

froling

Installation instructions

Dual fuel boiler SP Dual



Translation of original German version of installation instructions for technicians.

Read and follow all instructions and safety instructions.
All errors and omissions excepted.



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1 General	5
1.1 About this manual	5
2 Safety.....	6
2.1 Hazard levels of warnings.....	6
2.2 Qualification of assembly staff	7
2.3 Personal protective equipment for assembly staff	7
3 Design Information	8
3.1 Overview of standards	8
3.1.1 General standards for heating systems	8
3.1.2 Standards for structural and safety devices	8
3.1.3 Standards for heating water	8
3.1.4 Regulations and standards for permitted fuels	9
3.2 Installation and approval	9
3.3 Installation site	9
3.4 Chimney connection/chimney system	10
3.4.1 Connection line to the chimney	10
3.4.2 Measuring port	11
3.4.3 Draught limiter	11
3.4.4 Explosion flap	11
3.4.5 Electrostatic particle separator	12
3.5 Combustion air	13
3.5.1 Combustion air supply at the installation room	13
3.5.2 Simultaneous operation with other air-drawing systems	14
3.6 Domestic hot water	15
3.7 Pressure maintenance systems	16
3.8 Storage tank	17
3.9 Return lift	18
3.10 Boiler ventilation	18
4 Technology	19
4.1 SP Dual measurements	19
4.2 Components and connections	20
4.3 Technical specifications	21
4.3.1 SP Dual 22/28	21
4.3.2 SP Dual 32/34/40	23
4.3.3 Boiler data for planning the flue gas system	25
5 Transport and storage	26
5.1 Delivery configuration	26
5.2 Temporary storage	26
5.3 Positioning	27
5.4 Positioning at the installation site	28
5.4.1 Remove boiler from pallet	28
5.4.2 Removing the pellet unit from the pallet	29
5.4.3 Operating and maintenance areas of the equipment	31
6 Installation.....	32
6.1 Required accessories and tools	32
6.2 Accessories supplied	32
6.3 Assembly overview S4 Turbo F	33
6.3.1 Air duct system	33
6.3.2 S4 Turbo 22-28 WOS system	34

6.3.3	S4 Turbo 32-40 EOS system	35
6.3.4	Insulation.....	36
6.3.5	Boiler with pellet flange	37
6.4	Assembly overview pellet unit.....	38
6.5	Before Installation	39
6.5.1	Changing door stops (as needed).....	39
6.5.2	Adjusting the doors	42
6.5.3	Setting and checking the seal on the doors	44
6.6	Install firewood boiler	46
6.6.1	Fit the induced draught fan	46
6.6.2	Installing the pneumatic rods for the primary and secondary air	46
6.6.3	Installing the Lambda probe, flue gas temperature sensor and immersion sleeve	49
6.6.4	Installing the insulation.....	50
6.6.5	Installing the control	51
6.6.6	Installing the back panel	51
6.6.7	Installing the floor insulation.....	52
6.6.8	Installing the insulated door	52
6.6.9	Attaching the controller	54
6.6.10	Installing the servo-motors.....	55
6.7	Install the drive for the automatic WOS (optional)	56
6.8	Install the shaft for the automatic WOS (optional)	57
6.9	Fitting the pellet unit.....	58
6.9.1	Removing the cladding from the pellet unit.....	58
6.9.2	Screwing the pellet unit to the firewood boiler	60
6.9.3	Installing the WOS lever	65
6.9.4	Install the flow sensor	66
6.10	Electrical connection.....	67
6.10.1	Board overview	68
6.10.2	Connect the firewood boiler components.....	69
6.10.3	Connect the components of the pellet unit.....	71
6.10.4	Potential equalisation.....	73
6.11	Connecting the discharge system.....	73
6.11.1	Install suction hoses.....	73
6.11.2	Assembly information for hose lines	74
6.12	Hydraulic connection	76
6.13	Concluding work	78
6.13.1	Fitting the cladding to the pellet unit	78
6.13.2	Install the cladding on the firewood boiler.....	79
6.13.3	Positioning the boiler stickers	80
6.13.4	Affixing the identification plate	80
6.13.5	Insulate the connection line	81
6.13.6	Install the brackets for accessories.....	81
7	Start-up.....	82
7.1	Before commissioning / configuring the boiler	82
7.2	Initial startup	83
7.2.1	Permitted fuels	83
7.2.2	Fuels permitted under certain conditions	84
7.2.3	Non-permitted fuels.....	85
7.2.4	Heating up for the first time	85
7.2.5	Heating up for the first time.....	85
8	Decommissioning.....	86
8.1	Mothballing	86
8.2	Disassembly	86
8.3	Disposal	86

9 Appendix	87
9.1 Pressure equipment regulation.....	87

1 General

Thank you for choosing a quality product from Froling. The product features a state-of-the-art design and conforms to all currently applicable standards and testing guidelines.

Please read and observe the documentation provided and always keep it close to the system for reference. Observing the requirements and safety information in the documentation makes a significant contribution to safe, appropriate, environmentally friendly and economical operation of the system.

The constant further development of our products means that there may be minor differences from the pictures and content. If you discover any errors, please let us know: doku@froeling.com.

Subject to technical change.

*Issuing a delivery
certificate*

The EC Declaration of Conformity is only valid in conjunction with a delivery certificate, which has been filled in correctly and signed as part of the commissioning process. The original document remains at the installation site. Commissioning installers or heating engineers are requested to return a copy of the delivery certificate together with the guarantee card to Froling. On commissioning by FROLING Customer Service the validity of the delivery certificate will be noted on the customer service record.

1.1 About this manual

These installation instructions contain information for the following sizes of SP Dual boilers:

SP Dual 22, SP Dual 28, SP Dual 32¹⁾, SP Dual 34, SP Dual 40

1) SP Dual 32 is available only in Italy;

2 Safety

2.1 Hazard levels of warnings

This documentation uses warnings with the following hazard levels to indicate direct hazards and important safety instructions:

DANGER

The dangerous situation is imminent and if measures are not observed it will lead to serious injury or death. You must follow the instructions!

WARNING

The dangerous situation may occur and if measures are not observed it will lead to serious injury or death. Work with extreme care.

CAUTION

The dangerous situation may occur and if measures are not observed it will lead to minor injuries.

NOTICE

The dangerous situation may occur and if measures are not observed it will lead to damage to property or pollution.

2.2 Qualification of assembly staff

CAUTION



Assembly and installation by unqualified persons:

Risk of personal injury and damage to property

During assembly and installation:

- ☐ Observe the instructions and information in the manuals
- ☐ Only allow appropriately qualified personnel to work on the system

Assembly, installation, initial startup and servicing must always be carried out by qualified personnel:

- Heating technician / building technician
- Electrical installation technician
- Froling customer services

The assembly staff must have read and understood the instructions in the documentation.

2.3 Personal protective equipment for assembly staff

You must ensure that staff have the protective equipment specified by accident prevention regulations!



- During transport, erection and installation:
 - wear suitable work wear
 - wear protective gloves
 - wear safety shoes (min. protection class S1P)

3 Design Information

3.1 Overview of standards

Perform installation and commissioning of the system in accordance with the local fire and building regulations. Unless contrary to other national regulations, the latest versions of the following standards and guidelines apply:

3.1.1 General standards for heating systems

EN 303-5	Boilers for solid fuels, manually and automatically fed combustion systems, nominal heat output up to 500 kW
EN 12828	Heating systems in buildings - design of water-based heating systems
EN 13384-1	Chimneys - Thermal and fluid dynamic calculation methods Part 1: Chimneys serving one appliance
ÖNORM H 5151	Planning of central hot water heating systems with or without hot water preparation
ÖNORM M 7510-1	Guidelines for checking central heating systems Part 1: General requirements and one-off inspections
ÖNORM M 7510-4	Guidelines for checking central heating systems Part 4: Simple check for heating plants for solid fuels

3.1.2 Standards for structural and safety devices

ÖNORM H 5170	Heating installation - Requirements for construction and safety engineering, as well as fire prevention and environmental protection
ÖNORM M 7137	Compressed untreated wood – Requirements for storing pellets at the end customer's site
TRVB H 118	Technical directives for fire protection/prevention (Austria)

3.1.3 Standards for heating water

ÖNORM H 5195-1	Prevention of damage by corrosion and scale formation in closed warm water heating systems at operating temperatures up to 100°C (Austria).
VDI 2035	Prevention of damage hot water heating systems (Germany)
SWKI BT 102-01	Water quality for heating, steam, cooling and air conditioning systems (Switzerland)
UNI 8065	Technical standard regulating hot water preparation. DM 26.06.2015 (Ministerial Decree specifying the minimum requirements) Follow the instructions of this standard and any related updates. (Italy)

3.1.4 Regulations and standards for permitted fuels

1. BImSchV	First Order of the German Federal Government for the implementation of the Federal Law on Emission Protection (Ordinance on Small and Medium Combustion Plants) in the version published on 26 January 2010, BGBl. JG 2010 Part I No. 4.
EN ISO 17225-2	Solid bio-fuel - Fuel specifications and classes Part 2: Wood pellets for use in industrial and domestic systems
EN ISO 17225-3	Solid bio-fuel - Fuel specifications and classes Part 3: Wood briquettes for non-industrial use
EN ISO 17225-5	Solid bio-fuel - Fuel specifications and classes Part 5: Firewood for non-industrial use

3.2 Installation and approval

The boiler should be operated in a closed heating system. The following standards govern the installation:

Note on standards

EN 12828 - Heating Systems in Buildings

IMPORTANT: Every heating system must be officially approved.

The appropriate supervisory authority (inspection agency) must always be informed when installing or modifying a heating system, and authorisation must be obtained from the building authorities:

Austria: report to the construction authorities of the community or magistrate

Germany: report new installations to an approved chimney sweep / the building authorities.

3.3 Installation site

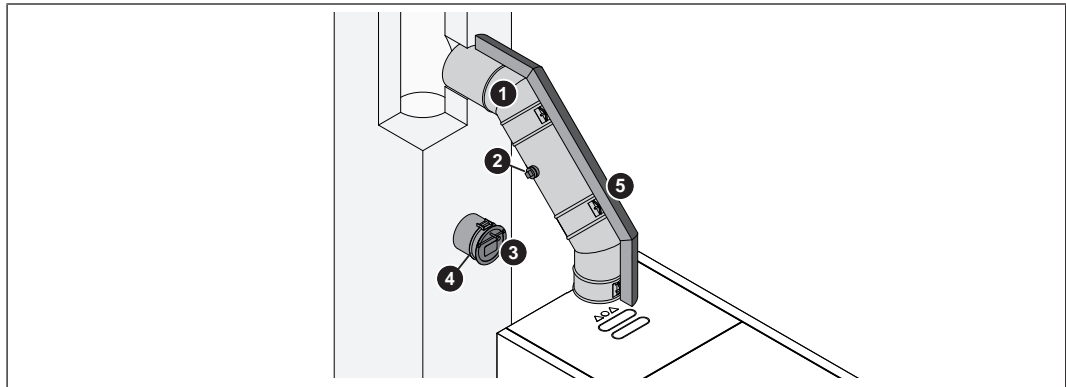
Requirements for the load bearing substrate:

- Flat, clean and dry
- Non-combustible and with sufficient load-bearing capacity

Conditions at the installation site:

- Frost-free
- Sufficiently well lit
- Free of explosive atmospheres such as flammable substances, hydrogen halides, cleaning agents and consumables
- Installation at altitude higher than 2000 metres above sea level only after consultation with the manufacturer
- The system must be protected against gnawing and nesting by animals (such as rodents)
- No flammable materials in proximity to the system

3.4 Chimney connection/chimney system



1	Connection line to the chimney
2	Measuring port
3	Draught limiter
4	Explosion flap (for automatic boilers)
5	Thermal insulation

NOTICE! The chimney must be authorised by a smoke trap sweeper or chimney sweep.

The entire flue gas system (chimney and connection) must be laid out as per ÖNORM / DIN EN 13384-1 or ÖNORM M 7515 / DIN 4705-1.

The flue gas temperatures (for clean systems) and additional flue gas values can be found in the table in the technical data.

Local regulations and other statutory regulations are also applicable.

EN 303-5 specifies that the entire flue gas system must be designed to prevent, wherever possible, damage caused by seepage, insufficient feed pressure and condensation. Please note within the permissible operating range of the boiler flue gas temperatures lower than 160K above room temperature may occur.

3.4.1 Connection line to the chimney

Requirements for the connection line:

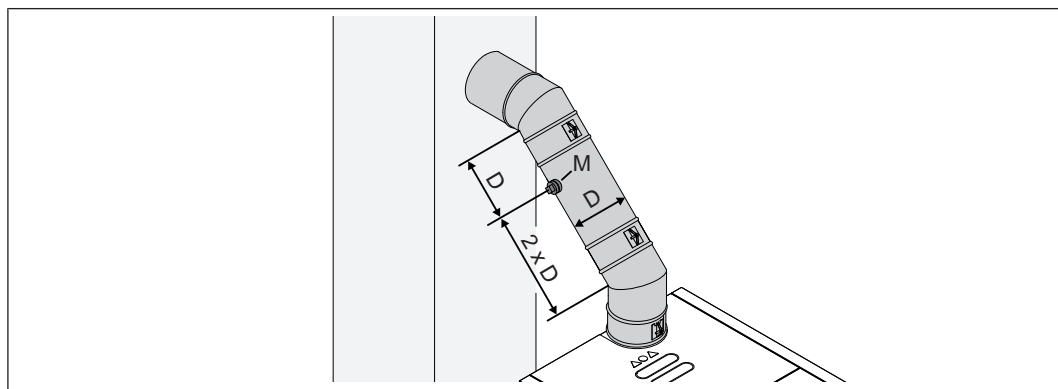
- This should be as short as possible and follow an upward incline to the chimney (30 - 45° (recommended))
- Leak-tight against overpressure
- Thermal insulation recommended

Distance from flammable components:

- 100 mm if at least 20 mm thermal insulation is installed
 - 375 mm if no thermal insulation is present
- Recommendation: three times the diameter of the connection line

3.4.2 Measuring port

For emissions measurement on the system, a suitable measuring port must be installed in the connection line between the boiler and chimney system.



Upstream of the measuring port (M) there should be a straight run-in section with a length about twice the diameter (D) of the connection line. Downstream of the measuring port (M) there should be a straight run-out section with a length about the diameter (D) of the connection line. The measuring port must remain closed whenever the system is in operation.

The diameter of the measuring probe used by Froling customer service is 14 mm. To avoid measuring errors due to the ingress of false air, the diameter of the measuring port must not exceed 21 mm.

3.4.3 Draught limiter

We generally recommend the installation of a draught limiter. A draught limiter must be installed if the maximum permissible feed pressure as given in the boiler data for planning the flue gas system is exceeded.

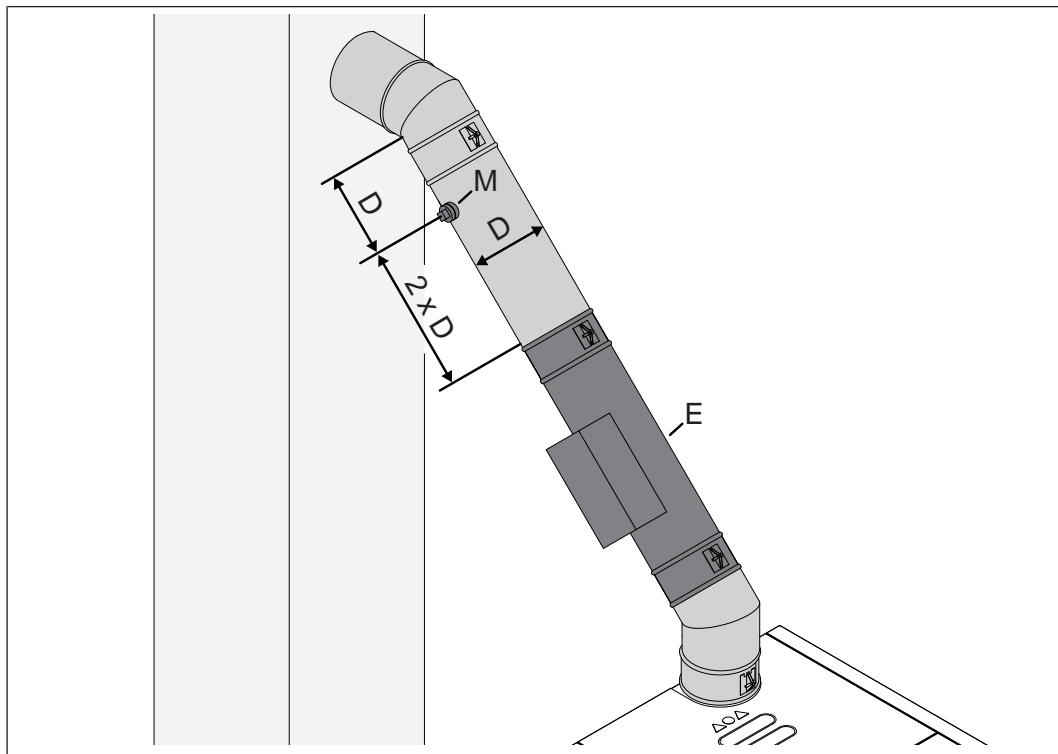
NOTICE! Install the draught limiter directly under the mouth of the flue line, as the pressure is constantly low at this point.

3.4.4 Explosion flap

TRVB H 118 (only Austria) stipulates that an explosion flap must be installed in the connection line to the chimney, directly next to the boiler. It should be situated in such a way that it poses no risk to persons!

3.4.5 Electrostatic particle separator

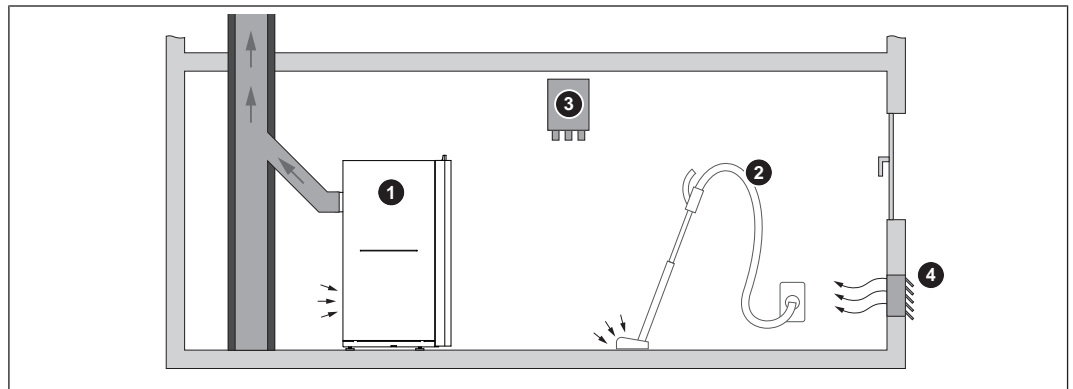
For reduction in the emissions an electrostatic particle separator may optionally be installed in the flue gas line.



For planning and installation, comply with the following points:

- Position the measuring port (M) downstream of the electrostatic particle separator (E) as specified in the instructions
[➡ "Measuring port" \[► 11\]](#)
- Locate the electrostatic particle separator in accordance with the planning for the flue gas system
- Install the electrostatic particle separator in accordance with the manufacturer's instructions supplied

3.5 Combustion air



- | | |
|---|--|
| 1 | Boiler in room air-dependent operation |
| 2 | Air extraction system (such as centralised dust extraction system, room ventilation) |
| 3 | Under-pressure monitoring system |
| 4 | Combustion air supply from outside |

3.5.1 Combustion air supply at the installation room

The system is operated in open flue mode, i.e. the combustion air required to operate the boiler is drawn from the installation room.

Requirements:

- Opening to the atmosphere
 - Weather conditions must not affect the air flow in any way (e.g. snow and foliage)
 - Cross-section area free of obstructions such as cover gratings and slats
- Air supply lines
 - For air supply lines longer than 2 metres and where mechanical means are used to feed combustion air, the flow rate must be calculated (maximum flow rate = 1 m/s)

Note on standards

ÖNORM H 5170 - Construction and fire protection requirements
TRVB H118 - Technical directives on fire protection/prevention

3.5.2 Simultaneous operation with other air-drawing systems

Where the boiler is operated in room air-dependent mode with simultaneous operation of other air-drawing systems (such as room ventilation), safety devices are necessary:

- Air pressure monitor
- Flue gas thermostat
- Window-tilting drive system, window-tilting switch

NOTICE! Clarify the safety devices with appropriate flue sweep / chimney sweep

Recommendation for room ventilation:

Use “intrinsically-safe” room ventilation systems with F classification

As a basic rule:

- Room under-pressure max. 8 Pa
- Air-drawing systems must not exceed the room under-pressure value
 - If the room under-pressure value is exceeded, safety equipment (under-pressure monitoring system) is necessary

In Germany, the following additional requirement must be observed:

DiBt requires that an approved under-pressure monitoring system (such as air pressure monitor P4) which monitor the maximum under-pressure to 4 Pa must be installed in the installation room.

In addition, at least one of the following three requirements must be met:

(Source: Section 4 MFeuV 2007 / 2010)

- Dimension the cross-section of the combustion air opening so that when the boiler is in operation the maximum under-pressure is not exceeded (simultaneous operation)
- Use safety equipment that prevents simultaneous operation (alternate operation)
- Monitor the flue gas outlet using safety devices (such as a flue gas thermostat)

Simultaneous operation

An approved safety system (such as an air pressure monitor) ensures that during simultaneous operation of the boiler and the air-drawing appliance the pressure conditions are maintained. In the event of a fault, the safety system will switch off one of the air-drawing systems.

Alternating operation

An approved safety system (such as a flue gas thermostat) ensures (e.g. by switching off the power supply) that the boiler cannot be operated simultaneously with the air-drawing appliance.

3.6 Domestic hot water

Unless contrary to other national regulations, the latest versions of the following standards and guidelines apply:

Austria:	ÖNORM H 5195	Switzerland:	SWKI BT 102-01
Germany:	VDI 2035	Italy:	UNI 8065

Observe the standards and also follow the recommendations below:

- ☐ Aim for a pH value of between 8.2 and 10.0. If the central heating water comes into contact with aluminium, the pH value must be between 8.0 and 8.5
- ☐ Use prepared water which complies with the standards cited above for filling and make-up water
- ☐ Avoid leaks and use a closed heating system to maintain water quality during operation
- ☐ When filling with make-up water, always bleed the filling hose before connecting, in order to prevent air from entering the system

Advantages of prepared water:

- Complies with the applicable standards
- Less of a drop in output due to reduced limescale build-up
- Less corrosion due to fewer aggressive substances
- Long-term cost savings thanks to improved energy efficiency

Permitted water hardness for the fill and make-up water in accordance with VDI 2035:

Overall heat output	Total hardness at <20 l/kW minimum individual heat output ¹⁾		Total hardness at >20 ≤50 l/kW minimum individual heat output ¹⁾		Total hardness at >50 l/kW minimum individual heat output ¹⁾	
kW	°dH	mol/m³	°dH	mol/m³	°dH	mol/m³
≤50	no demand or		11.2	2	0.11	0.02
	<16.8 ²⁾	<3 ²⁾				
>50 ≤200	11.2	2	8.4	1.5		
>200 ≤600	8.4	1.5	0.11	0.02		
>600	0.11	0.02				

1. From specific system volume (litres nominal capacity/heat output; for multi-boiler systems use the smallest individual heat output)

2. In the case of systems with central heating boilers and for systems with electric heating elements

Additional requirements for Switzerland

The filling and make-up water must be demineralised (fully purified)

- The water must not contain any ingredients that could settle and accumulate in the system
- This makes the water non-electroconductive, which prevents corrosion
- It also removes all the neutral salts such as chloride, sulphate and nitrate which can weaken corrosive materials in certain conditions

If some of the system water is lost, e.g. during repairs, the make-up water must also be demineralised. It is not enough to soften the water. The heating system must be professionally cleaned and rinsed before filling the units.

