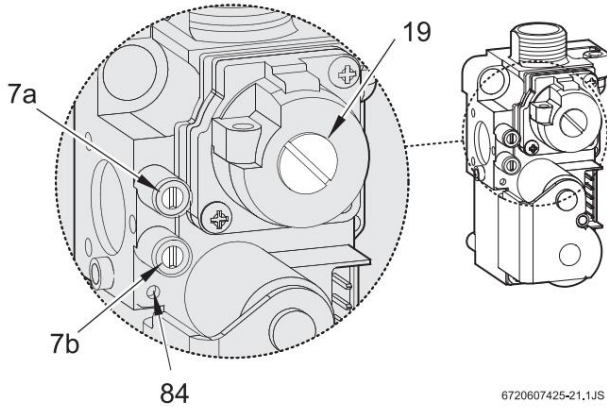


FIG. 31 Gas valve

- 7a Nozzle pressure measuring nozzle
- 7b Gas supply pressure measuring nozzle
- 19 Adjusting screw cap for maximum flow gaze
- 84 Minimum gas flow adjusting screw

B The gas valve opens.

B The service mode is activated (see chapter 7.2).

B Turn the temperature knob to position central.

The digital display flashes. which illuminates

Gas connection pressure controll

B Loosen the sealing screw (7b) and connect the pressure gauge to the measuring nozzle.

B The gas valve opens.

B Switch on the boiler and turn the temperature controller fully clockwise.

B Check the gas supply pressure:
the value required for natural gas must be between 18 mbar and 25 mbar.



At a supply pressure between 15 mbar and 18 mbar for natural gas, the rated power must be set to 85%.

At a supply pressure below 15 mbar / above 25 mbar, the boiler does not need to be adjusted and it is not permitted to operate it.

B If the supply pressure is out of range, the cause will be detected and the fault will be remedied.

B If the defect cannot be remedied: the natural gas distribution company is notified.

B In the event of an unusual flame, check the injector the burner.

B Close the gas valve, remove the U-shaped pressure gauge and re-screw the sealing screw (7b).

B Secure the control panel back in place safety screws.

Maximum burner pressure adjustment

B Remove the sealing screw cap a maximum gas flow (19).

B Turn the temperature knob completely in without prayer.

The control system adjusts the boiler for maximum nozzle pressure.

B In case of natural gas: adjust the MAX pressure at the nozzles with the adjusting screw (19) (tab. 9).

| | Natural gas H | Bhutan | Propane |
|---|---------------|-------------|-------------|
| Cod injector | 112 | 74 | 74 |
| Supply pressure (mbar) | 20 | 30 | 37 |
| Pressure MAX la duze 1 (mbar) | 16,2 | 24,0 - 27,0 | 32,0 - 35,0 |
| Pressure MIN at twelve (mbar) 1) | 0,8 | 2,4 | 3,4 |

Tab. 9 Burner pressure

1. Fitted cover

B In the case of LPG boilers: screw the adjusting screw (19) to the maximum.

B Cover the adjusting screw (19) again and seal.

Maximum burner pressure adjustment

B Turn the temperature knob completely in without prayer.

The control system adjusts the boiler to the minimum nozzle pressure.

B adjust the MIN pressure at the nozzles with the adjusting screw (84) (Tab. 9).

B The settings are checked by turning the temperature controller clockwise and counterclockwise, respectively, if necessary correct.

B The boiler switches off to end service.

B Close the gas valve, remove the U-shaped pressure gauge and re-tighten the sealing screw (7a).

7.3.2 Volumetric adjustment method



When supplying liquefied air-gas mixtures at times of maximum consumption, the adjustment must be made / checked according to the nozzle pressure method.

B Find the Wobbe index (Wo) and calorific value (PCI) from the gas supply company.

B Switch off the boiler at the main switch .:

B Fold down the control panel to the service position. (see Fig. 30).

B The gas valve opens.

B The service mode is activated (see chapter 7.2).

B Turn the temperature knob  in position central.

Maximum gas flow adjustment

B Remove the sealed cap of the maximum gas flow adjustment screw (19) (Fig. 31).

B Turn the temperature knob  completely in without prayer.

The control system adjusts the boiler for the maximum gas flow.

