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WARNING: If installation, adjustment, modification, operation or maintenance of the heating system is carried out by an unqualified person, this may result in personal injury or property damage.

The directions of this installation manual must be followed precisely.

If support or additional information is required, contact a qualified service company, service provider or the gas company.

WARNING:

Observe the safety instructions of this installation manual before placing the heating appliance in operation.

The operating manual is a component of the technical documentation and must be handed over to the operator of the heating system. Explain to the owner or operator how to use the heating system using the operating instructions. Make sure that he has been familiarized with all information required for the operation of the heating system.

This manual is available in the English and French language.

Please keep this manual for future reference.



Installation and Service Instructions Logano G515

Boilers for oil/gas-fired power burners

6 720 647 208 (2018/01) US/CA

Read carefully prior to installation and maintenance.

Buderus

About this manual



The appliance conforms to the basic requirements of the relevant directives.
 The conformity has been confirmed.
 The corresponding documentation and the original Declaration of Conformity are on file with the manufacturer.

This installation and maintenance instructions contain important information for the safe and proper installation, initial start-up and maintenance of the oil/gas-fired boiler Logano G515.

These installation and maintenance instructions are designed for specialists, who, due to their vocational training and experience, are knowledgeable in handling heating systems and oil and gas installations.

The oil/gas-fired boiler Logano G515 is available in two variants (disassembled and assembled).

These installation and maintenance instructions explain the installation and maintenance of both boiler types.

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1 Guideline to symbols and safety instructions

1.1 Guideline to symbols

Warnings



Warnings are indicated in the text by a warning triangle and a gray background.

Signal words at the beginning of a warning are used to indicate the type and seriousness of the ensuing risk if measures for minimizing damage are not taken.

- **NOTICE** indicates that damage to property may occur.
- **CAUTION** indicates possible minor to medium personal injury.
- **WARNING** indicates possible severe personal injury.
- **DANGER** indicates a potential for loss of life.

Important Information



Important information neither indicating personal injury nor damage to property are marked with this symbol. They are separated by lines above and below the text.

Additional symbols

Symbol	Explanation
▶	Sequence of steps
→	Cross-reference to other points in this document or to other documents
•	Listing/list entry
–	Listing/list entry (2nd level)

Table 1

1.2 Safety instructions

Danger from failing to consider your own safety in an emergency such as a fire

- ▶ Never risk your own life. Your own safety must always take the highest priority.

Risk due to oil leaks

- ▶ When using oil as the fuel, national regulations hold the operator responsible for immediately asking a specialist contractor to remedy oil leaks the moment they are discovered.

If you smell gas

- ▶ Close the gas shut-off valve.
- ▶ If you hear gas escaping, evacuate the affected area immediately.
- ▶ Open the windows.
- ▶ Do not operate any electrical switches or equipment such as telephones, power plugs and doorbells.
- ▶ Extinguish all open flames.
- ▶ Do not smoke.
Do not use lighters.
- ▶ Warn all occupants of the building, but do not ring doorbells.
- ▶ Call your gas utility company and your local heating contractor **from outside the building**. If necessary, notify police or the fire department.

If you smell flue gas

- ▶ Switch OFF the appliance.
- ▶ Open windows and doors.
- ▶ Inform a trained and certified heating contractor.

Danger of electric shock when the control panel is open

- ▶ Always de-energize the connection before working on electrical parts (circuit breaker).
- ▶ Take provisions against unintentional reconnection.

Danger of poisoning from flue gas if supply of combustion air is insufficient

- ▶ Safeguard supply of combustion air.
- ▶ Do not cover or reduce the size of ventilation openings in doors, windows and walls.
- ▶ Safeguard sufficient supply of combustion air also for appliances installed at a later date, e.g. kitchen exhaust fans, clothes dryers, and air conditioning units with vent to the outside.
- ▶ Never operate the appliance if the supply of combustion air is insufficient.

Combustion air / room air

To prevent corrosion, keep the supply of combustion air / room air free of corrosive substances (e.g. halogenated hydrocarbons that contain chlorine or fluorine compounds).

Danger of explosion of flammable gases

- ▶ Only employ a trained and certified contractor to carry out work on the gas train.

Explosive and easily combustible materials

Never use or store easily combustible materials (paper, thinners, paints, etc.) near the appliance.

Installation, conversion

Only have the appliance installed or modified by a trained and certified heating contractor.

Never modify any parts that carry flue gas.

Never close the outlet of safety valves. Water may be expelled from any safety valve during heat-up.

Inspection and maintenance

The operator is responsible for safety and environmental compliance of the heating system.

Sign a maintenance and inspection contract with a trained and certified contractor, covering an annual inspection and demand-dependent maintenance. This guarantees high efficiency and environmentally sound combustion.

Instructing the customer

- ▶ Instruct customers about the functions and operation of the appliance.
- ▶ Inform the customer that they must not carry out any modifications or repairs.
- ▶ Only use the boiler for its intended purpose and only when it is in working order.

Disposal

- ▶ Dispose of packaging in an environmentally responsible manner.
- ▶ All heating system components that have to be replaced should be disposed of in environmentally-responsible manner at an authorized disposal site.

Other important information

- ▶ If the system overheats or the gas supply does not shut off, do not switch off or disconnect the power supply to the pump. Instead, shut off the gas supply somewhere else separate from the heating system.

2 Product description

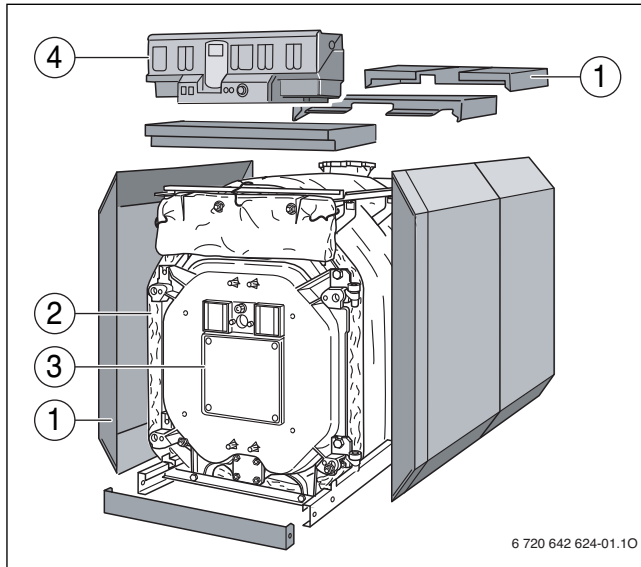


Fig. 1 Oil/gas-fired boiler Logano G515

- [1] Boiler shell (jacket)
- [2] Thermal insulation
- [3] Boiler heat exchanger
- [4] Control panel assembly

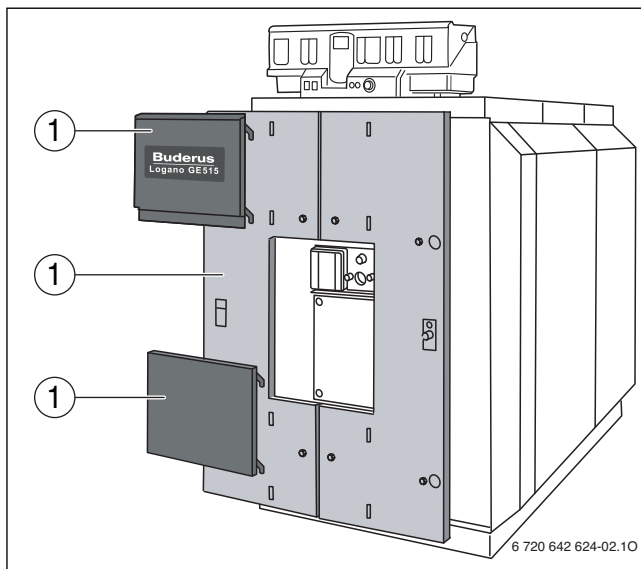


Fig. 2 Front jacket

- [1] Boiler shell (jacket)

The Logano G515 oil/gas-fired boiler is supplied with or without a burner. You can obtain undrilled or predrilled burner plates (hole pattern depends on burner) as accessories from Buderus.

The predrilled burner plate is included in the scope of delivery for the Logano G515 with oil or gas-fired fan-assisted burners.

NOTICE: Risk of system damage from use of incorrect burner.

- ▶ Only use burners that meet the technical requirements of the oil/gas-fired boiler Logano G515 (→ Chapter 3, page 8).

The main components of the Logano G515 oil/gas-fired boiler are:

- Boiler block (→ Fig. 1, [3]) The boiler heat exchanger transfers the heat generated by the burner to the boiler water.
- Boiler shell (jacket, (→ Fig. 1 [1] and Fig. 2, [1]), thermal insulation (→ Fig. 1, [2]). The boiler jacket and thermal insulation minimize energy loss.
- Control panel (→ Fig. 1, [4]). The control panel is designed to monitor and control all electrical components of the Logano G515 oil/gas-fired boiler.



Observe all standards and guidelines applicable to the installation and operation of the system in your country. Please observe the information on the boiler rating plate.



To prevent boiler contamination, we recommend installing a dirt trap in the water system.



As a basic rule, flush existing systems before connecting the boiler. Install a desludging unit in the boiler return to prevent damage to the boiler.

		Fuels	
Logano G515	Heating oil	Liquid propane (LPG)	Natural gas (NG)
Remarks	The Logano G515 boiler can be operated with the specified fuels. Select a burner suitable for use with the fuels specified for the Logano G515 boiler. The output figures shown in the Tab. "Technical Data" are nominal power figures. Carry out maintenance and cleaning procedures annually. Check that the entire system is functioning correctly. Immediately remedy faults. If heating oil is used, shorter maintenance intervals may be necessary depending on the operating time.		

Table 2

2.1 Designated use

The Logano G515 oil/gas-fired boilers have been designed for the heating of water.

The Logano G515 can be operated with oil, gas, and combination burners. For a list of the approved burners, please contact Bosch Thermotechnology Corp.

This boiler can be operated with an aquastat, the Logamatic 4000, and other control systems.

2.2 Operating conditions

Thermostream technology is a unique feature of Buderus cast iron boilers. Return water is preheated and mixed within the boiler before it comes in contact with the heating surface of the combustion chamber. The Thermostream technology ensures there is an even temperature distribution in the boiler and avoids condensate forming within the combustion chamber. This unique feature reduces thermal stress, the main cause of failure of traditional cast iron boilers. The advantage of this technology is the maintenance of the minimum operating temperature of the boiler (→ Tab. 3); this makes the installation of a shunt pump unnecessary. This way, the costs for the pump itself and its power consumption, as well as possible failure costs are saved. The minimum boiler operating temperature as shown in the table below must be reached within 10 minutes and then be maintained while the burner is running.

		Control of all heating zones with Buderus 4000	External controls (BMS) or Aquastat control
Minimum flow rate		none	
Minimum return temperature	°F (°C)	none	
Minimum operating temperature oil boiler ¹⁾	°F (°C)	122 (50)	
Minimum operating temperature gas boiler ¹⁾	°F (°C)	122 (50)	140 (60)
Maximum supply temperature	°F (°C)	212 ²⁾ /248 ³⁾ (100 ²⁾ /120 ³⁾)	
Maximum operating pressure	PSI (bar)	87 (6)	
Time constant of the temperature controller	sec	40	
Time constant of the monitor/limiter	sec	40	

Table 3

- 1) This temperature has to be reached within ten minutes of the burner starting and has to be maintained whilst the burner is firing.
- 2) The maximum supply temperature is 212 °F (100 °C), if the boiler is operated as hot water boiler.
- 3) The maximum supply temperature is 248 °F (120 °C), if the boiler is operated as a hot water generator.

This operating condition can be easily achieved by the controls monitoring the boiler temperature and reducing the flow rate through the boiler until the required temperature is reached. This is then maintained by continuing to control flow based on the boiler water temperature. The controls can reduce the flow rate by closing the valves on the mixed heating circuits, modulating the boiler primary pumps or by closing the motorized butterfly valves or by having a motorized valve in the boiler return on a single boiler installation. The Buderus 4000 series control panel can manage this process or it can be completed by the BMS.

If it is not possible for the control panel to regulate the flow sufficiently to meet this operating condition, then a shunt pump circuit must be fitted to avoid the type of thermal stress that all boilers would experience in these conditions. This shunt pump circuit can be controlled either with a Buderus 4000 control panel or with a third-party controller. Failure to ensure that the operating condition is maintained may lead to thermal stress in the boiler and eventual failure of the sections which would be outside the scope of the warranty.

2.3 Compliance with standards and regulations

Installation and operation of the system must comply with all applicable codes, regulations and statutory requirements.

Installation, connection of the fuel supply and flue connector, commissioning, connection of the electrical power supply, servicing and repair may only be carried out by trained and certified heating contractor. Only registered gas fitters may carry out work on the gas train.

The system must be cleaned and serviced once a year. The operation of the complete system must be tested at the same time. Any faults must be corrected immediately.

The design and mode of operation of this boiler comply with the American National Standard ANSI Z21.13/CSA4.9, latest edition for Gas Fired Low Pressure Steam and Hot Water Boilers.

Other confirmed approvals and certifications are indicated by labels on the boiler.

The heat exchanger has been designed and certified in accordance with the ASME Boiler and Vessel Code, Section IV.

Installation of the wall mounted condensing gas boiler must comply with all applicable codes and regulations imposed by the national, Federal or local authorities and bodies. If no specific requirements are defined, in the USA, the latest edition of the National Fuel Gas Code ANSI Z223.1/NFPA 54 applies. In Canada, installation must comply in all respects with the latest edition of the Installation Code for Gas Burning Appliances and Equipment, CAN/CSA-B.149 and the applicable local regulations and requirements for the appliance category. The relevant authorities and regulatory bodies must be informed before installation starts.

Where required by local regulations, the system must comply with the American Society of Mechanical Engineers Safety Code for Controls and Safety Devices for Automatically Fired Boilers (ASME CSD-1).

The hot water distribution system must comply with all applicable codes and regulations. When replacing an existing boiler, it is important to check the condition of the entire hot water distribution system to ensure safe operation.

Valves external to the boiler must be fitted with T-handles and condensate piping must be installed in accordance with the State Plumbing Code.

2.4 Additional regulations for installations in the Commonwealth of Massachusetts

(a) For all side wall horizontally vented gas fueled equipment installed in every dwelling, building or structure used in whole or in part for residential purposes, including those owned or operated by the Commonwealth and where the side wall exhaust vent termination is less than seven (7) feet above finished grade in the area of the venting, including but not limited to decks and porches, the following requirements shall be satisfied:

- **INSTALLATION OF CARBON MONOXIDE DETECTORS.** At the time of installation of the side wall horizontal vented gas fueled equipment, the installing plumber or gasfitter shall observe that a hard wired carbon monoxide detector with an alarm and battery back-up is installed on the floor level where the gas equipment is to be installed. In addition, the installing plumber or gasfitter shall observe that a battery operated or hard wired carbon monoxide detector with an alarm is installed on each additional level of the dwelling, building or structure served by the side wall horizontal vented gas fueled equipment. It shall be the responsibility of the property owner to secure the services of qualified licensed professionals for the installation of hard wired carbon monoxide detectors.
 - In the event that the side wall horizontally vented gas fueled equipment is installed in a crawl space or an attic, the hard wired carbon monoxide detector with alarm and battery back-up may be installed on the next adjacent floor level.
 - In the event that the requirements of this subdivision cannot be met at the time of completion of installation, the owner shall have a period of thirty (30) days to comply with the above requirements; provided, however, that during said thirty (30) day period, a battery operated carbon monoxide detector with an alarm shall be installed.
- **APPROVED CARBON MONOXIDE DETECTORS.** Each carbon monoxide detector as required in accordance with the above provisions shall comply with NPA 720 and be ANSI/UL 2034 listed and IAS certified.

- **SIGNAGE.** A metal or plastic identification plate shall be permanently mounted to the exterior of the building at a minimum height of eight (8) feet above grade directly in line with the exhaust vent terminal for the horizontally vented gas fueled heating appliance or equipment. The sign shall read, in print size no less than one-half (½) inch in size, “GAS VENT DIRECTLY BELOW. KEEP CLEAR OF ALL OBSTRUCTIONS”.
- **INSPECTION.** The state or local gas inspector of the side wall horizontally vented gas fueled equipment shall not approve the installation unless, upon inspections, the inspector observes carbon monoxide detectors and signage installed in accordance with the provisions of 248 CRM 5.08(2)(a) 1 through 4.

(b) EXEMPTIONS: The following equipment is exempt from 248 CRM 5.08(2)(a) 1 through 4:

- The equipment listed in Section 10 entitled “Equipment Not Required To Be Vented” in the most current edition of NFPA 54 as adopted by the board; and
- Product Approved side wall horizontally vented gas fueled equipment installed in a room or structure separate from the dwelling, building or structure used in whole or in part for residential purposes.

(c) MANUFACTURERS REQUIREMENTS - GAS EQUIPMENT VENTING SYSTEM REQUIRED. When the manufacturer of Product Approved side wall horizontally mounted gas equipment provides a venting system design or venting system components with the equipment, the instructions provided by the manufacturer for the installation of the equipment and venting shall include:

- Detailed instructions for the installation of the venting system or the venting system components; and
- A complete parts list for the venting system design or venting system.

(d) MANUFACTURERS REQUIREMENTS - GAS EQUIPMENT VENTING SYSTEM NOT PROVIDED. When the manufacturer of Product Approved side wall horizontally vented gas fueled equipment does not provide the parts for the venting of flue gases, but identifies “special venting systems”, the following requirements shall be satisfied by the manufacturer:

- The referenced “special venting systems” shall be included with the appliance or equipment installation instructions; and
- The “special venting systems” shall be Product Approved by the Board, and the instructions for that system shall include a parts list and detailed installation instructions.

(e) A copy of all instructions for all Product Approved side wall horizontally vented gas fueled equipment, all venting instructions, all parts lists for venting instructions, and/or venting design instructions shall remain with the appliance or equipment at the completion of the installation.

3 Specifications

The technical data provides information about the output profile of the Logano G515.

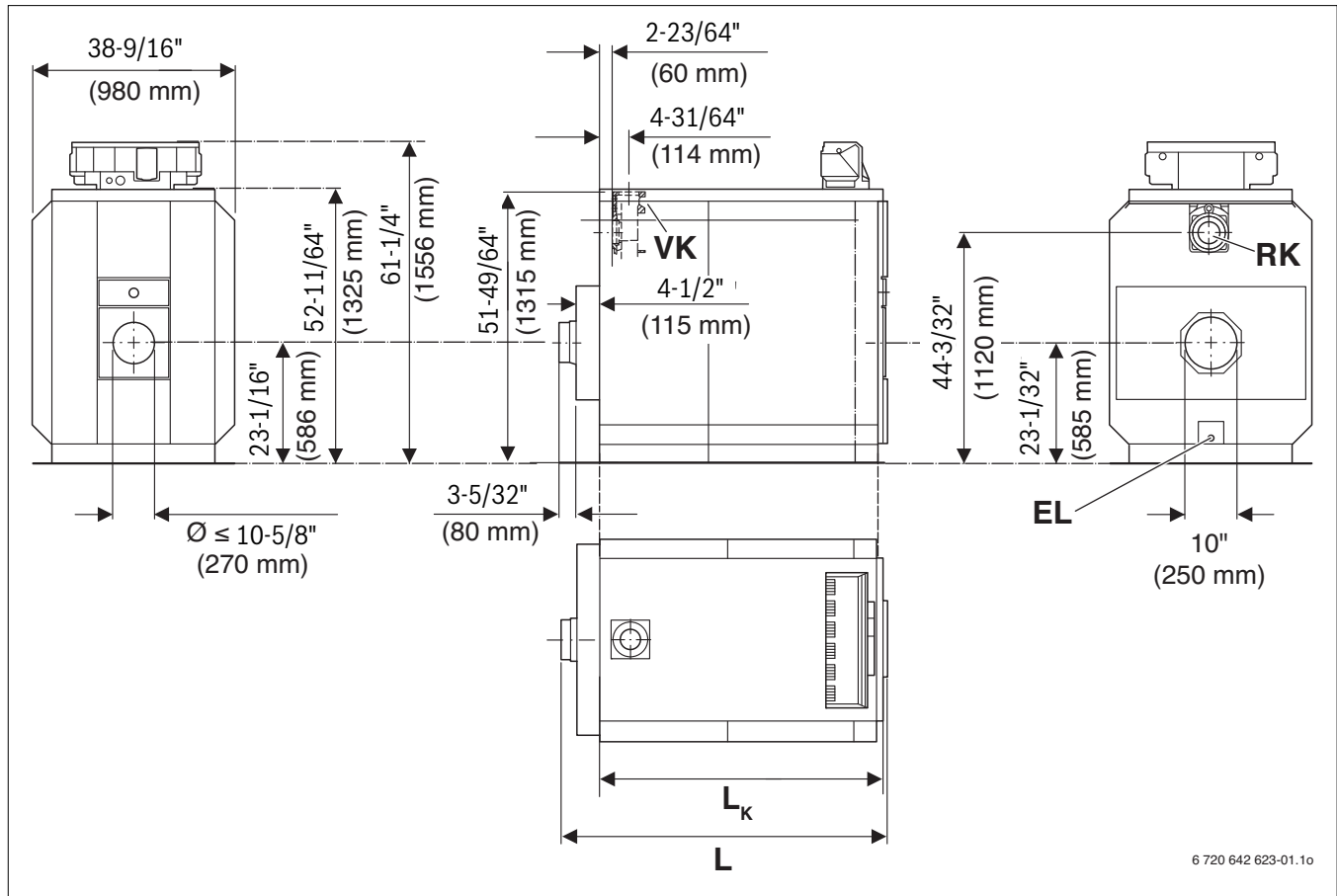


Fig. 3 Technical data for Logano G515 (dimensions in inches (mm))

- EL Drain valve (Rp ¾)¹⁾
- L_K Boiler heat exchanger length
- L Overall boiler length
- RK Return connection on the boiler²⁾
- VK Supply connection on the boiler³⁾

- 1) With the drain valve (EL), you may only drain the system, not fill it.
- 2) The filling of the boiler and the system must be undertaken on a separate connector on the return line.
- 3) The flange corresponds to the order reduced to 212 (DN100), 176 (DN80) or 149 (DN65).

Logano G515							
Boiler capacity	Unit	240	295	350	400	455	510
Number of boiler sections	–	7	8	9	10	11	12
Nominal output	MBH (kW)	685.8 - 818.9 (201 – 240)	822.3 - 1.006.6 (241 – 295)	1.010.0 - 1.194.2 (296 – 350)	1.197.7 - 1.364.9 (351 – 400)	1.368.3 - 1.552.5 (401 – 455)	1.555.9 - 1.74.2 (456 – 510)
Combustion output	MBH (kW)	735.7 - 886.1 (215.6 – 259.7)	879.7 - 1.088.5 (257.8 – 319.0)	1.080.3 - 1.286.7 (316.6 – 377.1)	1.278.2 - 1.465.9 (374.6 – 429.6)	1.461.8 - 1.669.2 (428.4 – 489.2)	1.665.8 - 1.869.2 (488.2 – 547.8)
Boiler overall length (L)	inches (mm)	62 – 7/32 (1580)	68 – 29/32 (1750)	75 – 19/32 (1920)	82 – 9/32 (2090)	88 – 31/32 (2260)	95 – 23/32 (2430)
Boiler block length (L _K)	inches (mm)	53 – 35/64 (1360)	60 – 15/64 (1530)	66 – 59/64 (1700)	73 – 5/8 (1870)	80 – 5/16 (2040)	87 (2210)
Fitting clearance, boiler section (width × height × depth)	inches (mm)	32 7/8 × 51 49/64 × 6 45/64 (835 × 1315 × 170)					
Fitting clearance, boiler block (width × height × length)	inches (mm)	32 7/8 × 51 49/64 × L _K (835 × 1315 × L _K)					
Combustion chamber length	inches (mm)	45 – 55/64 (1165)	52 – 9/16 (1335)	59 – 1/4 (1505)	65 – 15/16 (1675)	72 – 41/64 (1845)	79 – 21/64 (2015)
Combustion chamber diameter	inches (mm)	20 – 17/64 (515)					
Burner door thickness	inches (mm)	5 – 19/32 (142)					
Weight, net ¹⁾	lb. (kg)	2.80 (1270)	3.153 (1430)	3.506 (1590)	3.865 (1753)	4.189 (1900)	4.542 (2060)
Boiler water content	gal. (l)	68.2 (258)	77.7 (294)	87.2 (330)	96.7 (366)	106.2 (402)	115.7 (438)
Gas capacity	gal. (l)	111.2 (421)	128.6 (487)	145.5 (551)	162.7 (616)	179.9 (681)	196.8 (745)
Flue gas temperature, partial load (60%)	°F (°C)	281 (138)	281 (138)	284 (140)	265 (129)	266 (130)	284 (140)
Flue gas temperature, full load	°F (°C)	328 – 362 (164 – 183)	322 – 362 (161 – 183)	322 – 351 (161 – 177)	315 – 340 (157 – 171)	319 – 342 (159 – 172)	328 – 346 (164 – 174)
Flue gas mass flow rate, oil, partial load (60%)	lb./s (kg/s)	0.143 (0.065)	0.176 (0.080)	0.207 (0.094)	0.238 (0.108)	0.271 (0.123)	0.302 (0.137)
Flue gas mass flow rate oil, full load ²⁾	lb./s (kg/s)	0.203 – 0.243 (0.092 – 0.11)	0.241 – 0.298 (0.109 – 0.135)	0.296 – 0.353 (0.134 – 0.16)	0.351 – 0.401 (0.159 – 0.182)	0.401 – 0.459 (0.182 – 0.208)	0.457 – 0.514 (0.207 – 0.233)
Flue gas mass flow rate, gas, partial load (60%)	lb./s (kg/s)	0.143 (0.065)	0.176 (0.080)	0.209 (0.095)	0.238 (0.108)	0.271 (0.123)	0.304 (0.138)
Flue gas mass flow, gas, full load ²⁾	lb./s (kg/s)	0.203 – 0.245 (0.092 – 0.111)	0.243 – 0.300 (0.11 – 0.136)	0.298 – 0.355 (0.135 – 0.161)	0.353 – 0.403 (0.16 – 0.183)	0.403 – 0.459 (0.183 – 0.208)	0.459 – 0.233 (0.208 – 0.233)
CO ₂ content, oil	%	13					
CO ₂ content, gas	%	10					
Required draft	PSI (Pa)	0 (0)					
Flue gas resistance	PSI (mbar)	– (0.5 – 0.6)	– (1.0 – 1.4)	– (1.1 – 1.6)	– (2.1 – 2.9)	– (2.5 – 3.3)	– (2.4 – 3.1)

Table 4


Logano G515							
Boiler capacity	Unit	240	295	350	400	455	510
Maximum permissible supply temperature ³⁾	°F (°C)	248 (120)					
Maximum permissible operating pressure	PSI (bar)	87 (6)					
							

Table 4

- 1) Weight with packaging approx. 6–8% higher.
- 2) The details relate to the upper and lower rated output range.
- 3) Safety limit (high limit safety cut-out). Maximum possible supply temperature = safety limit (STB) – 32 °F (–18 K).
Example: Safety limit (STB): = 212 °F (100 °C), max. possible supply temperature = 212–32 = 180 °F (100–18 = 82 °C).

4 Scope of delivery

The Logano G515 can be delivered either as a pre-assembled block or in loose sections.

- ▶ Check that the packaging is undamaged on delivery.
- ▶ Check that the delivery is complete.

4.1 Logano G515 – Delivery as a pre-assembled block

Component	Qty	Packaging
Boiler block with burner door and draft diverter	1	Pallet
Assembly components (longitudinal rails and supply pipe)	1	Box
Jacket Pack A, B, C (according to boiler rating)	1 – 3	Cartons
Thermal insulation	1	PU bag

Table 5

4.2 Logano G515 – Delivery in loose sections

Component	Qty	Packaging
Front and rear section as well as burner door	1	Pallet
Intermediate sections – (depending on boiler size)	1 – 2	Pallet
Fittings	1	Box
Exhaust manifold	1	Box
Tie rods	1	bundle
Assembly components (longitudinal rails and supply pipe)	1	Box
Jacket Pack A, B, C (according to boiler rating)	1 – 3	Cartons
Thermal insulation	1	PU bag

Table 6

5 Transporting the boiler

Use suitable equipment to transport the individual boiler sections (delivery as loose sections) and other individual parts.