Inspection:

- After eight weeks, the pH value of the water must be between 8.2 and 10.0. If the central heating water comes into contact with aluminium, the pH value must be between 8.0 and 8.5
- Yearly. Values must be recorded by the owner

3.7 Pressure maintenance systems

Pressure maintenance systems in hot-water heating systems keep the required pressure within predefined limits and balance out volume variations caused by changes in the hot-water temperature. Two main systems are used:

Compressor-controlled pressure maintenance

In compressor-controlled pressure maintenance units, a variable air cushion in the expansion tank is responsible for volume compensation and pressure maintenance. If the pressure is too low, the compressor pumps air into the tank. If the pressure is too high, air is released by means of a solenoid valve. The systems are built solely with closed-diaphragm expansion tanks to prevent the damaging introduction of oxygen into the heating water.

Pump-controlled pressure maintenance

A pump-controlled pressure maintenance unit essentially consists of a pressure-maintenance pump, relief valve and an unpressurised receiving tank. The valve releases hot water into the receiving tank if the pressure is too high. If the pressure drops below a preset value, the pump draws water from the receiving tank and feeds it back into the heating system. Pump-controlled pressure maintenance systems with **open expansion tanks** (e.g. without a diaphragm) introduce ambient oxygen via the surface of the water, exposing the connected system components to the risk of corrosion. These systems offer no oxygen removal for the purposes of corrosion control as required by VDI 2035 and **in the interests of corrosion protection should not be used.**

3.8 Storage tank

Observe the regional regulations for using a storage tank!

Certain subsidy guidelines prescribe compulsory requirements for the installation of storage tanks. Up-to-date information about individual subsidy guidelines can be found at www.froeling.com.

Channelling the heat generated by the Dual fuel boiler to a storage tank can bring major advantages, such as

- better utilisation of fuel
- more user-friendly operation in terms of reloading intervals
- maximum independence from instantaneous heating requirements
- minimal dirt in boiler and flue gas system

As the boiler's minimum continuous heat output is 30% above the nominal heat output, we as boiler manufacturer are obliged under EN 303-5:2012, Section 4.4.6 to advise that the Dual fuel boiler SP Dual must always be connected to a storage tank with adequate storage capacity.

Certain countries have recommended storage capacities; these are listed below. The specified values apply when the nominal heat output of the boiler corresponds to the heating requirements of the building and a maximum of 50% of the nominal heat output can be dissipated to the building being heated under partial load conditions.

The storage tank capacity can be calculated according to EN 303-5:2012 using the following formula:

$V_{Sp} = 15 T_B \times Q_N / (1 - 0.3 \times Q_H / Q_{min})$	
V_{Sp}	Storage tank capacity in [l]
Q_N	Nominal heat output of boiler in [kW]
T_B	Burn-off period of boiler in [h] ¹⁾
Q_H	Heating load of building in [kW]
Q_{min}	Minimum heat output of boiler in [kW] ²⁾
1. Sample combustion times for various fuels are provided in the technical data	
2. The boiler's minimum output is the lowest value of the output range in the technical data. If there is no minimum heat output specified, use the nominal heat output ($Q_{min} = Q_N$)	

For the correct dimensions of the storage tank and the line insulation (for instance to ÖNORM M 7510 or guideline UZ37) please consult your installer or Fröling.

Recommended storage tank capacity:

	Unit	SP Dual 22-28	SP Dual 32-40
Recommended storage tank capacity ¹⁾	[l]	2000	2500
1. Values for calculating the capacity can be found in the technical data or the technical data with partial load inspection (if available)			

The exact design of the storage tank capacity is in accordance with the locally applicable guidelines and regulations:

Austria According to the relevant Austrian laws governing energy technology, which are based on Art. 15a B-VG "Agreement on protective measures for small furnaces" (2012):

No storage tank is required on manually fed biomass boilers that have been positively tested at both nominal load and partial load (below 50% of nominal load) to ensure they adhere to the emissions limits specified in that agreement.

Germany The first BImSchV (Ordinance on small and medium-sized heating plants of 26 January 2010, BGBl. I P. 38) stipulates a minimum water heat storage tank volume of 55 litres per kilowatt of rated heat output; a water heat storage tank with a volume of 12 litres per litre of fuel loading chamber is recommended.

Switzerland In accordance with the Swiss Federal Ordinance on Air Pollution Control (LRV 2018), appendix 3, paragraph 523 "Special requirements for boilers", hand-fed boilers up to 500 kW rated heat output must be fitted with a minimum heat storage tank volume of 12 litres per litre of fuel loading chamber. The volume may not fall below 55 litres per kW rated heat output.

3.9 Return lift


If the hot water return is below the minimum return temperature, some of the hot water outfeed will be mixed in.

CAUTION

Risk of dropping below dew point/condensation formation if operated without return temperature control.



Condensation water forms an aggressive condensate when combined with combustion residue, leading to damage to the boiler.

Take the following precautions:


- ☐ Regulations stipulate the use of a return temperature control.
 -  The minimum return temperature is 60 °C. We recommend fitting some sort of control device (e.g. thermometer).

3.10 Boiler ventilation



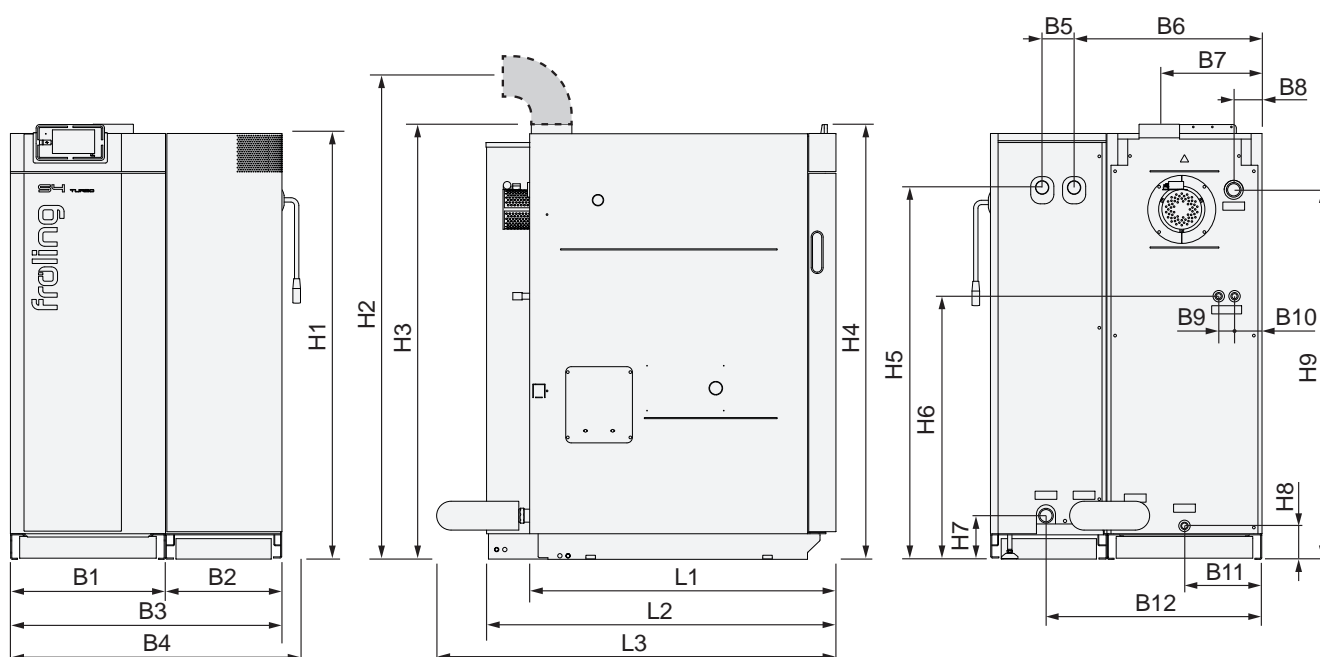
- ☐ Fit the automatic ventilating valve at the highest point on the boiler or at the ventilation connection (if present).
 -  This ensures that air in the boiler is constantly expelled, thus preventing malfunctions caused by air in the boiler
- ☐ Check that the boiler ventilation is working properly
 -  After installation and periodically according to manufacturer's instructions

Tip: ☐ Fit a vertical pipe as a calming section in front of the automatic ventilating valve in such a way that the ventilating valve is positioned above the water level in the boiler

Recommendation: ☐ Fit a microbubble separator in the pipes to the boiler
 Follow the manufacturer's instructions!

4 Technology

4.1 SP Dual measurements

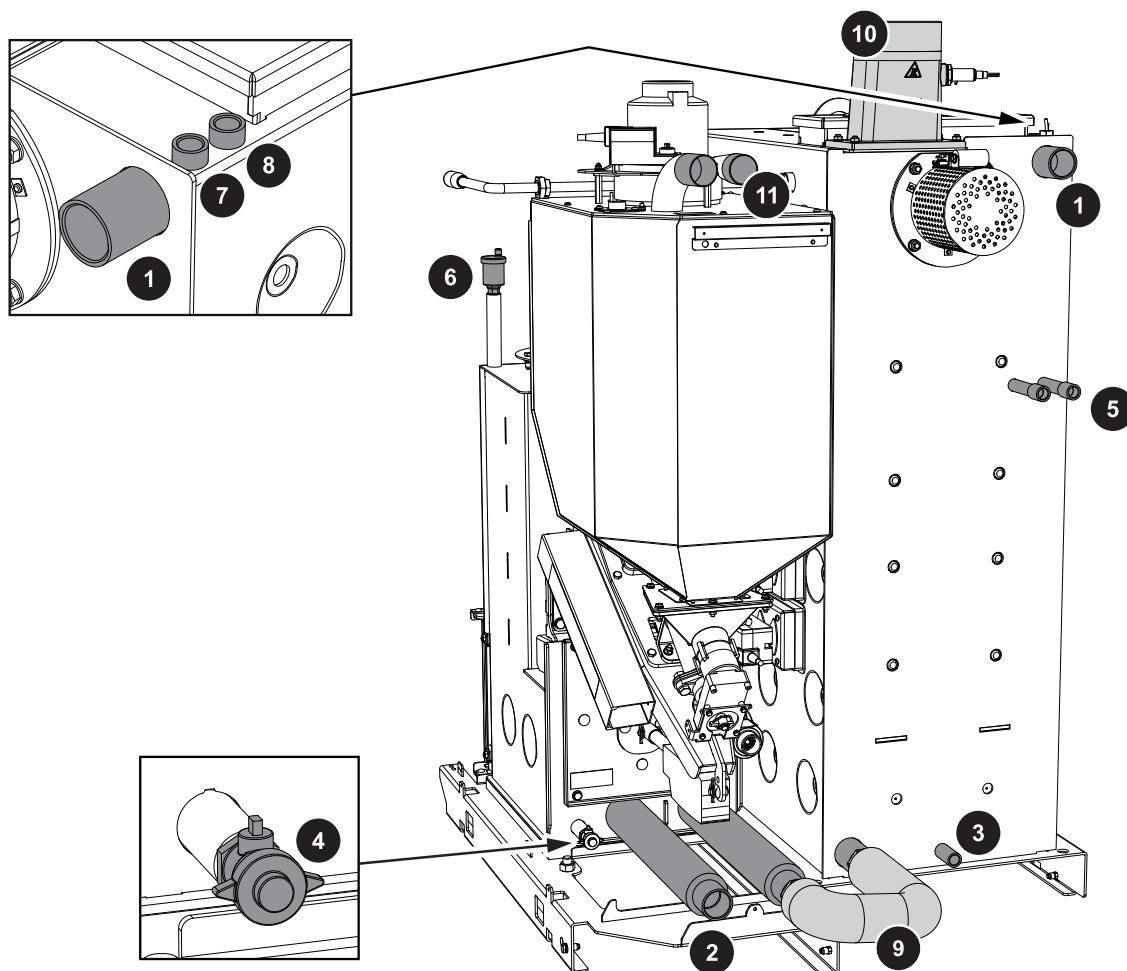


Dimension	Description	Unit	22-28	32-40
L1	Length, firewood boiler	mm	1125	1215
L2	Length, pellet unit		1285	1375
L3	Total length including pipe bend		1470	1560
B1	Width, firewood boiler		570	670
B2	Width, pellet unit		430	430
B3	SP Dual width		1000	1100
B4	Total width including WOS lever		1065	1165
B5	Distance between hose line connections		125	115
B6	Distance between hose line connection and side of boiler		685	790
B7	Distance between flue gas pipe connection and side of boiler		380	430
B8	Distance between flow connection and side of boiler		105	105
B9	Distance between safety heat exchanger connections		60	80
B10	Distance between safety heat exchanger connection and side of boiler		100	115
B11	Distance between drainage connection and side of boiler		285	335
B12	Distance between return connection and side of boiler		795	895
H1	Height, pellet unit		1565	1565
H2	Height of flue gas pipe connection ¹⁾		1705	1705
H3	Total height incl. flue gas nozzle		1600	1600
H4	Height, firewood boiler		1600	1600
H5	Height of hose line connection		1360	1360
H6	Height, safety heat exchanger connection		970	970

Dimension	Description	Unit	22-28	32-40
H7	Height, return connection		160	160
H8	Height, drainage connection		125	125
H9	Height, flow connection		1360	1360

1. When using the optional flue pipe nozzle for low chimney connections

4.2 Components and connections



Item	Description	22-40
1	Boiler flow connection	6/4" IT
2	Boiler return connection	6/4" IT
3	Firewood boiler drainage connection	1/2" IT
4	Pellet unit drainage	1/2" IT
5	Safety heat exchanger connection	1/2" IT
6	Pellet unit venting	1/2" IT
7	Position for boiler sensor and STL capillary (internal diameter)	16 mm
8	Immersion sleeve sensor connection for thermal discharge valve (customer supply)	1/2" IT
9	Pipe union ¹⁾ - Pellet unit outfeed to firewood boiler return	6/4" IT
10	Flue gas pipe connection (external diameter)	149 mm
11	Hose lines connection (external diameter)	50 mm

Item	Description	22-40
1. Included in delivery		

4.3 Technical specifications

4.3.1 SP Dual 22/28

Technical specifications of the firewood boiler

Refer to the relevant assembly instructions for technical specifications and information regarding efficiency and emissions in firewood operation.

Technical specifications of the pellet unit

Description		SP Dual	
		22	28
Rated heat output	kW	22	25
Output range during the pellet operation	kW	4.7 – 22	4.7 – 25
Electrical connection		230 V / 50 Hz / C16A	
Power consumption in pellet mode	W	38 - 67	38 - 70
Power consumption in slumber mode	W	3	
Boiler weight incl. pellet unit	kg	955	965
Weight of pellet unit	kg	310	315
Total boiler capacity (water)	L	157	
Pellet container capacity	l	90	
Water pressure drop ($\Delta T = 10 / 20 \text{ K}$)	mbar	14.5 / 7.5	18.5 / 5.9
Min. boiler return temperature	°C	60	
Max. permitted operating temperature	°C	90	
Permitted operating pressure	bar	3	
Boiler class as per EN 303-5:2012		5	
Permitted fuel as per EN ISO 17225		Part 2: Wood pellets class A1 / D06	
Airborne sound level	dB(A)	< 70	
Test book number		PB 041	PB 042

Regulation (EU) 2015/1187		SP Dual	
		22	28
Energy efficiency class of boiler		A+	A+
Energy efficiency index (EEI) of boiler		117	118
Heating space annual rate of use η_s	%	80	80
Energy efficiency index (EEI) of boiler and controller combined		119	120
Energy efficiency class of boiler and controller combined		A+	A+

Additional data for regulation (EU) 2015/1189

Description		SP Dual	
		22	28
Heating up mode		automatic	
Condensing boiler		No	
Solid fuel boiler for combined heat and power		No	
Combined heating system		No	
Storage tank volume		↻ "Storage tank" [► 17]	
Characteristics when operated exclusively with the preferred fuel			
Useful heat delivered at rated heat output (P_n)	kW	21.1	23.7
Useful heat delivered at 30% of rated heat output (P_p)		4.7	4.7
Fuel efficiency at rated heat output (η_n)	%	86.5	86.4
Fuel efficiency at 30% of rated heat output (η_p)		83.7	83.7
Auxiliary current consumption at rated heat output ($e_{l_{max}}$)	kW	0.067	0.070
Auxiliary current consumption at 30% of rated heat output (η_p)		0.038	0.038
Auxiliary current consumption in standby mode (P_{SB})		0.012	0.012

Regulation (EU) 2015/1189 – emissions in [mg/m ³] ¹⁾	
Annual space heating emissions of dust (PM)	≤ 30
Annual space heating emissions of gaseous organic compounds (GOC)	≤ 20
Annual space heating emissions of carbon monoxide (CO)	≤ 380
Annual space heating emissions of nitrogen oxides (NO _x)	≤ 200
1. The emissions of dust, gaseous organic compounds, carbon monoxide and nitrogen oxides are stated in a standardised form based on dry flue gas with a oxygen content of 10 % and under standard conditions at 0°C and 1013 millibar	

4.3.2 SP Dual 32/34/40

Technical specifications of the firewood boiler

Refer to the relevant assembly instructions for technical specifications and information regarding efficiency and emissions in firewood operation.

Technical specifications of the pellet unit

Description		SP Dual		
		32 ¹⁾	34	40
Rated heat output	kW	32	34	38
Output range during the pellet operation	kW	9.2 - 32	9.2 - 34	9.2 – 38
Electrical connection		230 V / 50 Hz / C16A		
Power consumption in pellet mode	W	40 - 72	41 - 73	41 - 73
Power consumption in slumber mode	W	3		
Boiler weight incl. pellet unit	kg	1055	1065	1075
Weight of pellet unit	kg	320	325	330
Total boiler capacity (water)	L	220		
Pellet container capacity	l	103		
Water pressure drop ($\Delta T = 10 / 20 \text{ K}$)	mbar	37.0 / 8.2	37.0 / 8.2	37.0 ²⁾ / 15
Min. boiler return temperature	°C	60		
Max. permitted operating temperature	°C	90		
Permitted operating pressure	bar	3		
Boiler class as per EN 303-5:2012		5		
Permitted fuel as per EN ISO 17225		Part 2: Wood pellets class A1 / D06		
Airborne sound level	dB(A)	< 70		
Test book number		PB 108	PB 053	PB 052
1. SP Dual 32 only available in Italy				
2. Water pressure drop at $\Delta T = 12\text{K}$				

Regulation (EU) 2015/1187		Pellet unit – SP Dual		
		32	34	40
Energy efficiency class of boiler		A+	A+	A+
Energy efficiency index (EEI) of boiler		119	120	120
Heating space annual rate of use η_s	%	81	82	82
Energy efficiency index (EEI) of boiler and controller combined		121	122	122
Energy efficiency class of boiler and controller combined		A+	A+	A+

Additional data for regulation (EU) 2015/1189

Description		Pellet unit, SP Dual		
		32	34	40
Heating up mode		automatic		
Condensing boiler		No		
Solid fuel boiler for combined heat and power		No		
Combined heating system		No		
Storage tank volume		↻ "Storage tank" [► 17]		
Characteristics when operated exclusively with the preferred fuel				
Useful heat delivered at rated heat output (P_n)	kW	32	35.1	38
Useful heat delivered at 30% of rated heat output (P_p)		8.2	9.2	9.2
Fuel efficiency at rated heat output (η_n)	%	86.7	86.8	86.8
Fuel efficiency at 30% of rated heat output (η_p)		85.0	85.5	85.5
Auxiliary current consumption at rated heat output ($e_{l_{max}}$)	kW	0.083	0.073	0.073
Auxiliary current consumption at 30% of rated heat output (η_p)		0.040	0.041	0.041
Auxiliary current consumption in standby mode (P_{SB})		0.013	0.011	0.011

Regulation (EU) 2015/1189 – emissions in [mg/m ³] ¹⁾	
Annual space heating emissions of dust (PM)	≤ 30
Annual space heating emissions of gaseous organic compounds (GOC)	≤ 20
Annual space heating emissions of carbon monoxide (CO)	≤ 380
Annual space heating emissions of nitrogen oxides (NO _x)	≤ 200
1. The emissions of dust, gaseous organic compounds, carbon monoxide and nitrogen oxides are stated in a standardised form based on dry flue gas with a oxygen content of 10 % and under standard conditions at 0°C and 1013 millibar	

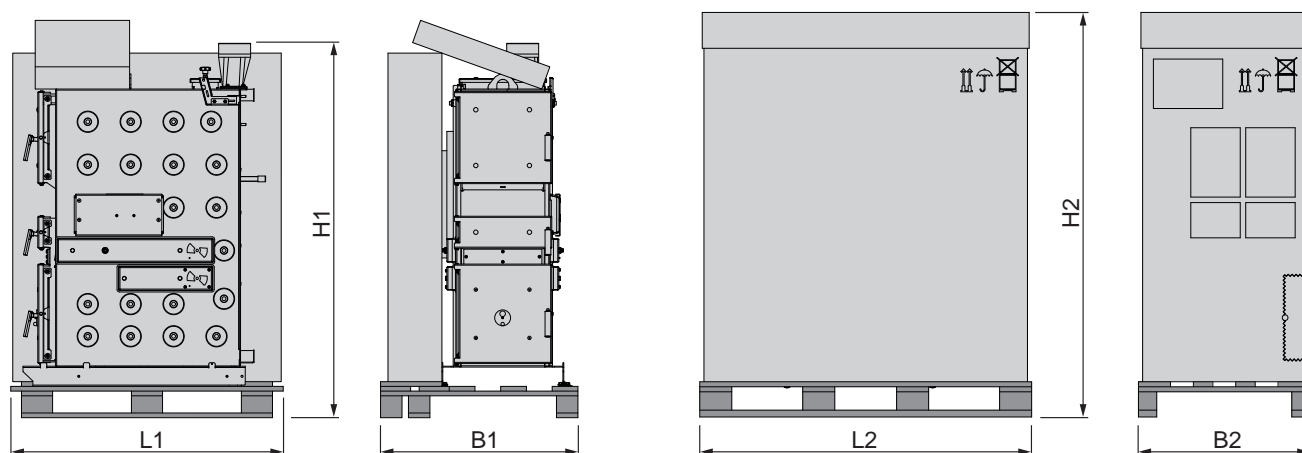
4.3.3 Boiler data for planning the flue gas system

The chimney design data is the same as the values of the S4 Turbo firewood boiler.

Name		SP Dual			
		22	28	32/34	40
Flue gas temperature at nominal load	°C	160	180	140	170
Flue gas temperature at partial load		110	130	110	130
CO ₂ - volume concentration at nominal load / partial load	%	12.3 / 9			
Flue gas mass flow at nominal load	kg/s	0.016	0.021	0.025	0.030
Flue gas mass flow at partial load		0.007	0.010	0.012	0.015
Required feed pressure at nominal load	Pa	8			
	mbar	0.08			
Required feed pressure at partial load	Pa	8			
	mbar	0.08			
Maximum permissible feed pressure	Pa	30			
	mbar	0.3			
Flue pipe diameter	mm	149			

5 Transport and storage

5.1 Delivery configuration



Item	Description	Unit	Pellet unit, SP Dual	
			22-28	32-40
L1	Length, firewood boiler	mm	1270	
L2	Length, pellet unit		1450	
B1	Width, firewood boiler		920	
B2	Width, pellet unit		750	
H1	Height, firewood boiler		1750	
H2	Height, pellet unit		1770	
-	Weight of firewood boiler	kg	665	755
	Weight, pellet unit		320	330

5.2 Temporary storage

If the system is to be assembled at a later stage:

- ☐ Store components at a protected location, which is dry and free from dust
 - ↳ Damp conditions and frost can damage components, particularly electric ones!