B In the case of natural gas: the MAX gas flow is adjusted by means of the adjusting screw (19) (Tab. 10).

| | Gas natural H | Bhutan | Propane |
|-------------------------------|---------------|----------|----------|
| Cod injector | 112 | 74 | 74 |
| Supply pressure (mbar) | 20 | 30 | 37 |
| Debit MAX 46,5 l/min | | 2,1 kg/h | 2,1 kg/h |
| Debit MIN | 14.7 l/min | 0,7 kg/h | 0,7 kg/h |

Tab. 10 Gas flow

B In the case of LPG boilers: screw the adjusting screw (19) to the maximum.


B Cover the adjusting screw (19) again and seal.

Adjusting the minimum gas flow

B Turn the temperature knob  completely in without prayer.

The control system regulates the boiler for the minimum gas flow.

B Adjust the MIN gas flow using the adjusting screw (64) (Tab. 10).

B Check the clockwise adjustment and the respective temperature controller  counterclockwise, up to the limit, and if necessary they will correct.

B The boiler switches off to end service.

B Turn off the gas valve.

Gas supply pressure control

B For the control of the gas supply pressure see the corresponding chapter in chapter 7.3.1 "Nozzle pressure adjustment method".

7.4 Heating power

The heating power can be set between the minimum and maximum rated heating power according to the specific heat demand (see 1.12).

7.4.1 Adjustment method by measuring the pressure at big

B Switch off the boiler at the main switch: 


B Fold down the control panel to the service position (see Fig. 30).



B Unscrew the sealing screw (7a) and connect the manometer with a U-shaped pipe.

B The gas valve opens.


B Set the control panel to service mode (see chapter 7.2).

Adjusting the minimum heating power

B Turn the temperature knob completely in without prayer. 

The display shows  flashing and an indication .

B Turn the temperature knob  completely in without prayer.

B Turn the temperature knob slightly  counterclockwise to adjust the burner pressure for the minimum heating power (see Tab. 11).



Caution:

If the desired value is exceeded during power adjustment, turn the temperature controller to its original position and perform the adjustment again.

| Heating power (kW) | Gas natural H ¹ | Bhutan ¹ | Propane ¹ |
|--------------------|----------------------------|---------------------|----------------------|
| 10 | 2,3 | 4,8 | 6,4 |



Tab. 11 Burner pressure for minimum power of Heating

1. Fitted cover


B Save the settings (see chapter 7.2).

Maximum heating power adjustment

B Turn the temperature knob  completely in without prayer.

The display shows  flashing and an indication .

B Turn the temperature knob  completely in without prayer.

B Turn the temperature knob slightly  in the clockwise to adjust the burner pressure for maximum heating power (Tab. 12).



Caution:

If the desired value is exceeded during power adjustment, turn the temperature controller to its original position and perform the adjustment again.

| Power heating (kW) | Natural gas H (mbar) | Bhutan (mbar) | Propan (mbar) |
|--------------------|----------------------|---------------|---------------|
| 12 | 3,6 | 6,8 | 9,0 |
| 14 | 5,1 | 9,3 | 12,1 |
| 16 | 6,8 | 12,1 | 15,6 |
| 18 | 8,8 | 15,3 | 19,6 |
| 20 | 11,0 | 18,8 | 24,1 |
| 22 | 13,5 | 22,8 | 29,1 |
| 24 | 16,2 | 24-27 | 32-35 |

Tab. 12 Burner pressure for maximum power of Heating


B Save the settings (see chapter 7.2).

Check settings




The measured values may vary by ± 0.5 mbar from the set values.

B Turn the temperature knob  completely in without prayer.

The display shows a flashing light and the indication. The control system will  the boiler to the minimum heating power.

B Check the burner pressure and adjust if it is necessary.

B Turn the temperature knob  completely in without prayer.

The display shows a flashing light and the indication. The control system will  the boiler to the maximum heating power.

B Check the burner pressure and adjust if it is necessary.

B Shuts down the boiler to exit service mode.

B Switch off the gas valve, remove the U-shaped manometer and the sealing screw (7a) are replaced.

7.4.2 Volumetric adjustment method

B Switch off the boiler at the main switch 



B Fold down the control panel to the service position (see Fig. 30).

B The gas valve opens.


B Set the control panel to service mode (see chapter 7.2).