WARNING: Risk of injury from improperly secured boiler sections.

- ▶ Use only suitable means of transportation when handling the boiler sections, e.g. a heavy duty hand truck.
- ▶ Secure the individual boiler sections to prevent them from sliding off during transport.

NOTICE: Risk of system damage from impacts.

- ▶ The standard delivery of the Logano G515 oil/gas-fired boiler contains components that are sensitive to shock.
- ▶ During handling protect all electronic and other components against impact.
- ▶ Please observe the transport instructions on the packaging.

NOTICE: Risk of system damage from contamination.

- ▶ If you intend to keep the boiler in storage once it has been assembled, observe the following:
- ▶ Protect the boiler connections against contamination by sealing them off or covering them.



Dispose of packaging in an environmentally responsible manner.

6 Positioning the boiler

This chapter describes how to properly position the Logano G515.

NOTICE: Risk of system damage from freezing.

- ▶ Install the system in a room free from the danger of freezing.

6.1 Tools and auxiliary materials

The following tools and auxiliary materials are required for the boiler assembly (the listed items must be provided by the installer):

- Boiler assembly tool 2.2 (→ Fig. 4, page 11) or 2.3 (→ Fig. 5, page 11)
- Boiler block support for fitting the boiler sections together
- Steel hammer and wooden or rubber mallet
- Half-round bastard file
- Screwdriver (Philips and flat head)
- Flat chisel
- Metric wrenches
- Support wedge, flat iron
- Cleaning rags and cloth
- Fine emery cloth
- Wire brush
- 3-in-1 oil
- Solvent (gasoline, mineral spirits)
- Spirit level, tape measure, chalk, straight edge
- Blanking flange with vent facility (for pressure test)

6.1.1 Boiler assembly tool size 2.2

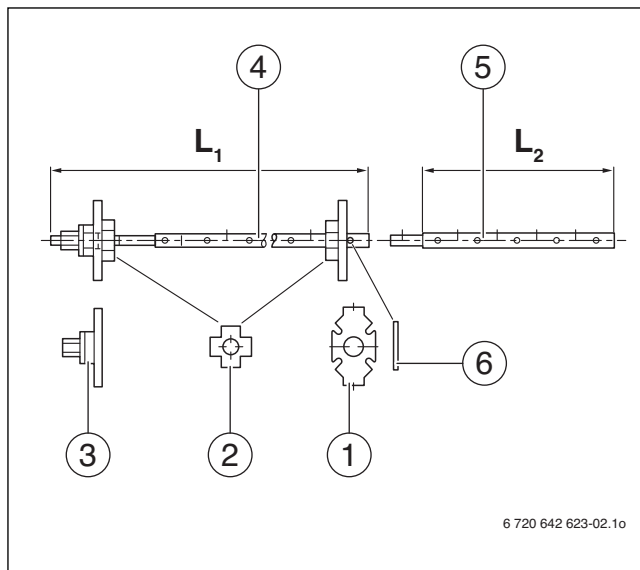


Fig. 4 Boiler assembly tool size 2.2

- [1] Mating flange
- [2] Additional flange
- [3] Compression unit
- [4] Tie rod
- [5] Extension
- [6] Dowel pin (size 2.2)
- [L₁] 85" (2160 mm)
- [L₂] 23 – 5/8" (600 mm)

Boiler sections	Assembly tool(s) per boiler hub	Extension piece per boiler hub	Length (total) in inches (mm)
7 – 10	1	0	85 – 3/64 (2160)
11 – 12	1	1	108 – 21/32 (2760)

Table 7



For the correct arrangement of the flange during assembly, refer to page 17.

6.1.2 Boiler assembly tool size 2.3 (complete in the toolbox)

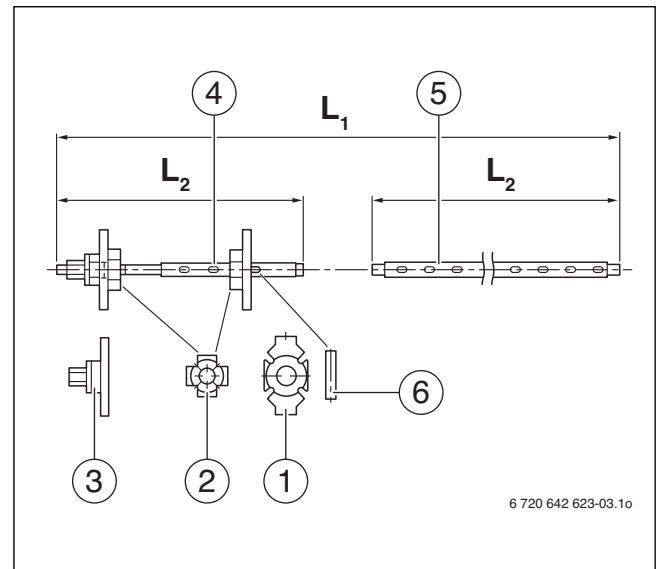


Fig. 5 Boiler assembly tool size 2.3

- [1] Mating flange
- [2] Additional flange
- [3] Compression unit
- [4] Tie rod
- [5] Extension
- [6] Wedge (size 2.3)
- [L₁] 121 – 1/4" (3080 mm)
- [L₂] 31 – 1/2" (800 mm)

Boiler sections	Assembly tool(s) per boiler hub	Extension piece per boiler hub	Length (total) in inches (mm)
7 – 12	1	3	121 – 1/4 (3080)

Table 8



For the correct arrangement of the flange during assembly, refer to page 17.

6.2 Recommended wall clearances

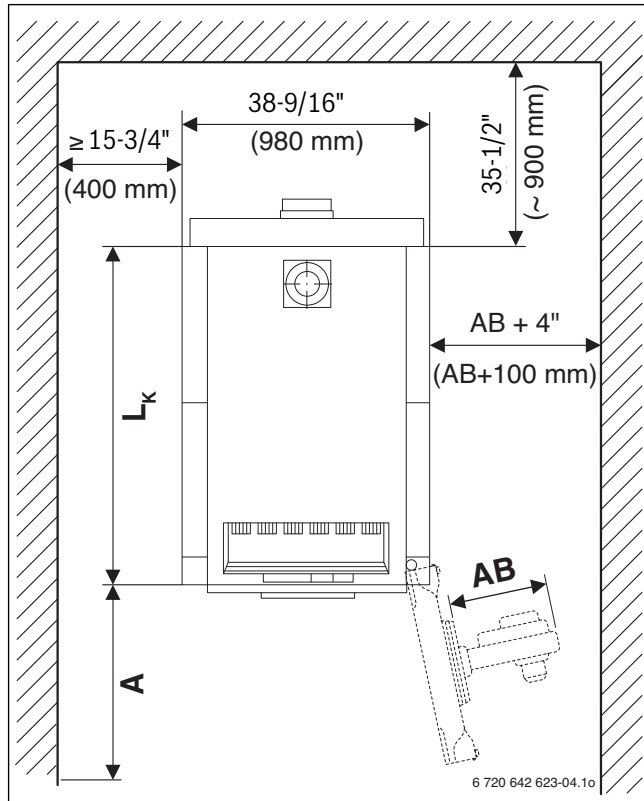


Fig. 6 Installation room with boiler



Observe the recommended wall clearances for complete opening of the burner door, for boiler installation and for cleaning and maintenance (→ Fig. 6 and Tab. 9).

The burner door can be right or left hung/opening (the boiler is always supplied with the door attached on the right).

When installing your boiler maintain the recommended minimum dimensions. Select the recommended clearances between wall and boiler for easy access for installation, maintenance and service work.

The wall clearance on the hinge side must be at least the burner projection (AB). A distance of $AB + 3 - 15/16$ " ($AB + 100$ mm) from the wall is recommended.

Boiler capacity		Clearance A in inches (mm)	
MBH (kW)	Boiler sections	Recommended	minimum
819 - 1.194 (240 - 350)	7 - 9	66 - 15/16" (1700)	39 - 3/8" (1000)
1,365 - 1,740 (400 - 510)	10 - 12	86 - 39/64" (2200)	39 - 3/8" (1000)

Table 9

If you do not observe the recommended minimum clearance (→ Fig. 6), you will not be able to use the cleaning kit (accessory). Alternatively, shorter cleaning devices or wet cleaning may be used. Alternatively shorter cleaning devices or wet cleaning may be used.

6.3 Installing the boiler on a boiler base or foundation

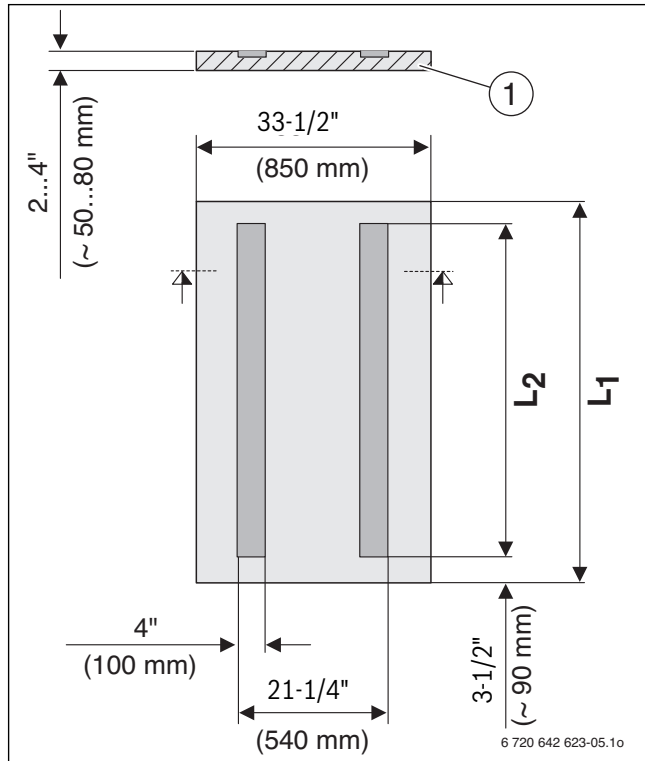


Fig. 7 Base dimensions (dimensions in inches (mm))



A silencing boiler base is available as an accessory from Buderus.

If this boiler base is not used, a concrete foundation can be constructed on-site. When building the base, a $3 - 15/16 \times 1 - 31/32 \times 5/16$ inches ($100 \times 50 \times 8$ mm) steel angle or $3 - 15/16 \times 13/64$ inches (100×5 mm) steel flat should be incorporated, to ensure that the boiler sections can slide when the boiler is installed (→ Fig. 7 and Tab. 10).



When building the bases, consider to which side the burner swings out (left or right-hand burner door stop (→ Fig. 6, page 12).

It is advisable to place the boiler on a 2 - 4 inch (50 - 80 mm) tall base (→ Fig. 7, [1]). The installation area must be completely flat and level. The front edge of the boiler should be flush with the edge of the base.

Number of boiler sections	L1 (base) in inch (mm)	L2 (steel section) in inch (mm)
7	53 - 35/64 (1360)	46 - 27/32 (1190)
8	60 - 15/64 (1530)	53 - 35/64 (1360)
9	66 - 59/64 (1700)	60 - 15/64 (1530)
10	73 - 5/8 (1870)	66 - 59/64 (1700)
11	80 - 5/16 (2040)	73 - 5/8 (1870)
12	87 (2210)	80 - 5/16 (2040)

Table 10

7 Boiler block assembly



WARNING: Risk of injury from improperly secured boiler sections.

- ▶ Use only suitable means of transportation when handling the boiler sections, e.g. a heavy duty hand truck with strap or a heavy duty hand truck.
- ▶ Secure the individual boiler sections to prevent them from sliding off during transport.

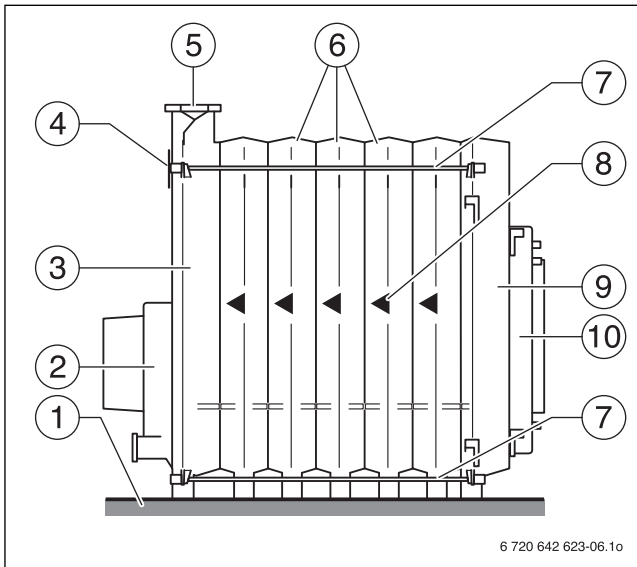


Fig. 8 Boiler heat exchanger

- [1] Boiler base or foundation
- [2] Exhaust manifold
- [3] Rear section
- [4] Return connection
- [5] Supply connection
- [6] Intermediate section
- [7] Tie rod
- [8] Sequence of installation
- [9] Front section
- [10] Burner door with burner plate

Depending on the type of delivery, we distinguish between delivery as disassembled sections and as ready assembled block. When delivered as a block, the boiler sections are already fully assembled and checked for leaks prior to delivery. If the assembled boiler is too large or too heavy to be brought to its final installation location in the building, delivery of the disassembled boiler in sections offers a solution.

For the further installation of a pre-assembled boiler block, see Chapter 7.3, page 18.

7.1 Assembly of a boiler block from sections



WARNING: Risk of injury from inadequately secured boiler sections.

- ▶ Secure boiler sections during assembly and take measures to prevent them from tipping over. The installation aid (accessory) is available from Buderus on request.

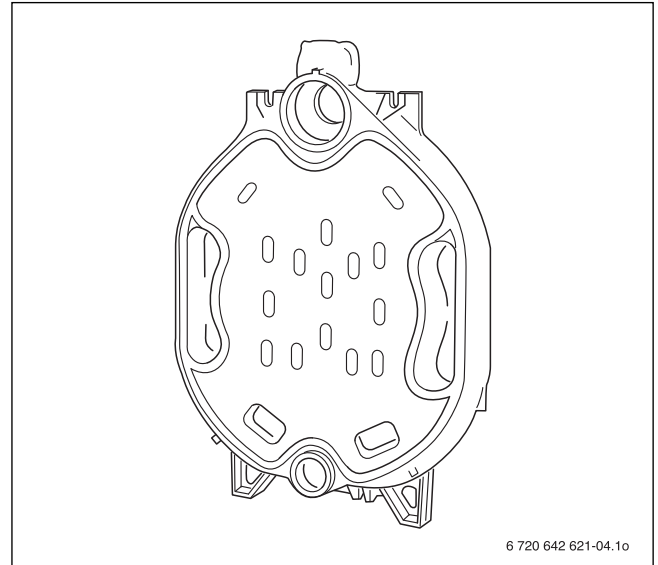


Fig. 9 Rear section

The boiler block is always installed starting from the rear with the rear section (→ Fig. 8, [3], page 13) and working toward the front. The front section (→ Fig. 8, [9], page 13) is always fitted last.

Observe the directional arrows (→ Fig. 8, [8]) during assembly and carry this out in accordance with the following instructions and illustrations.

7.2 Joining the boiler block assembly (delivery as loose sections)

Remove nuts and washers from the studs on the hubs of the boiler sections before attaching the rear section and front section.



If you are using the installation aid, you will need to remove the cleaning access cover before you can attach it to the rear section.

- ▶ Unscrew cleanout cover on rear section (→ Fig. 10, [1 and 2]).

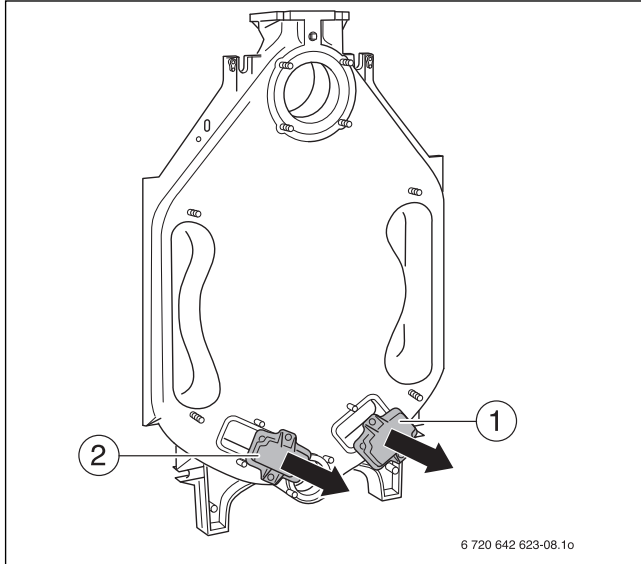


Fig. 10 Removing the cleanout cover.

- ▶ Set up the rear section and secure with the installation aid to prevent it from tipping (→ Fig. 11 and Fig. 9 and separate installation instructions for installation aid).

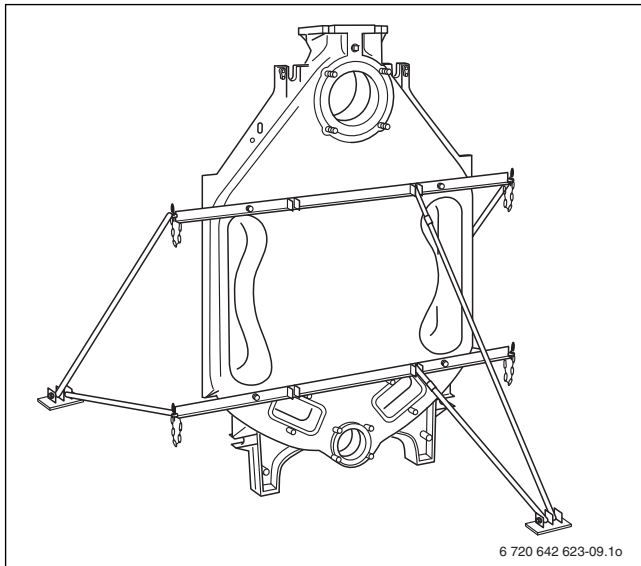


Fig. 11 Fastening the installation aid

- ▶ File down any burrs on the hubs (→ Fig. 12).
- ▶ Clean the packing grooves where required using a wire brush and cloth (→ Fig. 13, [3]).

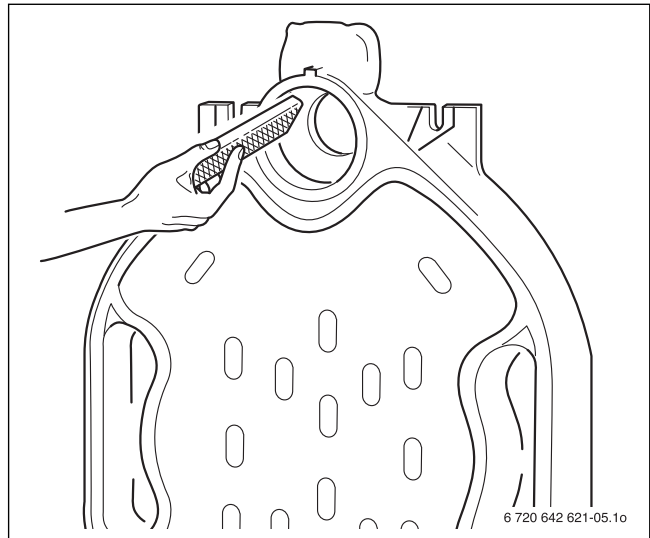


Fig. 12 Remove burrs



WARNING: Danger of fire from combustible cleaning agents.

- ▶ When using solvents, avoid open flames, ambers, and sparks.
- ▶ Please observe the safety instructions regarding any solvents used.

- ▶ Clean the hub sealing faces (→ Fig. 13, [1 and 2]) with a rag soaked in solvents or gasoline.



WARNING: Health hazard from noxious vapors released during material handling.

- ▶ Ensure adequate ventilation of the installation area.
- ▶ Please note the handling and safety instructions of the product used.

- ▶ Evenly coat the hub sealing faces with sealant.

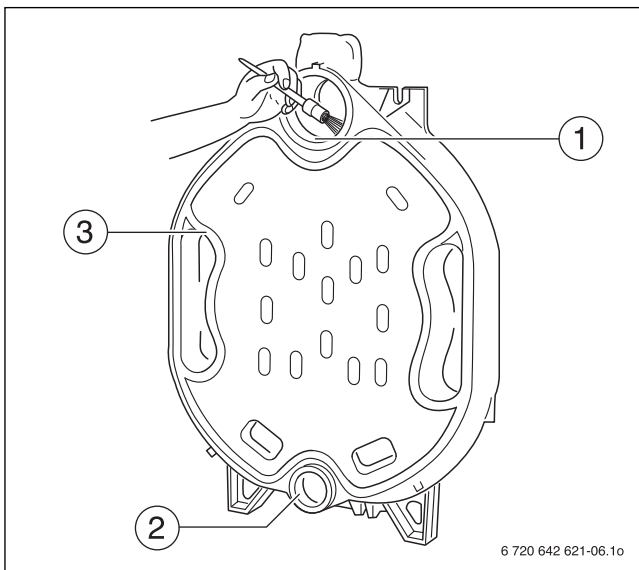


Fig. 13 Prepare packing grooves and hubs

The next step involves preparing the nipples that will eventually seal the boiler sections.

- ▶ Clean nipple with a rag soaked in solvents or gasoline and coat evenly with sealant.
- ▶ Insert the nipple straight into the upper (Sz. 4.181.70) and lower (Sz. 1, 82/50) hub of the rear section and pound home securely with alternate heavy blows. Once pounded in, the upper nipple (→ Fig. 14, [1]) must protrude approx. 1 – 49/64 inches (45 mm) and the lower nipple approx. 1 – 3/8 inches (35 mm) out of the corresponding hubs.
- ▶ Remove any burrs with a file.

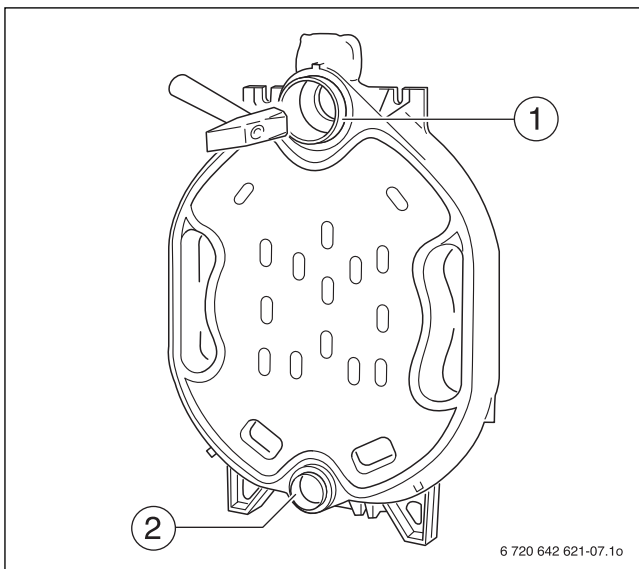


Fig. 14 Driving nipples home

The packing grooves (→ Fig. 15, [1]) must be clean and dry to enable the sealant rope to adhere properly.

- ▶ Coat the packing grooves with adhesive (primer)

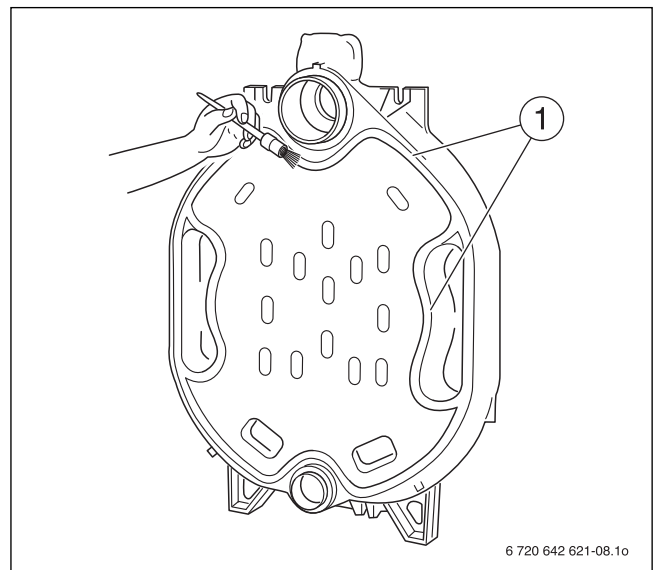


Fig. 15 Coat the packing grooves with adhesive (primer)

- ▶ Insert the flexible sealant rope (→ Fig. 16, [2]) on the front of the rear section, starting around the upper hub, into the packing grooves (→ Fig. 16, [1]) and press in lightly. At the butt joints, overlap the sealant rope by approx. 3/4" (20 mm) and press firmly together.
- ▶ Unroll the required length of sealant rope from the spool supplied.
- ▶ Peel the backing paper from the sealant rope when inserting into the packing groove (do not stretch).

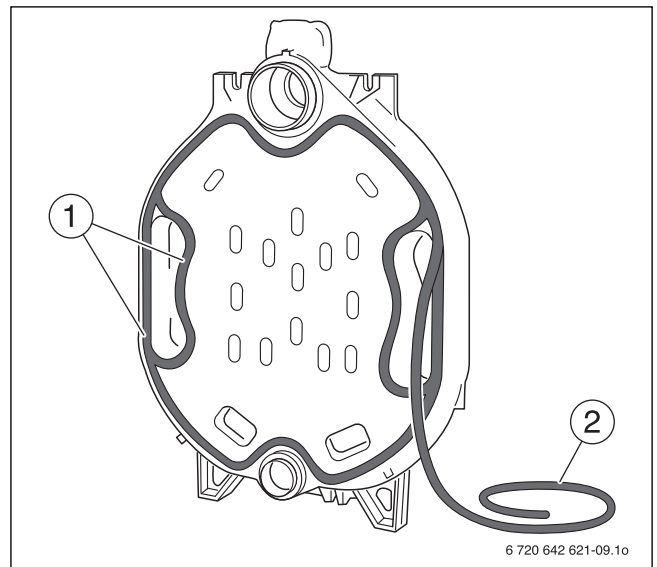


Fig. 16 Inserting sealant rope

Preparation of the first intermediate section:

- ▶ File down any burrs on the hubs (→ Fig. 12, page 14).

The packing springs must be clean and dry. Clean if necessary.

- ▶ Clean the hub sealing faces with a rag soaked in solvents or gasoline.
- ▶ Evenly coat the hub sealing faces with sealant (→ Fig. 17, [1]).
- ▶ Coat the packing springs with primer (→ Fig. 17, [2]).

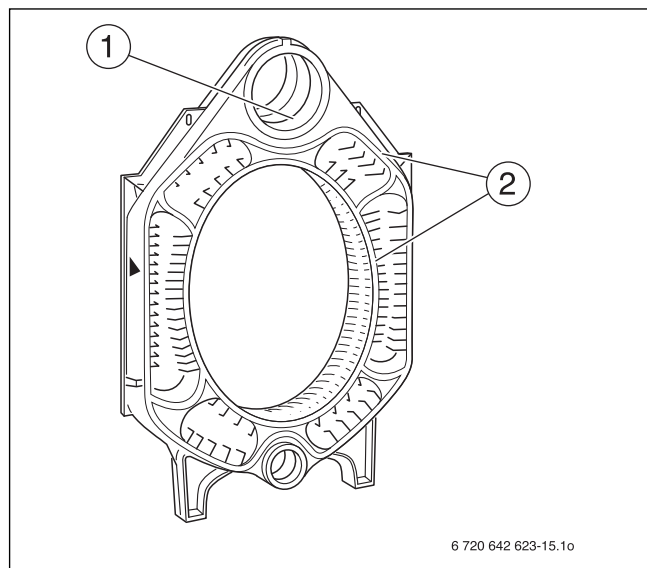


Fig. 17 Preparing the intermediate section



To make installation easier, place the boiler section to be fitted onto the nipple on the upper hub first. Once this has been done, the boiler section can be aligned with the lower hub.

The directional arrow (→ Fig. 18, [3]) must point toward the rear.

- ▶ Position the intermediate section so that the upper and lower hubs (→ Fig. 18, [2 and 4]) fit onto the nipples in the rear section.
- ▶ Drive first intermediate section onto the rear section using a wooden or a rubber mallet (→ Fig. 18, [1]).