5.3 Positioning

NOTICE



Damage to components if handled incorrectly

- ☐ Follow the transport instructions on the packaging
- ☐ Transport components with care to avoid damage
- ☐ Protect the packaging against damp conditions
- ☐ Pay attention to the pallet's centre of gravity when lifting

- ☐ Position a fork-lift or similar lifting device at the pallet and bring in the components

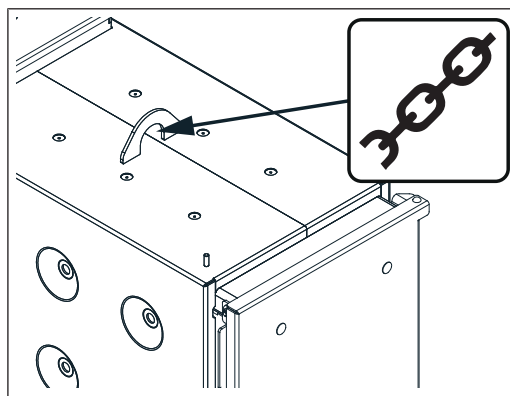
If the firewood boiler cannot be brought in on the pallet:

- ☐ remove the cardboard and take the boiler off the pallet
- ➔ "Remove boiler from pallet" [▶ 28]

If the pellet unit cannot be brought in on the pallet:

- ☐ Remove the cardboard and take the pellet unit off the pallet
- ➔ "Removing the pellet unit from the pallet" [▶ 29]

Positioning using a crane

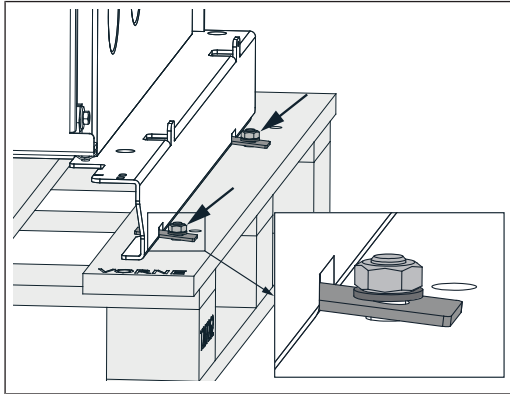


- ☐ Attach the crane hook to the attachment point correctly and position the boiler

5.4 Positioning at the installation site

5.4.1 Remove boiler from pallet

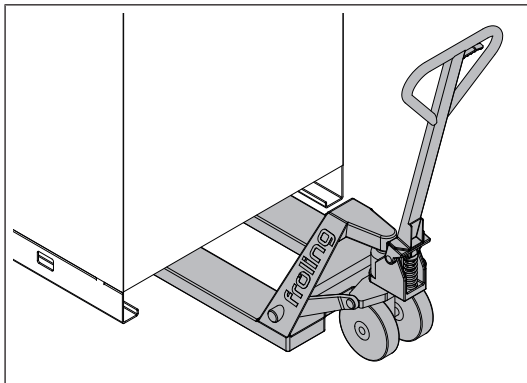
- ☐ Remove the cardboard with the controller from the boiler and put in a safe place
- ☐ Lift the cardboard box with the insulation from the pallet



- ☐ Remove the transport locks on both sides
- ☐ Lift boiler from pallet

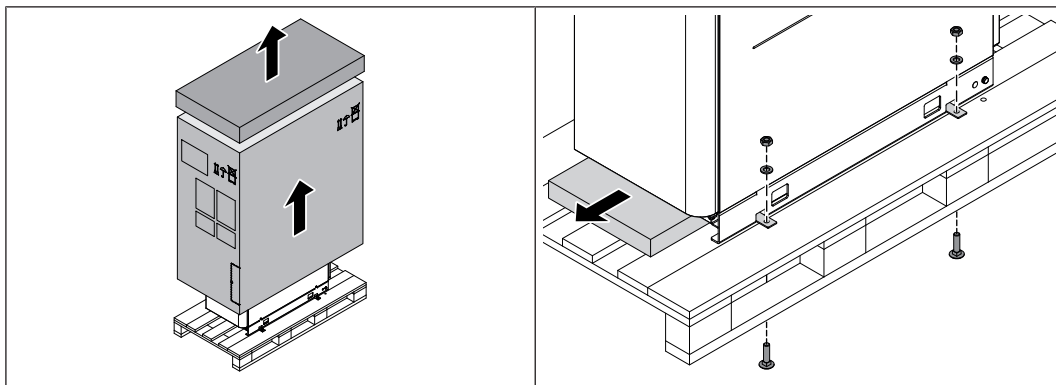


TIP: use Froling's KHV 1400 boiler lifting system to help remove the pallet!



- ☐ Position a fork-lift or similar lifting device with a suitable load-bearing capacity at the base frame
- ☐ Lift it and transport it to the intended position
 - ↳ Observe the operating and maintenance areas of the equipment in the process!

5.4.2 Removing the pellet unit from the pallet

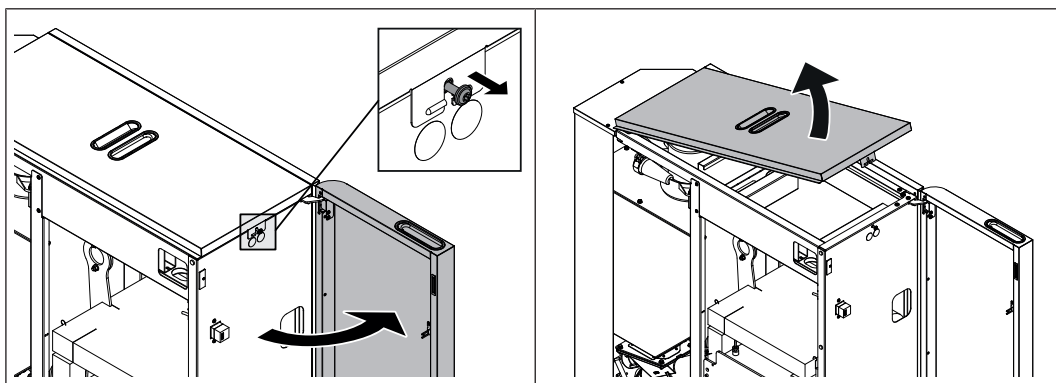


- ☐ Lift off the cardboard box
- ☐ Remove the transport restraints from the pallet
- ☐ Pull out floor insulation
- ☐ Remove the pellet unit from the pallet

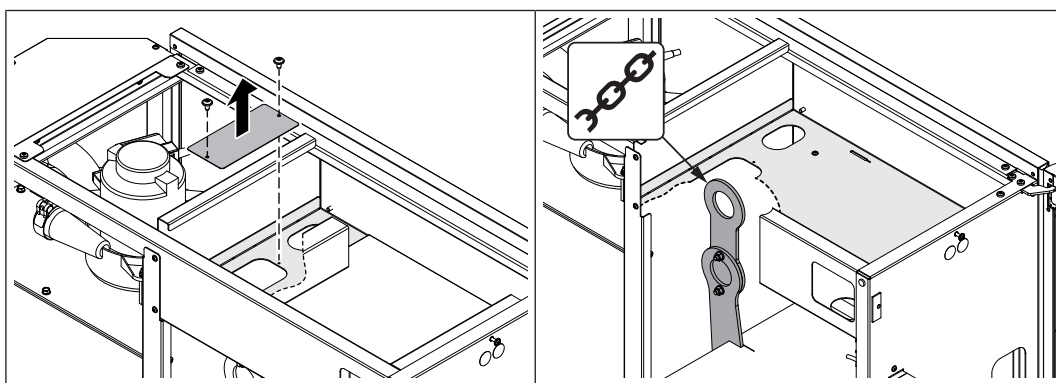


TIP: use Froling's KHV 1400 boiler lifting system to help remove the pallet!

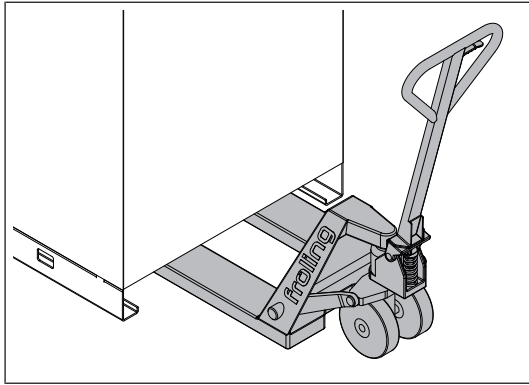
For lifting with a crane:



- ☐ Open the insulated door and undo the safety screws located behind it
- ☐ Lift the cover slightly and remove it from the front



- ☐ Remove the cover behind the controller box
- ☐ Secure the crane hook to the crane eye below and lift the pellet unit

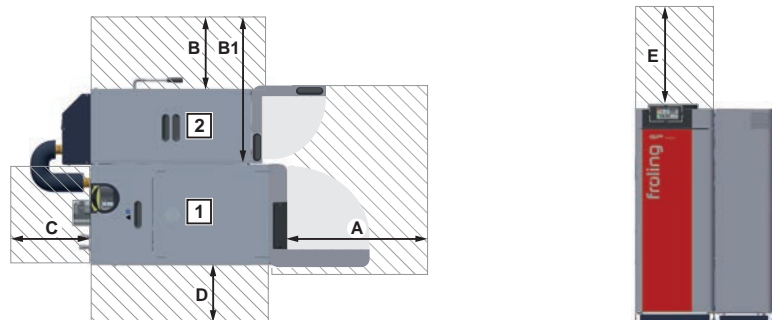


- ☐ Position a fork-lift or similar lifting device with a suitable load-bearing capacity at the base frame
- ☐ Lift it and transport it to the intended position
 - Observe the operating and maintenance areas of the equipment in the process!

5.4.3 Operating and maintenance areas of the equipment

- The system should generally be set up so that it is accessible from all sides allowing quick and easy maintenance.
- Regional regulations regarding necessary maintenance areas for inspecting the chimney should be observed in addition to the specified distances!
- Observe the applicable standards and regulations when setting up the system.
- Observe additional standards for noise protection!
(ÖNORM H 5190 - Noise protection measures)

Operating and maintenance areas of the SP Dual



1... Firewood boiler S4 Turbo F | 2... Pellet unit

	SP Dual 22-28	SP Dual 32-40
A	800 mm	
W	600 / 300 mm ¹⁾	700 / 400 mm ¹⁾
W1	1030 / 730 mm ¹⁾	1130 / 830 mm ¹⁾
C	500 mm	
D	200 / 800 mm ²⁾	
E	500 mm ³⁾	
1. When using the optional WOS drive or WOS lever on the left-hand side		
2. When using the WOS lever on the left-hand side		
3. Maintenance area to expand the WOS springs upwards		

6 Installation

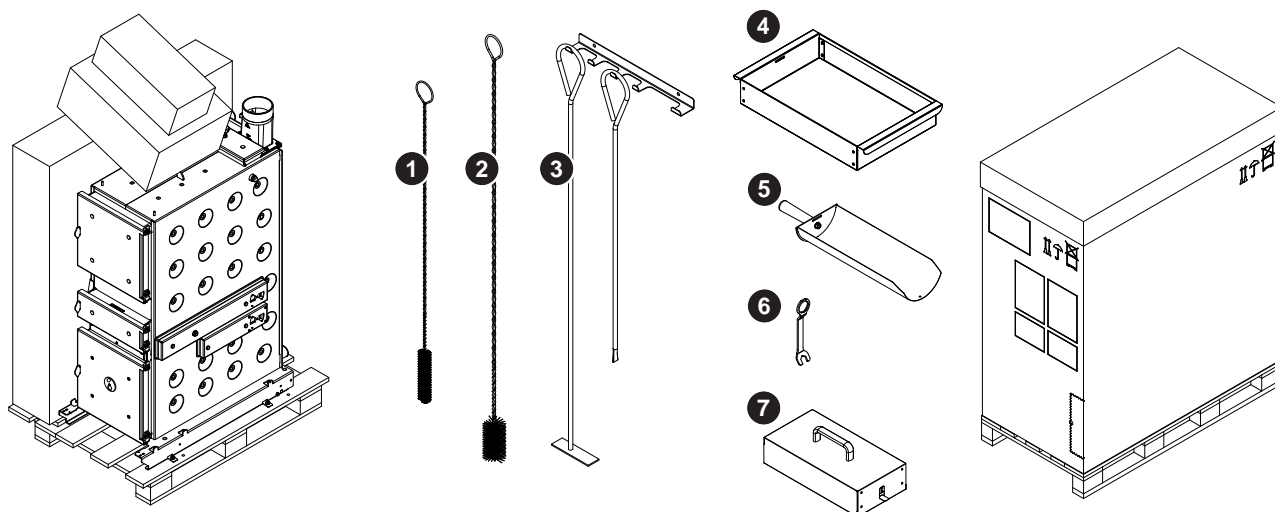
6.1 Required accessories and tools



The following accessories and tools are required for assembly:

- ☐ Spanner or box wrench set (widths across flats 8 - 32 mm)
- ☐ Set of Allen keys
- ☐ Flat head and cross-head screwdrivers
- ☐ Hammer
- ☐ Diagonal cutting pliers
- ☐ Half-round file
- ☐ Power drill or cordless screwdriver with Torx bit insert
- ☐ Stepladder

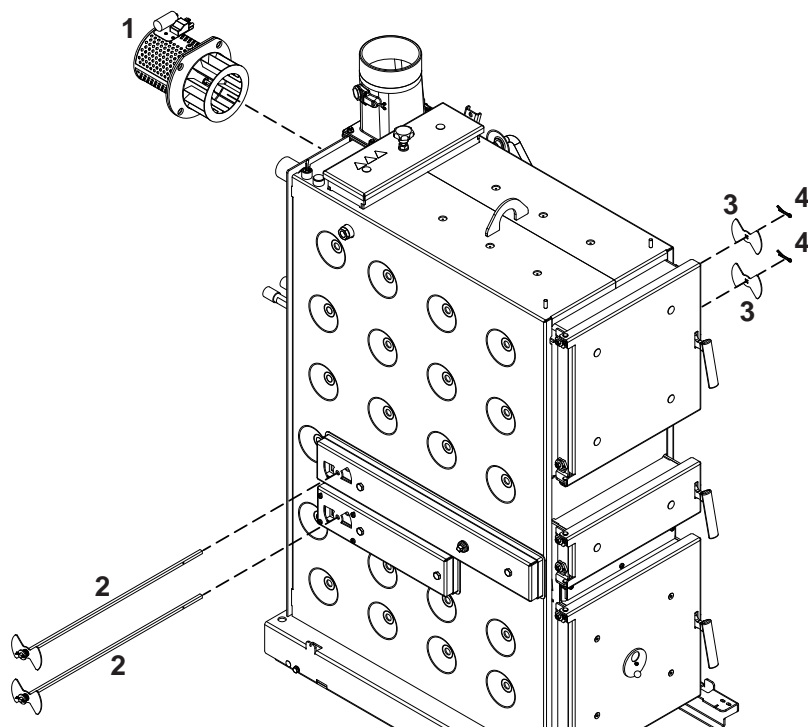
6.2 Accessories supplied



1	Cleaning brush 30 x 20 x 90	5	Ash shovel
2	Cleaning brush Ø 54 x 1350	6	Spanner for door mountings
3	Furnace tool with bracket	7	Transport cover for ash drawer
4	Ash drawer with bracket	8	

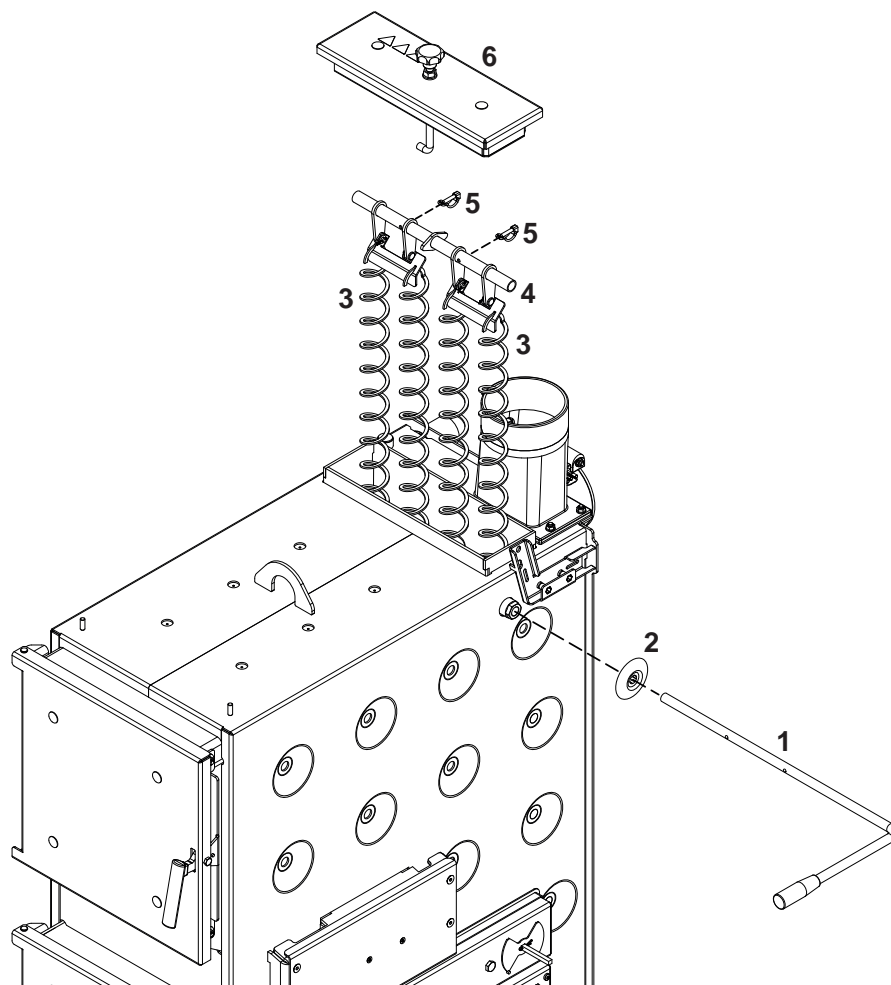
6.3 Assembly overview S4 Turbo F

6.3.1 Air duct system



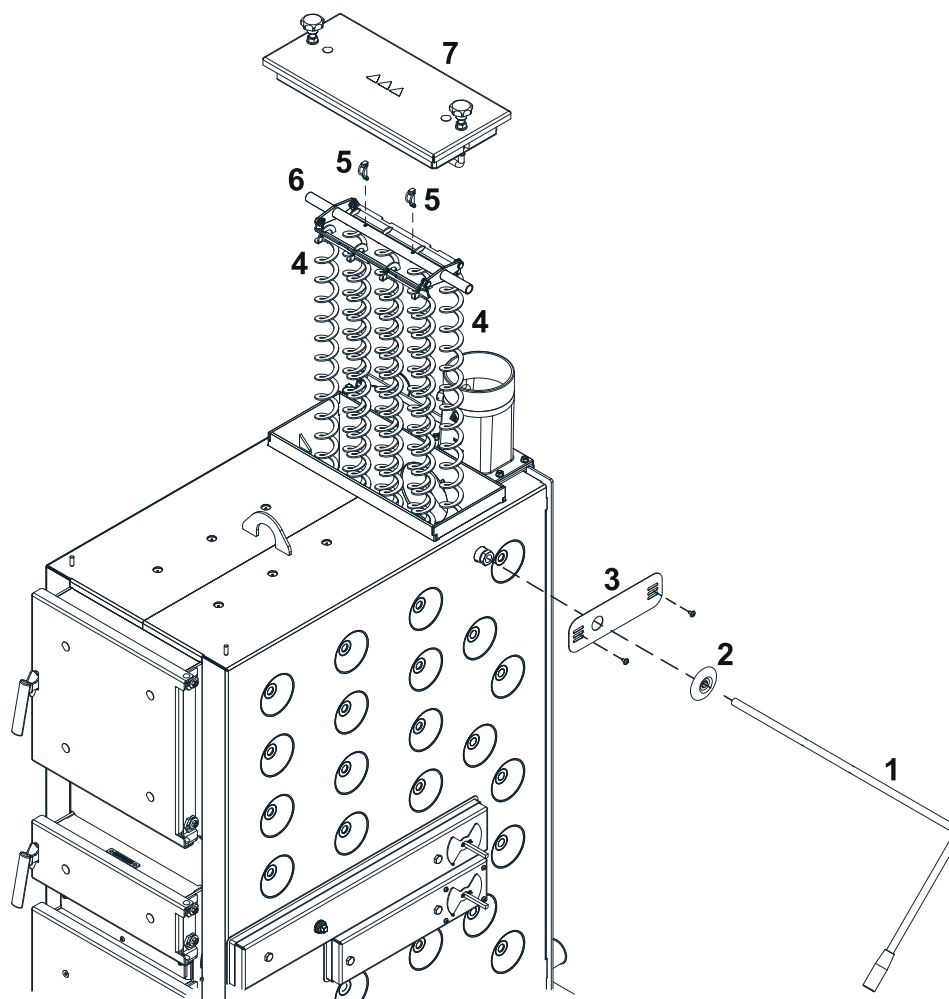
Item	Quantity	Description
1	1	Induced draught fan
2	2	Pneumatic rods with air flap and springs
3	2	Air flap
4	2	Split pin

6.3.2 S4 Turbo 22-28 WOS system



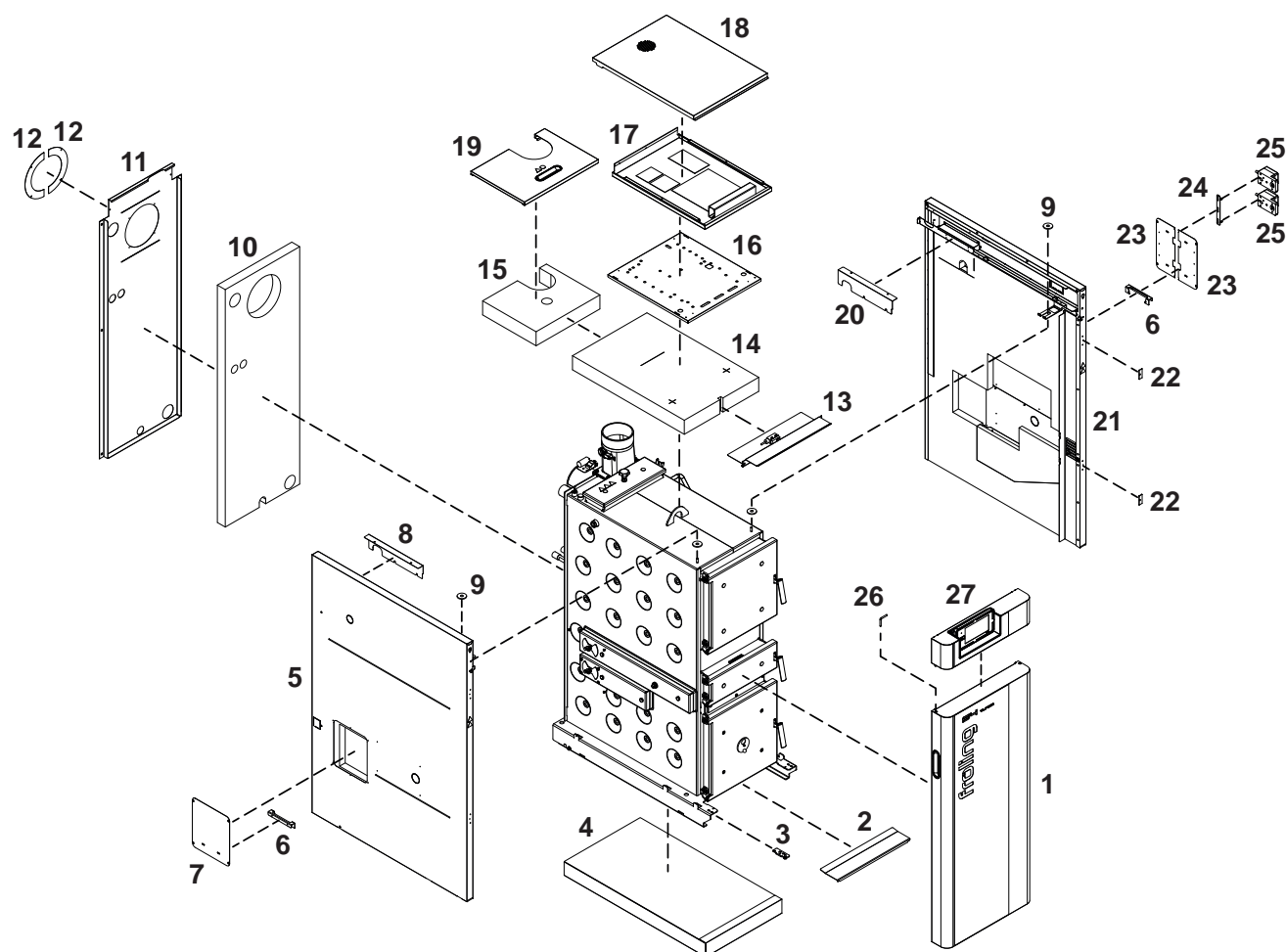
Item	Quantity	Description
1	1	WOS lever
2	1	Plastic cover
3	4	EOS turbulator
4	1	Stay tube EOS, simple
5	2	Pipe locking pin
6	1	Heat exchanger cover