Adjusting the minimum heating power

B Turn the temperature knob  completely in without prayer.

The display shows  flashing and an indication .

B Turn the temperature knob  completely in without prayer.

B Turn the timer temperature controller to adjust the  in the sense burner pressure for minimum heating power (see Tab. 13).



Caution:

If the desired value is exceeded during the power adjustment, turn the temperature controller to its original position and make the adjustment again.

| Heating power (kW) | Debit gaz | | |
|--------------------|-------------------------|---------------|----------------|
| | Natural gas H (l / min) | Bhutan (kg/h) | Propane (kg/h) |
| 10 | 20,3 | 0,9 | 0,9 |

Tab. 13 Gas flow for minimum output power


B Save the settings (see chapter 7.2).

Maximum heating power adjustment

B Turn the temperature knob  completely in without prayer.

The display shows a flashing light and the indication .

B Turn the temperature knob  completely in without prayer.

B Turn the temperature knob slightly  in the clockwise to adjust the burner pressure for maximum heating power (Tab. 14).

**Caution:**

If the desired value is exceeded during the power adjustment, turn the temperature controller to its original position and make the adjustment again.

| Power heating (kW) | Debit gaz | | |
|--------------------|-------------------------|---------------|----------------|
| | Natural gas H (l / min) | Bhutan (kg/h) | Propane (kg/h) |
| 12 | 24,1 | 1,1 | 1,1 |
| 14 | 27,8 | 1,2 | 1,2 |
| 16 | 31,5 | 1,4 | 1,4 |
| 18 | 35,3 | 1,6 | 1,6 |
| 20 | 39,0 | 1,7 | 1,7 |
| 22 | 42,7 | 1,9 | 1,9 |
| 24 | 46,5 | 2,1 | 2,1 |

Tab. 14 Gas flow for maximum output power

B Save the settings (see chapter 7.2).

Check settings

The measured values may vary by $\pm 0.5\%$ from the set values.

B Turn the temperature knob  completely in without prayer.

The display shows a flashing light and the indication. The control system will set the boiler to the minimum heating power.

B Check gas flow and adjust if necessary.

B Turn the temperature knob  completely in without prayer.

The display shows a flashing light and the indication. The control system will adjust the boiler to the maximum heating power.

B Check gas flow and adjust if necessary.

B Shuts down the boiler to exit service mode.

B Check for gas leaks.

B Turn off the gas valve.

7.5 Transformation to another type of gas

If the type of gas indicated on the nameplate does not correspond to the type of gas supplied, the boiler must be transformed.

B Turn off the gas valve.

B Switch off the boiler at the main switch.

B Remove the control panel.

B Remove the jacket.

B Remove the protective cover by releasing the four clamps.

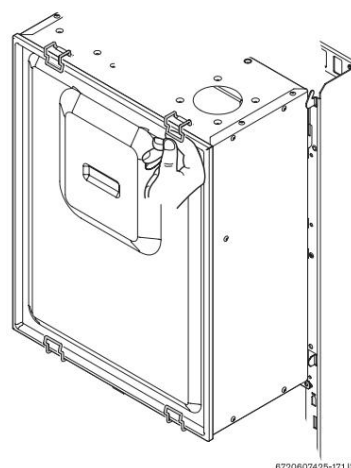


FIG. 32 Protective cover

B Remove the burner.

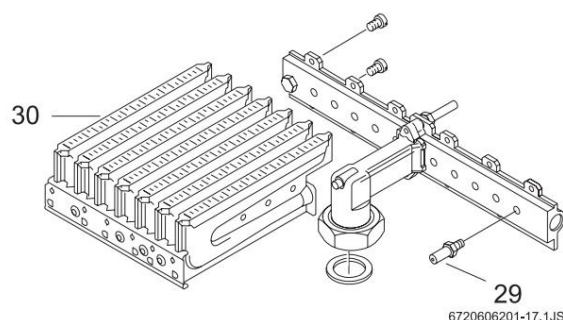


Fig. 33

B Remove the burner tubes and replace the injector.

| Gas family (type) | Cod injector |
|-------------------|--------------|
| NG | 112 |
| GPL | 74 |

Tab. 15

B Refit the burner.

B Check for gas leaks.

B Gas adjustment is performed (see chapter 7.3 and 7.4).