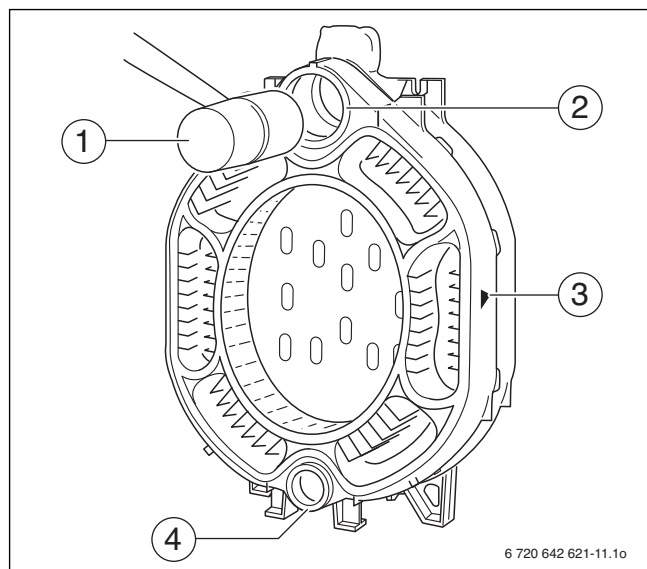


Fig. 18 Pound intermediate section in place



Before the nipples are inserted in the next intermediate section, the part-assembled boiler block must be compressed using the boiler assembly tool.

NOTICE: The boiler can be damaged by pulling the boiler sections together incorrectly or from excessive compression.

- ▶ Ensure that the nipples are positioned straight in the boiler hubs after being pounded in and that they have not been compromised.
- ▶ Never compress more than one nipple joint at a time.
- ▶ Stop compressing the sections when the boiler hubs meet.

NOTICE: Assembly tool damage from loose screw connections of the tie rods.

- ▶ Always check the tie rods before each use and retighten as necessary. The tie rod is correctly positioned if it is fully inserted and no threads are showing (→ Fig. 19, [2]).
- ▶ Always keep the threads (→ Fig. 19, [1]) clean. Dirty threads may damage the assembly tool during assembly.

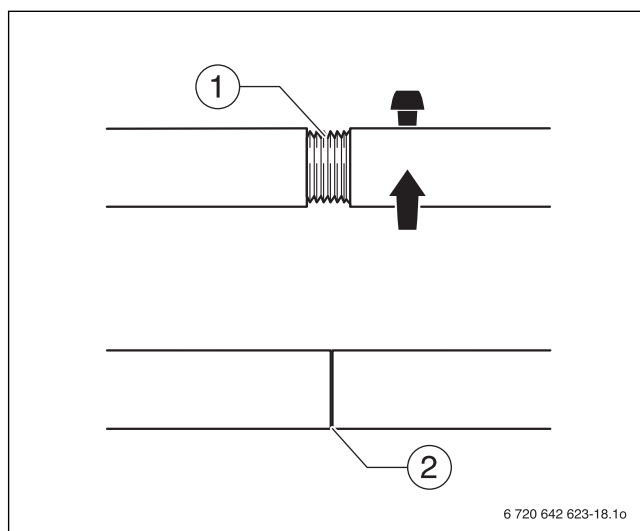


Fig. 19 Boiler assembly tool 2.3



CAUTION: Danger of accident from material fatigue. Improperly used or poorly maintained assembly tools may fail.

- ▶ Never work directly in front of the assembly tool while it is being tensioned.
- ▶ Ensure that no one is standing in front of the assembly tool.

Use a size 2.2 or 2.3 boiler assembly tool (→ Fig. 4, Fig. 5 and Fig. 20 [1 and 2]).

- ▶ Push pressure flanges (→ Fig. 20, [3]) with clamping nuts onto the tie rods (→ Fig. 4, page 11 and Fig. 5, [4]).
- ▶ Push a tie rod through the upper and lower hubs on the boiler.
- ▶ Push mating flanges onto the tie rods and secure each with wedge (dowel pin for assembly tool 2.2).
- ▶ Hold the tie rod in the center of the boiler hubs and slightly draw together the assembly tools using the clamping nut.
- ▶ Place ratchet wrench onto clamping nuts and compress boiler sections by tightening evenly.

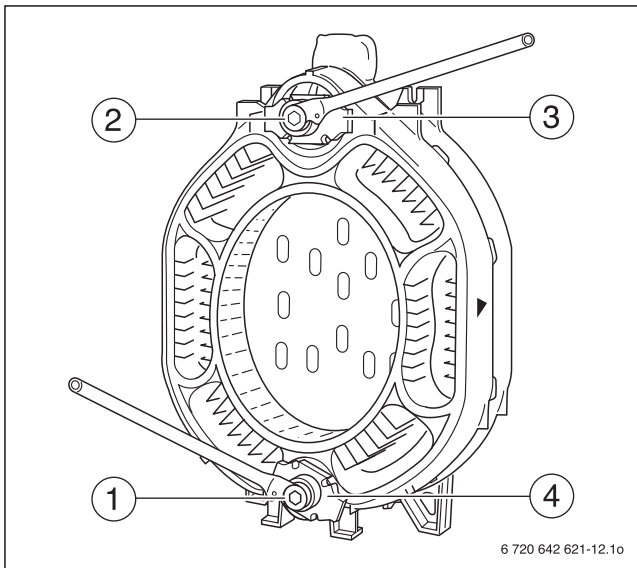


Fig. 20 Using the boiler assembly tool

- ▶ Release and remove the boiler assembly tool.
- ▶ Check nipples are seated correctly.



WARNING: Risk of injury from falling boiler sections.

- ▶ Remove the installation aid first if the partly-assembled boiler consists of at least three boiler sections.

Fig. 21 shows the rear section with intermediate section fitted. The preparations for fitting the next intermediate section have also been made.

The boiler section has been equipped with foot wedges for ease of installation (→ Fig. 21, [1]).

The boiler section foot wedges are also used later for final leveling of the boiler block.

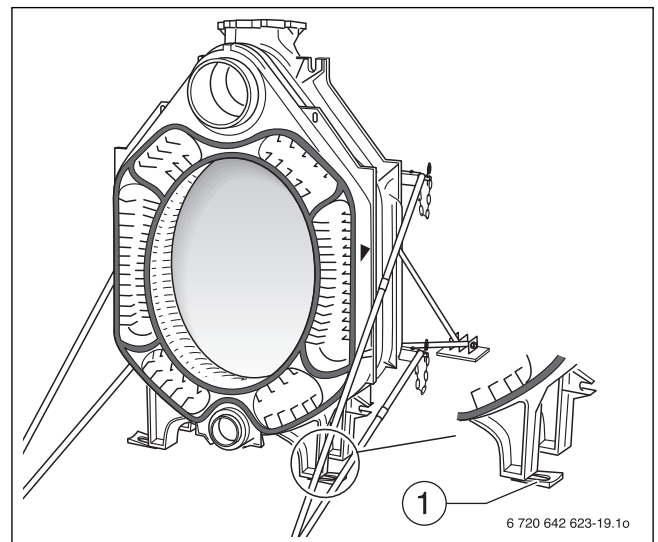


Fig. 21 Using the boiler section foot wedges

Assemble all other boiler sections as described. The front section is fitted last.



After the front section is installed, loosen the assembly tool – but do not remove it. Fit the tie rods first.

- ▶ Insert the tie rods (with spring packs fitted) into the cast lugs on the top left and right, and bottom left and right, next to the boiler hubs (→ Fig. 22, [1 to 4]).

NOTICE: Damage to system through excessively low contact pressure.

- ▶ Do not compress the spring pack. Only use the spring pack in its original state.

- ▶ Tighten the nuts hand-tight.
- ▶ Tighten the nuts on the tie rods 1 to 1½ turns.
- ▶ Level the boiler block vertically and horizontally on the base/foundation (→ see Chapter 6, page 11).
- ▶ Remove boiler assembly tool.

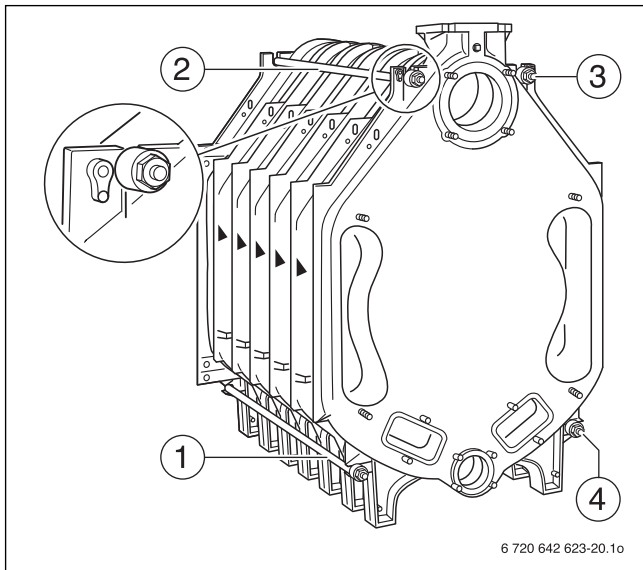


Fig. 22 Fitting the tie rods

The next step describes the installation of the supply pipe (→ Chapter 7.4, page 18).

7.3 Setting up the boiler block – (assembled block)



DANGER: Risk of fatal injury from falling objects.

- ▶ Provide a suitable means of supporting the load.
- ▶ Observe all locally applicable occupational health & safety regulations regarding lifting equipment.

- ▶ Cut the straps (→ Fig. 23, [1]).
- ▶ Remove the pallet prior to positioning the boiler block (→ Fig. 23, [2]).

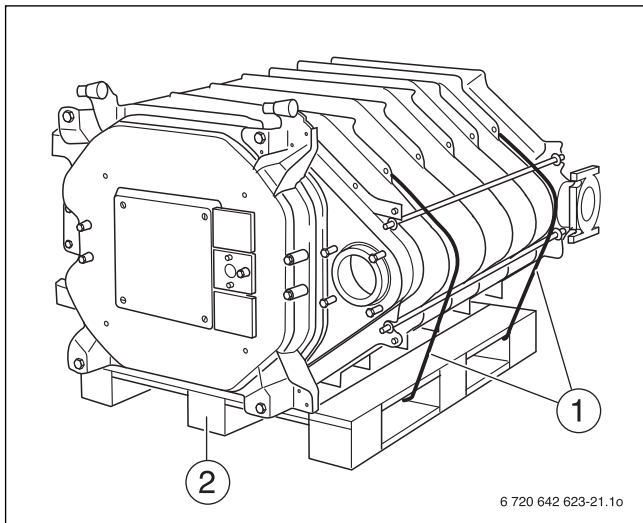


Fig. 23 Boiler block on pallet

- ▶ Level the boiler block vertically and horizontally on the base/impact sound-absorbing base (→ Chapter 6.3, page 12). Use the boiler section foot wedges provided for this purpose.

The following pages describe the installation of the supply pipe and sensor well. You must do both irrespective of whether the boiler is supplied pre-assembled or in separate sections.

7.4 Inserting the supply pipe (parts crate)

The supply pipe (→ Fig. 24, [4]) consists of 2 pieces for boilers with 10 – 12 boiler sections.

- ▶ Push the flat gasket over the supply pipe (→ Fig. 24, [1]).
- ▶ Push the supply pipe from the front into the top boiler hub.
- ▶ Close off with flange cover (→ Fig. 24, [2]).



The supply pipe must be fixed in such a way that the holes on the supply pipe are positioned at the correct angle. This ensures optimum distribution of water in the area of the top boiler hub (Thermostream principle).

- ▶ Make sure that the cam [3] on the end plate of the supply pipe (→ Fig. 24, [3]) fits in the notch in the top boiler hub (→ Fig 24, [5]).

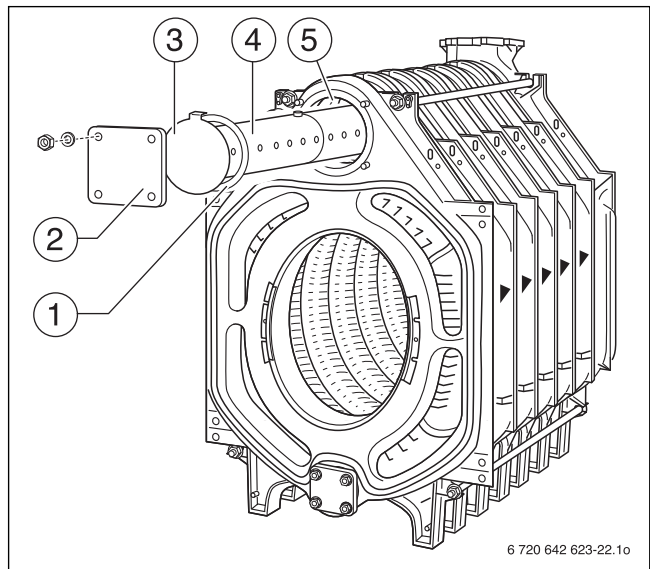


Fig. 24 Installing the supply pipe

7.5 Installing the sensor well

- ▶ Seal and install the sensor well R ¾ from the rear of the boiler (length: 110 mm) into the R ¾ tapped hole of the supply connection (→ Fig. 25, [1]).

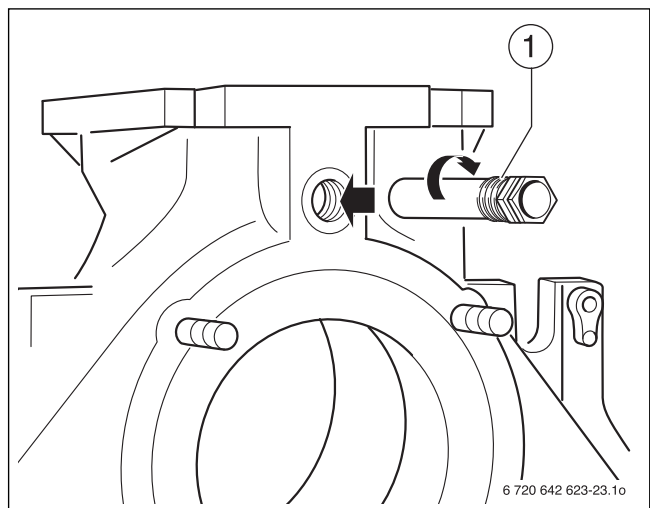


Fig. 25 Fitting the sensor well

7.6 Leak test

Conduct a leak test of the boiler block only when the boiler was delivered disassembled. Pre-assembled sections are leak tested in the factory.

For details of assembling the remainder of the boiler if the block is delivered pre-assembled, see → Chapter 10, page 34.

7.6.1 Carrying out leak test

NOTICE: Risk of system damage from overpressure.

- ▶ Ensure that no pressure, control or safety equipment is fitted during leak tests.

The leak test must be performed with a test pressure of 125 psi (8.6 bar). Use a pressure gauge class 1.0 to measure the pressure.

- ▶ Close off lower boiler hub (→ Fig. 26, [3]) at the front and rear. To do this, place corresponding seal (→ Fig. 26, [1]) on the relevant boiler hub and screw on flange cover with edge length 4 21/64 inches (110 mm). In this case, the flange with the tapped hole (R ¾) for the fill and drain connection (→ Fig. 26, [2]) is mounted on the rear of the boiler.
- ▶ Install the on-site fill and drain valve.
- ▶ Close off supply and return connections (supply connection flange with purger valve).

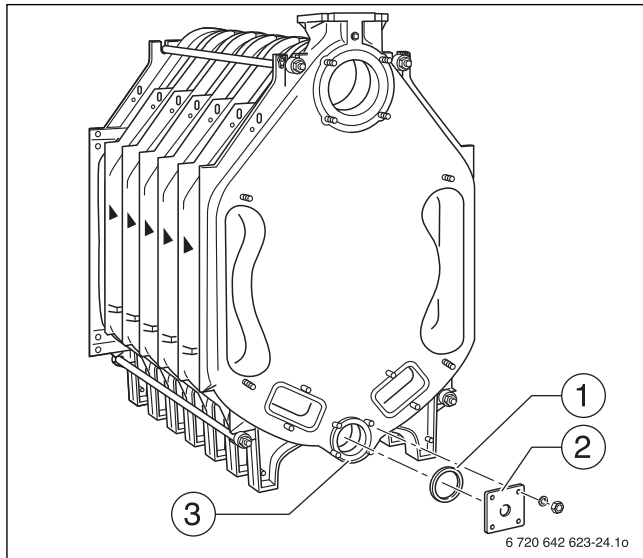


Fig. 26 Fitting the flange

- ▶ Slowly fill the boiler with water via the fill and drain connection. While doing this, purge the air from the boiler via the boiler supply connection with purger.

7.6.2 Sealing leaks

- ▶ If a hub connection is leaking, first drain the water through the fill/drain valves.
- ▶ Remove supply pipe.
- ▶ Undo nuts on tie rods and remove tie rods.
- ▶ Separate the boiler at the leak location by driving (knocking) in flat wedges or chisels between the sections at the points provided at the top and bottom (→ Fig. 27, [1 and 2], between the sections).

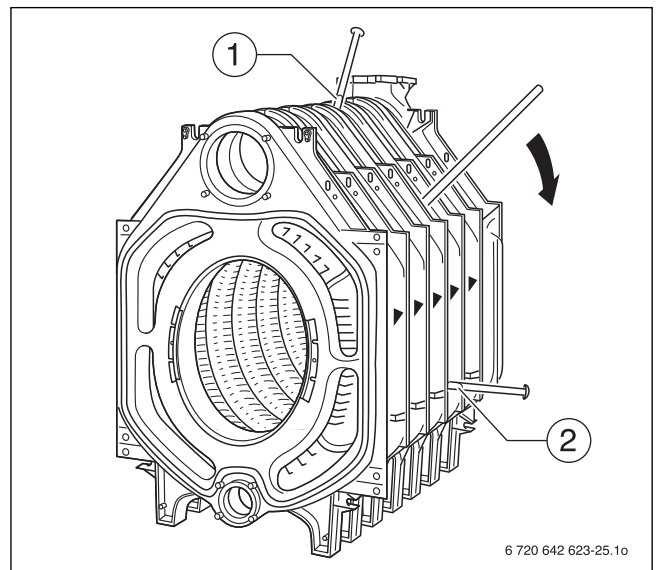


Fig. 27 Separating the boiler block



- ▶ Use new nipples and new sealant rope for reassembly.
- ▶ Pull the boiler back together and repeat the leak test.

7.7 Boiler water connections

Please observe the following information regarding the boiler connection to the system side. These instructions are important for trouble-free operation.

NOTICE: Risk of system damage from leaking connections.

- ▶ All pipe connections to the boiler must be free of stress and tension.

NOTICE: System damage from deposits, local overheating, and corrosion.

- ▶ As a basic rule, clean and flush existing systems thoroughly before connecting the new boiler.
- ▶ Install a desludging unit in the boiler return to prevent damage to the boiler.

The weld neck flange is fitted to the upper boiler hub (→ Fig. 28, [3] – return connection) if the return is connected at a later stage.

The weld neck flange and flat gasket are shown (→ Fig. 28, [4 and 5]).

- ▶ The supply connection flange (→ Fig. 28, [1]) with flat gasket (→ Fig. 28, [2]) is required for connecting the supply at a later stage.

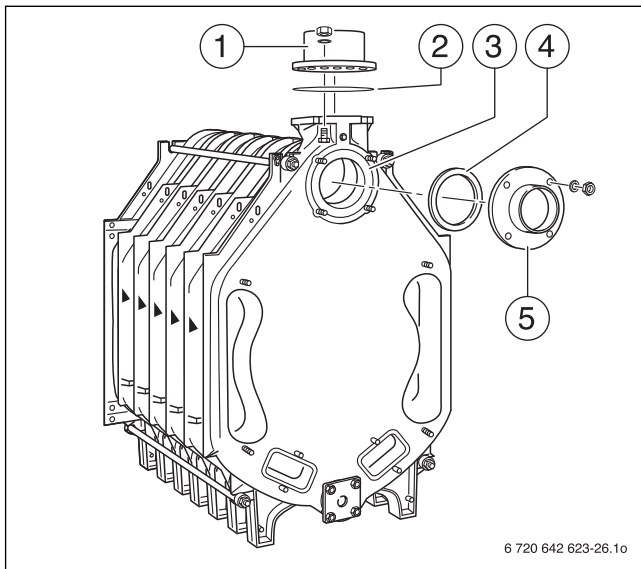


Fig. 28 Fitting a flange



The boiler supply and return manifolds are included in the Buderus scope of delivery.

NOTICE: Risk of system damage from temperature stresses.

- ▶ Install a fill valve on the system side.
- ▶ When the heating system is in operation, do not fill it via the boiler fill & drain valve. Instead, use the fill valve on the system side.

7.8 Installing draft diverter, baffles and burner door

Next step in the assembly process is to install the burner door and draft diverter. The pre-assembled boiler comes with these components already installed.

7.8.1 Positioning the draft diverter

The GP sealant rope (fiberglass cord with silicon casing) which forms a seal is inserted in the draft diverter at the factory.

- ▶ Place the draft diverter onto the four threaded studs on the rear section (→ Fig. 29 [1 to 4]) and secure using washers and nuts.

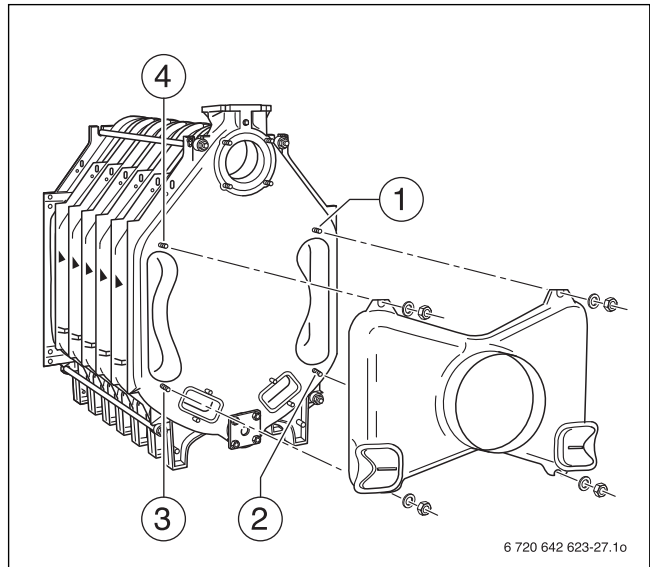


Fig. 29 Fitting the draft diverter

7.8.2 Screwing cleanout cover onto rear section

If the cleanout covers have been removed in order to attach the installation aid to the rear section:

- ▶ Screw the cleanout covers with washers and nuts back onto the rear section (→ Fig. 30, [1 and 2]).

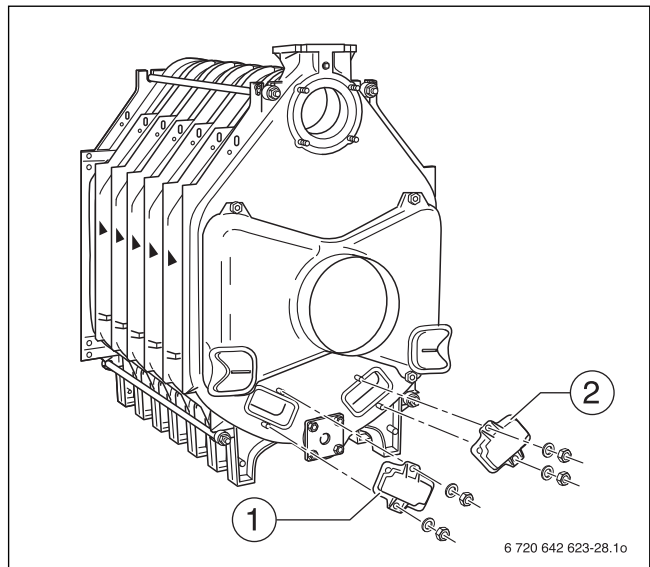


Fig. 30 Fitting the cleanout cover

7.8.3 Fitting the burner door

- ▶ Place a few drops of Silastic adhesive 6 inches – 8 inches (15 – 20 cm) apart in the packing grooves (→ Fig. 31, [2]) on the front section (→ Fig. 31).
- ▶ Insert GP sealant rope into the packing groove on the front section. The sealant rope joint should be located at the side (→ Fig. 31, [2]).

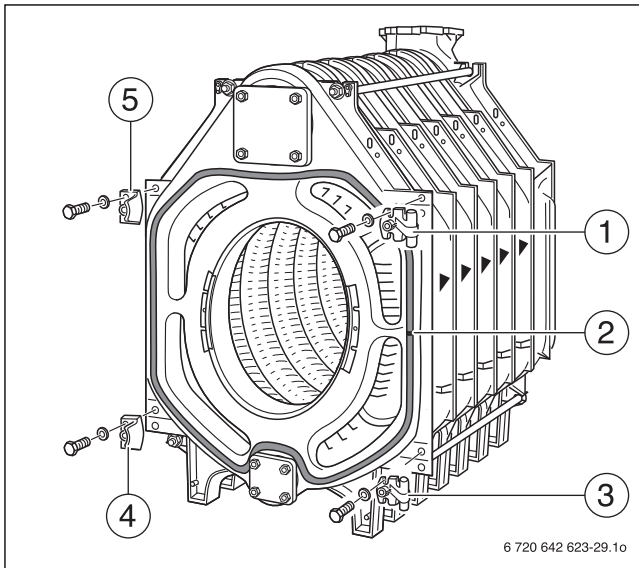


Fig. 31 Fitting the hinge pins and locking brackets

In the factory, both burner door hinge lobes are fitted on the right-hand side (→ Fig. 32 [1 and 2]). For left-hand closing, dismantle the hinge lobes from the right-hand side and reassemble them on the left-hand side of the burner door.

- ▶ Screw the hinge pins (right-hand) to the boiler front section with 2 machine screws M12 × 55 in each case (→ Fig. 31, [1 and 3]). For left-hand closing, secure accordingly on the left-hand side.
- ▶ Screw on locking brackets with run-on slopes for the burner door (right-hand closing) to the front section with 2 machine screws M12 × 55 (→ Fig. 31, [4 and 5]). For left-hand closing, secure accordingly on the right-hand side.



Make sure the run-on slopes of the locking brackets are on the inside of the boiler.

- ▶ Hook the burner door with the hinge lobes into the hinge pins.

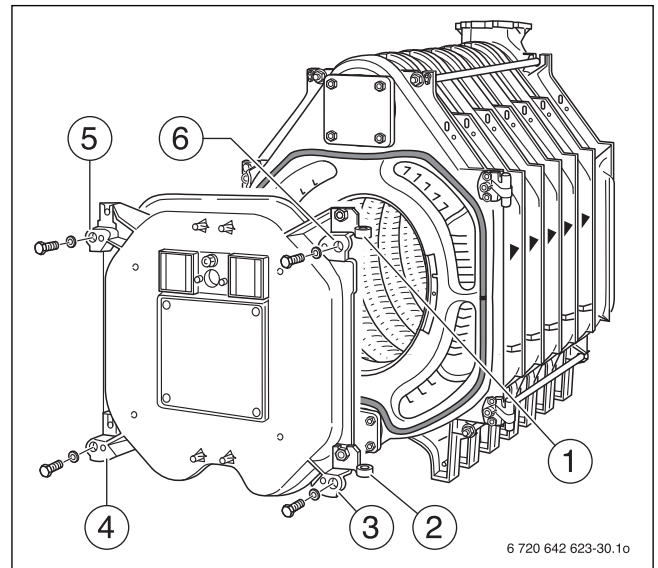


Fig. 32 Hooking in the burner door

7.8.4 Hot gas check plates on front section

The hot gas check plates (→ Fig. 33, [1 and 2]) are each screwed with one hexagon socket screw to the front section at the factory.

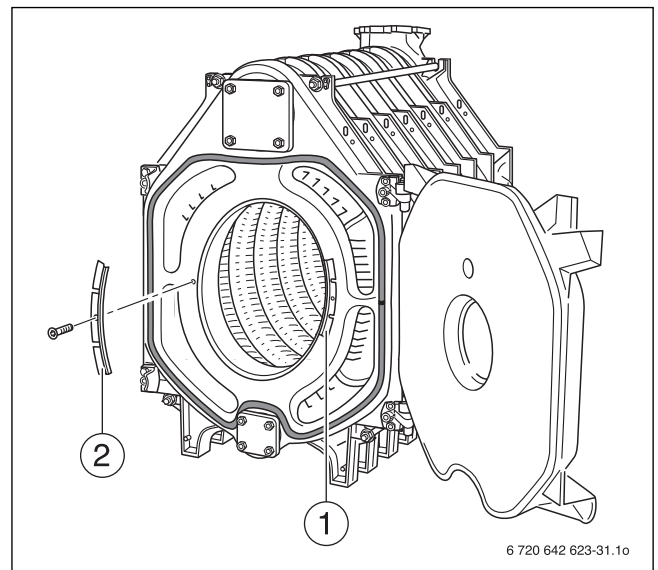


Fig. 33 Position of hot gas check plates

7.8.5 Insert the flue gas baffle plates



In pre-assembled boilers, the flue gas baffles are already fitted.