6.3.3 S4 Turbo 32-40 EOS system



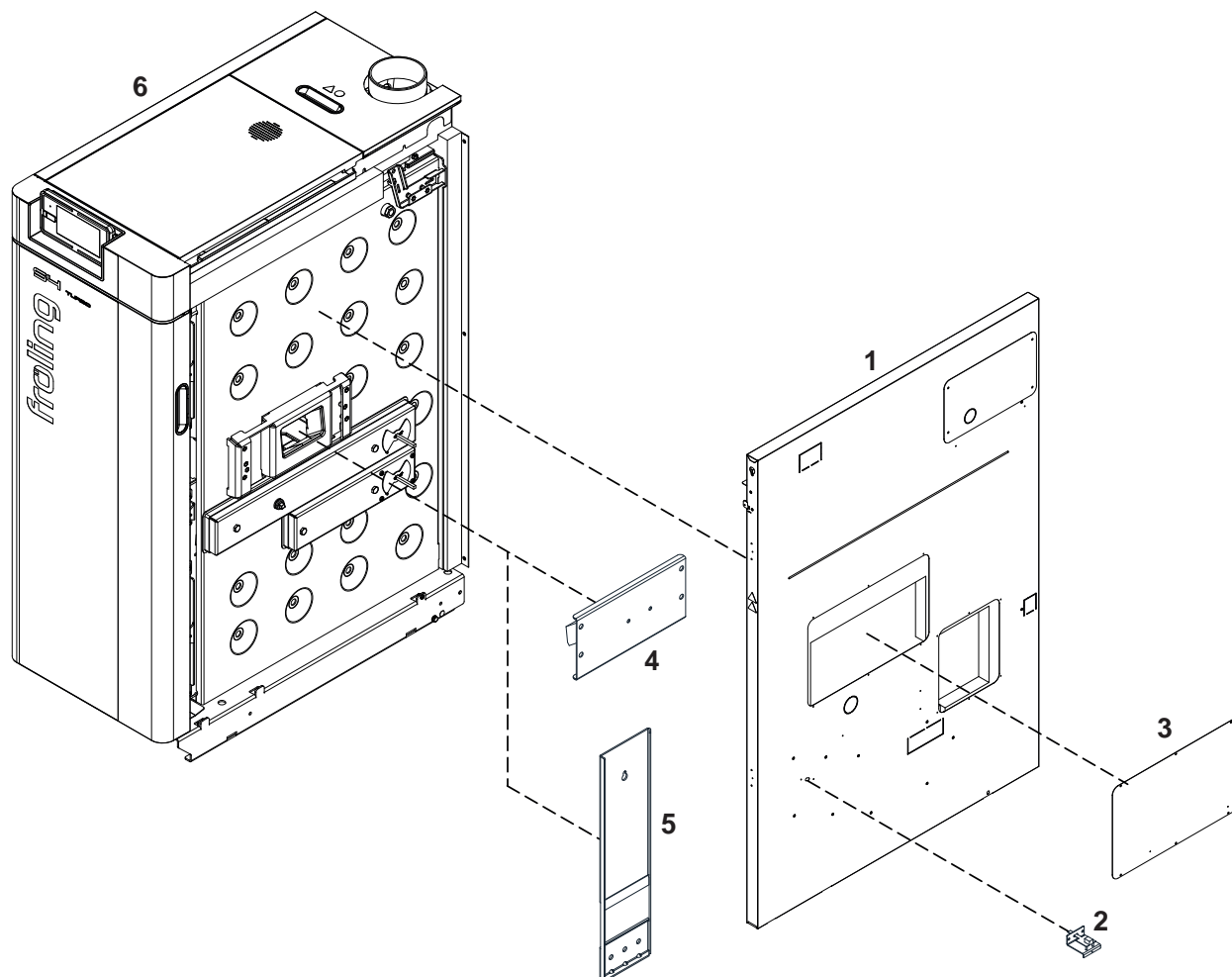
Item	Quantity	Description
1	1	WOS lever
2	1	Plastic cover
3	1	Cover plate
4	8	EOS turbulator
5	2	Pipe locking pin
6	1	Stay tube EOS, double
7	1	Heat exchanger cover

6.3.4 Insulation



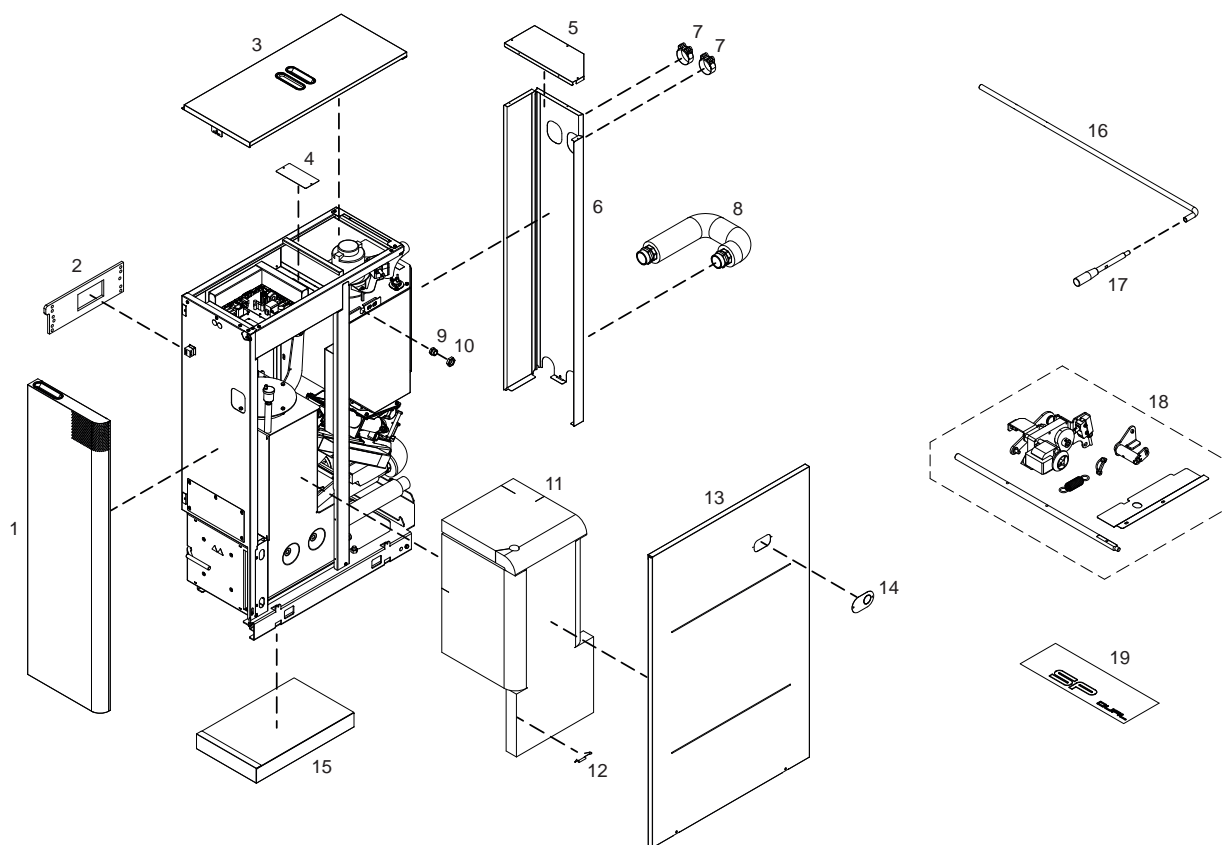
Item	units	Description	Item	units	Description
1	1	Insulated door	15	1	Thermal insulation of heat exchanger cover
2	1	Bottom cover plate	16	1	Securing plate (S4 Turbo 32-40)
3	1	Door mount	17	1	Controller box
4	1	Floor insulation	18	1	Controller cover
5	1	Side panel, left	19	1	Heat exchanger cover
6	2	Bracket	20	1	Cable duct cover, right-hand side
7	1	Cover plate	21	1	Side panel, right
8	1	Cable duct cover, left-hand side	22	2	Counter plate, magnetic latches
9	4	Spacer washer Ø44x4	23	2	Servo-motor cover plate
10	1	Rear thermal insulation	24	1	Torque support for actuators
11	1	Back panel	25	2	Servo-motor
12	2	Cover plate for ID fan	26	1	Door hinge
13	1	Top spacer plate	27	1	Control
14	1	Top thermal insulation			

6.3.5 Boiler with pellet flange



Item	Quantity	Description
1	1	Right hand side panel with the flange cut-out
2	1	LTC 2004 flow sensor for air mass measurement
3	1	Cover plate
4	1	Blanking plate, complete
5	1	Linking plate with flange cutout
6	1	S4 Turbo F boiler body with pellet flange

6.4 Assembly overview pellet unit



Item	Quantity	Description	Item	Quantity	Description
1	1	Insulated door	11	1	Thermal insulation
2	1	Pellet flange seal	12	6	Tension spring
3	1	Cover, top	13	1	Side panel
4	1	Cover plate	14	6	Cover plate WOS lever
5	1	Cover, back panel	15	1	Floor insulation
6	1	Back panel	16	1	WOS lever
7	2	Hinge pin clamp	17	1	WOS handle
8	1	Pipe union for hydraulic connection	18	1	WOS drive (optional)
9	1	Grey cast iron bushing	19	1	Sticker, "SP Dual"
10	1	Counter nut			

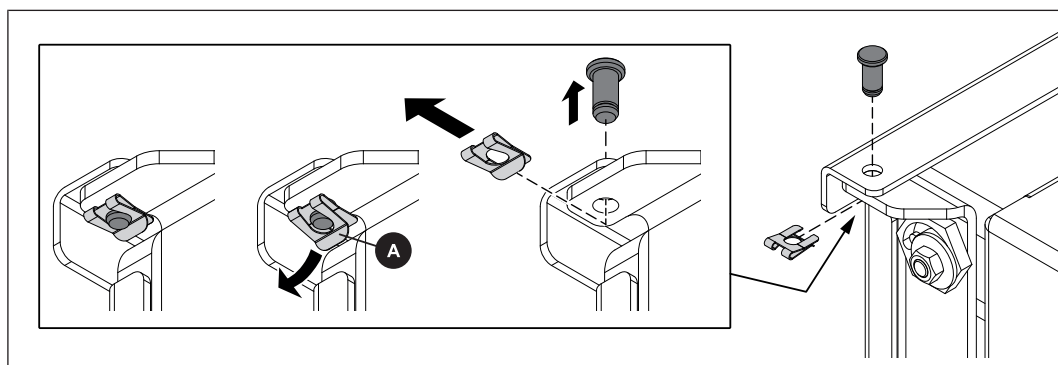
6.5 Before Installation

The firewood boiler is delivered with the door stop on the left side. When changing the door stop, follow the points described below accordingly.

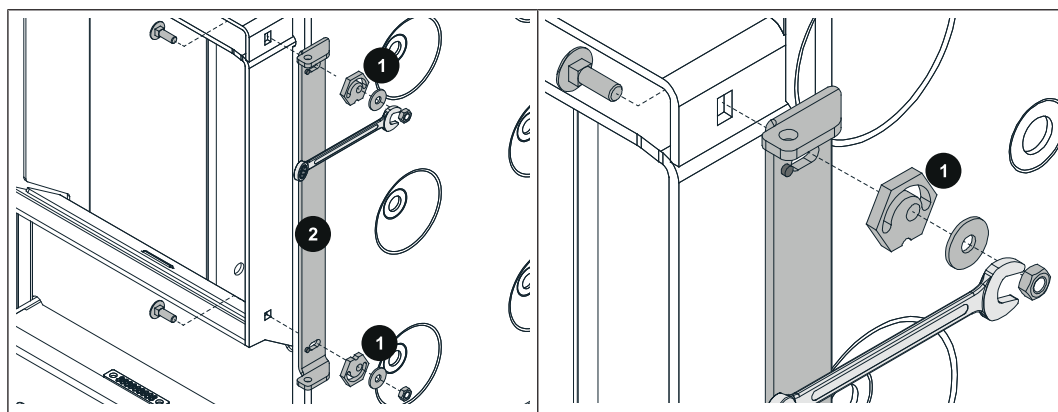
6.5.1 Changing door stops (as needed)

Changing the fuel loading door stop

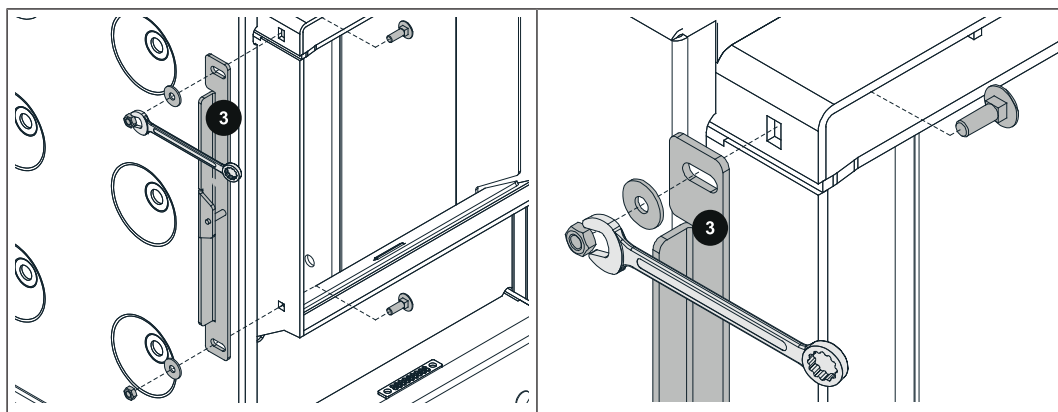
The following example using the fuel loading door shows how to change the door stop. The procedure is the same for changing the stop on the combustion chamber door and pre-heating chamber door!



- ☐ Lift the clip (A) slightly and pull out the shaft retainer
- ☐ Remove the top and bottom hinge pins and lift off the door



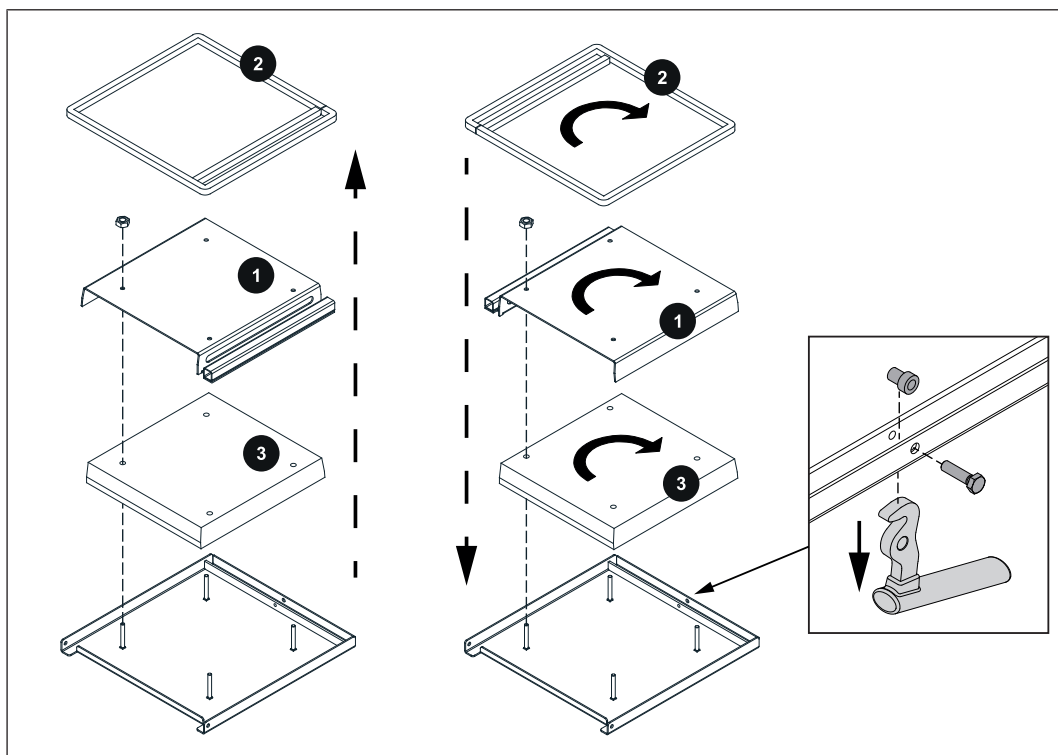
- ☐ Remove the nuts and locking cam (1) and disassemble the hinge (2)



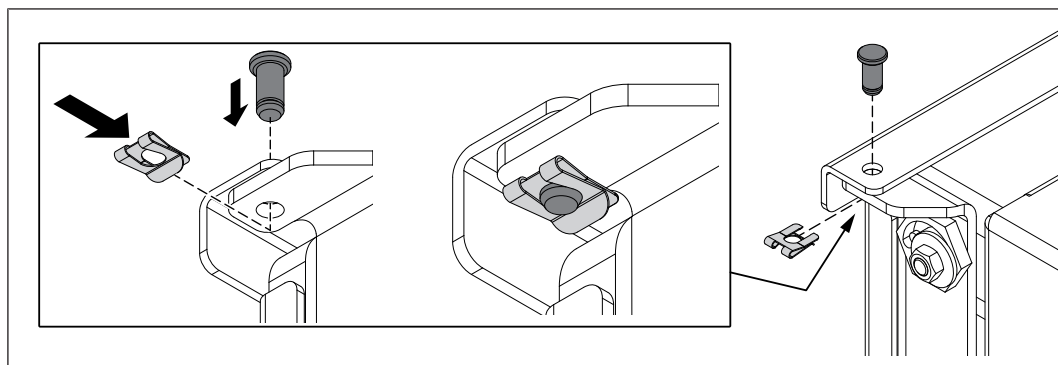
- ❑ Loosen the nuts and remove the locking plate (3)
- ❑ Remount the locking plate and hinge with spacer washers and nuts on the other side
 - ↳ Only partially tighten the nuts

Converting the fuel loading door

Only for the fuel loading door!



- ❑ Remove radiation plate (1) with fibre-glass seal (2)
- ❑ Carefully lift out the insulating plate (3)
- ❑ Rotate the insulating plate (3) 180° and position it so that it lines up with the holes in the fuel loading door
- ❑ Re-install the radiation plate (1)
- ❑ Use contact adhesive to fix the fibre-glass seal (2) in place
- ❑ Remove door handle and flange bushing



- ☐ Rotate the door and rehang it with the stop on the other side
 - ↳ Secure at the top and bottom with the hinge pins
- ☐ Slide the shaft retainer onto the hinge pin

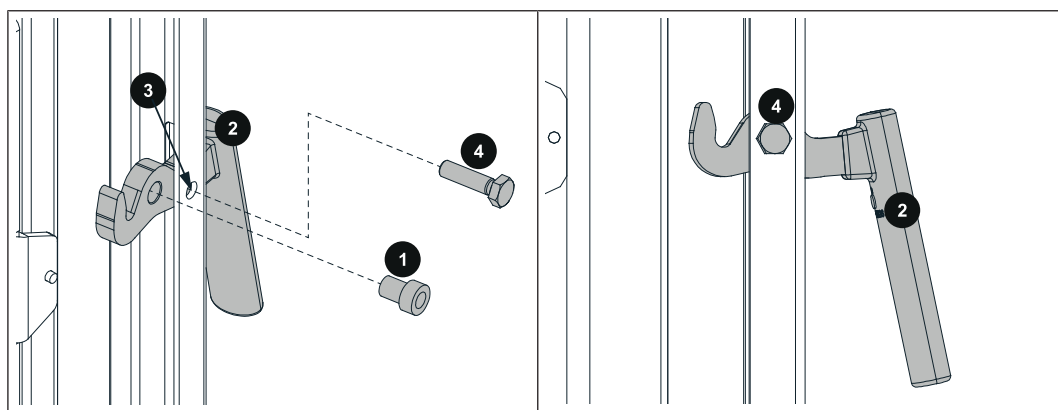
NOTICE! If the door stops have been changed, you must check the settings and seal of the door.

➔ "Adjusting the doors" [► 42]

➔ "Setting and checking the seal on the doors" [► 44]

Fitting the door handles

The procedure is the same for all doors.

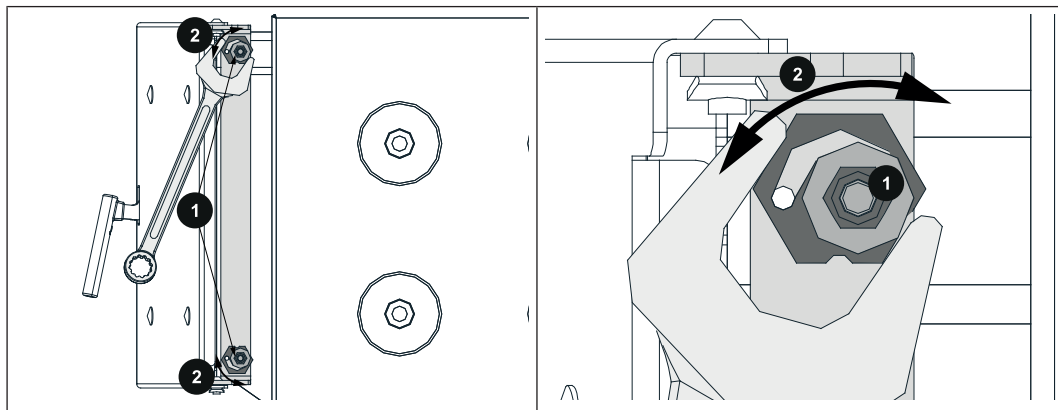


- ☐ Insert the flange bushing (1) into the door handle (2) and position it alongside the hole (3) provided
- ☐ Fix the door handle (2) in place using screws (4)

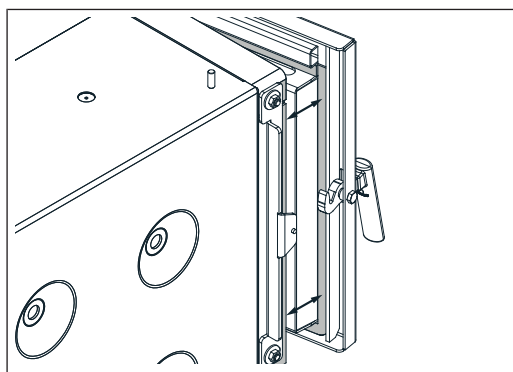
6.5.2 Adjusting the doors

The example below shows how to position the fuel loading door. The procedure is the same for the combustion chamber door and the pre-heating chamber door!