B Pass the modified gas type on the nameplate.

**Warning:**

When reassembling, make sure that the washer between the protective cover and the static chamber is in the correct position.

8 Maintenance



Danger:

Danger of electric shock!

B The power supply to the boiler will be always disconnected before interventions on the electrical part (fuses, switch).

B The boiler will be maintained and overhauled only by an ISCIR authorized technician for the JUNKERS brand in the thermal field.

B Only genuine Junkers spare parts will be used.

B Spare parts will be ordered based on the list of spare parts.

B Gaskets and sealing rings will be removed replaced with new gaskets and rings.

B Only the following types of grease should be used:

- At the water system: Unisilikon L 641 (8 709 918 413)
- Screw connections: HFt 1 v 5 (8 709 918 010)

Access to constructive elements

B Remove the accessory drawer.

B Loosen the safety panel screws order (see page 15).

B Fold down the control panel to the service.

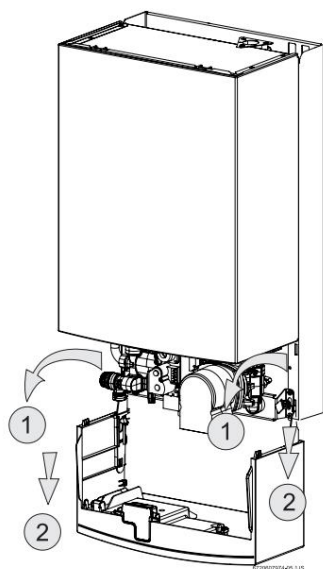


FIG. 34 Service position for access to electronic and water parts



Caution:

When returning the control panel to the service position, care must be taken not to damage the pressure transducer tube.

8.1 Periodic maintenance work

Operation control

B Check the operation of all components safety, regulation and control.

Heat exchanger

B Check the cleanliness of the heat exchanger chamber the heat.

B If it is found to be dirty:

- Remove the heat exchanger chamber and remove the temperature limiter
- Clean the heat exchanger chamber with a strong water jet

B In case of heavy soiling: sink the slides in hot water with washing agent and clean well.

B If necessary, decalcify the inside

heat exchanger and connecting pipes.

B Refit the heat exchanger chamber using new gaskets.

B Insert the limiter into the holder.

burner

B The burner is checked annually and cleaned if necessary.

B In case of heavy soiling (grease, calamine), remove the burner, immerse in warm water with a washing agent and clean thoroughly.

Water filter

B The service gas valve is closed.

B Remove the cover (Fig. 35, Item A).

B Clean the water filter.

Expansion vessel (every 3 years)

B Depressurize the boiler.

B Check the expansion vessel and, if necessary, fill it with an air pump at approx. 0.75 bar.

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

8.2 Emptying the heating system

Domestic water circuit

- B The service gas valve is closed.
- B The hot water consumers supplied by central.

Heating circuit

- B Empty the heating elements (radiators, radiators).

- B Remove the drain plugs (Fig. 35, Item B).

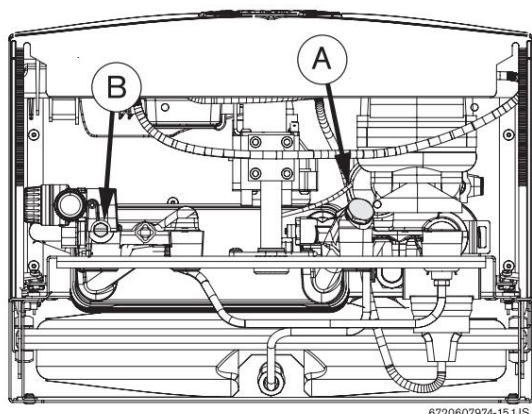


Fig. 35

8.3 Commissioning after maintenance

- B Tighten all joints again with screwing.
- B Read Chapter 6 "Commissioning" and Chapter 7 "Gas regulation".

- B Check gas adjustment (nozzle pressure).

- B Check the flue pipe (with the jacket fitted).

- B Check for gas leaks.


8.4 Fault diagnosis mode

The fault diagnosis mode allows the installer to see the values selected for the boiler in 21 parameters.

There are adjustment, read and test parameters (last three).

Activating the fault diagnosis mode

- B The boiler starts.