- ▶ Remove the cardboard transport protectors from the pre-assembled boiler.

- ▶ Take flue gas baffles out of the fittings case and insert into the flue gas passages as indicated by the inscription on them (→ Fig. 34 and Tab. 11).

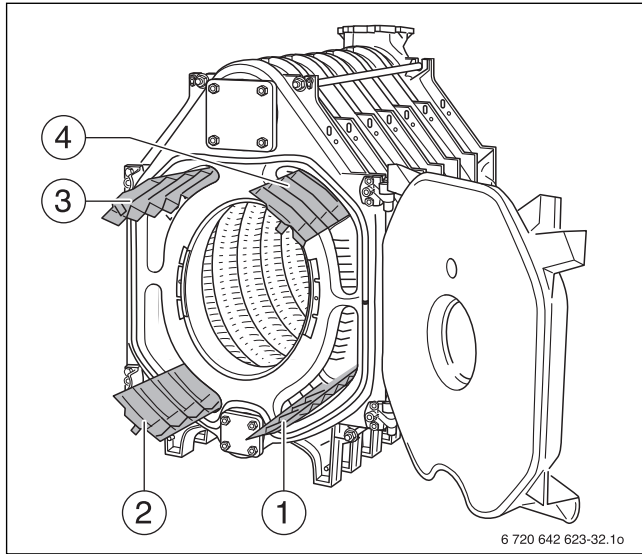


Fig. 34 Heat exchanger baffle plates

- [1] Flue gas baffle plates (bottom right)
- [2] Flue gas baffle plates (bottom left)
- [3] Flue gas baffle plates (top left)
- [4] Flue gas baffle plates (top right)

Boiler capacity	Number of boiler sections	Length of flue gas baffle plate in inches (mm)	Installation information on the flue gas baffle plate (→ Fig. 34)
240	7	26 – 25/32 (680)	top right
295	8		top left
350	9		bottom right
400	10		bottom left
455	11	16 – 47/64 (425)	top right
			top left
			bottom right
			bottom left
510	12	–	–

Table 11

7.9 Installation of the boiler jacket

This section describes how to install thermal insulation and jacket components.



- ▶ You must install the cross rails and longitudinal rails before installing the thermal insulation in order to be able to align the brackets correctly.
- ▶ To install the thermal insulation, you need to take the longitudinal rails off again in the following step.

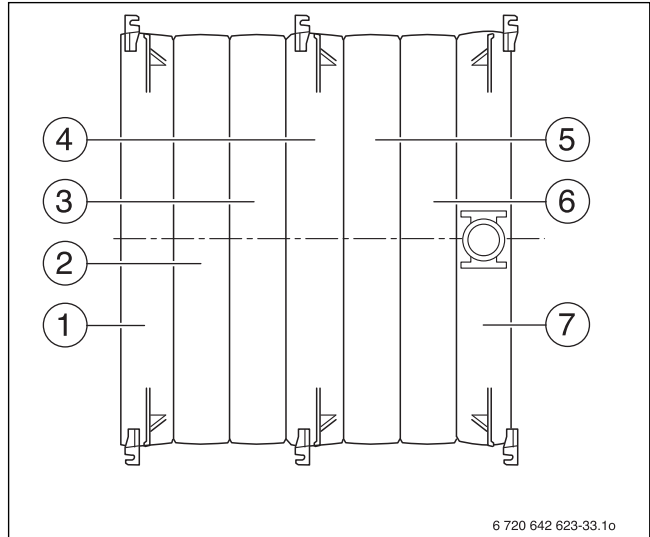


Fig. 35 View from above: boiler block (7 boiler sections) with brackets

7.9.1 Mount the brackets

- ▶ Loosely screw the brackets for the boiler jacket onto the upper ribs of the boiler sections on the left and right (→ Fig. 35, Fig. 36 and Tab. 12).



- ▶ Screw the brackets on the rear section (→ Fig. 36, [2]) to the ribs from behind.
- ▶ Screw the brackets of the front and intermediate sections (→ Fig. 36, [1]) on from the front only.

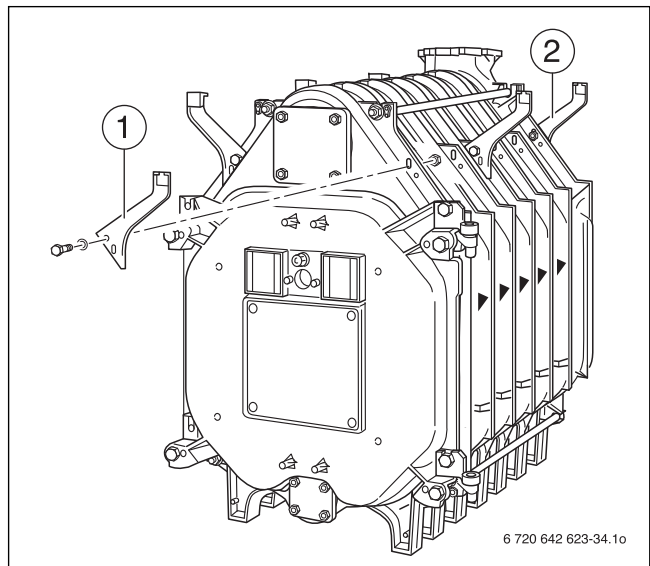


Fig. 36 Installing the mounting brackets

Total number of boiler sections	Right and left-hand installation on...		
	Front section Section no.	Intermediate section Section no.	Rear section Section no.
7	1	4	7
8	1	4	8
9	1	5	9
10	1	5	10
11	1	4 and 7	11
12	1	4 and 8	12

Table 12

7.9.2 Fitting the profile rails

- ▶ Fasten top front crosswise profile rails (→ Fig. 37, [2]) to the cast lugs (→ Fig. 37, [1 and 4]) and screw on hand-tight with hexagon bolts (M8 × 16). The folded edge on the front profile rail must face forward.
- ▶ Fasten top rear crosswise profile rail (→ Fig. 37, [3]) onto the cast lugs and screw in place with hexagon bolts (M8 × 16). The folded edge of the rear profile rail must point toward the rear.



- ▶ You can only align the longitudinal rails or brackets before placing the thermal insulation.
- ▶ Align the longitudinal rails or brackets correctly prior to installation of the side panels, covers and thermal insulation.

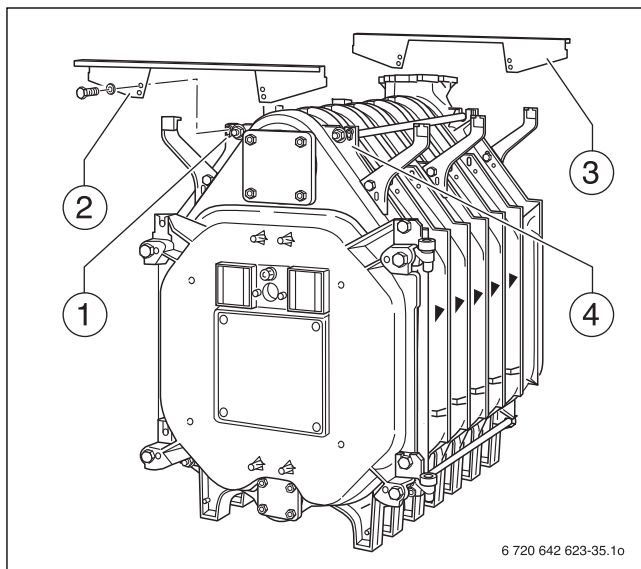


Fig. 37 Fitting the crosswise profile rails

- ▶ Place the longitudinal rails (→ Fig. 38, [1 and 2]) on both brackets on the rear and front section.
- ▶ Push longitudinal rails with pre-fitted screws (→ Fig. 38, [3]) into the notches in the brackets (→ Fig. 38, [4]) and screw together.

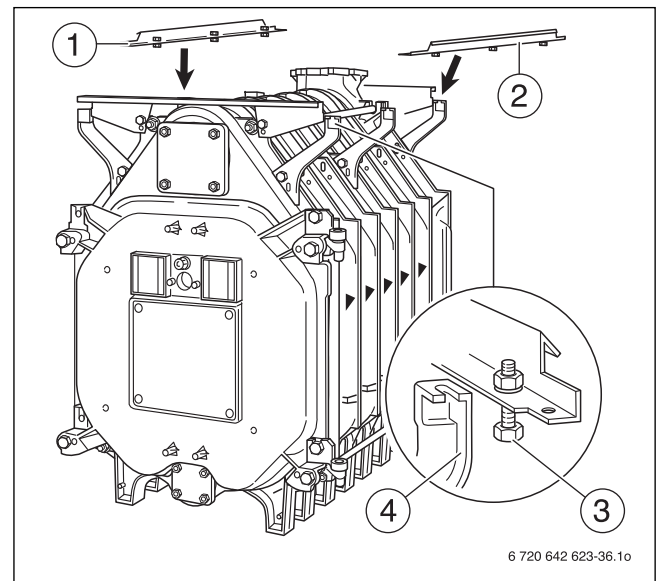


Fig. 38 Installing the longitudinal rails

- ▶ Place longitudinal rail (→ Fig. 39, [1]) with the notch at the front on the notch of the crosswise profile rail (→ Fig. 39, [2]).
- ▶ The longitudinal rail must be pushed from below against the crosswise profile rail at the rear of the boiler.

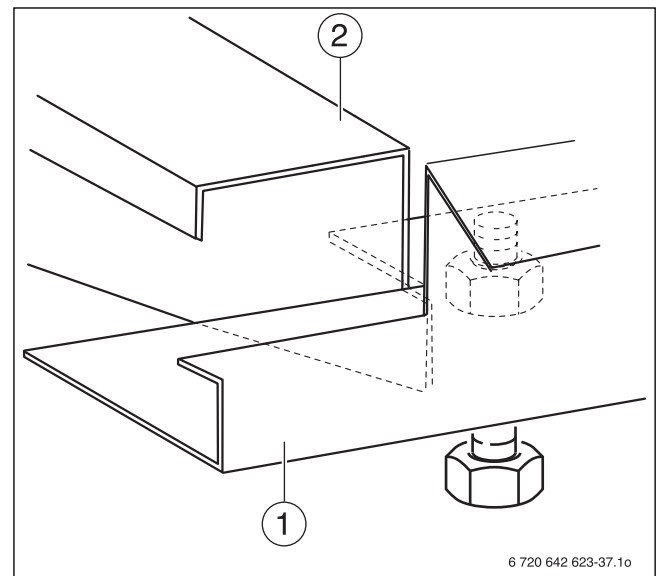


Fig. 39 Place longitudinal rail on crosswise profile rail

- ▶ Align the longitudinal rails, screw on the brackets at the front and/or rear section (→ Fig. 40, [1 and 3]) and fully tighten.
- ▶ Push the center brackets (→ Fig. 40, [2]) against the longitudinal rails from below, then screw onto the boiler block and tighten.

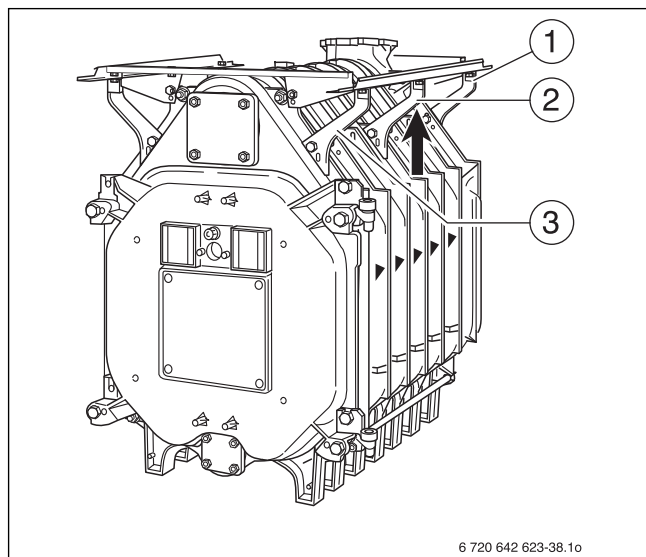


Fig. 40 Aligning the longitudinal rails

7.9.3 Fitting the thermal insulation



First of all, take the longitudinal rails off to install the thermal insulation.

- ▶ The thermal insulation provided (→ Fig. 41, [1]) corresponds to the boiler size. Arrange the thermal insulation on the boiler block as shown in the diagram in Fig. 42 (the numbers above the thermal insulation that is shown spread out correspond to the number of boiler sections).
- ▶ Guide the brackets through the cut-outs in the thermal insulation.
- ▶ Push the thermal insulation under the boiler block in the lower section. The boiler feet are placed in the cut-outs in the thermal insulation.

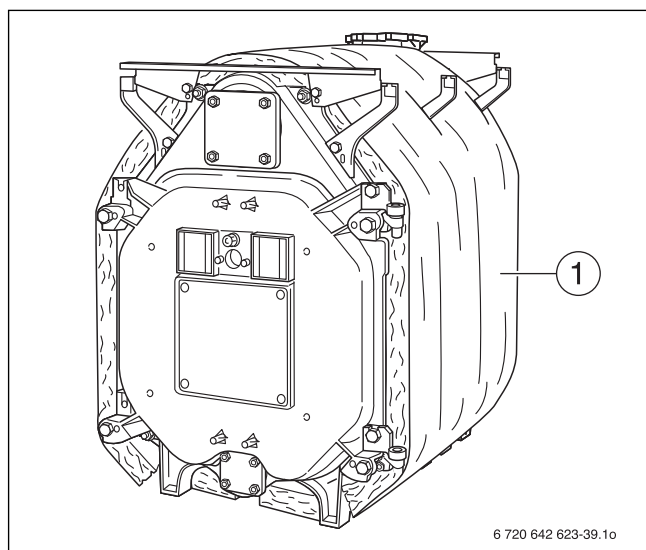
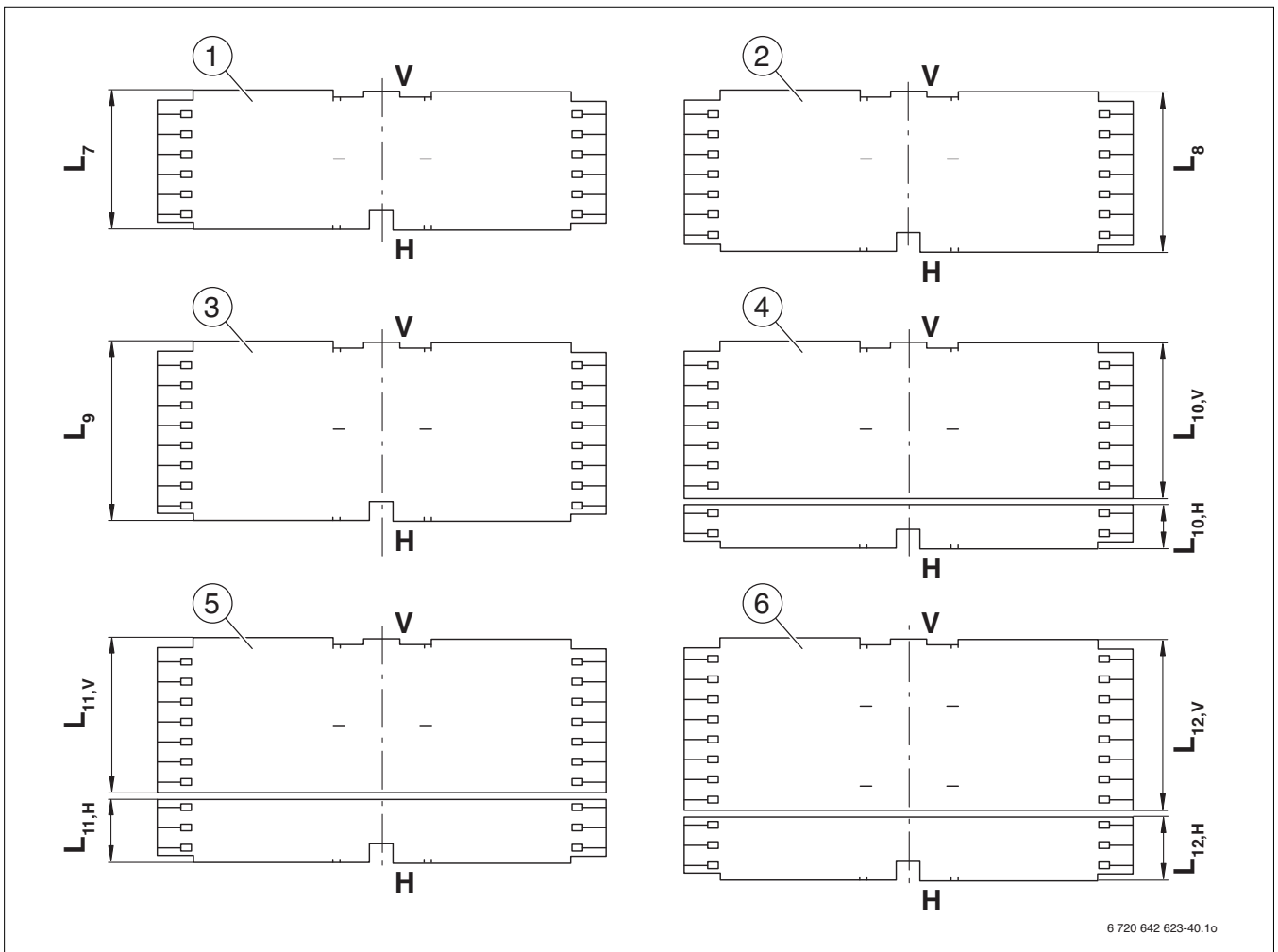


Fig. 41 Boiler block with thermal insulation

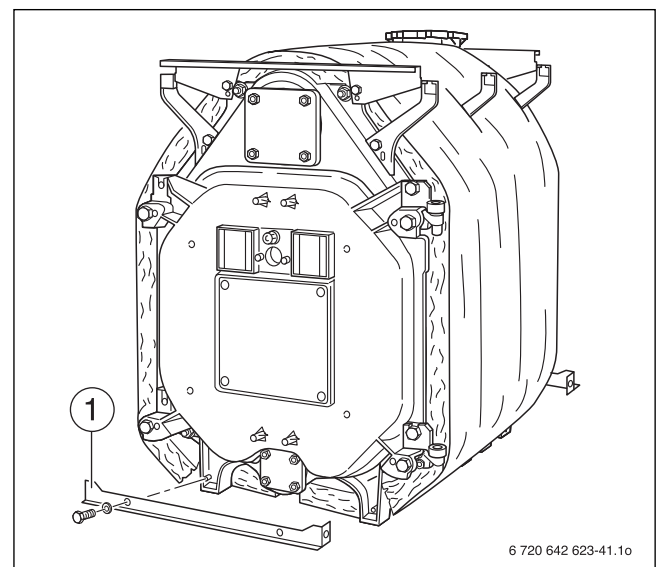


6 720 642 623-40.1o

Fig. 42 Thermal insulation for the various boiler sizes

- [1] 7 boiler sections
- [2] 8 boiler sections
- [3] 9 boiler sections
- [4] 10 boiler sections
- [5] 11 boiler sections
- [6] 12 boiler sections
- [H] Rear (boiler back)
- [L₇] 41 - 3/8" (1050 mm)
- [L₈] 52 - 3/4" (1340 mm)
- [L₉] 59 - 1/2" (1510 mm)
- [L_{10,H}] 14 - 3/4" (375 mm)
- [L_{10,V}] 51 - 3/8" (1305 mm)
- [L_{11,H}] 21 - 1/2" (545 mm)
- [L_{11,V}] 51 - 3/8" (1305 mm)
- [L_{12,H}] 21 - 1/2" (545 mm)
- [L_{12,V}] 58" (1475 mm)
- [V] Front (boiler front)

- Screw each lower crosswise profile rail (→ Fig. 43, [1]) at the front and rear to the corresponding boiler feet with two hexagon bolts. The folded edges of these profile rails must face outwards.



6 720 642 623-41.1o

Fig. 43 Fitting the lower crosswise profile rails

- ▶ Fit rectangular thermal insulation (→ Fig. 44, [1]) with the cut-outs facing upwards at the front above the door.
- ▶ Fasten thermal insulation to the block thermal insulation with the 3 spring hooks (→ Fig. 44, [2]).

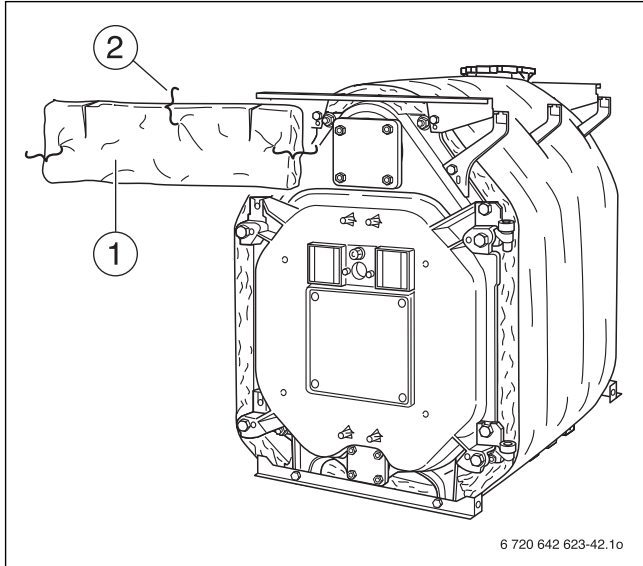


Fig. 44 Installing thermal insulation at the front

- ▶ Push longitudinal rails (→ Fig. 45, [1 and 2]) with pre-fitted screws into the notches in the brackets, as previously described, and screw together.

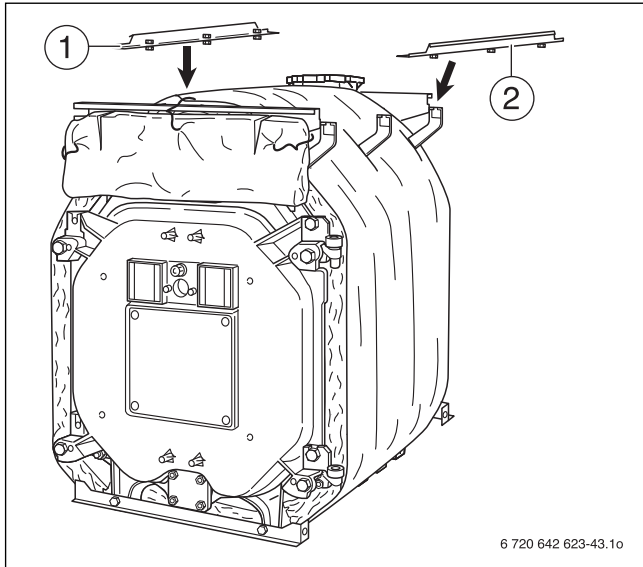


Fig. 45 Installing the longitudinal rails

- ▶ Push back rear section thermal insulation (→ Fig. 46, [1]) onto the flue outlet. The cut-out for the boiler return (→ Fig. 46, [2]) must point upwards.
- ▶ Attach the thermal insulation for the rear section via the four spring hooks to the boiler block thermal insulation.
- ▶ Close the slot below the flue outlet with a spring hook (→ Fig. 46, [3]).

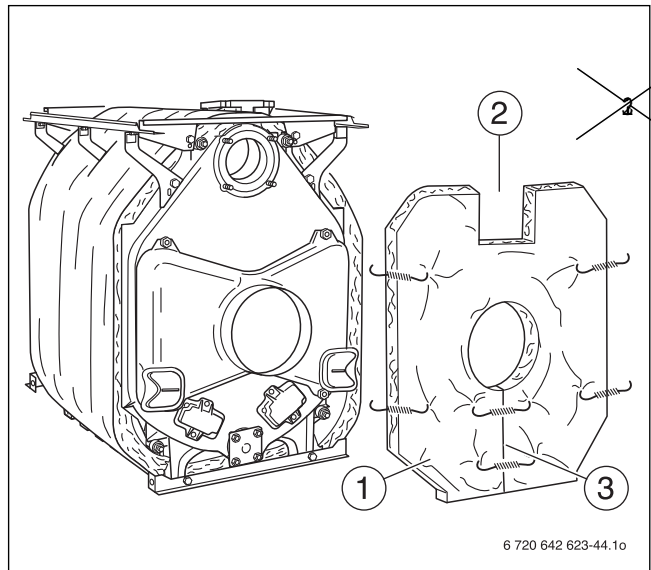


Fig. 46 Fitting the thermal insulation for the rear section

- ▶ Hook each base rail (→ Fig. 47, [1 and 3]) with the long projection facing toward the front (→ Fig. 47, [2]) into the bottom crosswise profile rails.
- ▶ Initially screw the side of the base rails loosely to the crosswise profile rails using self-tapping screws.

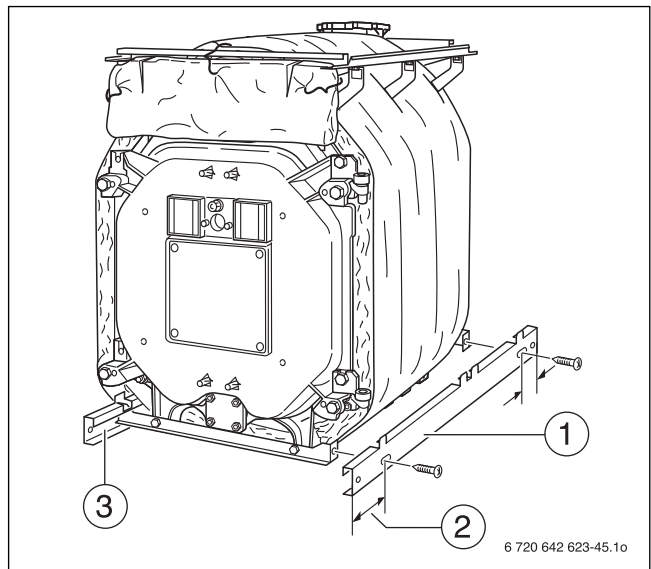


Fig. 47 Mounting the side base rails

7.9.4 Fitting side panels and top covers

► Fit all side panels as shown in the diagram (→ Fig. 48).