Door stop side

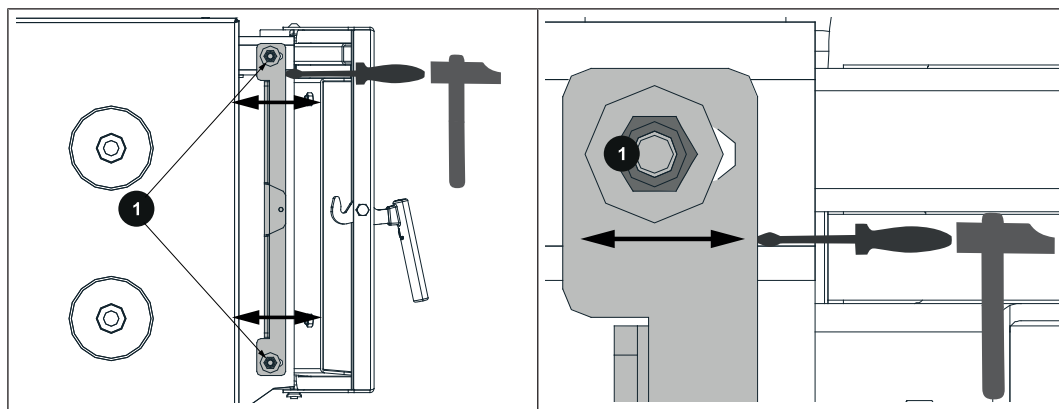


- ☐ Loosen the lock nuts (1) at the top and bottom of the locking cam
- ☐ Where necessary move the locking cam either back or forward using an Allen wrench (32 mm) (2)



- ☐ Assemble the locking cam so that there is slight resistance at a gap of approx. 2-3 cm when the door is closed
 - ↳ Caution: the locking cams must be aligned in the same way at the top and bottom!
- ☐ Secure the position of the hinge at the top and bottom with the lock nuts (1)

Door handles

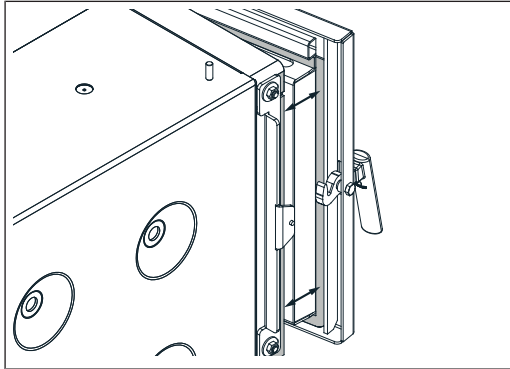


- ☐ Loosen the lock nuts (1) at the top and bottom of the locking plate
- ☐ Use suitable tools (e.g. screwdriver and hammer) to move the locking plate to the rear or the front as needed
 - ↪ Position the locking plate so that it is easy to close the door
 - ↪ Caution: the locking plate must be aligned at the top and bottom.
- ☐ Secure the position of the locking plate at the top and bottom with the lock nuts (1)

6.5.3 Setting and checking the seal on the doors

Setting and checking the seal are shown using the example of the fuel loading doors. The procedure is the same for the combustion chamber door and the pre-heating chamber door!

Checking the settings of the door stop

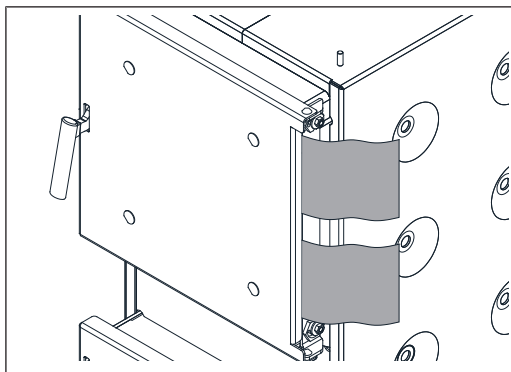


- ❑ Close the door
 - ↳ Slight resistance at a gap of 2 - 3 cm:
correct setting
 - ↳ No resistance felt:
setting must be corrected - push the hinge toward the back
➔ ["Adjusting the doors" \[▶ 42\]](#)
 - ↳ Resistance at a gap of >3 cm:
setting must be corrected - push the hinge toward the front
➔ ["Adjusting the doors" \[▶ 42\]](#)

Checking the settings of the door handle

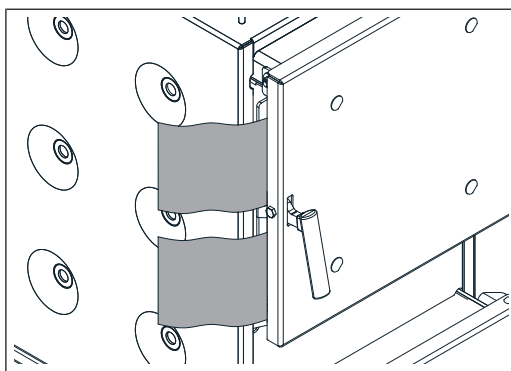
- ❑ Close the door
 - ↳ If the door can be closed with the usual force:
correct setting
 - ↳ If the door cannot be closed with the usual force or must be forced closed:
push the locking plate toward the front
➔ ["Adjusting the doors" \[▶ 42\]](#)

Checking the door stop seal



- ☐ Open the door
- ☐ Insert a sheet of paper at both the top and the bottom area of the door stop between the door and the boiler
- ☐ Close the door
- ☐ Try to pull out the sheets of paper
 - ✦ If the paper cannot be removed:
the seal is correct
 - ✦ If the paper can be removed:
the door is not sealed properly - push the hinge toward the back.
➔ ["Adjusting the doors" \[▶ 42\]](#)

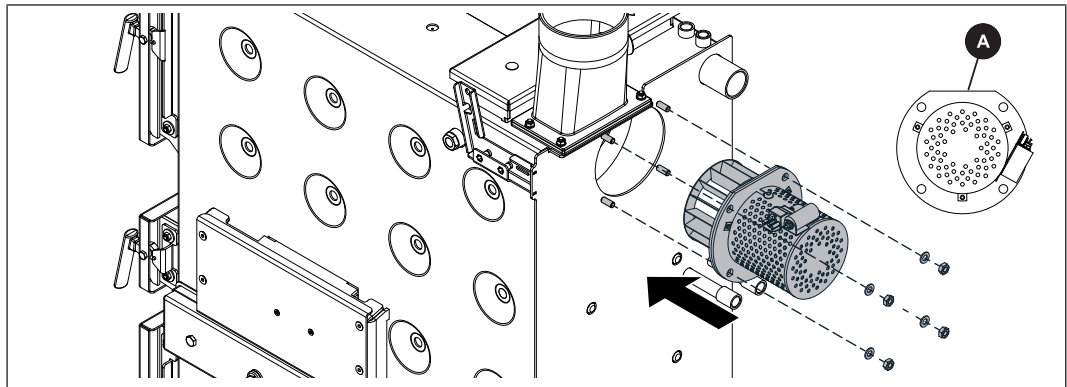
Checking the door handle seal



- ☐ Open the door
- ☐ Insert a sheet of paper at both the top and the bottom area at the side of the door handle between the door and the boiler
- ☐ Close the door
- ☐ Try to pull out the sheets of paper
 - ✦ If the paper cannot be removed:
the seal is correct
 - ✦ If the paper can be removed:
the door is not sealed properly - push the locking plate toward the back.
➔ ["Adjusting the doors" \[▶ 42\]](#)

6.6 Install firewood boiler

6.6.1 Fit the induced draught fan



□ Fit induced draught fan to the back of the boiler

↳ Straight edge (A) top

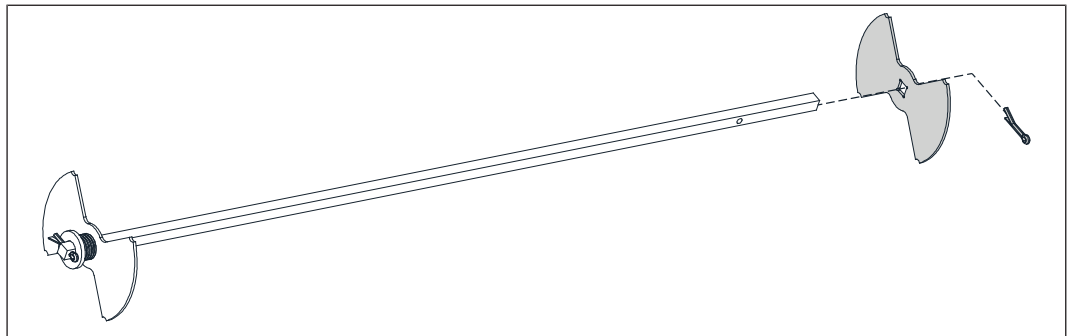
↳ Caution: do not overstress the flange!

6.6.2 Installing the pneumatic rods for the primary and secondary air

The air control servo-motors can be mounted on either the left- or right-hand side of the boiler. Delivery configuration: servo-motors on the right

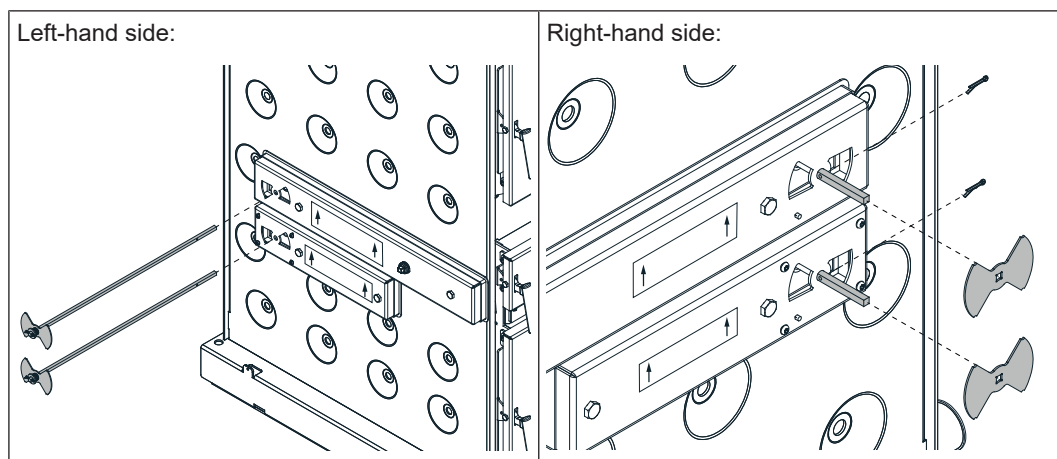
NOTICE! If the servo-motors are to be assembled on the left, the air ducts must be changed on both sides!

NOTICE! Unless otherwise indicated, “right” and “left” refer to the side of the boiler when standing in front of it.

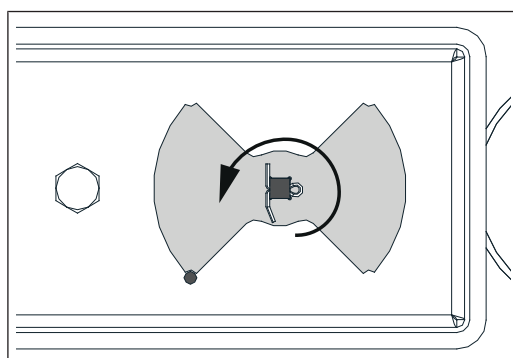


□ Remove the split pin on both pneumatic rods opposite the spring and pull one of the air flaps off of each

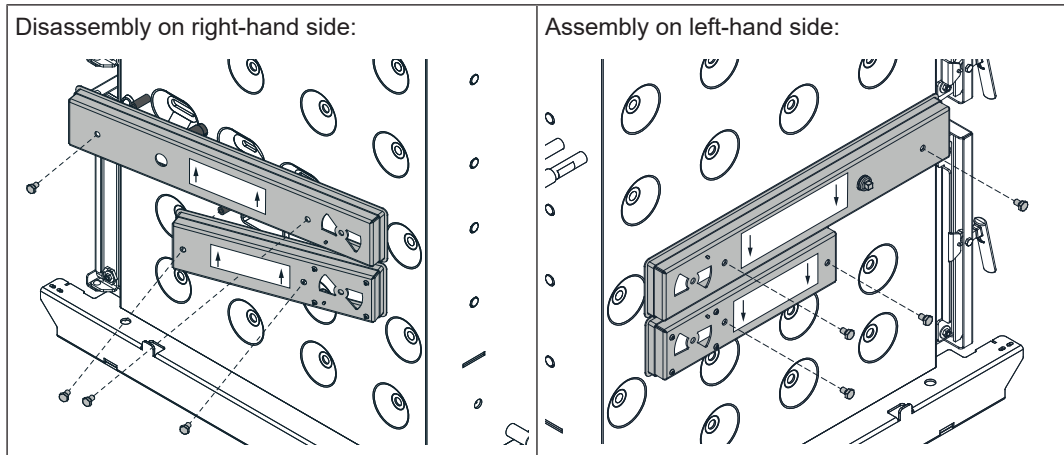
↳ The pneumatic rods are packed along with the insulation

servo-motors on the right

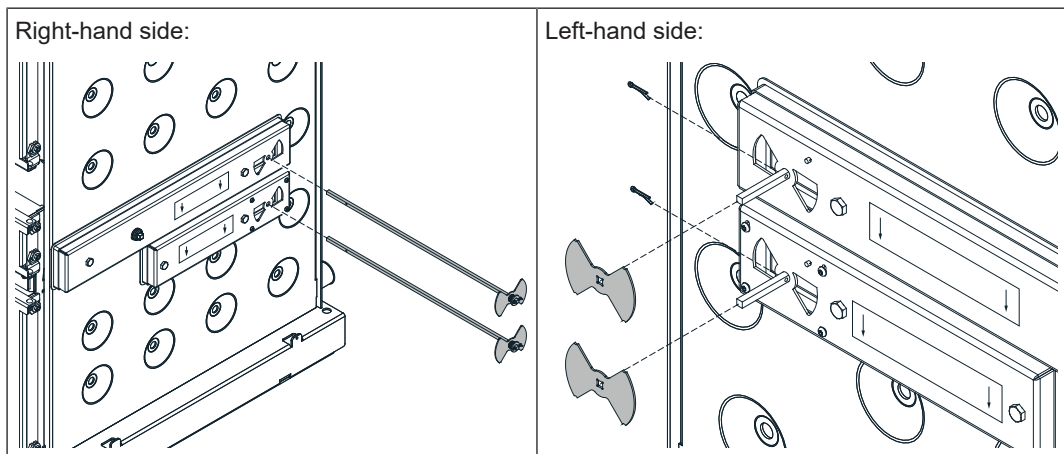
- ☐ Insert both pneumatic rods into the left-hand side of the boiler
 - ↳ The air flaps with springs lie flat on the left-hand air ducts!
- ☐ Insert the air flaps on the pneumatic rods on the right-hand side and secure them with split pins
 - ↳ **IMPORTANT:** the air flaps must be in the same position as those on the opposite side!



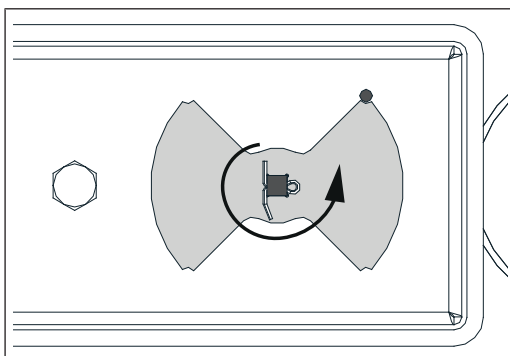
- ☐ Turn both pneumatic rods anti-clockwise as far as the stop
 - ↳ Check the pneumatic rods can move freely

servo-motors on the left

- ☐ Remove both air ducts on the left and right-hand sides
- ☐ Fit the air ducts back onto the other side
 - ↳ The arrow on the air duct sticker should now point downwards!
 - ↳ Only partially tighten the screws!



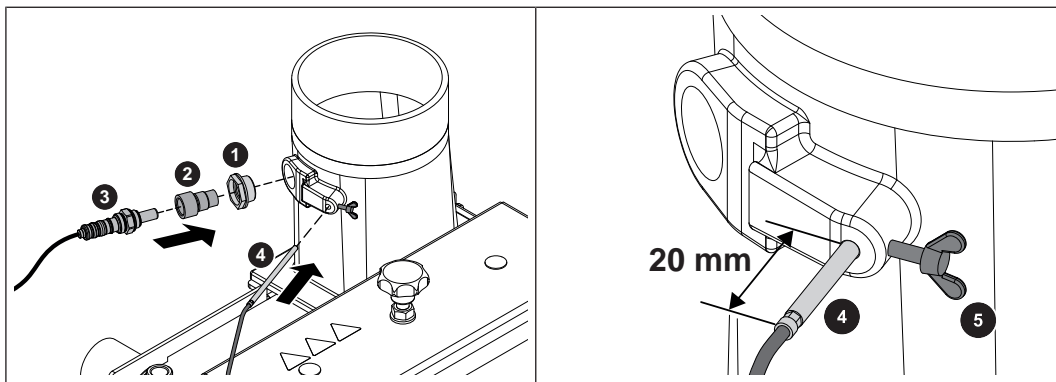
- ☐ Insert both pneumatic rods into the right-hand side of the boiler
 - ↳ The air flaps with springs lie flat on the right-hand air ducts!
- ☐ Insert the air flaps on the pneumatic rods on the left-hand side and secure them with split pins
 - ↳ **IMPORTANT:** the air flaps must be in the same position as those on the opposite side!



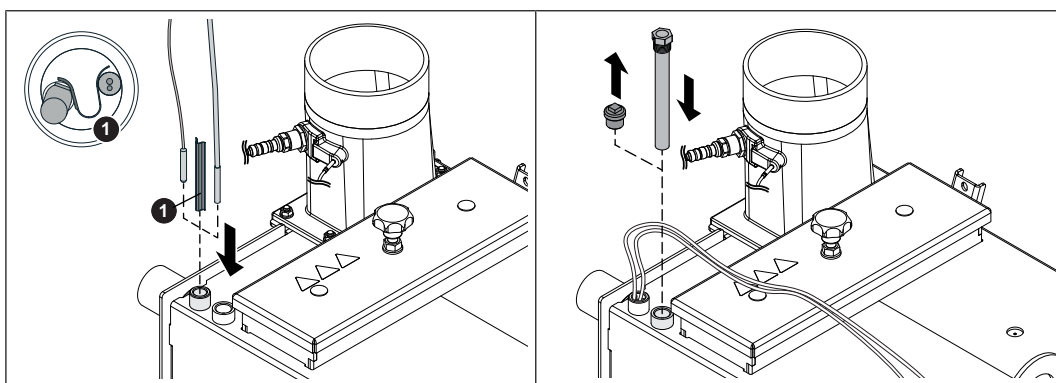
- ☐ Turn both pneumatic rods anti-clockwise as far as the stop

- ↪ Check the pneumatic rods can move freely
- ❑ Tighten the screws on the air flaps

6.6.3 Installing the Lambda probe, flue gas temperature sensor and immersion sleeve

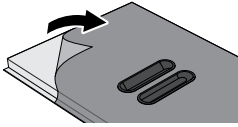


- ❑ Screw the bushing (1) into the flue gas nozzle and gently tighten
- ❑ Screw the adapter (2) into the bushing (only Lambda probe NTK OZA685 – article number 69400)
- ❑ Screw the Lambda probe (3) in and tighten slightly using an Allen key (22 mm)
- ❑ Push the flue gas temperature sensor (4) in so that it protrudes approx. 20 mm from the housing and secure the position with the wing screw (5)
- ❑ Plug in the extension cable for the Lambda probe

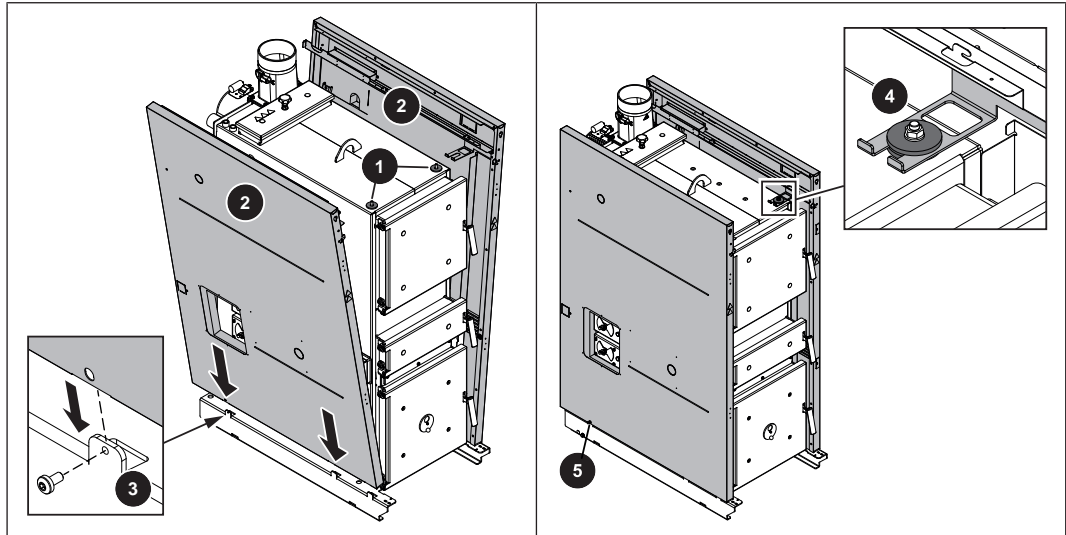


- ❑ Push the boiler sensor and the STL capillary with the pressure spring (1) into the immersion sleeve of the boiler flow
- ❑ Remove the pre-installed blanking plug from the sleeve next to the immersion sleeve and then seal the supplied immersion sleeve on the thermal discharge valve
 - ↪ Thermal discharge valve not included!

6.6.4 Installing the insulation

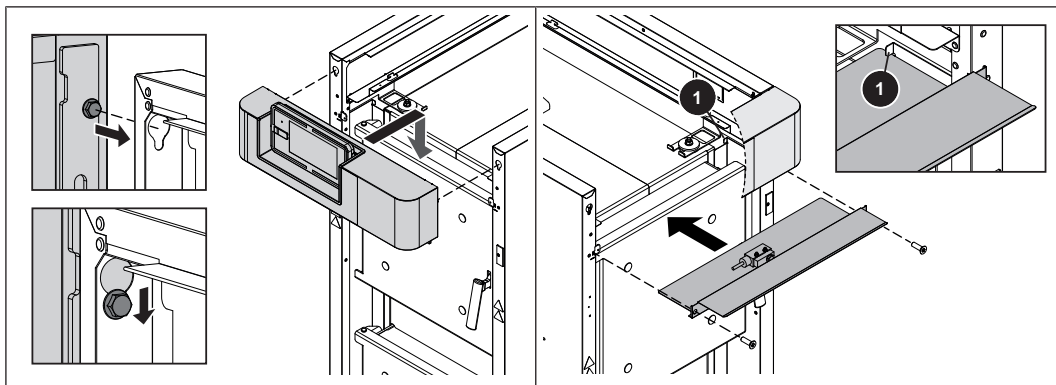


IMPORTANT: The individual parts of the boiler insulation covered with a protective film. The protective film must be removed before proceeding with the installation!