- B Press and hold B Rotate the temperature knob to the minimum and then to the maximum.  first at

The control panel is now in fault diagnosis mode.

Parameter selection

- B Turn on the heating thermostat 

On the left, position 01.

right, position 21


| Parameter display | | Tip plant |
|-------------------|--|------------|
| 01 | ECO Mode/Quick tap | adjustment |
| 02 | Summer operation | adjustment |
| 03 | Last 8 failures | Reading |
| 04 | The temperature is reasonable | Reading |
| 05 | Temperature selected for flow | Reading |
| 06 | Domestic water return temperature) | Reading |
| 07 | Selected return temperature (domestic water) | Reading |
| 08 | Unused | — |
| 09 | Differential pressure switch | — |
| 10 | Temperature limiter | Reading |
| 11 | Detector debit | Reading |
| 12 | Gas safety valve | Reading |
| 13 | Gas adapter valve | Reading |
| 14 | Thermostat | Reading |
| 15 | Ventilator | Reading |
| 16 | Ionization | Reading |
| 17 | Pump | Reading |
| 18 | 3-way valve | Reading |
| 19 | Pump test | Test |
| 20 | 3-way valve test | Test |
| 21 | Digital display test | Test |

Tab. 16




Once the parameter number has been selected, the digital display changes the instruction between the selected parameter number and the current status.

Parameter adjustment

- B Turn the thermostat on 

Storing settings

B Press and hold the emergency key for at least 2 seconds to record the settings. Digital display flashes with the symbol 

8.4.1 ECO / Quick Actuation Module

B Turn the thermostat until instruction "01" is obtained on the display.


The boiler can be configured to supply domestic hot water quickly.

The display shows:

- 00 - ECO
- 01 - quick tap
- 02 - reserved
- 03 - reserved

Once the "Quick tap" mode has been activated, the hot water is switched on for a period of two to five seconds, the boiler will heat the internal circuit to produce faster domestic hot water.

8.4.2 Summer operation

B Turn the thermostat until "02"  displayed.

If the boiler is used as an accessory to a system based on solar energy, the parameter must be set to "So".

The display shows:

- No - summer mode off
- Summer mode activated

8.4.3 Last 8 faults detected

B Turn the thermostat until instruction "03" is displayed.

The last 8 faults detected by the boiler can be seen.

If you turn the thermostat, you can choose between the most recent fault (Left) and the oldest fault (right).

8.4.4 The temperature of the water

B Turn the thermostat to  until obtained on the display instruction "04".

The display shows the current temperature on the circuit sensor warming up.

8.4.5 Temperature selected for flow

B Turn the thermostat to  until obtained on the display instruction "05".

The display shows the selected temperature on the heating circuit.

8.4.6 Temperature on the return sensor

B Turn the thermostat to  until obtained on the display instruction "06".

The display shows the current temperature on the domestic water circuit sensor.

8.4.7 Selected return temperature (domestic water)

B Turn the thermostat to  until obtained on the display instruction "07".

The display shows the selected temperature on the domestic hot water circuit.

8.4.8 Differential pressure switch

B Turn the thermostat to "09".  until obtained on the display

Pressure switch status information.

The display shows:

- 00 - Pressure switch open - blower off / no flue gas flow
- 01 - Pressure switch closed - blower on / flue gas flow

8.4.9 Limiting control

B Turn the thermostat to "10".  until obtained on the display

Temperature limiter status information.

The display shows:

- 01 - temperature within the range
- E9 - temperature above limit (see chapter 9)

8.4.10 Detector debit


B Turn the thermostat on  until obtained on the display statement "11"

Flow detector status information.

The display shows:

- 00 - no water flow
- 01 - there is water flow

8.4.11 Gas safety valve

B Rotate the thermostat until it  appears on the display statement "12"

Gas safety valve information.

The display shows:

- 00 - valve closed
- 01 - valve open

Maintenance

8.4.12 Gas adapter valve

B Turn the thermostat to "13".  until obtained on the display

Adapter valve status information.

The display shows:

- 00 - valve closed
- between 01 and 70 - minimum / maximum adjustment value the vent

8.4.13 Thermostat


B Turn the thermostat on  until obtained on the display instruction "14"

Thermostat status information, ie:

The display shows:

- 00 - thermostat open
- 01 - thermostat closed

8.4.14 Blowing

B Turn the thermostat knob appears  until on the display 15.