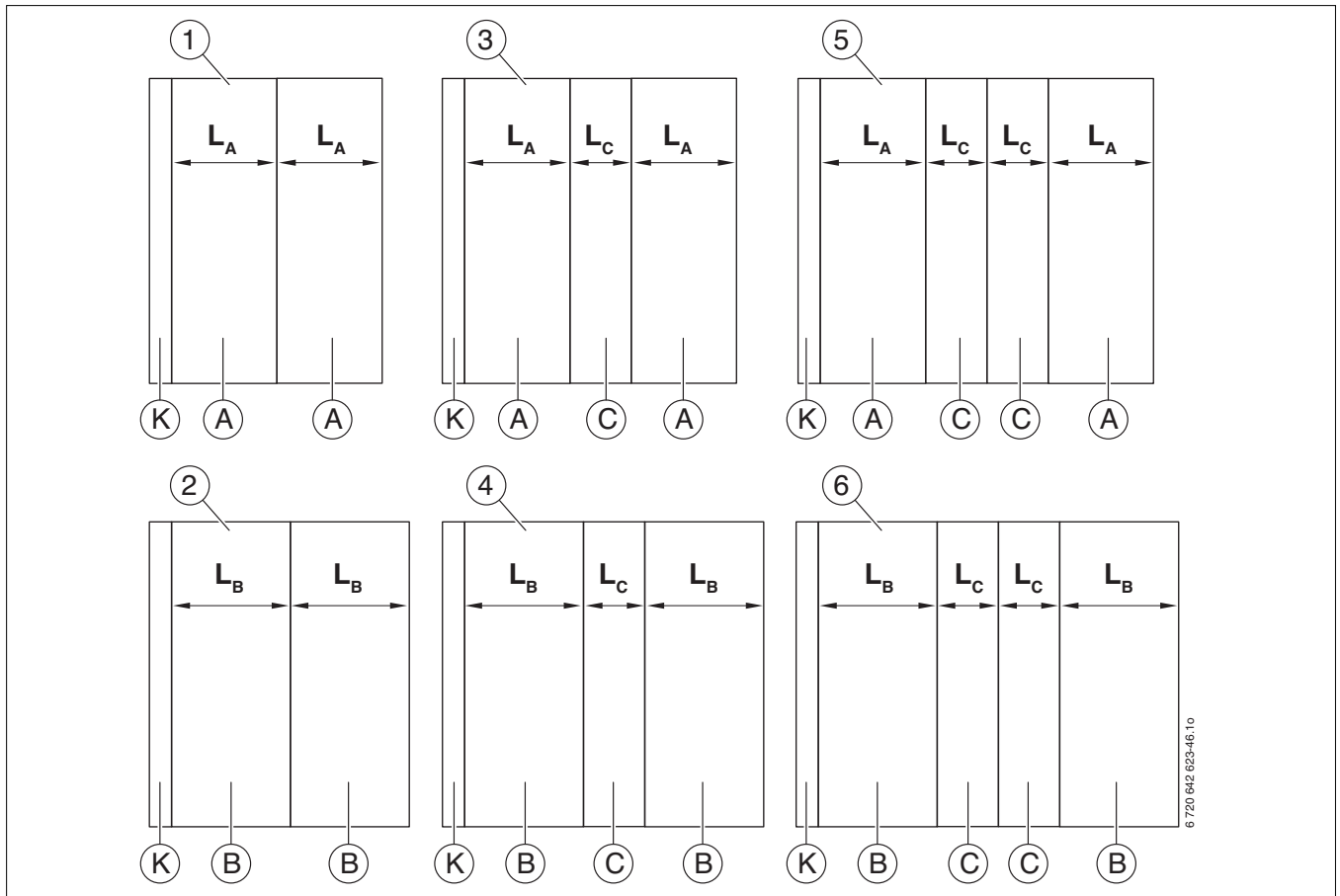


Fig. 48 Arrangement of side panels for the various boiler sizes (dimensions in inches (mm))

- [1] 7 boiler sections
- [2] 8 boiler sections
- [3] 9 boiler sections
- [4] 10 boiler sections
- [5] 11 boiler sections
- [6] 12 boiler sections
- [K] Flap 4 - 21/64" (110 mm)
- [L_A] 24 - 7/32" (615 mm)
- [L_B] 27 - 9/16" (700 mm)
- [L_C] 13 - 25/64" (340 mm)

To fit the side panel sections, the side panel flaps must first be fastened to the front side panels.

- ▶ Fasten the hinges to the side panel flaps beforehand using 2 self-tapping screws in each case.
- ▶ Hook the hinge pins (→ Fig. 49, [1]) on the side panel flap into the cut-out of the front side panel and secure with self-tapping screws.
- ▶ Attach tension spring (→ Fig. 49, [2]) to the side panel and side panel flap.

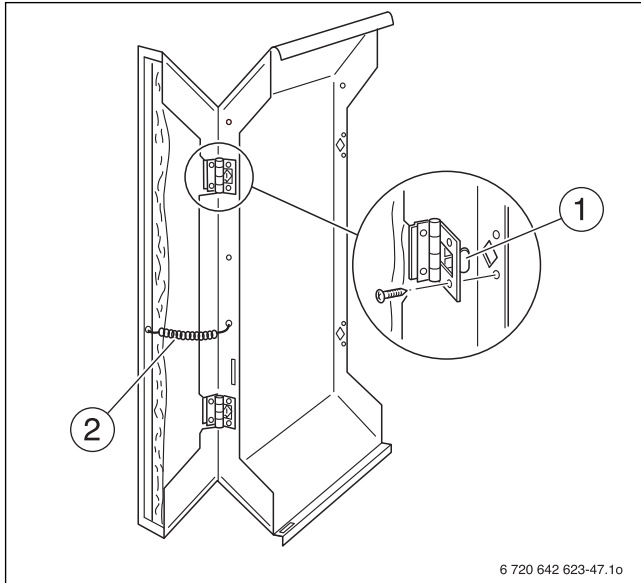


Fig. 49 Fitting the side panel flaps

- ▶ Attach the side panels (→ Fig. 50, [2]) on the bottom left and right to the lugs in the base rails that have been bent upwards (→ Fig. 50, [1]) then push up over the folded edge of the longitudinal rails.

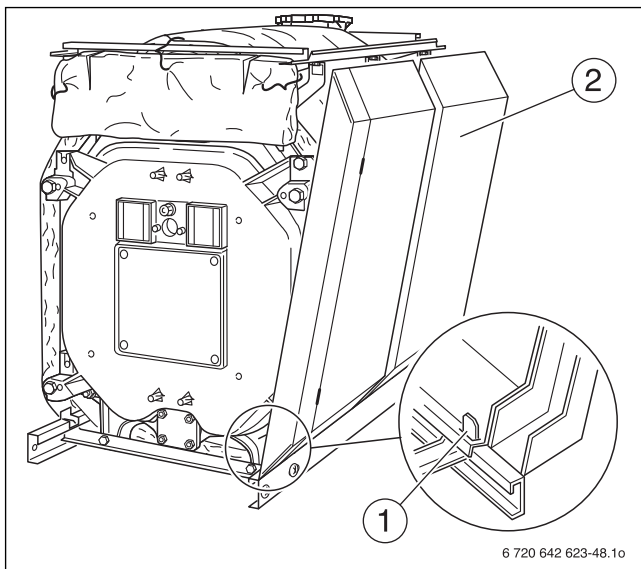


Fig. 50 Attaching the side panel sections

- ▶ Once the side panels (→ Fig. 51 [2]) have been vertically aligned, the self-tapping screws in the base rail (→ Fig. 51, [4]) must be tightened.

- ▶ Push the base rails that run crosswise (→ Fig. 51, [1 and 3]) into the base rails that run lengthwise from the front and back. The folded edge on the cross plate must be at the bottom in each case, and point toward the boiler (→ Fig. 51).

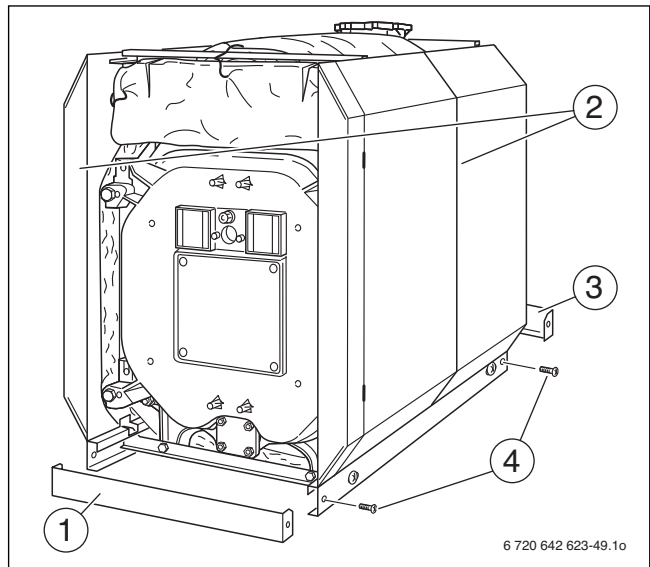


Fig. 51 Mounting the base rails

- ▶ Attach the front cover (→ Fig. 52, [1]) to the front side panels with the two hooks (→ Fig. 52, [3]).
- ▶ Screw the front cover to the longitudinal rails from below with two self-tapping screws (→ Fig. 52, [2]).

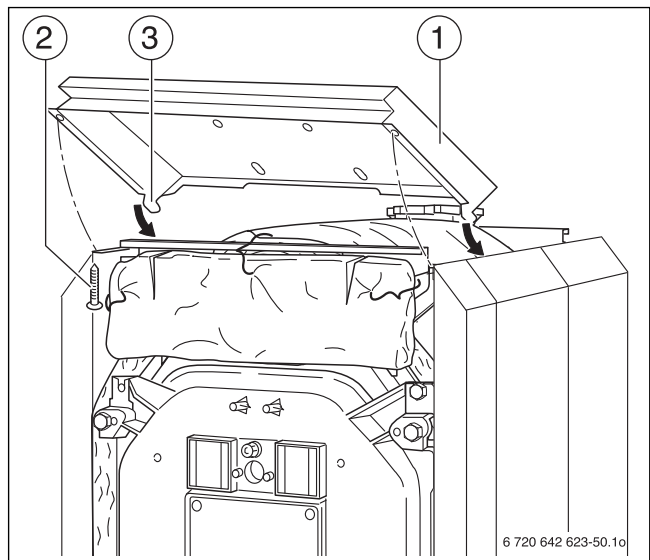


Fig. 52 Fitting the front cover



Before fitting the other parts of the cover, you must first install the control panel, route the capillaries to the sensor well and insert the sensor into the sensor well (→ Chapter 9, page 32).

- ▶ Push the center boiler cover with the folded edges (→ Fig. 53, [1]) under the front boiler cover and insert into the bead of the side panels.

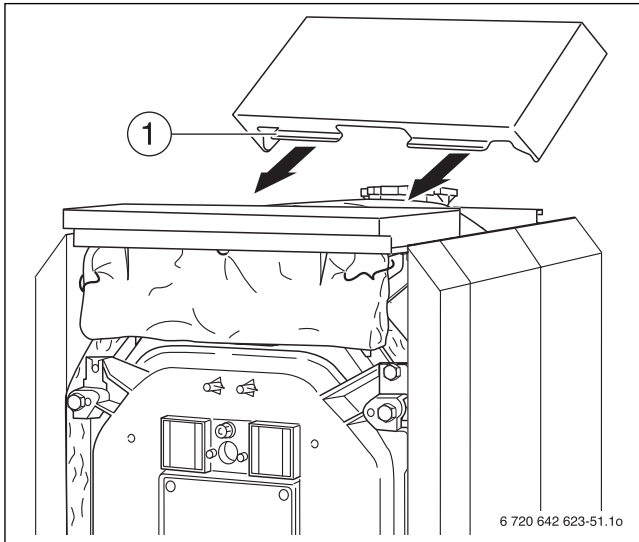


Fig. 53 Fitting the center cover

- ▶ Fit the rear boiler cover on the side panels with the folded edges and cut-out for the heating circuit flow (→ Fig. 54, [1]) facing toward the front.

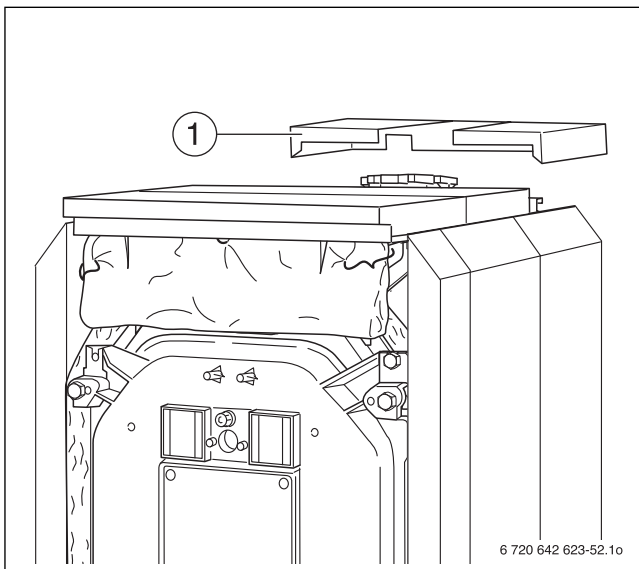


Fig. 54 Fitting the rear cover

- ▶ Push upper rear boiler panel under the rear boiler cover (→ Fig. 55, [1]) and screw to the side panels from the back using four self-tapping screws (→ Fig. 55, [2]).

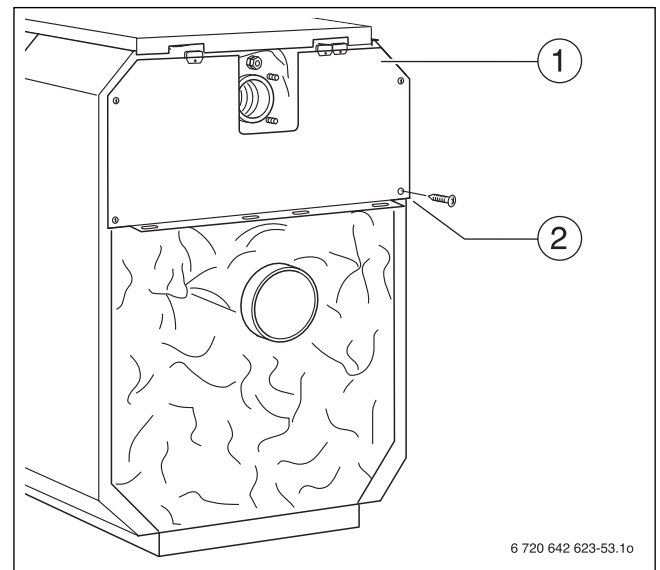


Fig. 55 Fitting the rear boiler panel

- ▶ Insert snap nuts into the left and right-hand side panels and also the rear boiler panel sections (→ Fig. 56, [1, 3, 4, and 8]).
- ▶ Hang the bottom rear boiler panel sections on the left and right into the slots in the folded edge of the upper rear boiler panel and the side panel (→ Fig. 56, [5]).
- ▶ Secure the rear panel sections of the boiler to the side panels with self-tapping screws.
- ▶ Screw the connecting plate (→ Fig. 56, [2]) below the flue outlet to the rear boiler panel sections using self-tapping screws.
- ▶ Fasten the plastic cable entries to the left or right-hand side of the upper rear boiler panel (→ Fig. 56, [6 and 7]).

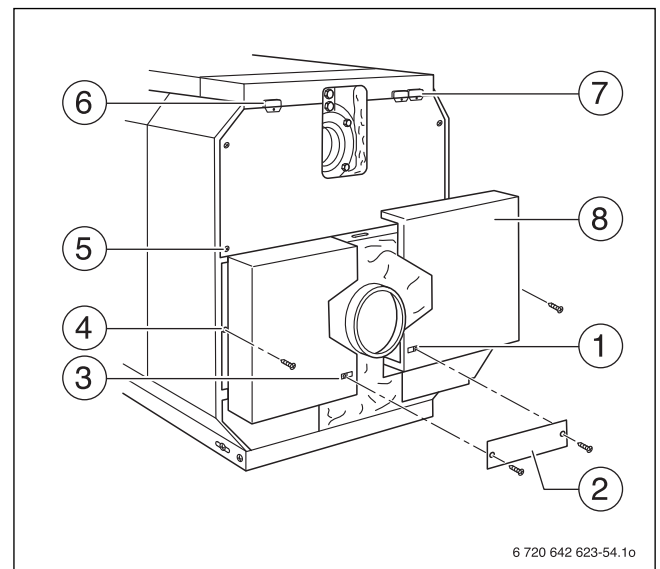


Fig. 56 Installing the rear boiler panel sections

- ▶ Snap burner cable with strain relief into cable entry (→ Fig. 57, [1]).
- ▶ Insert the burner cable with strain relief into the burner door cladding.
- ▶ Route the burner cable up along the folded edge of the burner door cladding and fasten with the cable clamp to ensure the burner cable does not come into hot components of the boiler.
- ▶ Fit the burner door cladding on the burner door from the front and screw on with four machine screws (→ Fig. 57, [2 to 5]).
- ▶ Route the burner cable to the cable entry for the control panel.



When the boiler is supplied ready-assembled, the type plate can be found in the combustion chamber accompanied by the assembly and maintenance instructions; when the boiler supplied in separate sections, it can be found in the transparent pocket on the burner door.

- ▶ Subject to the boiler location, affix the type plate to the top right or left side panel where it can be clearly seen.

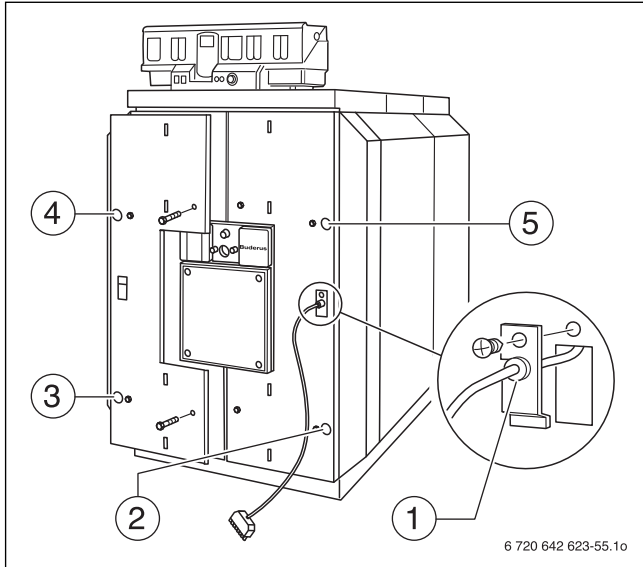


Fig. 57 Installing the burner door cladding

- ▶ Attach the burner door panels to the burner door cladding (→ Fig. 58, [1 and 2]).

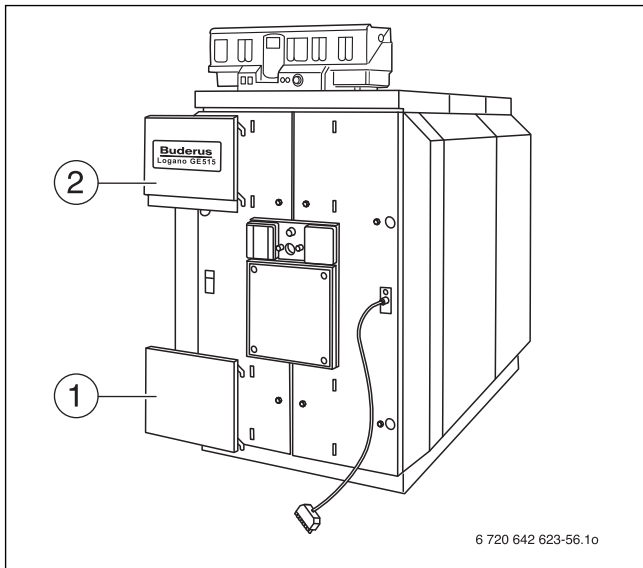


Fig. 58 Attaching the burner door panels

8 Connecting the boiler on the flue gas side

This chapter explains how to connect the boiler on the flue gas side.

8.1 Fitting the vent pipe sealing collar (accessory)



We recommend you use a vent pipe sealing collar (→ Fig. 59, [1]).

- ▶ Push the vent pipe (→ Fig. 59, [4]) as far as possible onto the draft diverter outlet (→ Fig. 59, [6]).
- ▶ Place the vent pipe sealing collar (→ Fig. 59, [1]) around the vent pipe (→ Fig. 59, [4]) and draft diverter (→ Fig. 59, [6]) outlet so that it overlaps at the top.
- ▶ Place hose clamps (→ Fig. 59, [5]) over the vent pipe sealing collar (→ Fig. 59, [1]). One of the hose clamps (→ Fig. 59, [5]) must press onto the draft diverter outlet (→ Fig. 59, [6]) and one onto the vent pipe (→ Fig. 59, [4]).
- ▶ Tighten hose clamps (→ Fig. 59, [5]). The vent pipe sealing collar (→ Fig. 59, [1]) must fit smoothly and firmly in place.

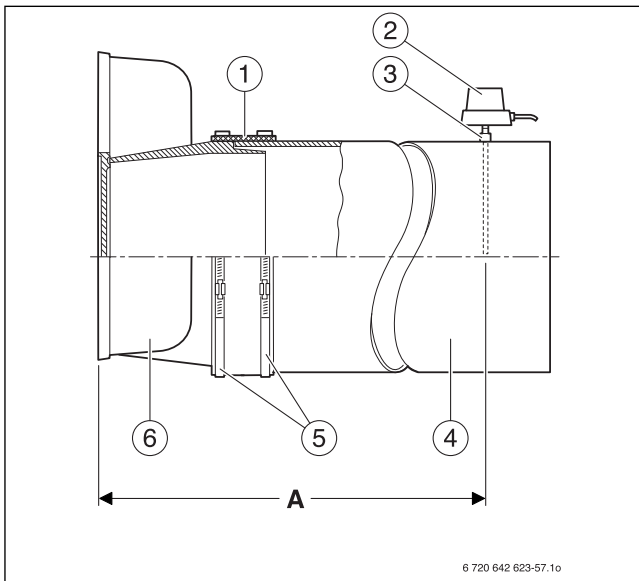


Fig. 59 Installing the vent pipe

- [1] Vent pipe sealing collar
- [2] Flue gas temperature sensor
- [3] Sleeve
- [4] Vent pipe
- [5] Hose clamps
- [6] Exhaust manifold
- [A] $2 \times$ Vent pipe diameter, at least 28 – 22/64 inches (720 mm)



Retighten the hose clamps if required.

8.2 Installing a flue gas temperature sensor (accessory)

- ▶ Weld a sleeve (→ Fig. 59, [3]) at a distance of $2 \times$ vent pipe diameters (A) from the draft diverter (→ Fig. 59, [6]) in the vent pipe (→ Fig. 59, [4]).
- ▶ Fit the flue gas temperature sensor (→ Fig. 59, [2]) as described in the separate installation manual.

9 Installing the control panel

This section explains how to install a Logamatic 4000 series control panel and its set of temperature sensors.

9.1 Installing the control panel

Fig. 60 shows the control panel and the top cover "A" from the back.

- ▶ Loosen both screws on top of the control panel (→ Fig. 60, [1]) and remove the top cover.
- ▶ Mounting the control panel in place Fit the control panel at the front by inserting the alignment tabs (→ Fig. 60, [4]) into the oval holes in the front top boiler cover (→ Fig. 60, [5]). Tilt the control panel forward and then tip backward. The flexible hooks (→ Fig. 60, [2]) must engage with the rectangular cutouts in the rear of the front boiler cover (→ Fig. 60, [3]).
- ▶ Attach the base of the control panel to the top cover (→ Fig. 60, [6]) using two self-tapping screws (→ Fig. 60, [7]).

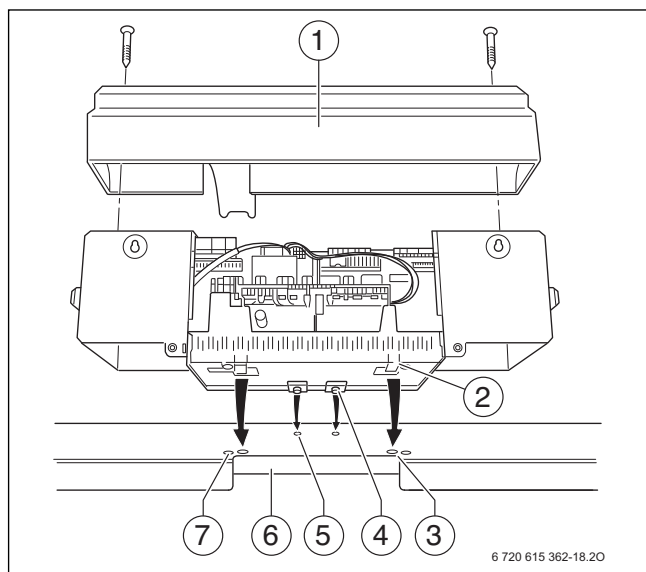


Fig. 60 Installing the control panel

9.2 Fitting temperature sensor assembly and burner cable



Observe the following when connecting the control panel:

- ▶ Lay out cables and capillaries carefully.
- ▶ Do not bend the capillaries during installation.
- ▶ Never carry out any electrical work on the heating system unless you are licensed for this type of work. If you are not suitably qualified, arrange for a qualified electrician to make the electrical connections.
- ▶ Observe the local regulations!

- ▶ If necessary, make knock-outs (→ Fig. 61, [1]) in the rear panel of the cable entry (Logamatic 33xx) or remove the rear panel section (Logamatic 43xx) (→ Fig. 61, [2]).
- ▶ Route the capillaries through the cable entry and unroll to the required length.

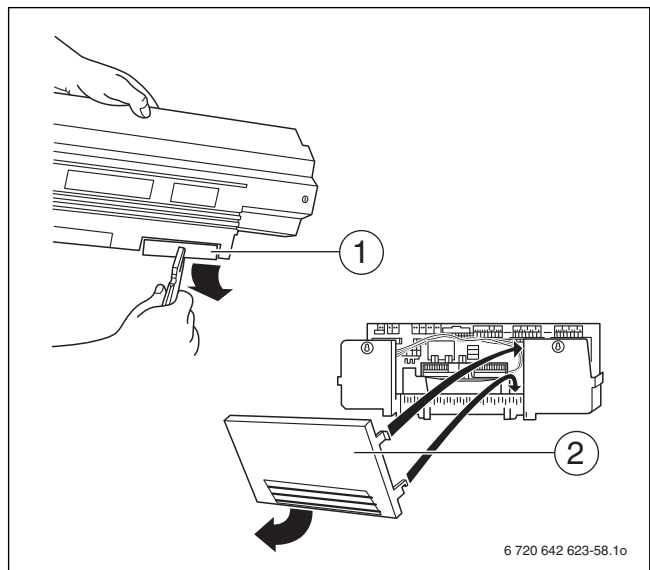


Fig. 61 Preparing the cable entry

The sensor well has already been sealed in the flow connection socket (→ Chapter 7.5, page 18).

The temperature sensor set connected to the control panel (consisting of three temperature sensors and one sensor blind piece → Fig. 62, [1]) is installed in the sensor well R $\frac{3}{4}$.

- ▶ Route capillary pipe sensor to the measuring port of the boiler and then guide the sensor into the sensor well (→ Fig. 62, [2]) and secure with the retaining clip (→ Fig. 62, [3]).

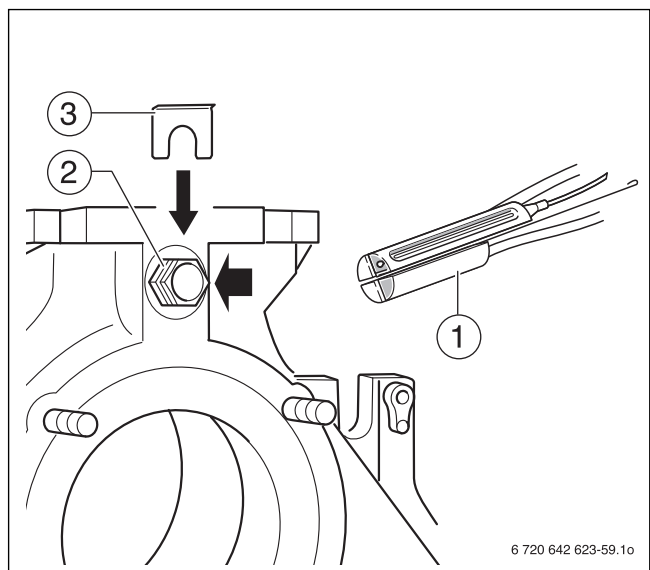


Fig. 62 Installing the temperature sensor assembly

- ▶ Screw cable entry (→ Fig. 63, [1 and 2]) to the left and right of the rear boiler panel.

A permanent connection must be made in accordance with EN 50165 or the relevant national installation standard.

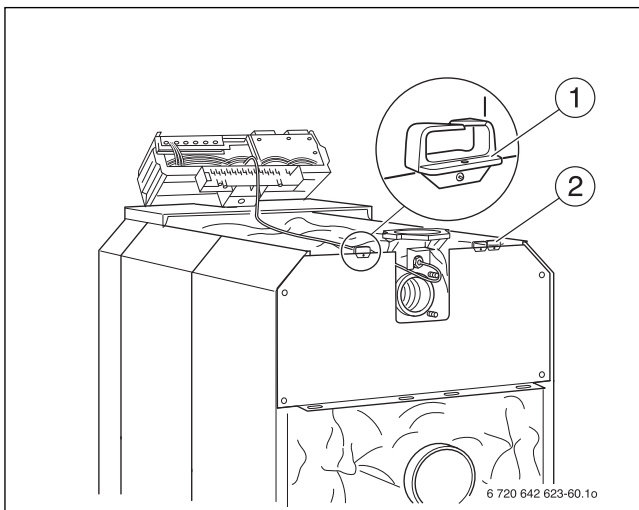


Fig. 63 Making the electrical connections

- ▶ Connect the electrical cables as shown in the wiring diagram. Take care to ensure proper cable and capillary tube routing.



Secure all cables with cable strain reliefs.

- ▶ Insert cable strain relief with cable inside into the frame and secure by closing the lever (→ Fig. 64, [1]).