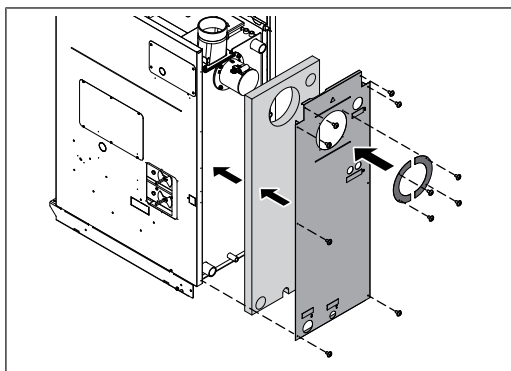
- ☐ Place one large spacer washer (1) on each of the threaded bolts to the right and the left above on the boiler
- ☐ Insert the side panels (2) into the base of the boiler at the lug (3) and push onto the boiler
 - ↳ The holes in the side panel must line up with the holes in the flap (3)
- ☐ Position the brackets on the side panels (2) onto the threaded bolts and secure lightly with a large and a small spacer washer and nut (4)
- ☐ Secure the side panels (2) on the right and left at the flap on the boiler base with thread forming screws (5)

6.6.5 Installing the control



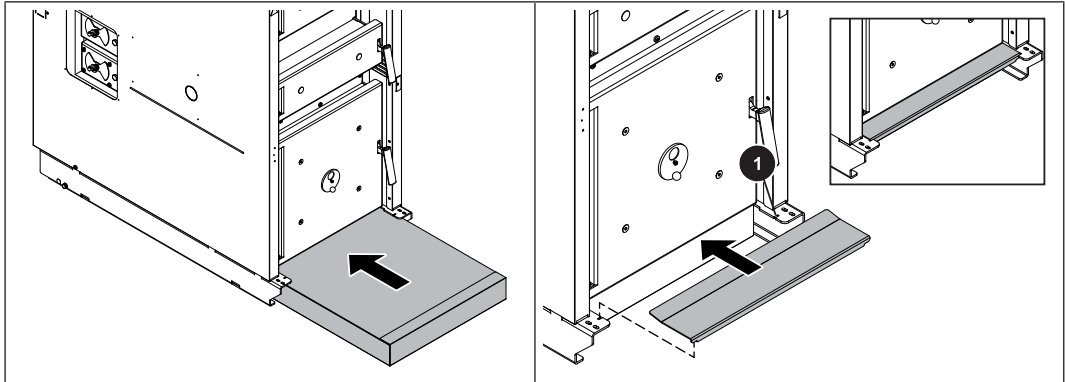
- ☐ Fit the control screw heads into the cutouts on the side panels
- ☐ Insert the spacer plate beneath the control
 - ↳ Ensure the spacer plate is positioned below the flap (1)
- ☐ Attach the spacer plate and control to the side panel using two screws
- ☐ Tighten both screws on the cutouts

6.6.6 Installing the back panel



- ☐ Position the rear thermal insulation on the rear side of the boiler
- ☐ Attach the back panel to the side panel
- ☐ Install the ID fan cover plate on the back panel

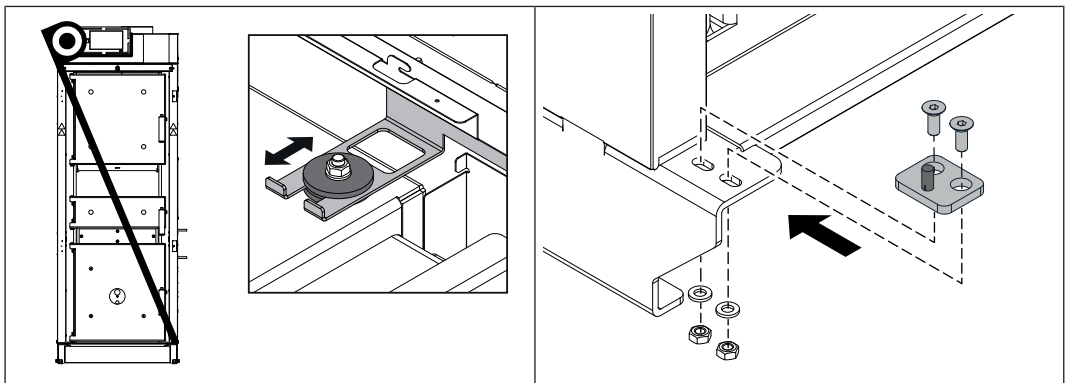
6.6.7 Installing the floor insulation



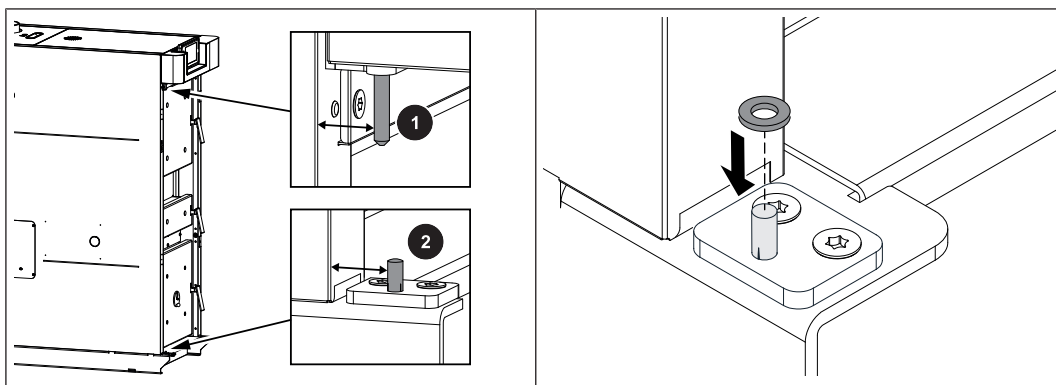
- ☐ Push in the floor insulation
- ☐ Insert the cover plate under the combustion chamber door
 - ↳ Hook the angled lugs left and right into the opening (1) on the boiler base

6.6.8 Installing the insulated door

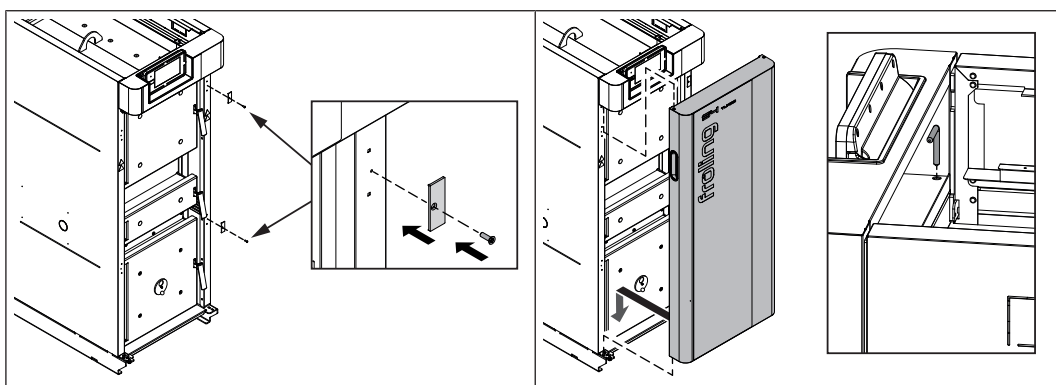
Installation of the insulated door is explained below using the example of the door stop on the left. To mount the insulated door with the door stop on the right, invert and follow the same steps!



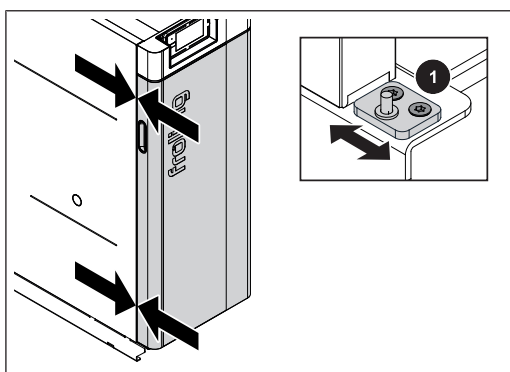
- ☐ Measure both diagonals and align the side panels so that the two diagonals are the same
 - ↳ Adjust the side panels if necessary
- ☐ Tighten the nuts on both brackets
- ☐ Mount the lower door bracket onto the boiler base with the half-length taper grooved pin facing outwards
 - ↳ Tighten M6 x 20 screws just slightly



- ❑ Measure the distance from the side panel to the hinge pins on the upper bracket (1)
- ❑ Measure the distance from the side panel to the half-length taper grooved pin on the lower door bracket (2)
- ⇒ The two distances must be equal!
- ⇒ If necessary, correct the position of the lower door bracket and tighten in place
- ❑ Place the spacer washer on the half-length taper grooved pin



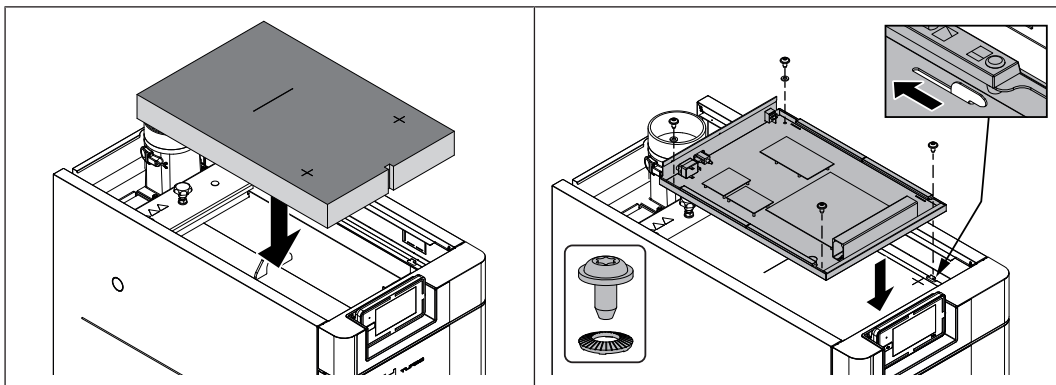
- ❑ Mount counter plates for magnetic latches on the side panel on the opposite side of the door stop
- ❑ Hang the insulated door at the bottom onto the half-length taper grooved pin and secure at the top with a door pin



- ❑ Check to see if the gap between the side panel and the insulated door is the same along the entire height of the boiler
- ⇒ If necessary, adjust the position of the lower door bracket (1)

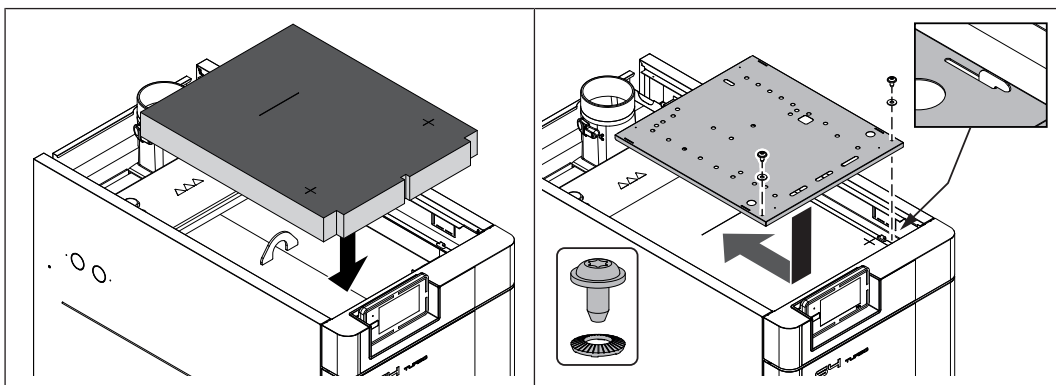
6.6.9 Attaching the controller

S4 Turbo 22-28:

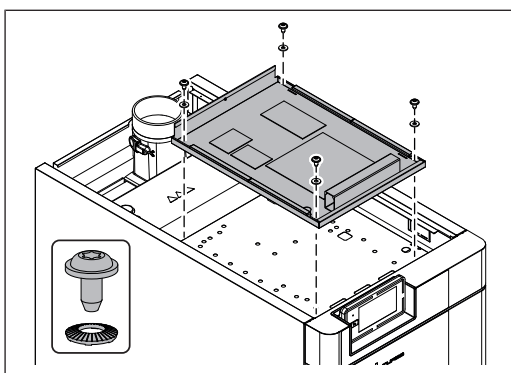


- ☐ Place the thermal insulation on the boiler
- ☐ Thread the controller box on the lugs and push the box to the back
- ☐ Use four screws incl. contact washers and mount controller box

S4 Turbo 32-40:



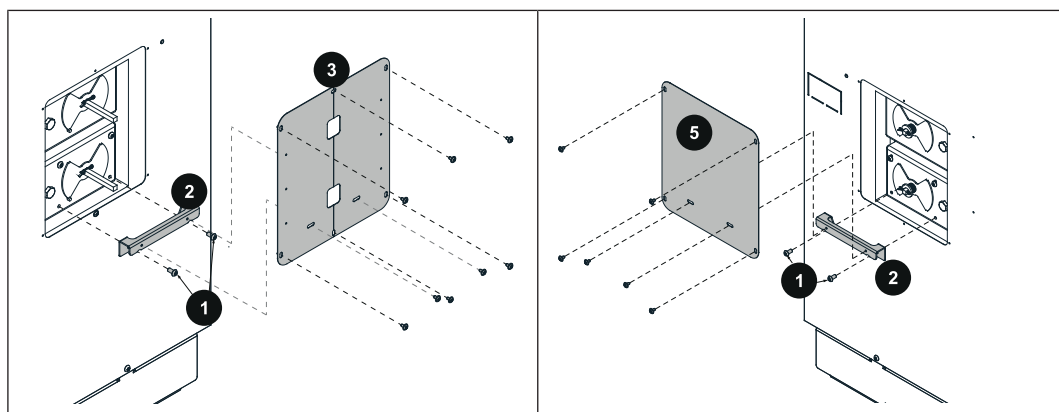
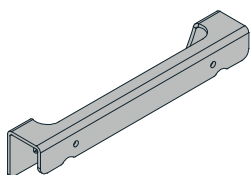
- ☐ Place the thermal insulation on the boiler
- ☐ Thread the securing plate on the lugs and push the box to the back
- ☐ Use two screws and contact washers to attach the securing plate



- ☐ Use four screws incl. contact washers and mount controller box onto the securing plate

6.6.10 Installing the servo-motors

NOTICE! The images show a boiler with the servo-motors installed in the right



- ☐ Remove the screws (1) at the bottom of each side of the air duct and then use them to fix the bracket (2) in place on the duct

↳ Helps stabilise the side panels

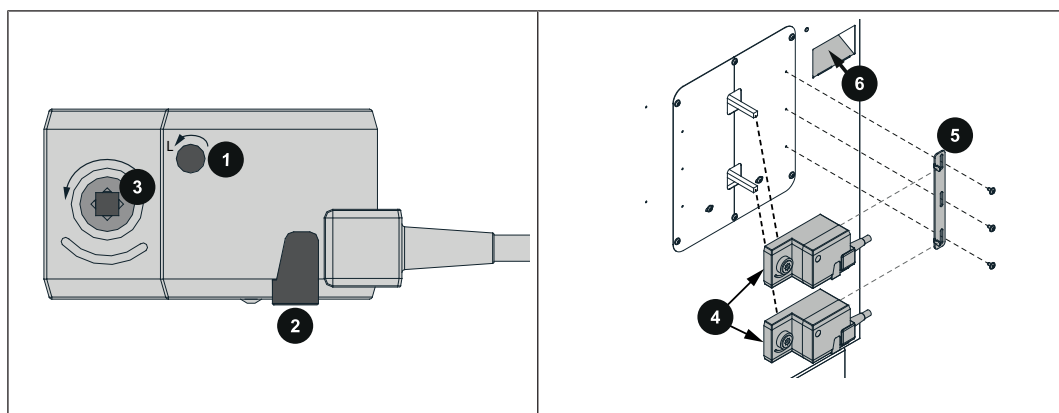
On the servo-motor side:

- ☐ Fix the two-part cover plate (3) onto the insulation side panel and bracket (1) using thread forming screws

On the opposite side:

- ☐ Fix the cover plate (5) onto the insulation side panel and bracket (1) using thread forming screws

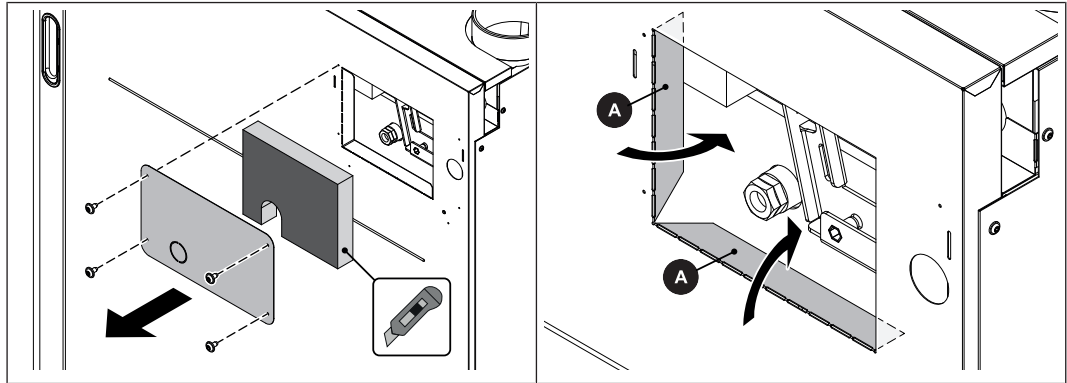
IMPORTANT: Air flaps must be positioned at the left stop (closed)



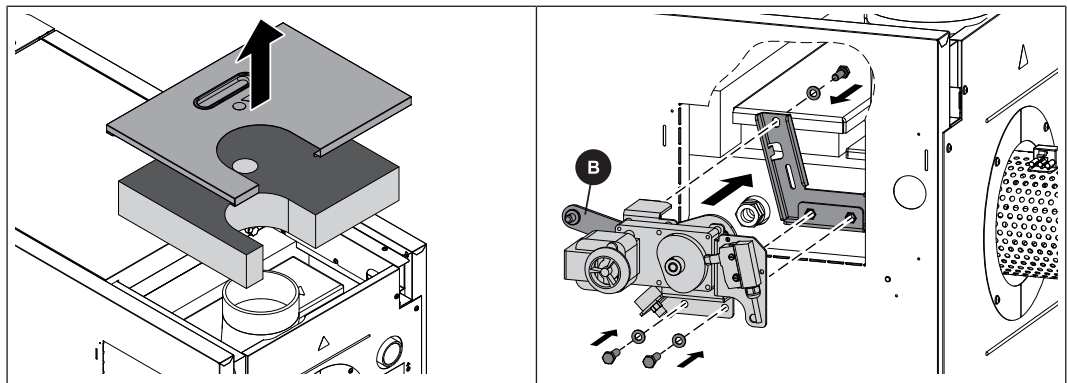
- ☐ Set the direction of rotation of the servo-motor (1) to left (L)
- ☐ Press the unlock key (2) and turn the drive for the shaft to the air duct (3) in an anti-clockwise direction as far as the stop
- ☐ Fit the servo-motors (4) onto the pneumatic rods
- ☐ Position the torque support (5) and partially tighten the screws
- ☐ Align the servo-motors (4) so that they are straight and tighten the screw on the torque support
- ☐ Push in the pre-punched opening for the cable duct onto the insulation (6)
- ☐ Apply a sticker to the servo-motor cable near the plug
 - ↳ Primary air = upper servo-motor / secondary air = lower servo-motor
- ☐ Run the cable from the two servo-motors through the cable duct upward to the controller

6.7 Install the drive for the automatic WOS (optional)

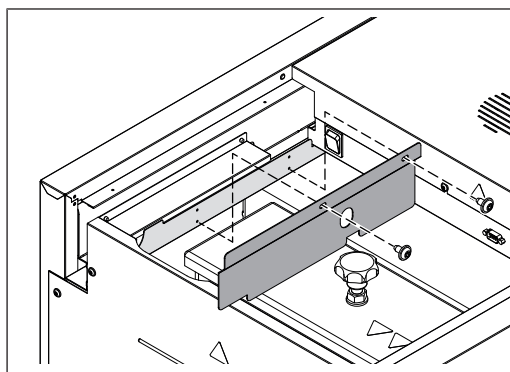
Prior to installing the pellet unit, install the bracket and drive on the firewood boiler:



- ☐ Remove the blanking plate from the side of the firewood boiler
- ☐ Remove thermal insulation
- ☐ Bend in the pre-punched lugs (A) by 90°

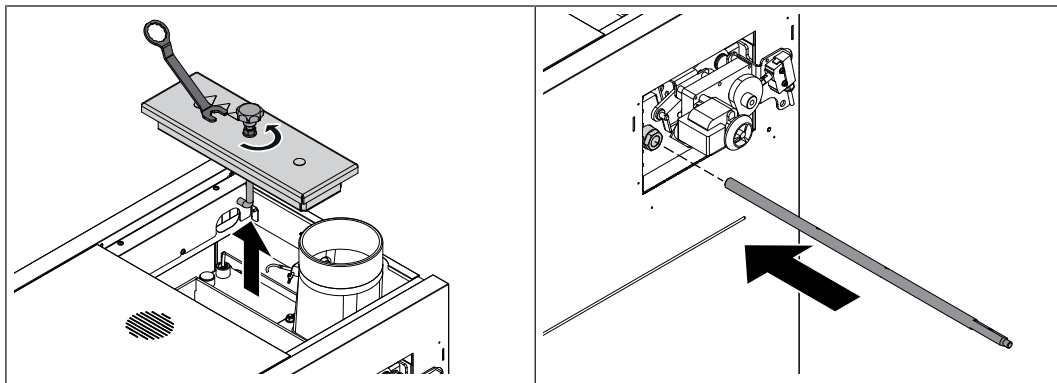


- ☐ Remove the back insulating cover and thermal insulation from the firewood boiler
- ☐ Secure the bracket with drive to the bracket on the boiler body
 - ↳ The carrier plate (B) must point towards the front of the boiler

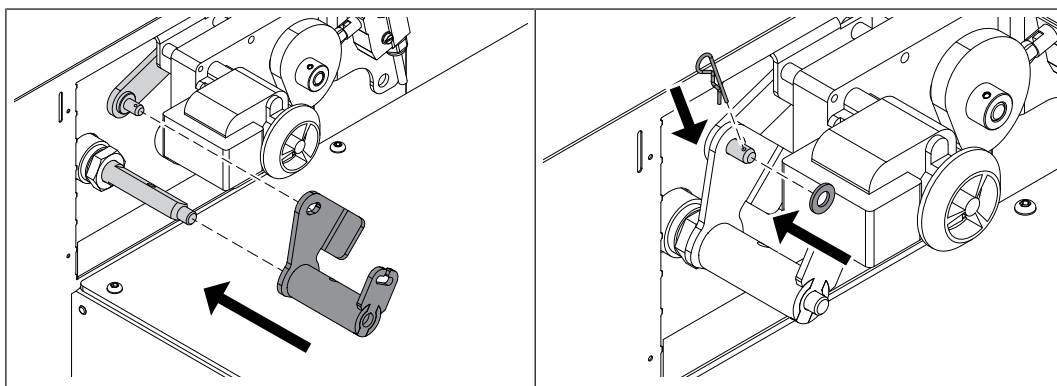


- ☐ Lay the cable for the WOS drive and WOS monitor via the cable duct to the boiler controller
- ☐ Secure the protective plate to the cable tray with two screws

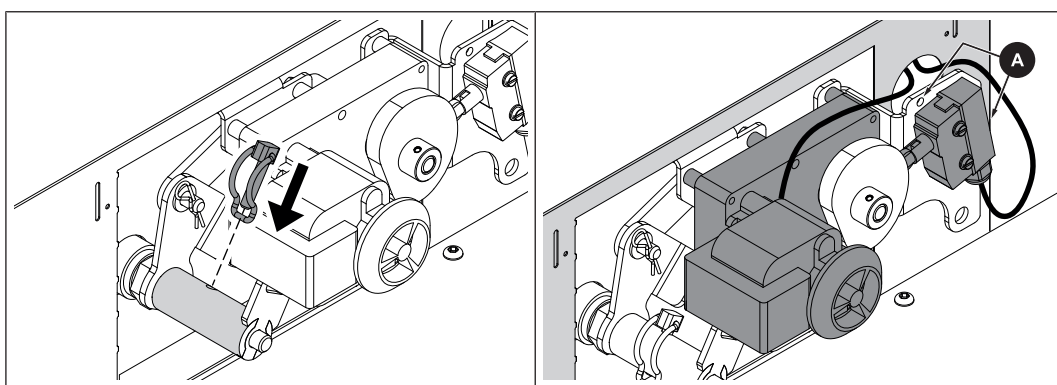
6.8 Install the shaft for the automatic WOS (optional)



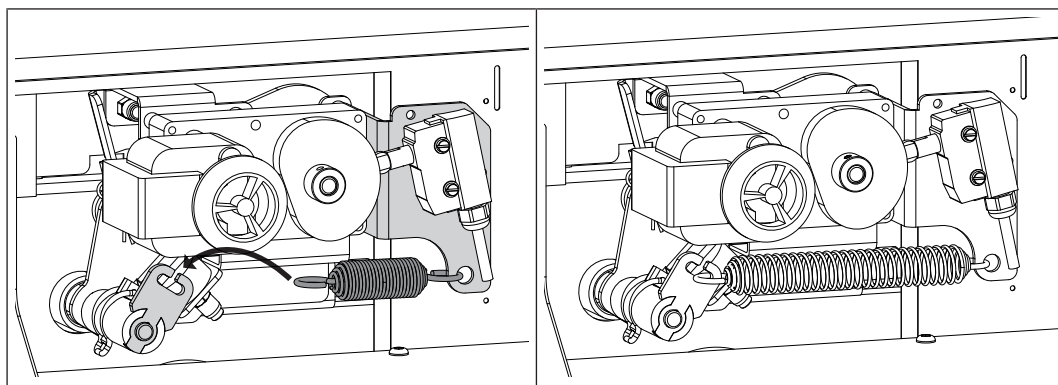
- ☐ Loosen the lock nut on the heat exchanger cover, turn the star-shaped screw and remove the heat exchanger cover
- ☐ Lift the linking plate and WOS springs and insert the shaft
- ☐ Push the shaft all the way in and insert into the opposite side with the bushing already fitted