Blower status information.

The display shows:

- 00 - blower off
- 01 - blower on

8.4.15 Ionization

B Turn the thermostat to  until obtained on the display instruction "16".

Thermostat status information.

The display shows:

- 00 - no flame
- 01 - with flame

8.4.16 Pump

B Turn the thermostat on  until obtained on the display instruction "17"

Pump status information.

The display shows:

- 00 - pump running
- 01 - pump stopped

8.4.17 3-way valve

B Turn the thermostat to  until obtained on the display instruction "18".


3-way valve status information.

The display shows:



- 01 - works in the internal circuit
- 02 - works in the external circuit


8.4.18 Pump test

B Turn the thermostat to  until obtained on the display instruction "19".

Depending on the position of the  central thermostat, perform a pump test.


The display shows:

- 00 - thermostat  to the left
- 01 - thermostat  to the right



If the burner is still running, it is not possible to perform the test, and the display shows .


8.4.19 3-way valve test

B Turn the thermostat to "20".  until obtained on the display

Depending on the position of the thermostat  central perform a 3-way valve test.

The display shows:

- 01 - the earth  to the left, the valve in the circuit intern.
- 02 - terrestrial  to the right, valve in external circuit

If the burner is still running, it is not possible to perform the test, and the display shows .

8.4.20 Digital display test

B Turn the thermostat to  until obtained on the display instruction "21"

All symbols appear on the display.

Disable fault diagnosis mode

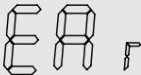


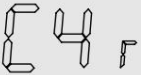

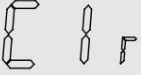
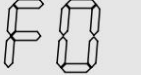
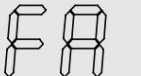
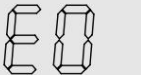

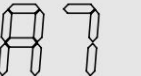
B Shut down and restart the boiler again.



If the boiler is not switched off, it returns to normal working condition after 5 minutes.



9 Faults

Installation, maintenance and repairs should only be performed by authorized personnel. In the following table you can find various ways to fix possible faults (solutions marked with * should only be performed by authorized personnel).

| displays | Possible cause | Solution |
|---|--|--|
|  | No ionization current occurs. | Check that the gas valve is open. Check the gas pressure at the inlet, the connection to the mains, the ignition electrode and its cable, the ionization electrode and its cable. |
|  | Wrong ionization signal. | Check the ionization electrode and its cable for damage. Check the box for moisture. * |
|  | Overheating, temperature limiter on. | Open the boiler heating circuit valve. Ventilate the system and open the automatic boiler aerator. * Remove the pump air from the front screw. Checking the status of the limiter temperature.* |
|  | The pressure switch does not open the circuit in resting position. | Clean dirt and any other obstruction for good flue gas discharge. Check the connections to the pressure switch. * |
|  | The pressure switch does not close the circuit. | Clean dirt and other obstructions for proper flue gas discharge. Check the connections to the pressure switch. * |
|  | The pressure switch then opens the circuit when the boiler is running. | Clean dirt and any OTHER obstructions for proper flue gas discharge. |
|  | Electronic board malfunction. | Check electrical connections and wiring. Replace the board. * |
|  | Gas valve failure. | Check the condition of the gas valve connections. * |
|  | Low voltage.1 | Check the supply voltage and mains frequency. * |
|  | NTC temperature sensor defective at central heating. | Check the NTC sensor and its connections. * |
|  | NTC temperature sensor defective when heating domestic water. | Check the NTC sensor and its connections. * |

Tab. 17


malfunctions

| displays | Possible cause | Solution |
|---|---|--|
|  | <p>Excess temperature in the primary circuit</p> <p>Insufficient water flow for current requirements.</p> | <p>Pump stopped.</p> <p>Check the temperature hole on tur - NTC</p> <p>Check that the combustion chamber and / or heat exchanger are full limestone.</p> |
|  | <p>The blower or pressure switch connections are defects.</p> | <p>Check connections.</p> |

Tab. 17

1. When the supply voltage exceeds a minimum value, the boiler returns to normal operation.

Note: In all cases where the display shows the symbol simultaneously

 with an error code, the button must be pressed after the fault has been repaired.



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