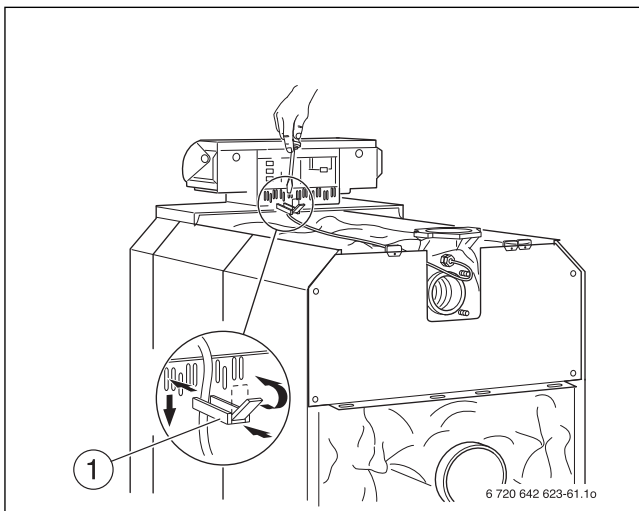


Fig. 64 Fastening the connecting cables

- ▶ Engage the lower hook of the rear panel (Logamatic 43xx) with the frame at an angle and tilt upward until the upper hooks engage with the side panels (→ Fig. 61, [2]).
- ▶ Put the top cover in place (→ Fig. 60, [1]) and tighten the screws (→ Fig. 65).

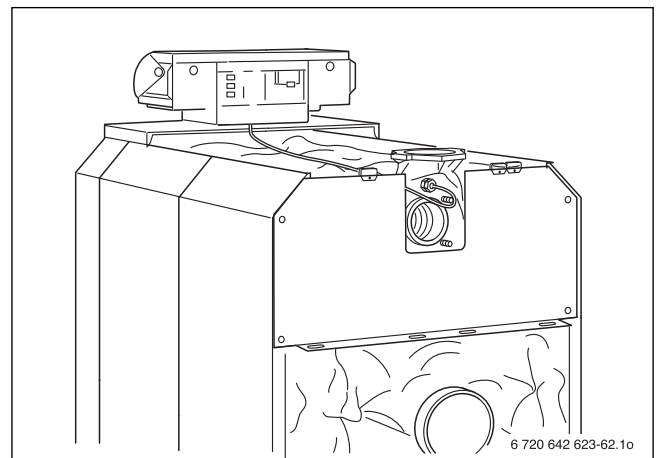


Fig. 65 Boiler with fitted control panel

10 Mounting the burner

This chapter explains the basic steps involved in fitting a burner

NOTICE: Risk of system damage from use of incorrect burner.

- ▶ Only use burners that meet the technical requirements of the oil/gas-fired boiler Logano G515 (→ Chapter 3, page 8).

- ▶ Close the burner door and seal with 4 machine screws (M16 × 140) (→ Chapter 7.8.3, page 21, Fig. 32, [3 to 6]). Tighten the machine screws evenly crosswise.



You can obtain undrilled or predrilled burner plates (hole pattern depends on burner) as accessories from Buderus.

If you have ordered an undrilled burner plate, you will have to machine the plate on site:

- ▶ Drill or cut the burner plate (→ Fig. 66, [1]) to match the required burner tube diameter $\varnothing 10 - 5/8$ inches (270 mm).
- ▶ Drill burner attachment holes using the burner flange as a template.
- ▶ Screw burner plate onto the burner door (seal with GP sealant rope; diameter $\varnothing 25/64$ inches (10 mm)).
- ▶ Screw the burner to the burner plate.
- ▶ Cut out insulating rings to match the burner tube diameter (→ Fig. 66, [2]).
- ▶ Fill the remaining gap between the burner door thermal insulation and the burner tube → Fig. 66, [4]) using the appropriate insulating rings (→ Fig. 66, [3]).
- ▶ Connect the vent connection to the burner to ensure the inspection window remains free of deposits.

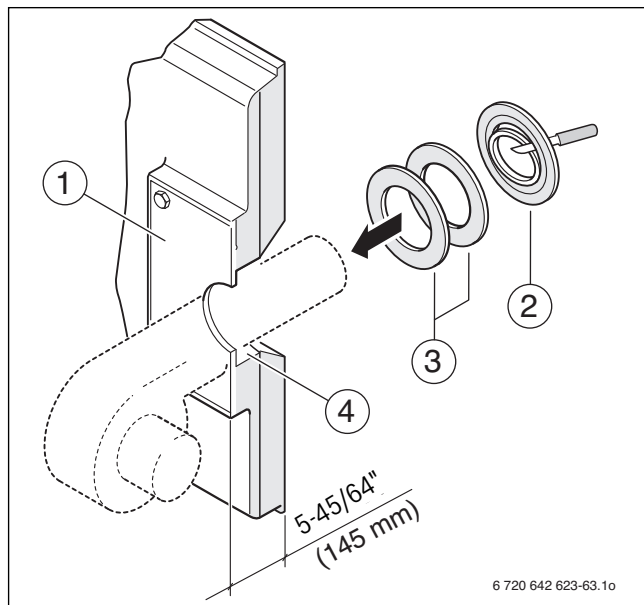


Fig. 66 Mounting the burner

11 System start-up

You can connect control panels of the 4000 series to the Logano G515. The commissioning process for the different types of control panel is the same.

NOTICE: The boiler can be damaged through heavy dust deposits!

- ▶ Do not operate the boiler where heavy dust contamination persists, e.g. through building work inside the boiler room.

- ▶ Complete the commissioning log (→ Chapter 11.6, page 37).

The pH value of the boiler water increases after the heating system has been filled. After 3 – 6 months (at the time of the first service), check whether the pH value of the boiler water has stabilized.

Overall boiler output MBH (kW)	Ca (HCO ₃) ₂ concentration / grains per gallon ¹⁾ (ppm)	Maximum fill and make-up water quantity V _{max} / ft ³ (m ³)	Boiler water pH value
341 < Q ≤ 1,194 (100 < Q ≤ 350)	≤ 11.7 (≤ 2.0)	V _{max} = three times system volume	8.2–9.5
1,194 < Q ≤ 3412 (350 < Q ≤ 1000)	≤ 8.8 (≤ 1.5)		
341 < Q ≤ 1,194 (100 < Q ≤ 350)	> 11.7 (> 2.0)	$V_{\max} = 0,0243 \cdot \frac{Q(\text{MBH})}{\text{Ca}(\text{HCO}_3)_2 \left(\frac{\text{gr}}{\text{gal}} \right)}$ $\left(V_{\max} = 0,0313 \cdot \frac{Q(\text{kW})}{\text{Ca}(\text{HCO}_3)_2 \left(\frac{\text{mol}}{\text{m}^3} \right)} \right)$	8.2–9.5
1,194 < Q ≤ 3412 (350 < Q ≤ 1000)	> 8.8 (> 1.5)		

Table 13 Requirements for fill, make-up and boiler water

1) 1 ft³ = 7.48 gal

11.2 Commissioning the system

Observe the following when commissioning:

- ▶ Purge the air from your heating system via its radiators prior to commissioning.
- ▶ Check that the hot gas baffle plates are inserted correctly (→ Chapter 7.8.5, page 22).

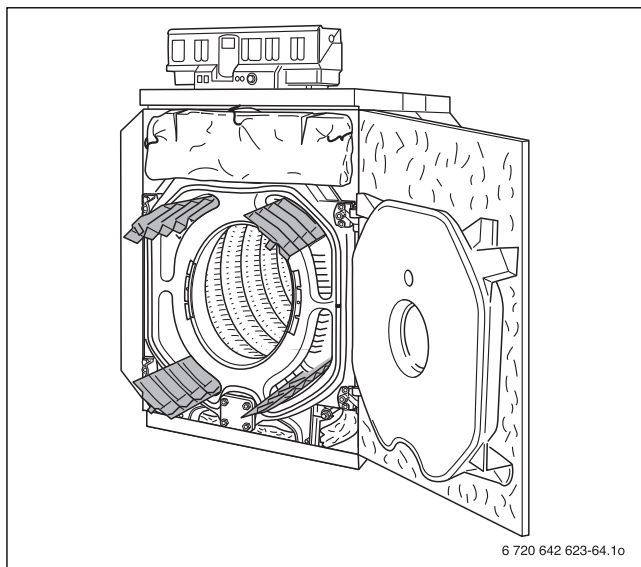


Fig. 67 Check position of heat exchanger baffles

11.1 Filling the system

NOTICE: Risk of system damage from temperature stresses.

- ▶ During operation, only fill the heating system via the fill valve on the system side (return).

Refer to the table below for information about correct use and treatment of the fill and make-up water.

11.3 Start up the control panel

Please see the accompanying technical documentation for the 4000 series control panel you are using for information on how to start it up.

11.4 Initial burner start-up

- ▶ When commissioning the burner, follow the installation and maintenance instructions enclosed with the burner.
- ▶ Fill out the commissioning log in the burner documentation.

If you notice when taking measurements for the commissioning log that the flue gas temperature is too low for the flue pipe (risk of condensation), you can raise the flue gas temperature (→ Chapter 11.5, page 36).

11.5 Raising flue gas temperature

With a new boiler, the flue gas temperature when the boiler temperature is 176 °F (80 °C) will be around 320 – 356 °F (160 – 180 °C), depending on the boiler rating.

In two-stage operation the temperature of the flue gas is lower.

You can increase the flue gas temperature further by removing individual hot gas check plates and hot gas baffle plates or combinations of these.



You should only consider modifying the hot gas check plates as a last resort as once you have reduced the size of the hot gas check plates you cannot change this back.

- ▶ Take the boiler out of operation in accordance with the operating instructions.

You can increase the temperature of the flue gas by carrying out the following measures.

11.5.1 Removing heat exchanger baffles

For boilers with 7 – 11 boiler sections (819 – 1,553 MBH or 240 – 455 kW) an increase of the flue gas temperature can be achieved through **pair-wise** removal of the upper or lower flue gas baffles.

11.5.2 Removing hot gas check plates

You can significantly increase the flue gas temperature by removing the hot gas check plates.

- ▶ Take the hexagon socket screws out of the hot gas check plates on the left and right and remove the hot gas check plates (→ Fig. 68, [1 and 2]).

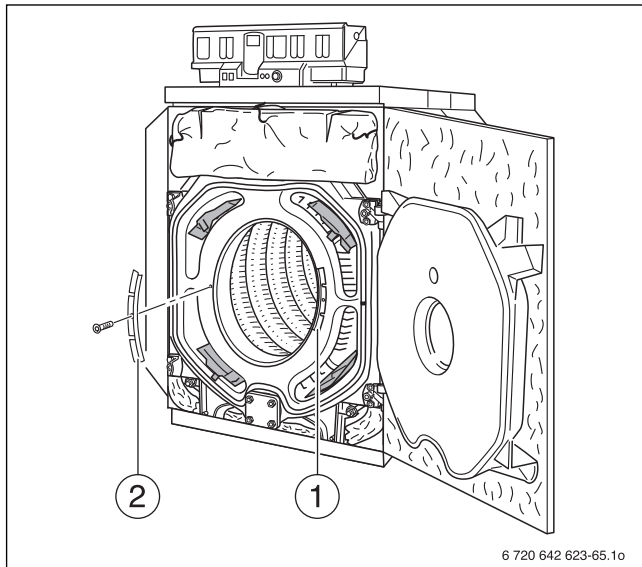


Fig. 68 Position of hot gas check plates

11.5.3 Increasing the flue gas temperature slightly

- ▶ Take the hexagon socket screw (→ Fig. 69, [3]) out of the hot gas check plate on the left and right (→ Fig. 69, [1 and 2]) and remove the hot gas check plates.
- ▶ Place the hot gas check plate on the support with the channels (→ Fig. 69, [1 and 2]) facing downwards. Knock off one segment of the left and right hot gas check plate with a hammer.
- ▶ Screw the hot gas check plate back onto the front section with the hexagon socket screws.

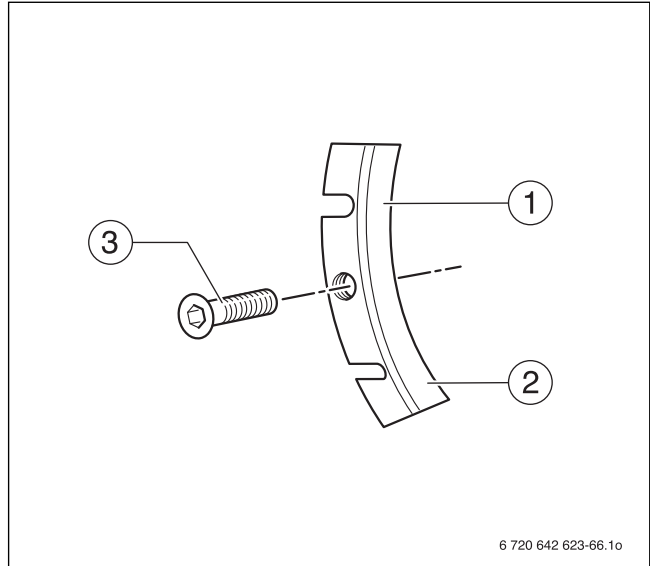


Fig. 69 Hot gas check plate

- ▶ If the flue gas temperature increases by an insufficient amount, the second segment on the hot gas check plates can be broken off in the same way, or all hot gas check plates can be removed as described above.

11.6 Commissioning log

The Logano G515 can be used with an oil or gas-fired burner. Fill in the commissioning log for the appropriate type of oil or gas burner carefully.

► Sign all start-up work as completed and enter the relevant date.

Commissioning operations		Individual steps	Comments (signature)
1.	Perform leak test of the entire system		
2.	Fill the heating system with water	→ page 35	
3.	Purge the air from the heating system		
4.	Perform the leak test if the boiler was assembled on-site	→ page 19	
5.	Record the filling water quantity and composition in the operator's log (included with the technical documentation).		
6.	Check position of heat exchanger baffles	→ page 22	
7.	Check the fuel line for leaks.		
8.	Start up the control panel	→ page 35	
9.	Initial burner start-up	See burner documentation	
10.	Check the flue gas temperature	→ page 36	
11.	Check vent pipe for leaks.		
12.	Check the boiler and flue gas side for leaks		
13.	Enter the fuel used in the table provided in the operating instructions.		
14.	Inform the owner and operator and hand over technical documentation		
15.	Confirm properly-completed commissioning		
<hr/> Company stamp/signature/date			

12 Shutting down the system

You can connect control panels of the 4000 series to the Logano G515. The shutting down process for the different types of control panel is the same.

NOTICE: Risk of system damage from freezing.

- ▶ The heating system can freeze up if it is disabled, e.g. shut down due to a fault.
- ▶ Protect the heating system from freezing when temperatures below freezing are expected. Drain the boiler water from the heating system at its lowest point using the drain valve. To do this, open the air vent at the highest point in the system.

12.1 Shutting down the heating system via the control panel

Shut down your boiler via the control panel. Shutting down the control panel automatically also switches off the burner.

- ▶ Shut off the fuel supply to the burner.

12.2 Shutting down the system in an emergency



In an emergency disconnect electrical power to the boiler and heating system by shutting off the emergency shut-off switch on the boiler or outside the boiler room, or disengage the heating system circuit breaker.

In other dangerous situations, immediately close the main fuel shut-off valve.

- ▶ Shut off the fuel supply to the burner.

13 System inspection and maintenance

13.1 General information

Offer your customer a maintenance contract covering annual inspection and servicing work as required. To find out what a contract for annual inspection and demand-based servicing covers, refer to Chapter 13.7, page 42.



DANGER: Risk of fatal injury from the explosion of flammable gases.

- ▶ Work on gas components must be carried out by trained and certified personnel only.

Cleaning and maintenance:

If heating oil is being used, cleaning and maintenance must be carried out twice a year. Depending on demand/run time, a shorter cleaning interval may be necessary.



Spare parts can be ordered from the Buderus spare parts catalog.

13.2 Why is regular maintenance important?

You should have your customer's system serviced for the following reasons:

- to achieve a high level of efficiency and to operate the system economically (low fuel consumption),
- to achieve a high level of operational safety and reliability
- to maintain a clean and environmentally-friendly combustion.

13.3 Cleaning the boiler with cleaning brushes

- ▶ Put the main power switch (→ Fig. 70, [1]) on the control panel in position "0".
- ▶ Shut off the fuel supply to the burner.
- ▶ De-energize the system.

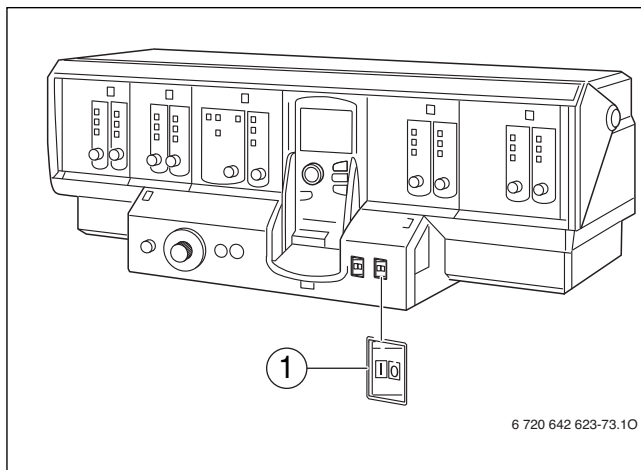


Fig. 70 Logamatic 4311 shown as an example

- ▶ Undo the four machine screws that fasten the burner door to the front section (→ Fig. 71, [1 to 4]).
- ▶ Swing out burner door.

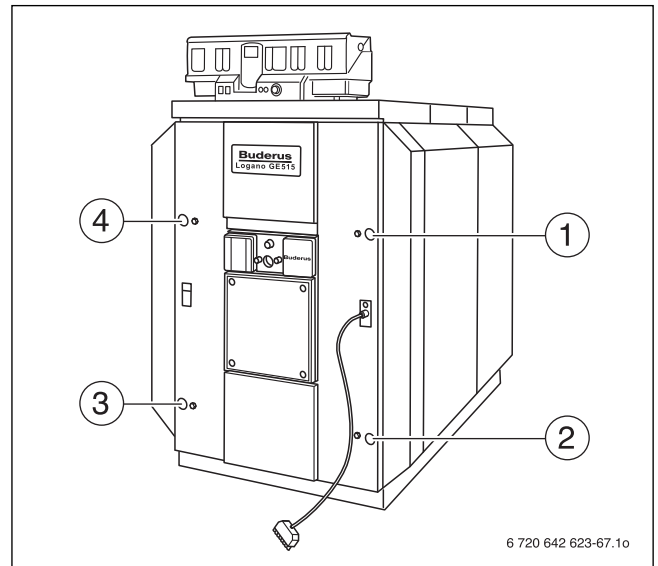


Fig. 71 Fastening the burner door



Boilers rated at 510 with 12 boiler sections are not equipped with flue gas baffle plates. Flue gas baffle plates are not used in boilers rated between 240 – 455 with 7 – 11 boiler sections (→ Chapter 7.8.5, page 22).

- ▶ Remove the flue gas baffles from the flue gas passages (→ Fig. 72, [1 to 4]).

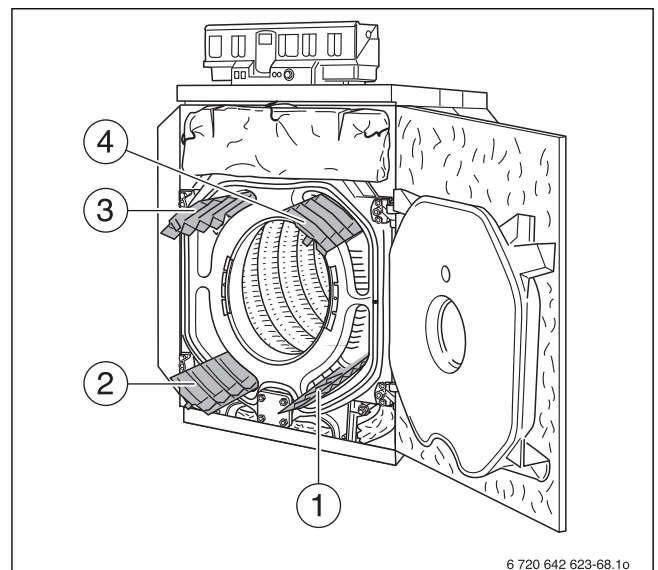


Fig. 72 Flue gas baffles, removing

The various brush types available from Buderus (accessories) are shown in Fig. 73.

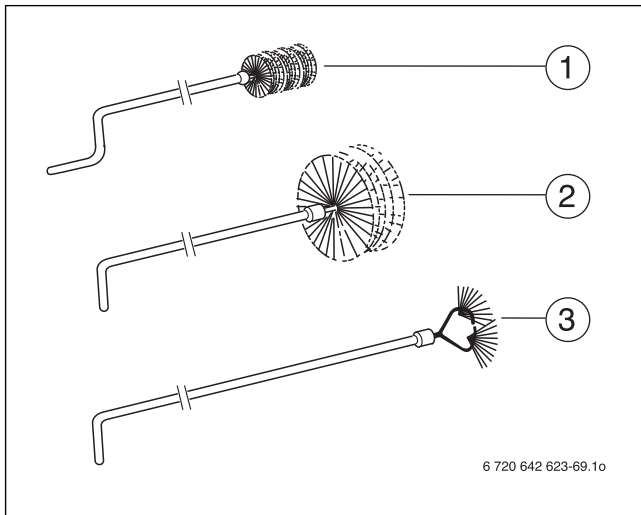


Fig. 73 Cleaning brushes

- ▶ Clean the flue gas passages, starting at the front and working toward the back with cleaning brushes 1 and 2 (→ Fig. 74, [1 and 3]).
- ▶ Clean the rear wall of the combustion chamber with cleaning brush 3.
- ▶ Clean the rest of the combustion chamber (→ Fig. 74, [2]) with cleaning brush 2.

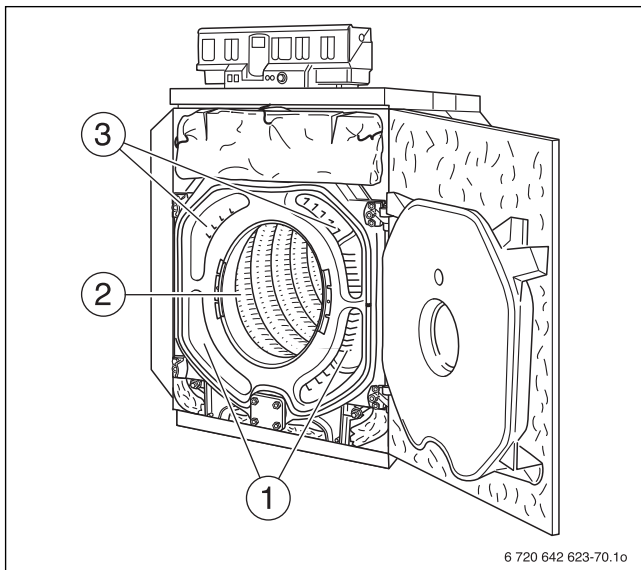


Fig. 74 Heat exchanger flue gas passages, cleaning

- ▶ Undo both self-tapping screws on the connecting plate and remove connecting plate.
- ▶ Remove the two self-tapping screws on the left and right-hand side of the lower rear boiler panel section.
- ▶ Lift up the bottom rear boiler panel sections slightly and take out toward the rear.
- ▶ Undo the spring hooks below the flue outlet, fold up the thermal insulation and attach via the spring hooks (→ Fig. 75, [1]).
- ▶ Remove the cleanout covers from the rear section (→ Fig. 75, [2]) and on the draft diverter (→ Fig. 75, [3]).
- ▶ Remove all loose combustion residues from the combustion chamber, the flue gas passages and the draft diverter.
- ▶ Check sealant ropes on the cleanout openings and burner door. Replace damaged or hardened sealant ropes.

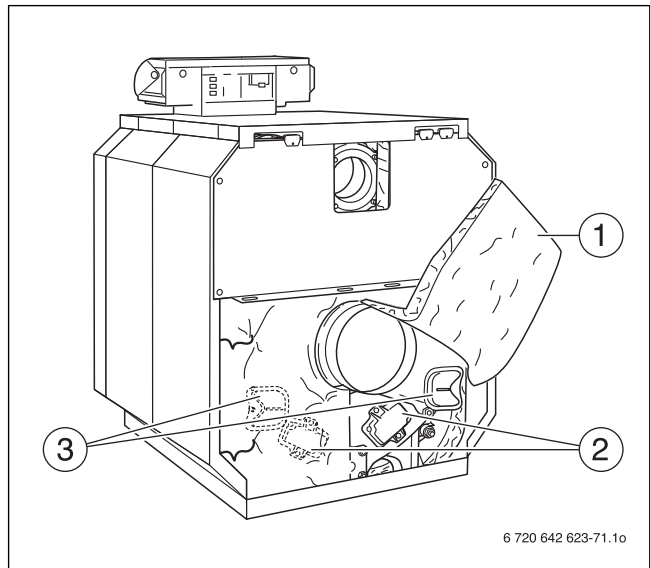


Fig. 75 Removing the cleanout cover.



You can obtain sealant ropes from your local Buderus wholesaler.

- ▶ Clean flue gas baffles with the cleaning brushes.
- ▶ Insert the flue gas baffle plates in the flue gas passages (→ Chapter 7.8.5, page 22).
- ▶ Fasten cleanout cover and tighten the screws evenly.
- ▶ Close the burner door and tighten the screws evenly.
- ▶ Fold the rear section thermal insulation down and pull together under the flue outlet using the spring hook (→ Fig. 76, [1]).

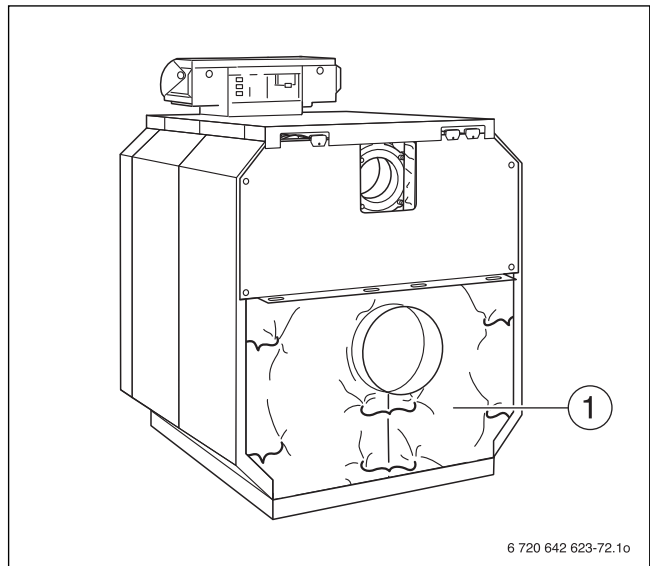


Fig. 76 Pull rear section thermal insulation together

- ▶ Hang the bottom rear boiler panel sections on the left and right into the slots in the folded edge of the upper rear boiler panel and the side panel and screw the connecting plate below the flue outlet onto the bottom rear boiler sections.

13.4 Wet-cleaning the boiler

When wet-cleaning, pick the cleaning agent based on the level of contamination.

Proceed with wet cleaning in the same order as described for cleaning with cleaning brushes (→ Chapter 13.3, page 39).



For wet-cleaning (chemical cleaning), observe the operating instructions of the relevant cleaning equipment and cleaning agent. It may be necessary to vary the wet-cleaning process from that described here.

- ▶ Select a cleaning agent that is appropriate for the type of contamination (soot or encrustation).
- ▶ Cover the control panel with foil to prevent penetration by the cleaning agent.
- ▶ Spray cleaning agent evenly from the top into the flue gas passages
- ▶ Heat up the boiler to a boiler water temperature of at least 158 °F (70 °C).
- ▶ Brush out the heat exchanger heater.

13.5 Checking the operating pressure

The operating pressure must be at least 15 psi (1 bar).

- ▶ Read the current operating pressure (psi) and temperature (°F (°C)) from the temperature/pressure gauge.
- ▶ If the operating pressure drops below 15 psi (1 bar), fill boiler water.