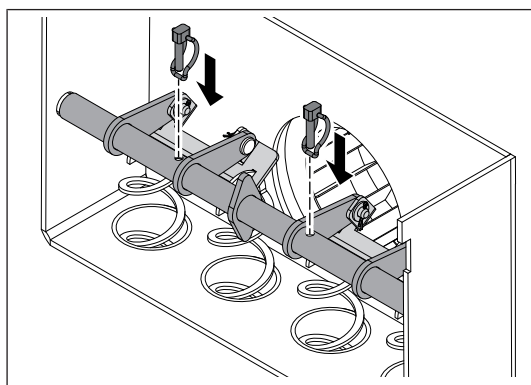
- ☐ Slide the operating lever onto the shaft and insert the eyebolt onto the catch above
- ☐ Secure eyebolt with spacer washer and spring cotter



- ☐ Secure operating lever to shaft with pipe locking pin
- ☐ Run the cable for the drive and the limit switch through the cable tray and to the controller
- ☐ Relieve the tension at the positions provided (A)



- ☐ Put the tension springs onto the bracket and operating lever

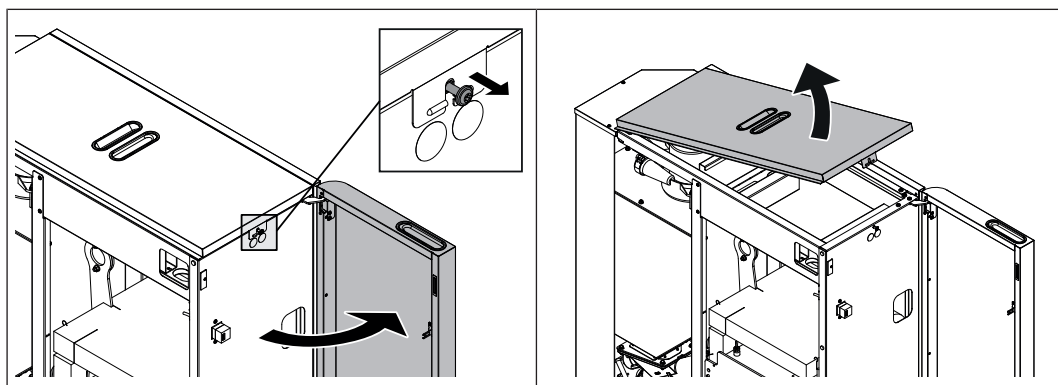


- ☐ Raise or lower the WOS springs until the holes in the shaft and linking plate are aligned
- ☐ Secure the linking plate with two pipe locking pins

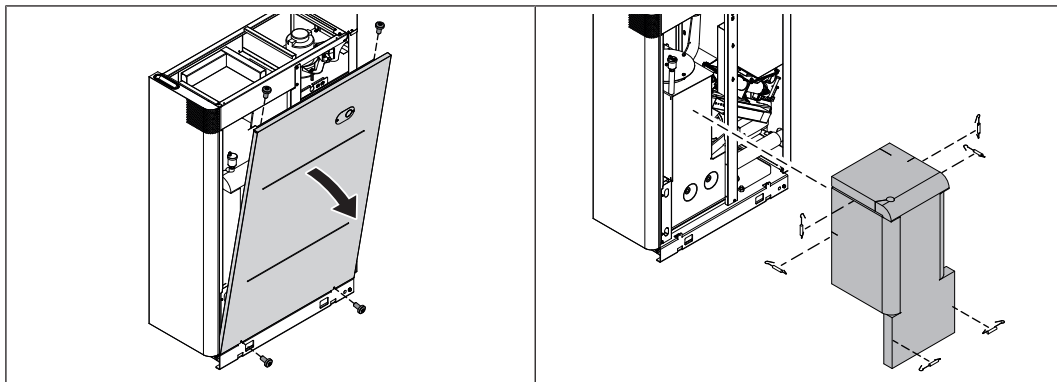
6.9 Fitting the pellet unit

6.9.1 Removing the cladding from the pellet unit

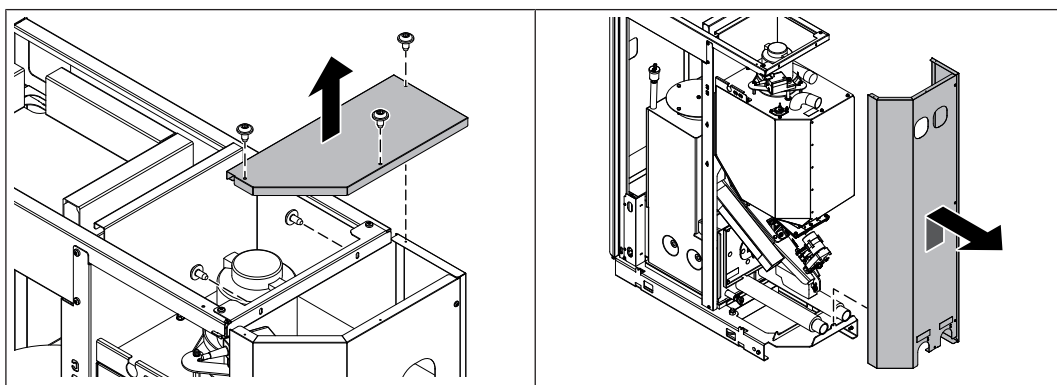
Components removed in the following steps must be kept in a dry, dust-free protected location until being refitted.



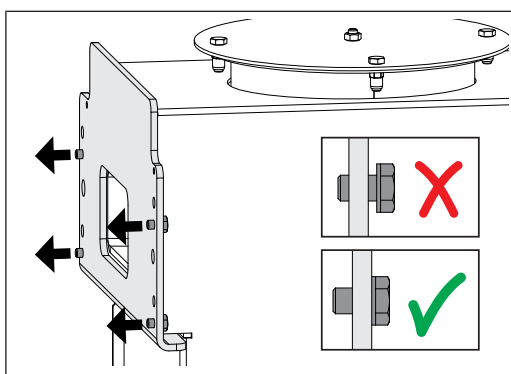
- ☐ Open the insulated door and undo the safety screws located behind it
- ☐ Lift the cover slightly and remove it from the front



- ☐ Undo the screw connection on the side panel and remove it to the side
- ☐ Unhook the tension springs and remove the thermal insulation



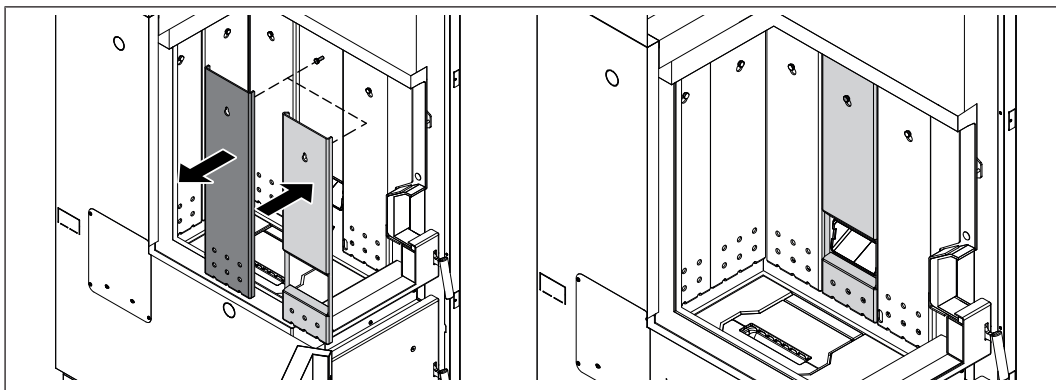
- ☐ Take out the screws from the back cover and remove the cover
- ☐ Unhook the rear panel on the bottom of the pellet unit



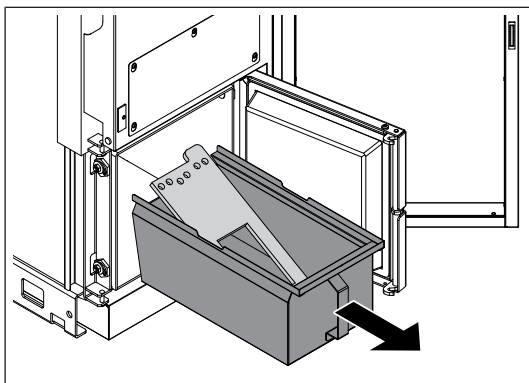
- ☐ Completely screw in four adjusting screws (galvanized, yellow) on the flange
 - ↳ Adjusting screws function afterwards as the stop when setting the gap size

NOTICE! Despite the aforementioned adjusting screws the flange seal is sufficiently compressed!

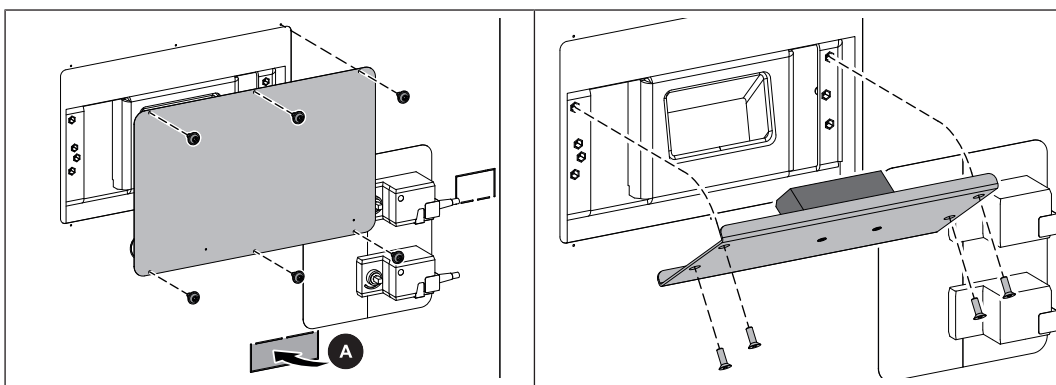
6.9.2 Screwing the pellet unit to the firewood boiler



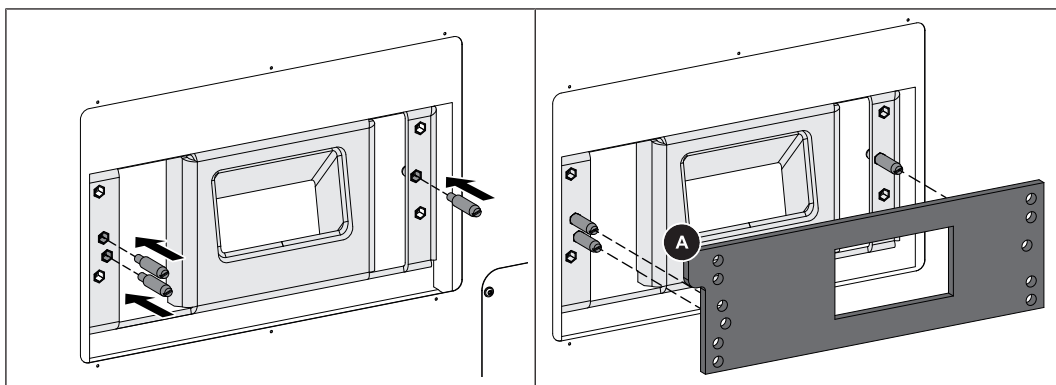
- ☐ Open the insulating door and the fuel loading door of the firewood boiler
- ☐ Remove the middle linking plate on the flange side
- ☐ Fit the linking plate provided to the flange cutout as shown



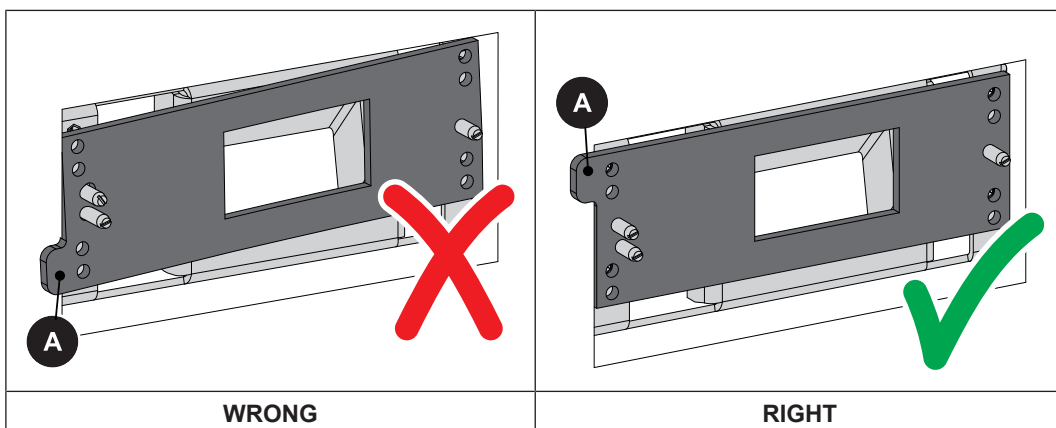
- ☐ Open the insulated door and ash door on the pellet unit
- ☐ Pull out the ashcan and remove the flange seal

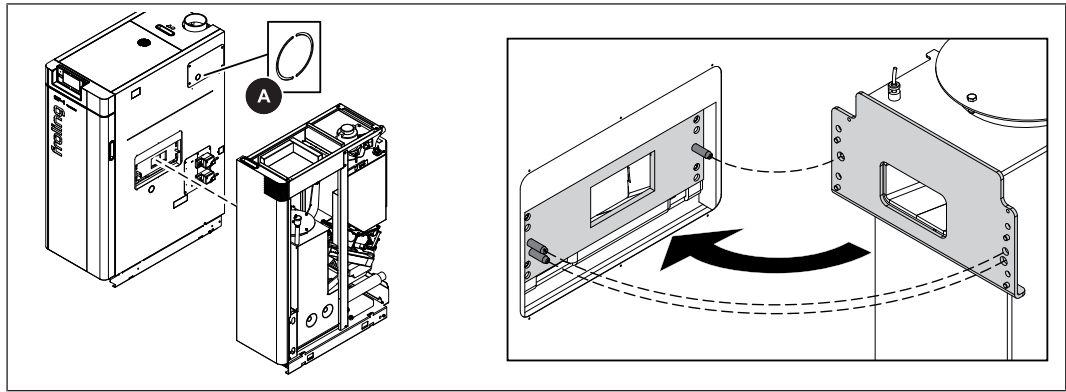


- ☐ Remove the cover plate on the firewood boiler flange
- ☐ Press the pre-punched cover (A) of the air intake duct all the way in
- ☐ Remove the blanking plate

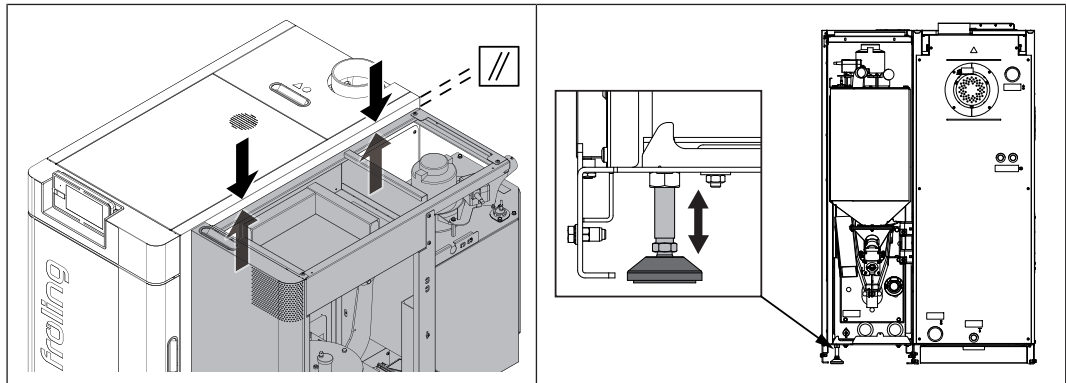


- ❑ Take the flange seal and lock bolts from the ashcan of the pellet unit
- ❑ Install the lock bolts for the firewood boiler
 - 2 bolts to the left of the burn-through duct
 - 1 bolt to the right of the burn-through duct
- ❑ Slide the flange seal over the lock bolts
 - ↗ The projecting lug (A) must be located at the top, facing towards the front of the boiler
 - ↗ The seal must slide smoothly over the three lock bolts
 - ↗ The seal must not be laid so as to obstruct the cross-section of the burn-through duct

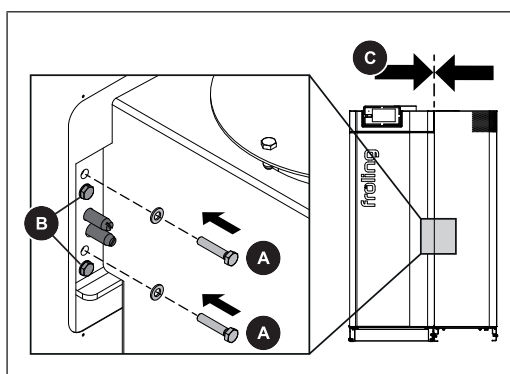




- ☐ Press the piece out of the pre-punched hole (A) for the WOS lever on the firewood boiler
 - ↳ Use a half-round file to file down any protruding pieces
- ☐ Position the pellet unit alongside the firewood boiler so that the flange holes on the pellet unit are aligned with the previously fitted lock bolts on the flange of the firewood boiler
- ☐ Thread the pellet unit into the lock bolts and push towards the firewood boiler



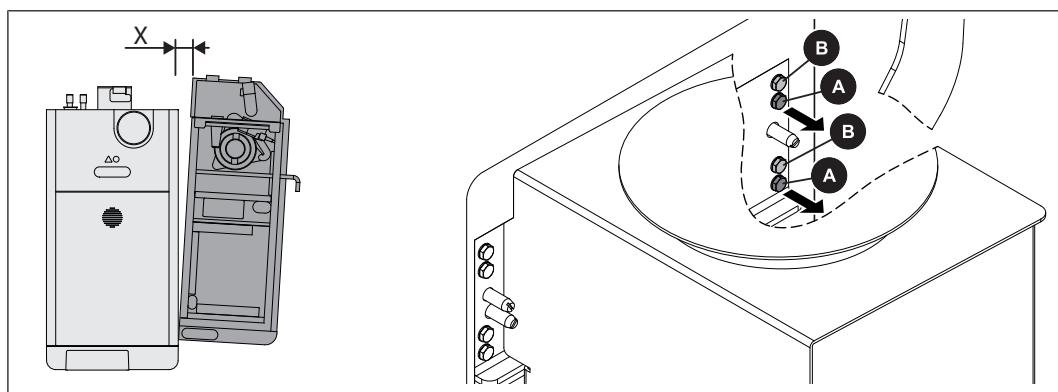
- ☐ Adjust the height of the pellet unit using the adjustable feet so that the top edge of the pellet unit is parallel with the edge on the insulating cover of the firewood boiler



- ☐ Affix the pellet unit to the flange of the firewood boiler using 4 hexagon bolts M8 x 40 (A)
- ☐ Once you have done this, check that the clearance (C) between the firewood boiler insulation and the pellet unit is consistent

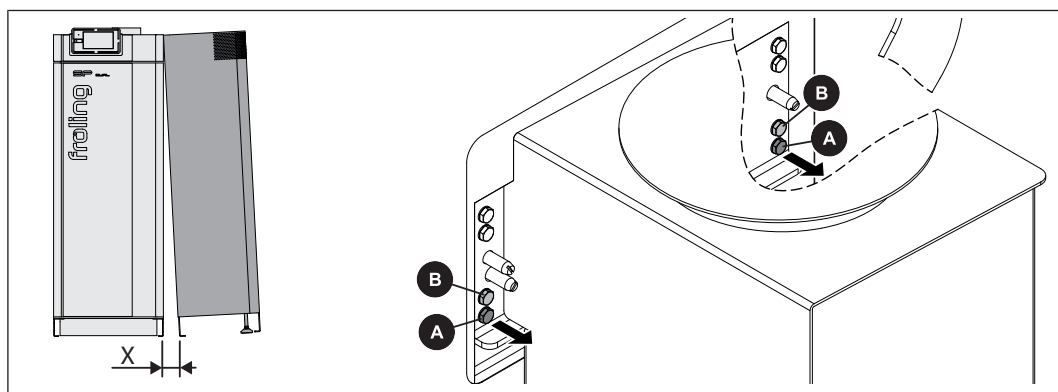
If the firewood boiler and the pellet unit are not parallel, the gap (X) can be adjusted using the adjusting screws (A - galvanized yellow – AF 13 mm):

Example 1 – Large gap (X) at the back

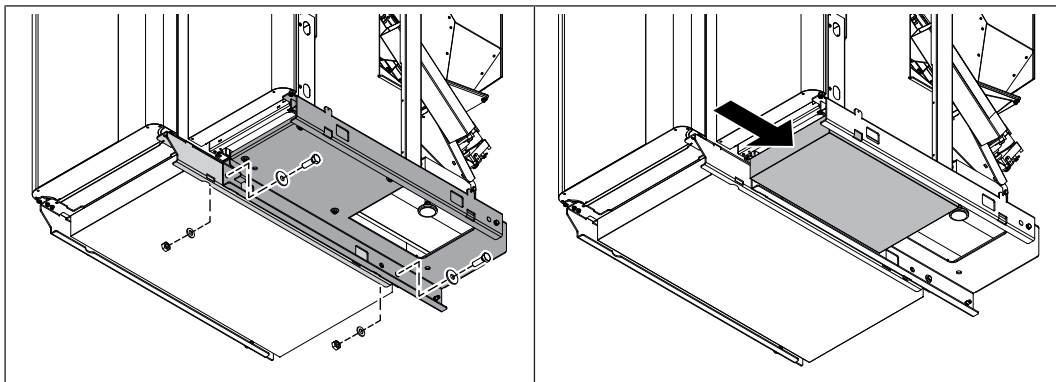


- ☐ Loosen the adjusting screw at the back (A) and tighten the flange screw connections (B) until the size of the gap is the same, both front and back
- ☐ Tighten all of the screw connections (A and B) once again

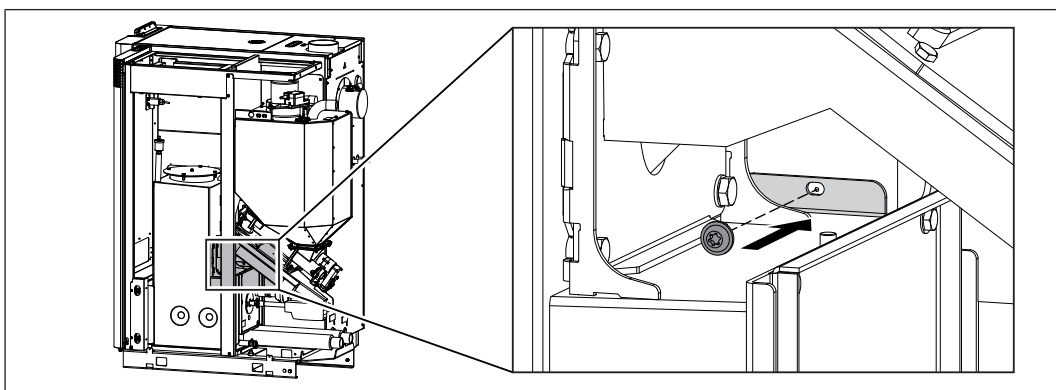
Example 2 – Large gap (X) on the bottom



- ☐ Loosen the bottom adjusting screws (A) and tighten the flange screw connections (B) until the size of the gap is the same, both top and bottom
- ☐ Tighten all of the screw connections (A and B) once again