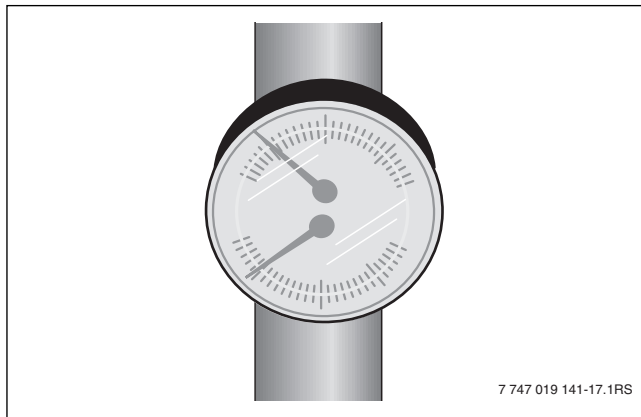


Fig. 77 Pressure/temperature gauge

13.6 Filling with boiler water and purging the system

NOTICE: Risk of system damage from temperature stresses.

- ▶ When the heating system is in operation, do not fill it via the boiler fill & drain valve. Instead, use the fill valve on the system side.



Bring the system up to the required operating pressure.

- ▶ Slowly fill the heating system via the on-site fill valve. During filling, observe the display (pressure gauge).
- ▶ Once the desired operating pressure is reached, stop the procedure.
- ▶ Purge the air from the heating system via the purge valves on the heating bodies.
- ▶ Fill with water again if the operating pressure drops as a result of purging the system.

NOTICE: Risk of system damage from frequent refilling.

- ▶ The system may be damaged, depending on water quality, by corrosion or scaling, if you frequently need to re-fill your system with make-up water.
- ▶ Ensure that your heating system is bled.
- ▶ Check the heating system for leaks and the function of the expansion vessel.

13.7 Inspection and maintenance logs

The inspection and maintenance logs provide an overview of the required inspection and maintenance work.

► Initial and date the inspection operations completed.

The inspection and maintenance logs can also be used as templates.

Inspection work		Page	Date: _____	Date: _____
1.	Check general condition of heating system		<input type="checkbox"/>	<input type="checkbox"/>
2.	Visual inspection and function check of the heating system		<input type="checkbox"/>	<input type="checkbox"/>
3.	Check fuel and water-carrying components of the system for: <ul style="list-style-type: none"> • Leaks during operation • Visible signs of corrosion • Signs of aging 		<input type="checkbox"/>	<input type="checkbox"/>
4.	Check the combustion chamber and heating surfaces for contamination. Shut down the heating system first.	→ 39	<input type="checkbox"/>	<input type="checkbox"/>
5.	Check the burner (→ burner documentation)		<input type="checkbox"/>	<input type="checkbox"/>
6.	Check the flue gas and venting system for proper operation and safety (see → burner documentation)		<input type="checkbox"/>	<input type="checkbox"/>
7.	Check the operating pressure and inlet pressure of the diaphragm expansion vessel for heating systems	→ 41	<input type="checkbox"/>	<input type="checkbox"/>
8.	Check the function of indirect-fired heater and rod (→ tank documentation)		<input type="checkbox"/>	<input type="checkbox"/>
9.	Check the control panel setting (see → control panel documentation)		<input type="checkbox"/>	<input type="checkbox"/>
10.	Record the final checks of the inspection work, incl. measurements and test results		<input type="checkbox"/>	<input type="checkbox"/>
	Confirm professional inspection			
			Company stamp/signature	Company stamp/signature



If during inspection work conditions are identified that require additional service and maintenance, perform this work on an as-needed basis. If make-up water is added, the quality of this water must correspond to the specifications in the enclosed operating manual.

	Date: _____	Date: _____	Date: _____	Date: _____
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Company stamp/signature	Company stamp/signature	Company stamp/signature	Company stamp/signature

Additional maintenance work as-needed		Page	Date: _____	Date: _____
1.	Shut down the heating system	→ 38	<input type="checkbox"/>	<input type="checkbox"/>
2.	Remove and clean heat exchanger baffles	→ 39	<input type="checkbox"/>	<input type="checkbox"/>
3.	Clean the flue gas passages (heating surfaces) and flue gas baffles	→ 40	<input type="checkbox"/>	<input type="checkbox"/>
4.	Clean the combustion chamber	→ 40	<input type="checkbox"/>	<input type="checkbox"/>
5.	Clean the draft diverter	→ 40	<input type="checkbox"/>	<input type="checkbox"/>
6.	Insert the flue gas baffles	→ 40	<input type="checkbox"/>	<input type="checkbox"/>
7.	Check gaskets/sealant ropes on the burner and burner door and replace if required (see burner documentation)		<input type="checkbox"/>	<input type="checkbox"/>
8.	Commissioning the heating system	→ 35	<input type="checkbox"/>	<input type="checkbox"/>
9.	Record the final checks of the maintenance work, incl. measurements and test results		<input type="checkbox"/>	<input type="checkbox"/>
10.	Check safe and proper operation		<input type="checkbox"/>	<input type="checkbox"/>
	Confirm professional inspection			
			Company stamp/signature	Company stamp/signature

	Date: _____	Date: _____	Date: _____	Date: _____
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Company stamp/signature	Company stamp/signature	Company stamp/signature	Company stamp/signature

14 Troubleshooting burner faults

Heating system faults are shown on the display of the control panel. You will find detailed information regarding fault displays in the service instructions for the relevant control panel. The burner fault is also indicated by a fault lamp on the burner.

- NOTICE:** Risk of system damage from freezing.
The heating system can freeze up in cold weather if it has been disabled due to a fault shutdown.
- ▶ Rectify the fault immediately and restart the heating system.
 - ▶ If this is not possible, drain the heating and DHW from the system side at the lowest point.

Troubleshooting burner faults

- ▶ Press the burner reset button (see burner operating instructions).

- NOTICE:** Risk of system damage from too many resets.
- ▶ The burner ignition transformer may be damaged if you press the reset button more than three times in succession when the burner refuses to start.
 - ▶ Do not attempt to remedy the fault by pressing the reset button more than three times in succession.

If the burner does not restart after three attempts, refer to the technical documentation provided with the burner to find out how to reset it.

15 Spare Parts

- Request spare parts with name and part number using the spare parts list.

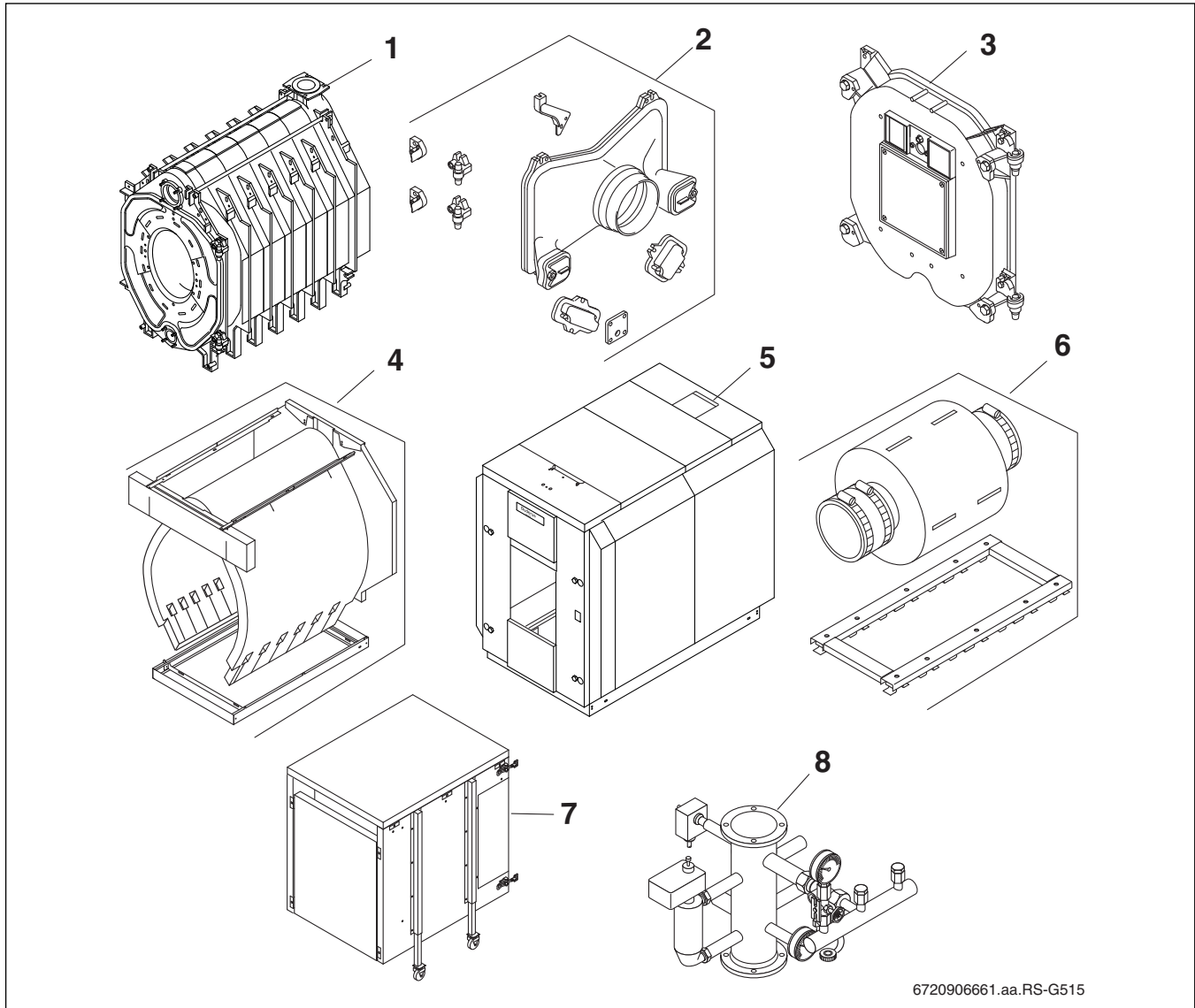


Fig. 78 Spare part groups Logano G515

Item (→ Fig. 78)	Designation	Spare parts list
1	Group 1 – boiler block - front	→ Page 47
2	Group 2 – boiler block - rear	→ Page 50
3	Group 3 – burner door	→ Page 52
4	Group 4 – jacket - fastening	→ Page 54
5	Group 5 – jacket - sheetmetal parts	→ Page 56
6	Group 6 – pedestal - silencer	→ Page 58
7	Group 7 – burner cover	→ Page 60
8	Group 8 – safety group	→ Page 62

Table 14 Spare part groups Logano G515

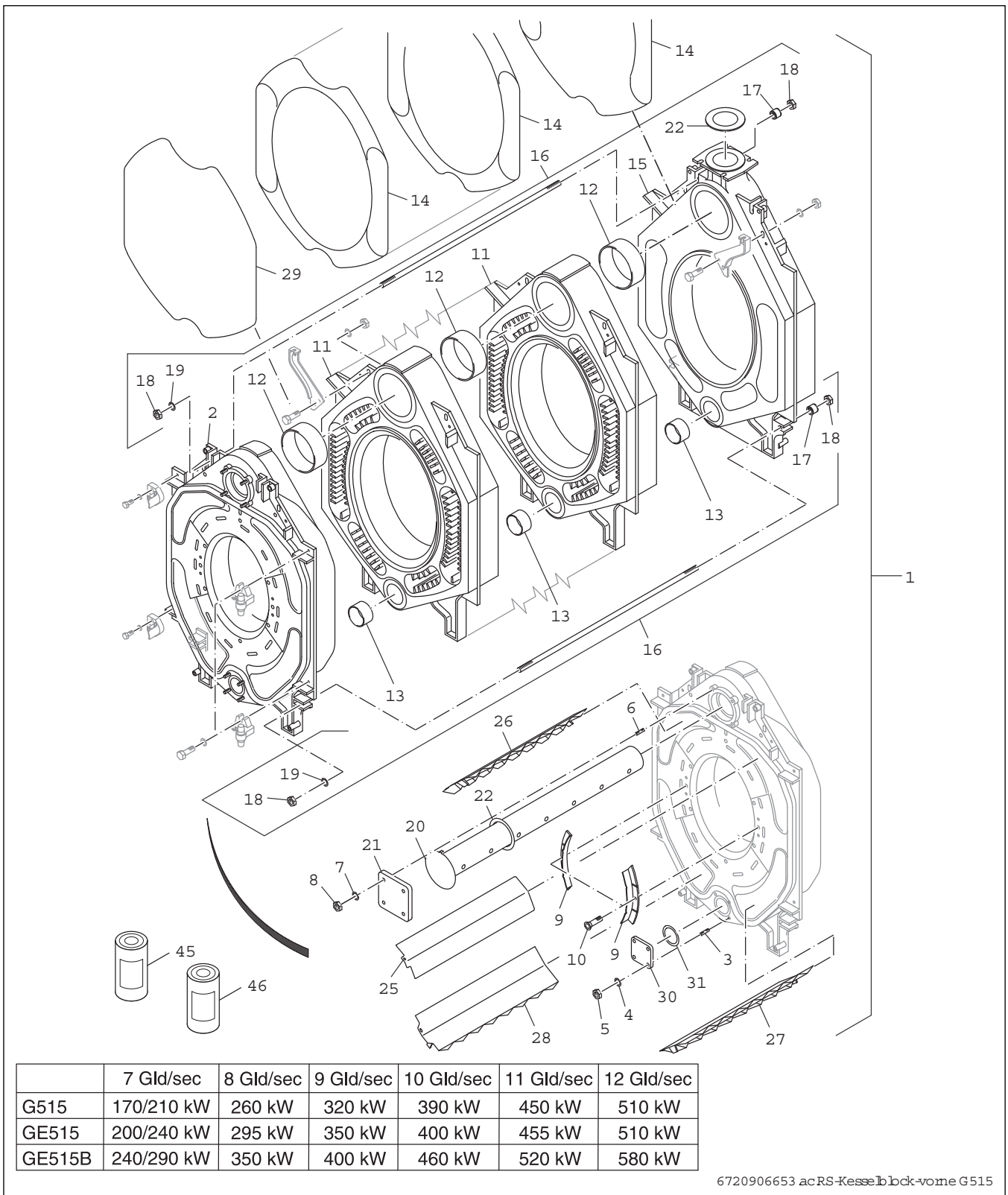


Fig. 79 Group 1 – boiler block - front Logano G515

Item (→ Fig. 79)	Designation	Order number
1	Boiler block unassembled – 7 segments	5 086 720
	Boiler block unassembled – 8 segments	5 086 722
	Boiler block unassembled – 9 segments	5 086 724
	Boiler block unassembled – 10 segments	5 086 726
	Boiler block unassembled – 11 segments	5 086 728
	Boiler block unassembled – 12 segments	5 086 730
2	Front segment G515	8 718 572 188 0
3	Studs DIN939 M12x35 5.6	3 719 184
4	Washer DIN125-A13-A3K	5 883 276
5	Hexagon nuts ISO4032 M12 8 A3K	5 090 068
6	Threaded stud DIN939 M16x45 5.6	3 719 328
7	Washer DIN125-A17-A3K	3 869 840
8	Hexagon nut DIN555 M16	82 585 200
9	Stop plate [5257820]	8 718 570 847 0
11	Intermediate section G515	8 718 572 189 0
12	Boiler nipple 181/170 Sz 4	7 747 024 979
13	Boiler nipple 82/50 Sz 1	7 747 024 965
14	Sealant rope D15x4300 20 KMVk Pack A=2	7 747 013 784
	Sealant rope D15x4300 20 KMVk Pack B=3	7 747 013 785
	Sealant rope D15x5050 20 KMVk Pack A=2	7 747 013 787
	Sealant rope D15x5050 20 KMVk Pack B=3	7 747 013 788
15	Rear section G515	8 718 572 190 0
16	Tie rod M16x1165 (for 7 segments)	5 413 070
	Tie rod M16x1365 (for 8 segments)	5 420 100
	Tie rod M16x1510 (for 9 segments)	5 504 112
	Tie rod M16x1675 (for 10 segments)	5 526 040
	Tie rod M16x1845 (for 11 segments)	5 526 050
	Tie rod M16x2015 (for 12 segments)	5 526 060
17	Spring package compl. for tie rods	5 413 202
18	Hexagon nuts ISO4032 M16 8 A3K	82 585 200
19	Washer DIN125-A17-A3K	3 869 840
20	Supply pipe G515 7-pc	5 436 400
	Supply pipe G515 8-pc	5 436 402
	Supply pipe G515 9-pc	5 436 404
	Supply pipe G515 10-pc	5 436 736
	Supply pipe G515 11-pc	5 436 738
	Supply pipe G515 12-pc	5 436 740
21	Flange cover square 170mm	5 428 121
22	Gasket D125x170x1.5mm (2x)	8 718 572 753 0
23	Washer DIN125-A17-A3K	3 869 840
24	Hexagon nuts ISO4032 M16 8 A3K	82 585 200
25	Flue gas baffle top right 680mm	5 265 206
	Flue gas baffle top right 425mm	5 265 210
26	Flue gas baffle top right 425mm long	5 265 212
	Flue gas baffle top left 680mm long	5 265 220
27	Flue gas baffle bottom right 680mm long	5 265 204
	Flue gas baffle bottom right 425mm	5 265 214
28	Flue gas baffle bottom right 425mm	5 265 216
	Flue gas baffle bottom right 680mm	5 265 218
29	Sealant rope 18x2900mm long	63 020 973
30	Flange cover square 110mm	5 428 081

Table 15 Group 1 – boiler block - front Logano G515

Item (→ Fig. 79)	Designation	Order number
31	Gasket D72x96x1.5mm	8 718 571 260 0
45	Sealant graphite treated with linseed oil 450 g can	8 718 571 927
46	Primer 181, 12.5 oz (370 ml) in 17 oz (500 ml) can	5 909 922
	Fittings G515 7-pc loose spare	5 621 600
	Fittings G515 8-pc loose spare	5 621 602
	Fittings G515 9-pc loose spare	5 621 604
	Fittings G515 10-pc loose spare	5 621 606
	Fittings G515 11-pc loose spare	5 621 608
	Fittings G515 12-pc loose spare	5 621 610
	Sealant rope 18x3800 GP	63 020 975

Table 15 Group 1 – boiler block - front Logano G515

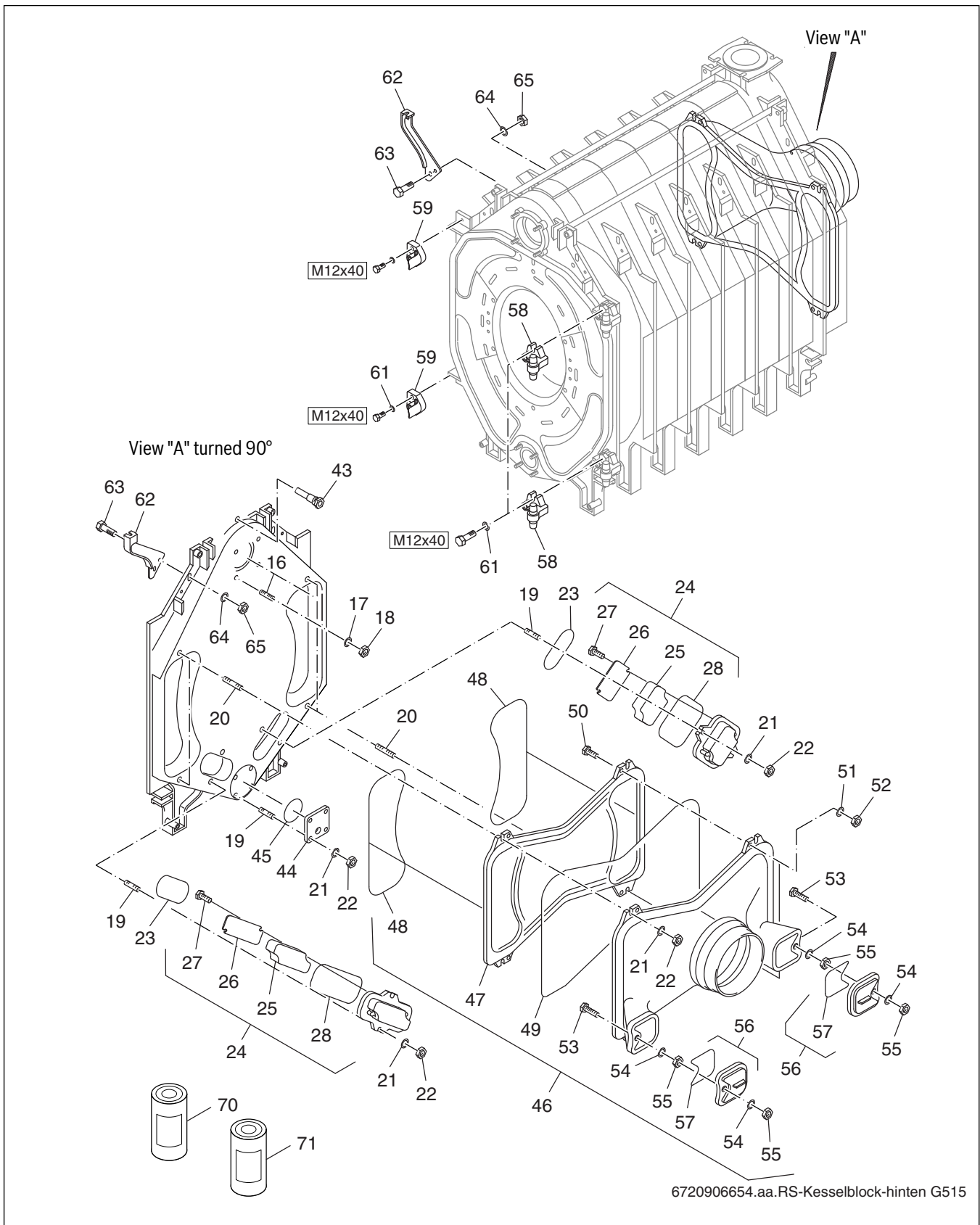


Fig. 80 Group 2 – boiler block - back Logano G515

Item (→ Fig. 80)	Designation	Order number
16	Threaded stud DIN939 M16x45 5.6	3 719 328
17	Washer DIN125-A17-A3K	3 869 840
18	Hexagon nuts ISO4032 M16 8 A3K	82 585 200
19	Threaded stud DIN939 M12x35 5.6	3 719 184
20	Threaded stud DIN939 M12x60 5.6	3 719 204
21	Washer DIN125-A13-A3K	5 883 276
22	Hexagon nuts ISO4032 M12 8 A3K	5 090 068
23	Sealant rope GP10x1070mm long	63 020 962
24	Cleanout cover left/right cpl G515	5 371 615
25	Thermal insulation cleanout cover G515	5 078 718
43	Sensor well R3/4" (100 mm)	5 446 065
44	Threaded flange square 110mm 3/4"	5 430 056
45	Gasket D72x96x1.5mm	8 718 571 260 0
46	Draft diverter G515 VE	5 321 792
47	Rear panel draft diverter G515 cpl	5 078 742
48	Sealant rope GP14x1650mm long	63 020 965
49	Sealant rope D15x4300 KMV Pack A = 2 rolls	5 830 260
50	Hex-head bolt ISO4017 M8x50 8.8	5 090 330
51	Washer DIN125 A8.4 A3K (10x)	8 718 571 269 0
52	Hex nut DIN6923 M8 A3K (10x)	8 718 571 267 0
53	Hex-head bolt ISO4017 M12x55 8.8	5 090 262
54	Washer DIN125-A13-A3K	5 883 276
55	Hexagon nuts ISO4032 M12 8 A3K	5 090 068
56	Cleanout cover compl. for the draft diverter	5 371 906
57	Sealant rope GP10x1070mm long	63 020 962
58	Hinge painted G515	5 327 432
59	Locking bracket painted G515	5 928 700
61	Washer DIN125-A13-A3K	5 883 276
62	Console cladding deburred G515	5 928 706
63	Hex bolts M8x30 set 10 pcs	63 027 500
64	Washer DIN125 A8.4 A3K (10x)	8 718 571 269 0
65	Hex nut DIN6923 M8 A3K (10x)	8 718 571 267 0
70	Gasket kit PK-W11 310 ml cartridge	2 037 038
71	Sealing compound brown	63 014 361
	Installation material G515 VE	5 015 940
	Maintenance package G515	63 006 596

Table 16 Group 2 – boiler block - back Logano G515

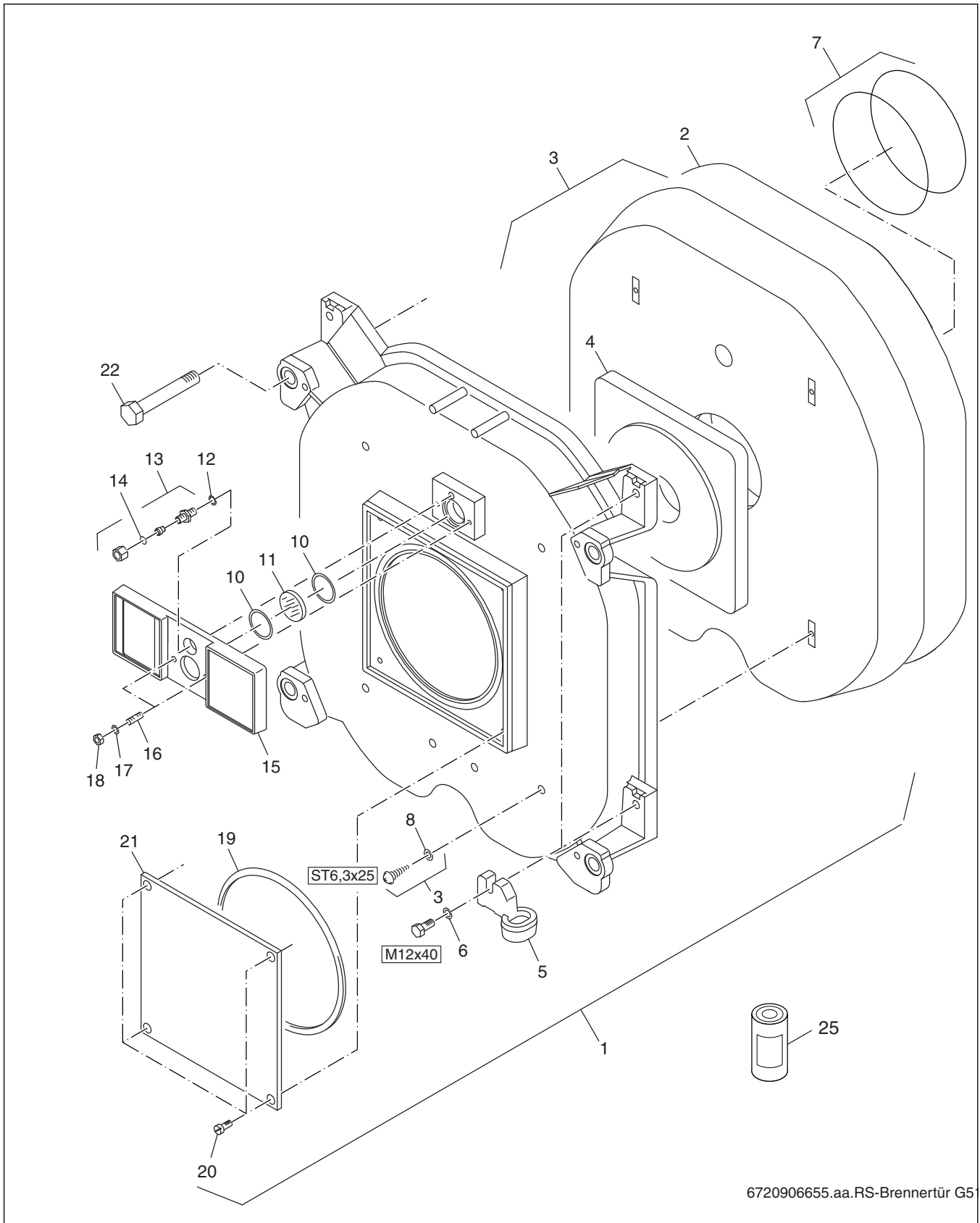
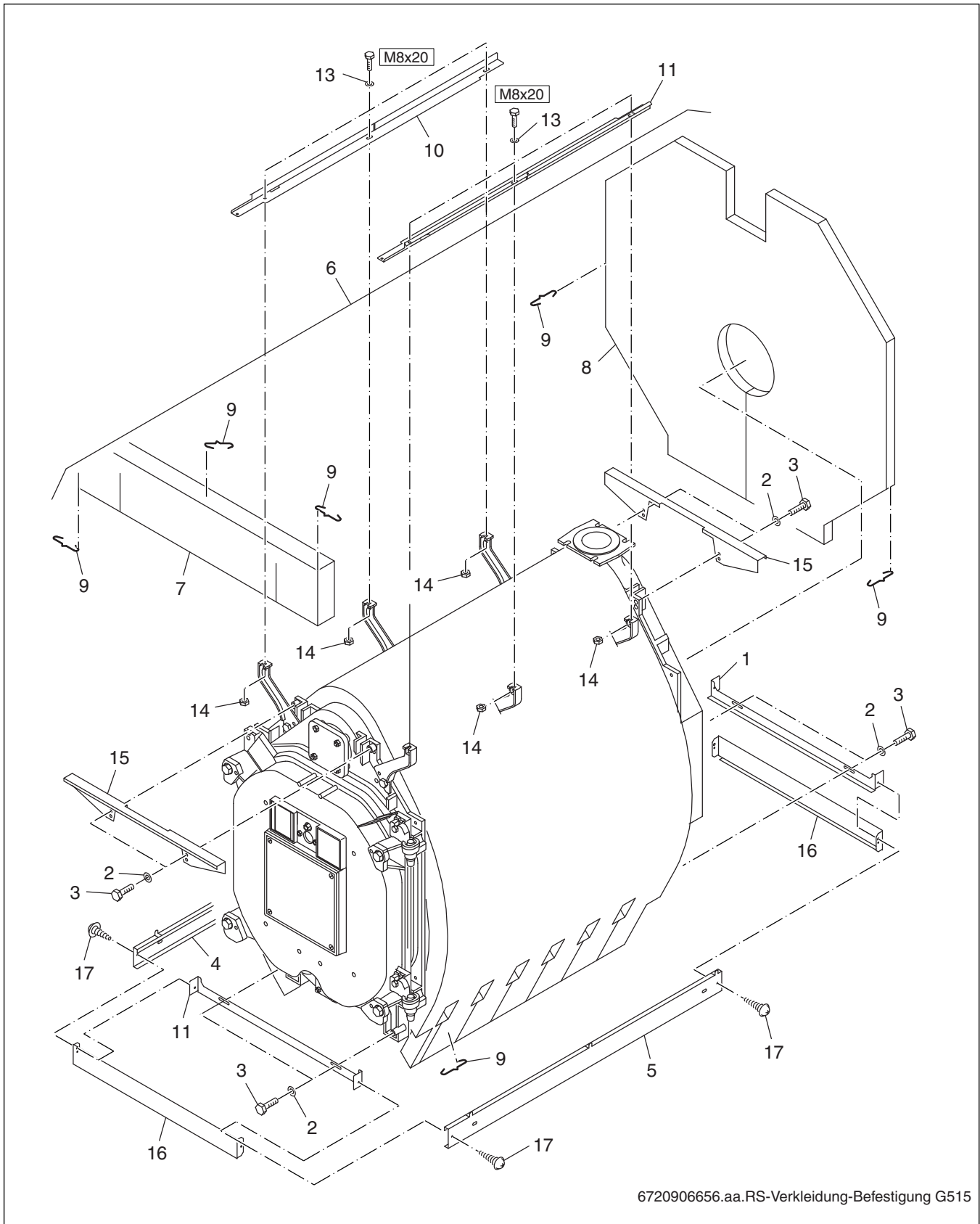


Fig. 81 Group 3 – burner door Logano G515

Item (→ Fig. 81)	Designation	Order number
1	Burner door compl. G515	63 015 444
2	Sealant rope 18x2900mm long (for burner door)	63 020 973
3	Thermal insulation br door G515 Board607	63 002 424
4	Insulating shield G505/G515/SB605/SB615	63 004 307
5	Hinge eyelet painted G515	5 327 430
6	Washer DIN125-A13-A3K	5 883 276
7	Insulation ring burner door G515 isoglas	5 333 046
8	Washer DIN9021 A6,4 A3K	5 264 166
10	Gasket D42x52x1.5mm	5 752 520
11	Glass pane D49.5x5mm (1x9)	7 747 021 871
12	Seal ring 13x18x1.5	5 883 094
13	Threaded pipe adapter GE 10-lr Ermeto	5 802 753
14	Gasket D13.5x1mm	5 752 220
15	Inspection hole cover G515 paint 70003150	5 438 604
16	Threaded stud DIN939 M8x25mm (4x)	8 718 571 262 0
17	Washer DIN125 A8.4 A3K (10x)	8 718 571 269 0
18	Hex nut DIN6923 M8 A3K (10x)	8 718 571 267 0
19	Sealant rope GP10x1070mm long	63 020 962
20	Hex-head bolt DIN6921 M10x25 (10x)	8 718 575 500 0
21	Burner plate blind 10x320x320mm	5 431 165
22	Hex-head bolt M16x140 (DIN931), black	80 080 136
25	Sealing compound brown	63 014 361

Table 17 Group 3 – burner door Logano G515



6720906656.aa.RS-Verkleidung-Befestigung G515

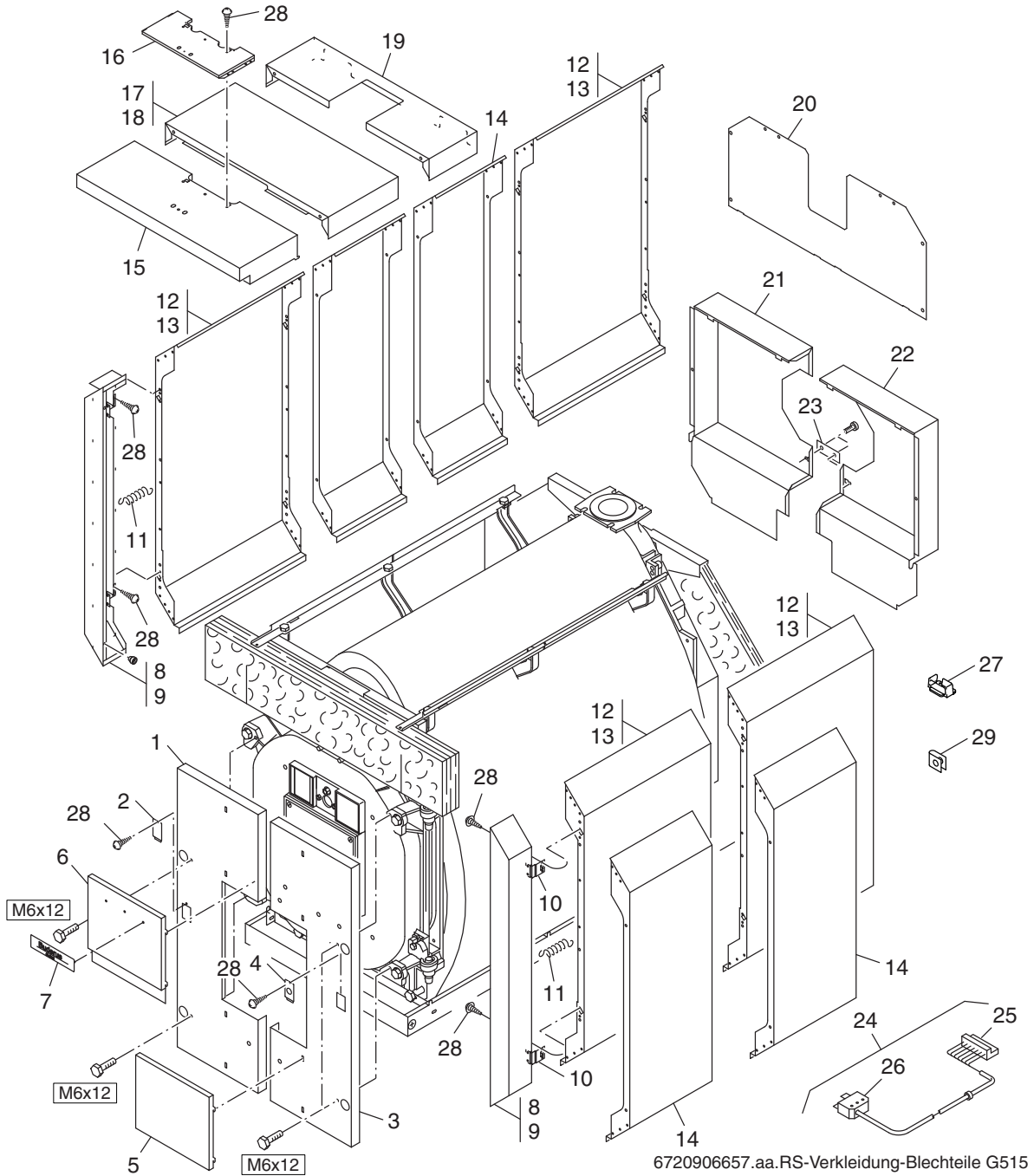
Fig. 82 Group 4 – jacket - fastening Logano G515

Item (→ Fig. 82)	Designation	Order number
1	Bottom profile rail G515	5 078 620
2	Washer DIN125 A8.4 A3K (10x)	8 718 571 269 0
3	Hex-head bolt ISO4017 M8x16 8.8	5 090 124
4	Base left compl. 1315mm long	5 078 642
	Base left compl. 1485mm long	5 078 644
	Base left compl. 1655mm long	5 078 646
	Base left compl. 1825mm long	5 078 648
	Base left compl. 1995mm long	5 078 650
	Base left compl. 2165mm long	5 078 652
5	Base right compl. 1315mm long	5 078 630
	Base right compl. 1485mm long	5 078 632
	Base right compl. 1655mm long	5 078 634
	Base right compl. 1825mm long	5 078 636
	Base right compl. 1995mm long	5 078 638
	Base right compl. 2165mm long	5 078 640
6	Thermal insulation 7 sections G515	5 078 440
	Thermal insulation 8 sections G515	5 078 442
	Thermal insulation 9 sections G515	5 078 444
	Thermal insulation 10 sections G515	5 078 446
	Thermal insulation 11 sections G515	5 078 448
	Thermal insulation 12 sections G515	5 078 450
7	Thermal insulation for front cover G515	63 013 247
8	Thermal insulation for rear panel G515	63 013 246
9	Retaining spring (10x)	7 747 016 084
10	Profile rail left top compl. 1280mm long	5 078 672
	Profile rail left top compl. 1450mm long	5 078 674
	Profile rail left top compl. 1620mm long	5 078 676
	Profile rail left top compl. 1790mm long	5 078 678
	Profile rail left top compl. 1960mm long	5 078 680
	Profile rail left top compl. 2130mm long	5 078 682
11	Profile rail right top compl. 1280mm long	5 078 660
	Profile rail right top compl. 1450mm long	5 078 662
13	Washer DIN125 A8.4 A3K (10x)	8 718 571 269 0
14	Hex nut DIN6923 M8 A3K (10x)	8 718 571 267 0
15	Top cross member G515	5 078 624
16	Base cross cpl G515	5 078 698
17	Flat-head screw ST3.9x9.5 A3T (10x)	7 747 026 999

Table 18 Group 4 – jacket - fastening Logano G515

side panel			7	8	9	10	11	12
segments								
Pos.								
12	A	614mm	4		4		4	
13	B	699mm		4		4		4
14	C	339mm			2	2	4	4

cover			7	8	9	10	11	12
segments								
Pos.								
17		509mm	1	2	1	2	1	2
18		339mm	1	0	2	1	3	2

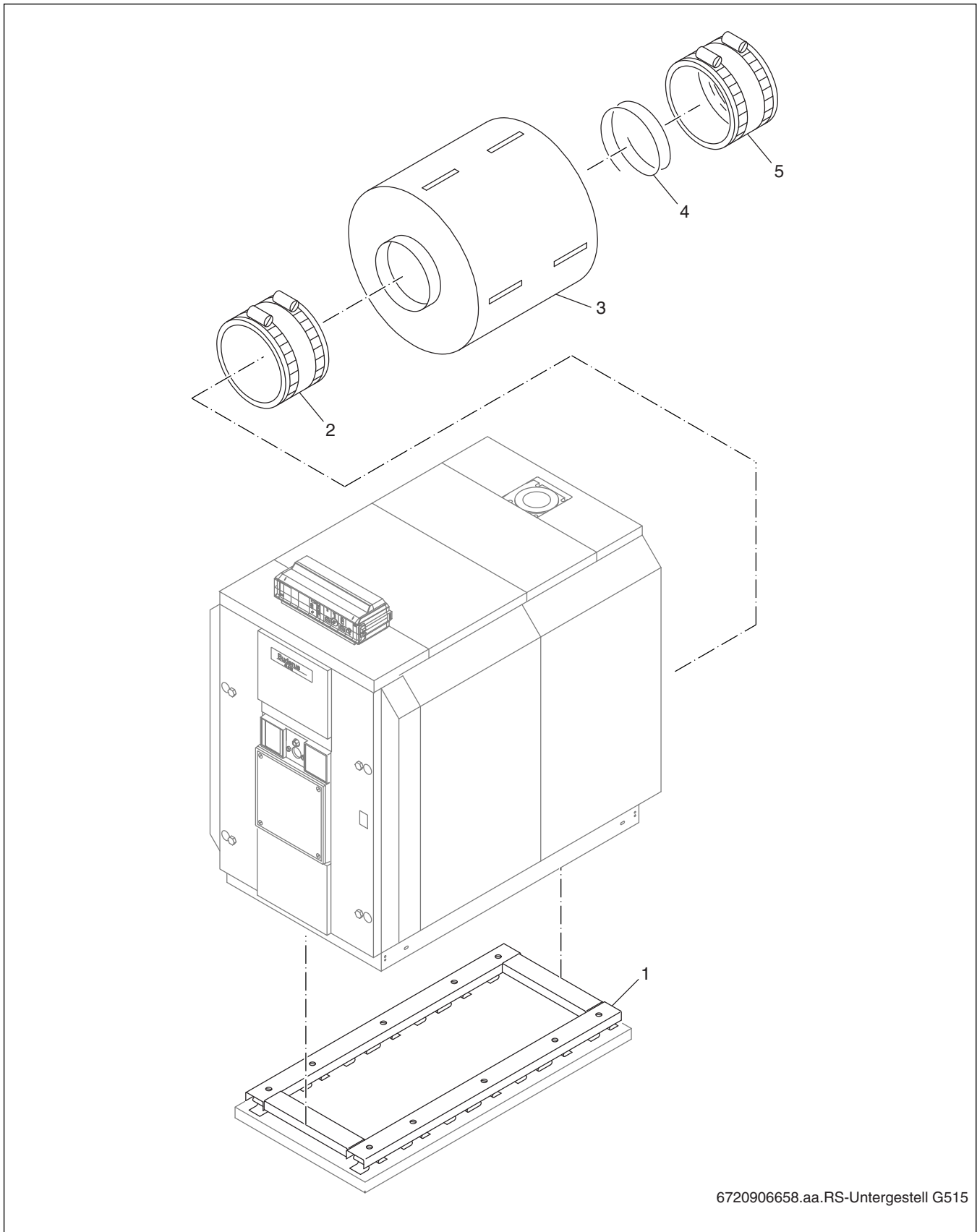


6720906657.aa.RS-Verkleidung-Blechteile G515

Fig. 83 Group 5 – jacket - sheetmetal parts Logano G515

Item (→ Fig. 83)	Designation	Order number
1	Front cover ll G515	63 029 196
2	Conduit shield (blue)	63 045 229
3	Front cover rt G515	63 029 193
4	Conduit slotted (blue) (1x)	63 045 226
5	Cover bott cpl G515	5 078 714
6	Cover top cpl G515	5 078 712
7	Appliance label Buderus Logano G515 (>4/1999)	67 902 827
	Appliance label Logano plus G515 (>4/1999)	67 902 849
8	Flap cpl G515	5 078 690
9	Thermal insulation f. flap right+left 40x100x1200	5 078 508
10	Piano hinge	63 013 120
11	Tension spring f. front jacket G515	5 078 880
12	Side panel compl. 614lg G515	63 029 214
13	Side panel compl. 699lg G515	63 029 213
14	Side panel compl. 339lg G515	63 029 215
15	Front top panel compl.	5 078 701
16	Adapter plate for control panel	63 018 642
17	Cover middle compl. 509mm long	5 078 704
18	Cover middle compl. 339mm long	5 078 702
19	Cover rear compl.	5 078 706
20	Rear panel top G515	5 078 692
21	Rear panel left bottom cpl G515	5 078 694
22	Rear panel rt bottom cpl G515	5 078 696
23	Connection strip 80x30x0.75mm	63 001 624
24	Burner connection cable compl. 3200mm long	7 060 992
25	Connection terminal 7-pin green BR 1 burner	7 747 023 989
26	Connector part ST18/7 silver-plated	67 903 164
27	Cable clamp	7 060 754
28	Flat-head screw ST3.9x9.5 A3T (10x)	7 747 026 999
29	Snap nut 4.8-A3KSNU5743	5 834 364
	Installation material G515	5 078 716

Table 19 Group 5 – jacket - sheetmetal parts Logano G515



6720906658.aa.RS-Untergestell G515

Fig. 84 Group 6 – pedestal - silencer Logano G515

Item (→ Fig. 84)	Designation	Order number
1	Sound-absorbing boiler base for G515. Sz 240	5 093 400
	Sound-absorbing boiler base for G515. Sz 295	5 093 402
	Sound-absorbing boiler base for G515. Sz 350	5 093 404
	Sound-absorbing boiler base for G515. Sz 400	5 093 406
	Sound-absorbing boiler base for G515. Sz 455	5 093 408
	Sound-absorbing boiler base for G515. Sz 510	5 093 410
2	Vent pipe sealing collar DN250 neutr	54 004 294
3	Vent pipe silencer, steel, DN 250	5 074 550
4	Sealant rope 10x2000 GP	63 020 963
5	Vent pipe sealing collar DN250	5 354 038

Table 20 Group 6 – pedestal - silencer Logano G515

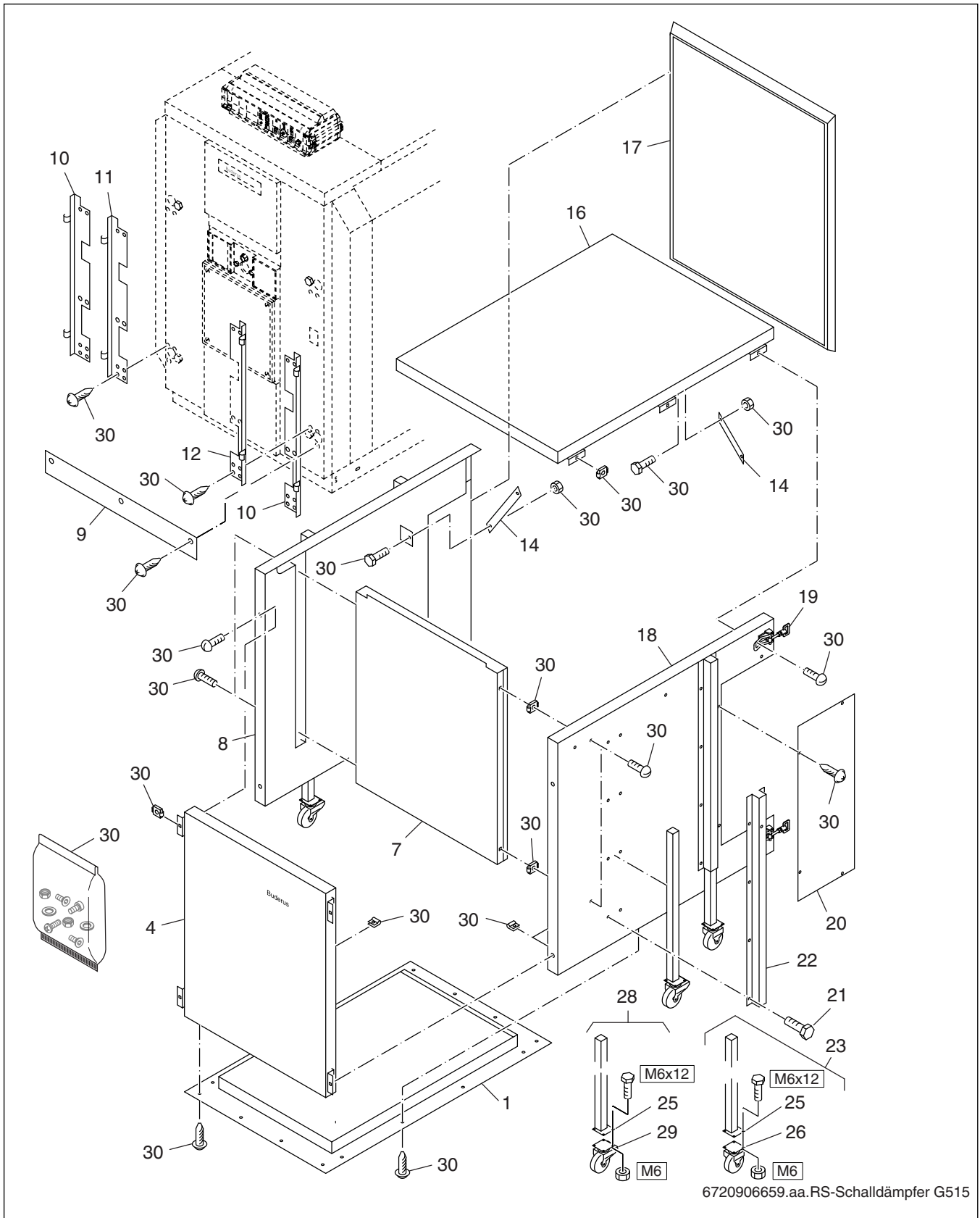


Fig. 85 Group 7 – burner cover Logano G515

Item (→ Fig. 85)	Designation	Order number
1	Bottom compl. 790x885mm size 1.1 (type 1.2)	5 414 718
	Bottom compl. 820x1165mm (type 2.2)	5 414 770
4	Front cover compl. 570x700mm (type 1.2)	5 414 683
	Front cover compl. 730x750mm (type 2.2)	5 414 780
7	Baffle compl. 530x795mm (type 1.2)	5 414 688
	Baffle compl. 670x825mm (type 2.2)	5 414 784
8	Side panel left compl. 650x890mm (type 1.2)	5 414 776
	Side panel left compl. 830x1170mm (type 2.2)	5 414 778
9	Cover bottom cpl 2x50.5x830mm (type 2.2)	5 078 740
10	Cover right/left compl. 720mm long (type 1.2)	5 928 150
11	Cover left cpl 90x900mm (type 2.2)	5 928 154
12	Cover right cpl 90x900mm (type 2.2)	5 928 152
14	Brace 40x210mm	5 414 703
16	Cover 800x890mm size 1.1 (type 1.2)	5 414 693
	Cover 830x1170mm (type 2.2)	5 414 786
17	Edge protector 3000mm long	5 972 800
18	Side panel R.h. 650x890mm (type 1.2)	5 414 772
	Side panel right compl. 650x890mm	5 414 774
19	Box closure	5 755 060
20	Locking plate 280x400mm (type 1.2)	5 414 796
	Locking plate 280x580mm (type 2.2)	5 414 802
22	Attachment bracket 730mm long (type 2.2)	5 414 788
	Attachment bracket 134x550mm (type 1.2)	5 414 790
23	Roller leg rear compl. 850mm long	5 928 158
25	Shaft 745mm long	5 928 162
26	Fixed roller AB/75 blue-gray	5 755 050
28	Roller leg compl. with swivel roller	5 928 156
29	Swivel roller A2K/75	5 755 055
30	Installation material burner sound-damping cover	5 158 222
	Moltoprene knob plate 50x1000x2000mm	5 678 100

Table 21 Group 7 – burner cover Logano G515

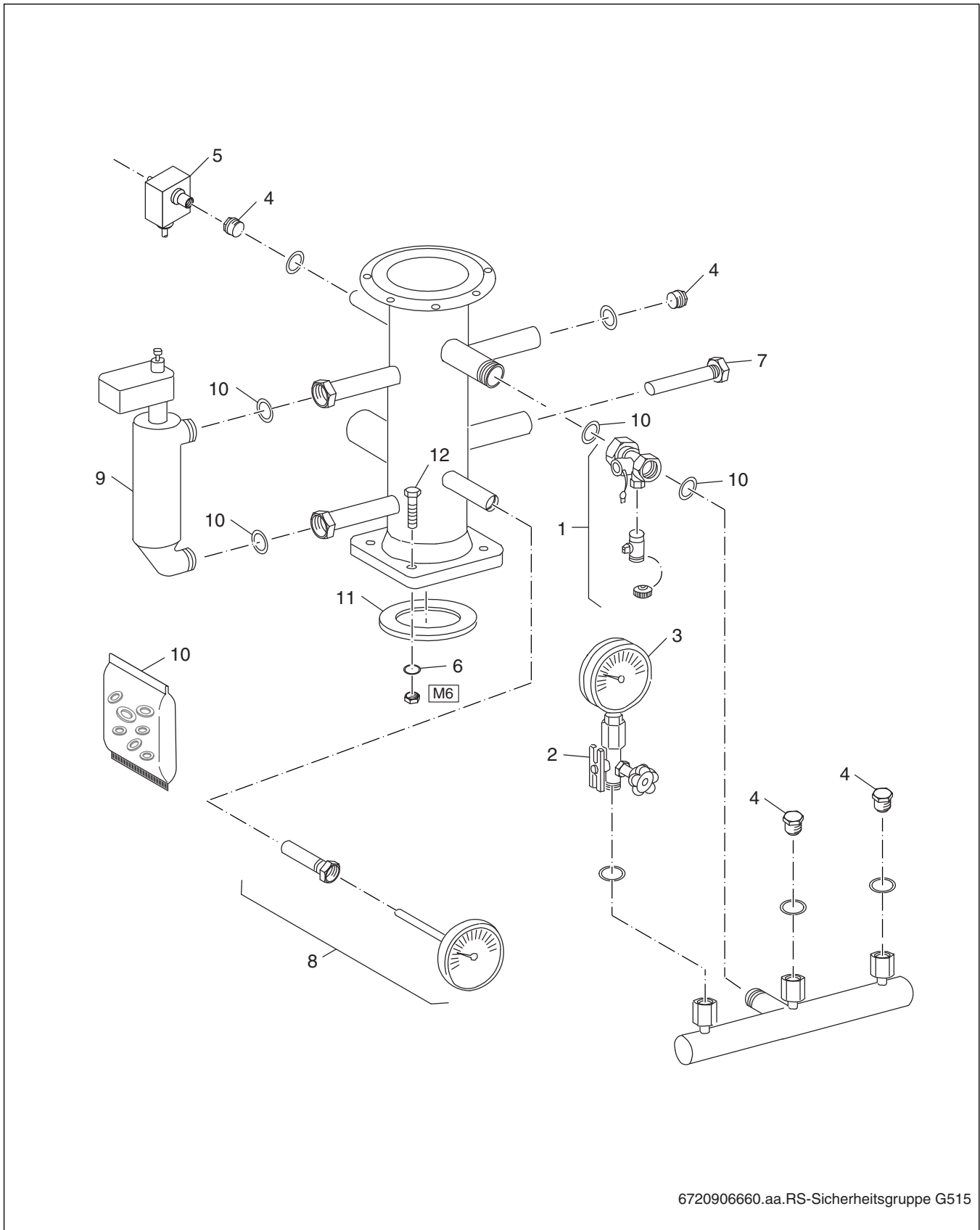


Fig. 86 Group 8 – safety group Logano G515

Item (→ Fig. 86)	Designation	Order number
1	Cap valve with drain & fill valve	5 639 600
2	OV pressure gauge block valve 1/2"AG, PN250,	81 504 600
3	Röhrenfeder pressure gauge d: 100mm, 0-10bar	81 188 605
4	Set of grommets for safety armatures	5 639 660
5	Pressure regulator cpl minimal f. G515 pack	5 639 612
6	Washer DIN125-A17-A3K	3 869 840
7	Sensor well G1/2" 160mm long	63 004 634
8	Thermometer D100,G1/2, 0-120degrees C,160lg	5 639 624
9	Water level limiter SYR 933, 20, 11	8 718 575 403 0
10	Gasket set KSG	5 639 634
11	Seal DIN2690 DN65 2 mm	81 363 040

Table 22 Group 8 – safety group Logano G515

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Appendix

Data and system handover

Type _____

User _____

Manufacturer no. _____

Location _____

System installer _____

The system named above has been installed and commissioned according to standard engineering practice, as well as provisions of the buildings inspectorate and any legislative requirements.

The technical documentation has been handed over to the user. He has been familiarized with the safety instructions, operation and maintenance of the system.

 Date, signature (system installer)

 Date, signature (user)

----- please cut along dotted line -----

For use by system installer

Type _____

User _____

Manufacturer no. _____

Location _____

The technical documentation has been handed over to the user. He has been familiarized with the safety instructions, operation and maintenance of the system.

 Date, signature (user)

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