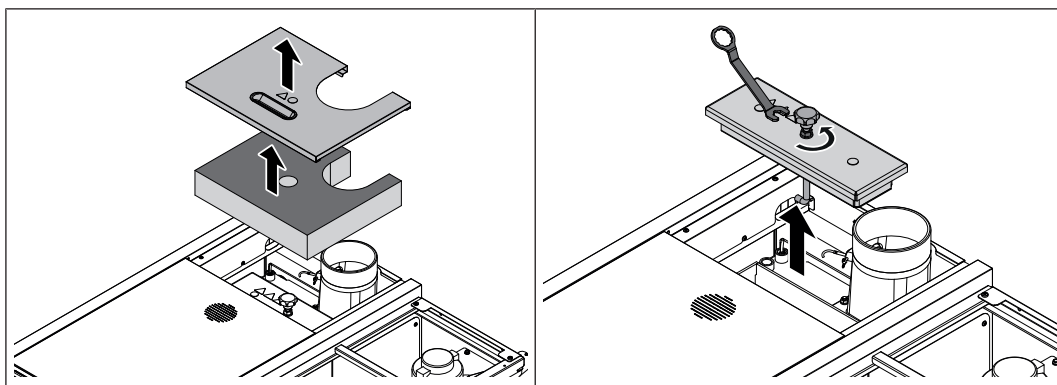


- ☐ Screw the base frame of the two units from the front and back
- ☐ Slide the floor insulation under the pellet unit from the front

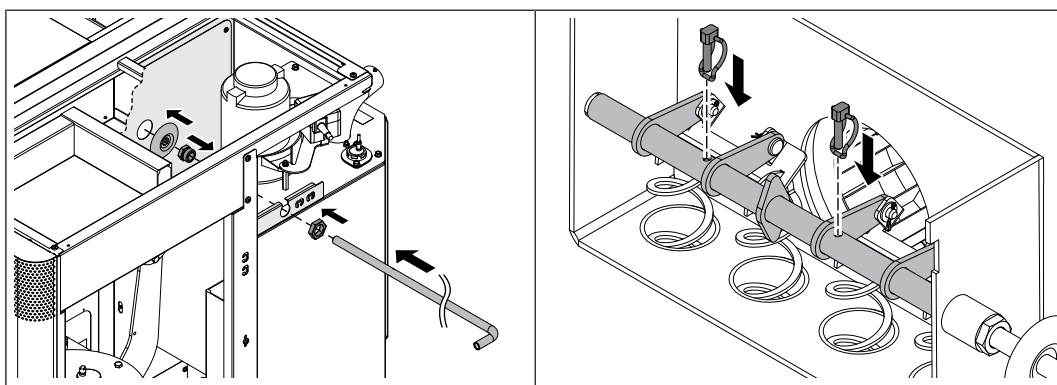


- ☐ Attach the air intake of the boiler body to the insulated side panel of the firewood boiler using one screw

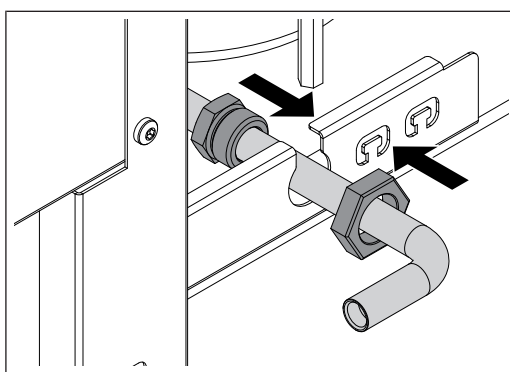
6.9.3 Installing the WOS lever



- ☐ Remove the back insulating cover and thermal insulation from the firewood boiler
- ☐ Loosen the lock nut on the heat exchanger cover, turn the star-shaped screw and remove the heat exchanger cover



- ☐ Fit the plastic cover, brass bushing and counter nut to the WOS lever
- ☐ Lift the linking plate and WOS springs and insert the WOS lever
- ☐ Push the WOS lever all the way in and thread into the opposite side with the grey cast iron bushing already fitted
- ☐ Turn the WOS lever until the holes in the shaft and linking plate are aligned and secure with pipe locking pin

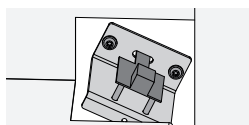
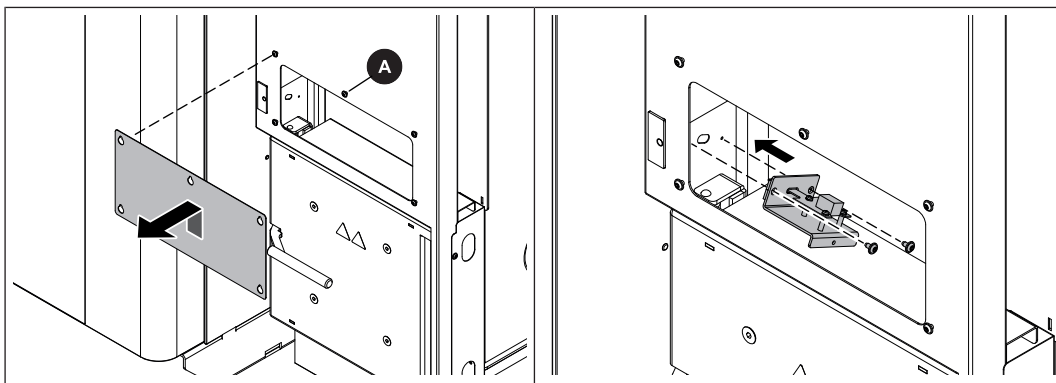


- ☐ Secure the WOS lever to the pellet unit with grey cast iron bushing and counter nut

6.9.4 Install the flow sensor



- ☐ Flow sensor is supplied packed in the controller box



- ☐ Open the insulated door to the pellet unit
- ☐ Loosen the screws (A) on the cover plate above the ash door and unhook the cover
- ☐ Fix the flow sensor with 2x self-tapping screws to the side plate of the firewood boiler
 - ↳ The cutout is at the front of the pellet unit between the pellet heat exchanger and inside panel
 - ↳ Pay attention to the installation position – see diagram
- ☐ Run the flow sensor cable upwards to the controller box of the pellet unit
- ☐ Put the cover plate back on the screw heads and tighten the screws (A)
- ☐ Close the insulated door on the pellet unit

6.10 Electrical connection

DANGER

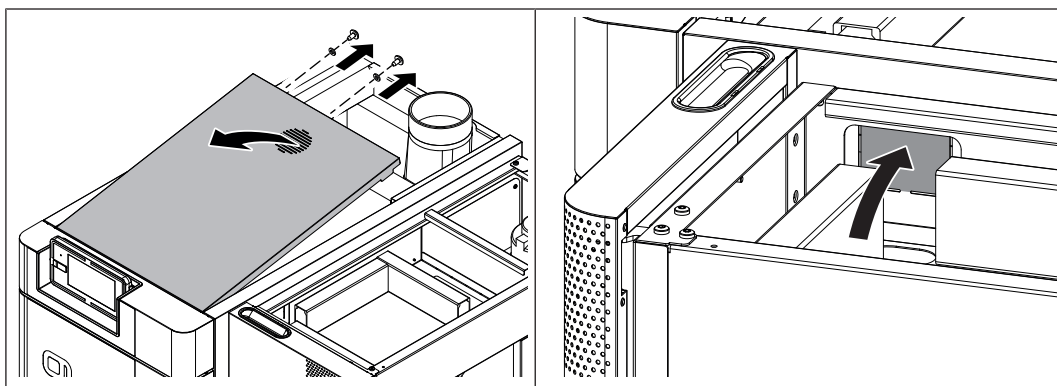


When working on electrical components:

Risk of electrocution!

When work is carried out on electrical components:

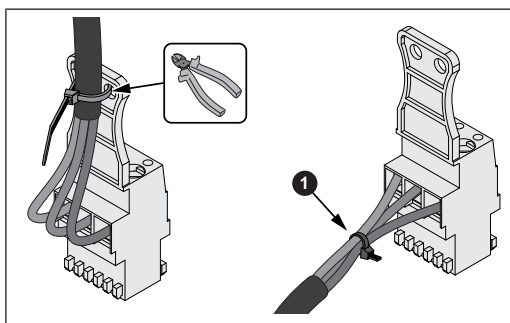
- ☐ Always have work carried out by a qualified electrician
- ☐ Observe the applicable standards and regulations
- ⚡ Work must not be carried out on electrical components by unauthorised persons



- ☐ Undo the retaining screw and contact disc on the back of the controller cover
- ☐ Lift off the controller cover
- ☐ Press the piece out of the pre-punched opening between the firewood boiler and pellet unit for cable feedthrough at a later time

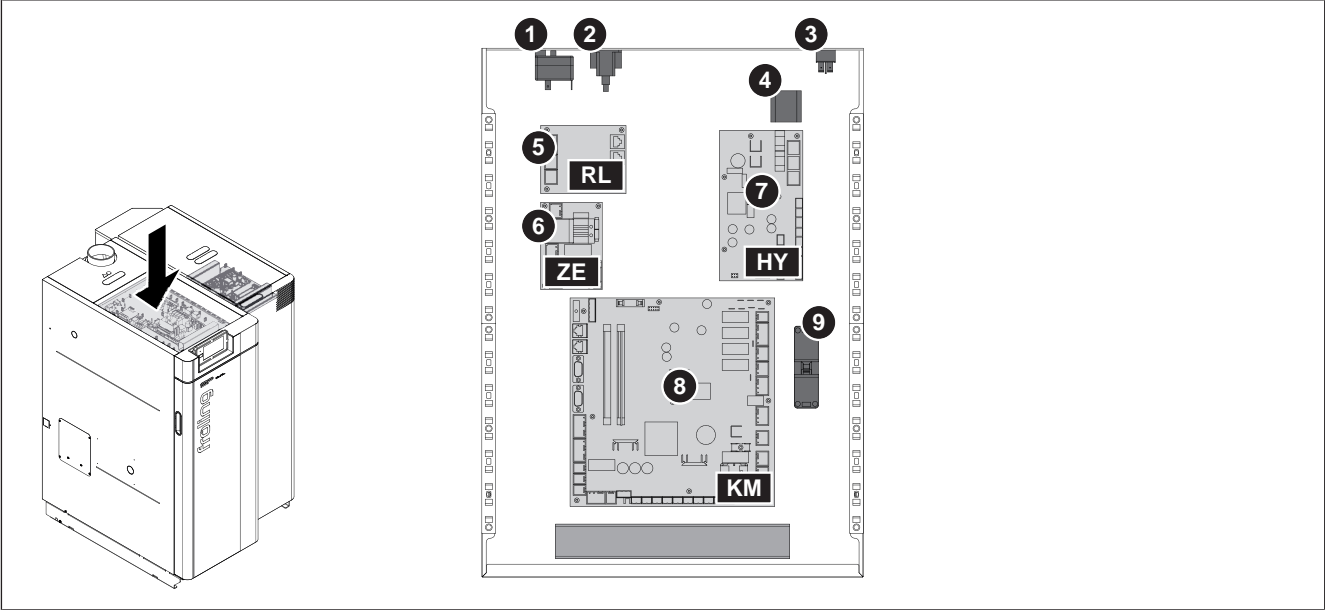
Prepare the plug

some components come ready to connect with the cable fixed to the tag connector with cable tie.

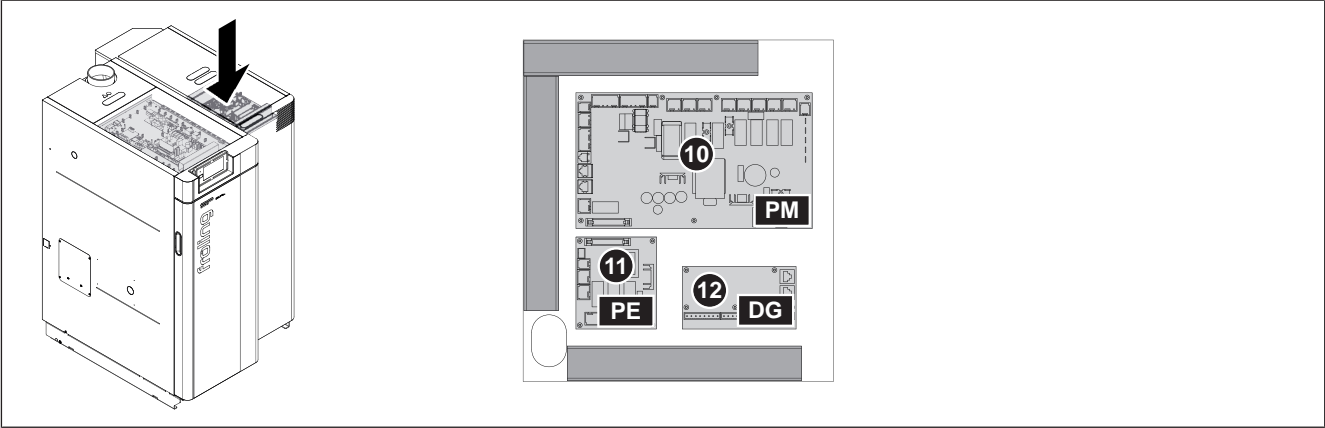


- ☐ Remove the cable ties from the tag connector
- ☐ Bind the individual cores together with cable ties (A)

6.10.1 Board overview



Item	Designation	Item	Designation
1	High-limit thermostat STL	6	Ignition expansion module (optional)
2	Service interface	7	Hydraulic module
3	Main switch	8	Core module
4	Device connection terminal	9	Mains connection plug
5	Return mixer module (optional)		

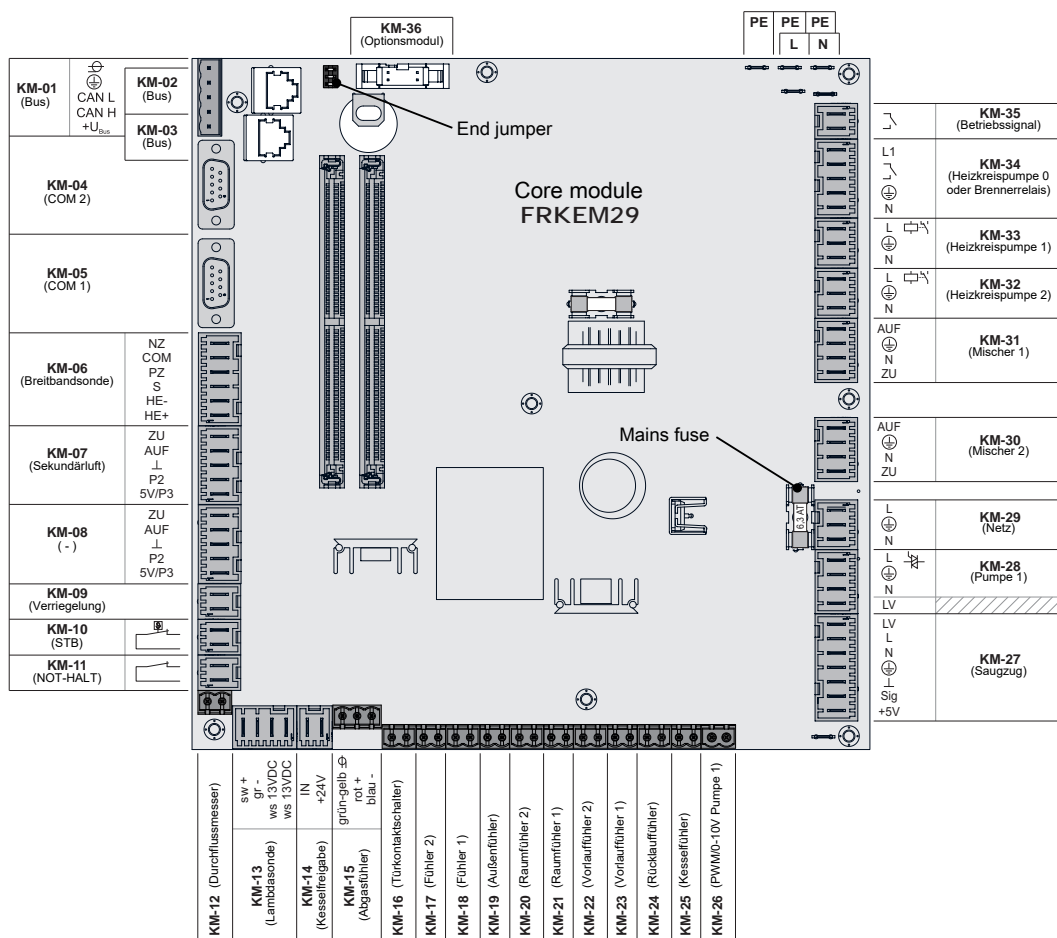



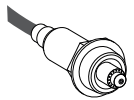
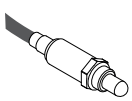
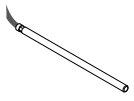
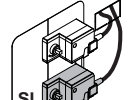
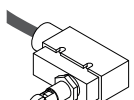
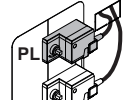
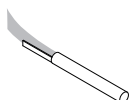
Item	Designation	Item	Designation
10	Pellet module	12	Digital module (optional)
11	Pellet module expansion (optional)		

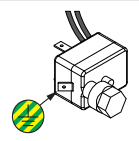
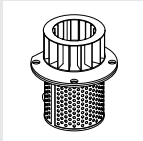
6.10.2 Connect the firewood boiler components

- Run the cables of the following components to the boiler controller and connect them to the boards in the controller box
- ↳ Tuck any extra cable into the cable duct

Core module:

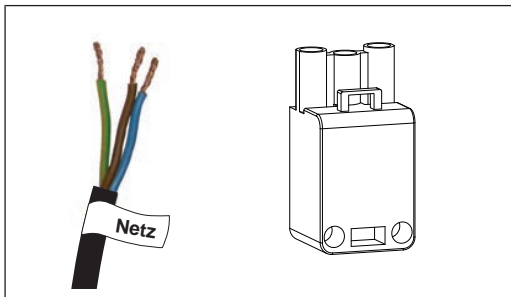


KM-02		Boiler display	KM-13		Lambda probe
KM-06		Broadband probe (alternative to the Lambda probe)	KM-15		Flue gas temperature sensor
KM-07		Secondary air servo-motor	KM-16		Door switch
KM-08		Primary air servo-motor	KM-25		Boiler sensor

KM-10		High-limit thermostat	KM-27		Induced draught fan
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Once the individual components have been wired:

Mains connection:

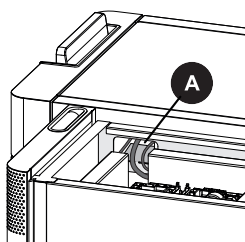


☐ Providing network connection

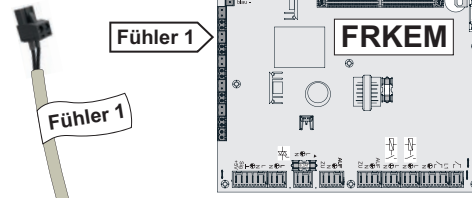
- ✎ The power supply line (network connection) must be fitted with a max. C16A fuse by the customer!
- ✎ Observe the circuit diagrams in the boiler controller operating instructions.
- ✎ Flexible sheathed cable must be used for the wiring; this must be of the correct size to comply with applicable regional standards and regulations

6.10.3 Connect the components of the pellet unit

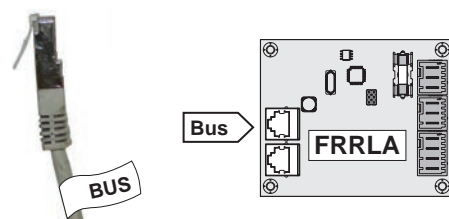
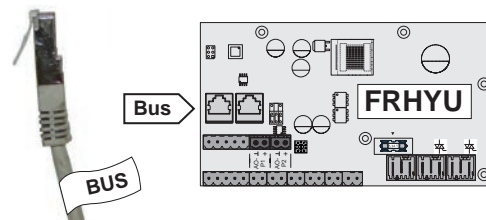
- ❑ Run the cables through the top cable duct to the firewood boiler controller and plug into the boards:



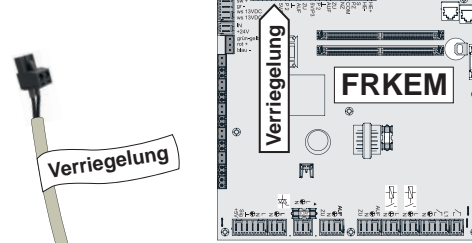
temperature sensor of the pellet unit to the core module



bus cable of the pellet unit to the hydraulic or return feed mixer module

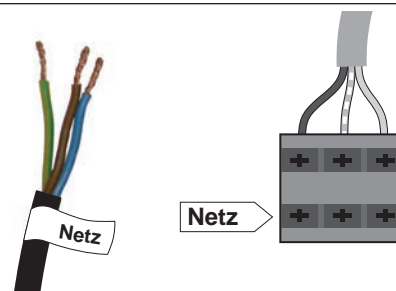


latch of the pellet unit to the core module

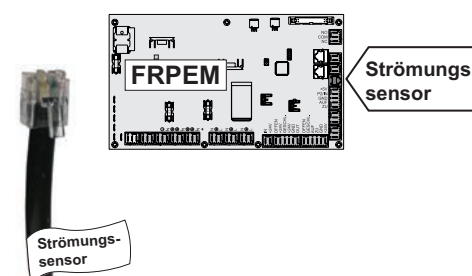


Power supply on terminal block

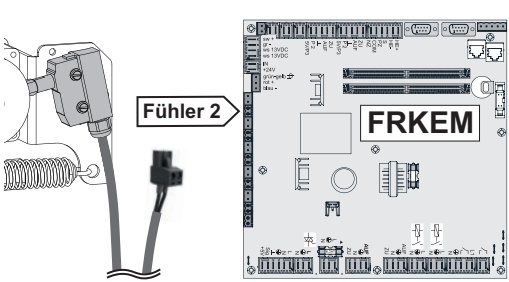
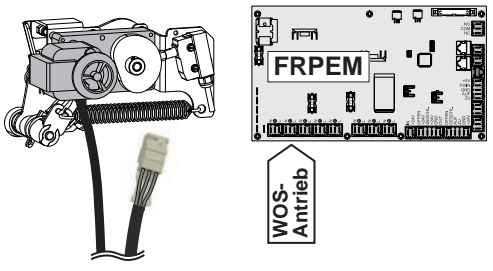
- Boiler protection in accordance with the section entitled "Technical specifications"



Flow sensor for the pellet unit on the pellet module

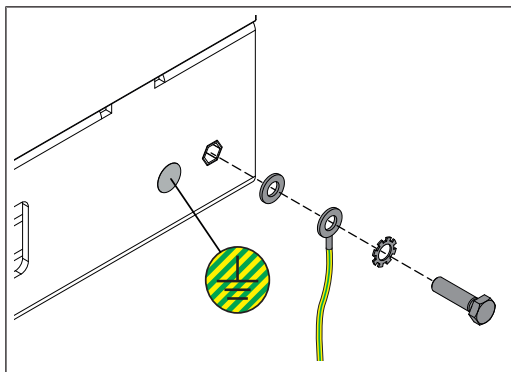


Also for WOS drive:

WOS monitor to the core module	
WOS drive to the pellet module	

NOTICE! Observe additional information in the relevant boiler controller documentation!

6.10.4 Potential equalisation

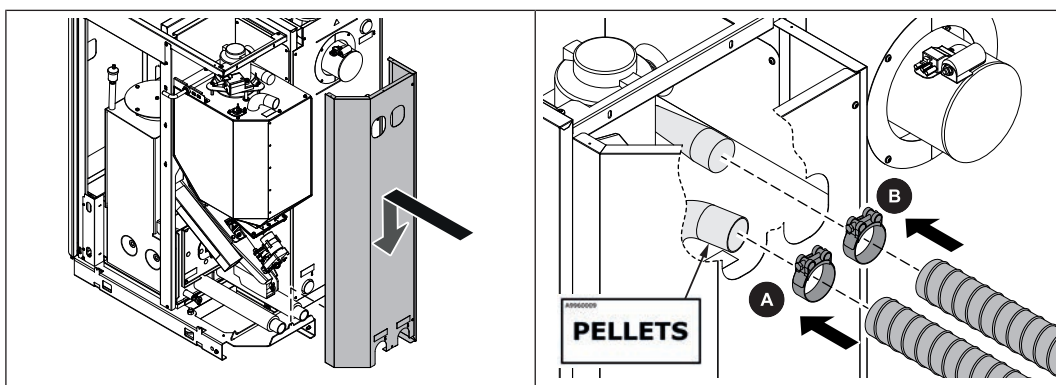


- ☐ The potential equalisation on the boiler base must comply with current directives, regulations and standards.

6.11 Connecting the discharge system

6.11.1 Install suction hoses

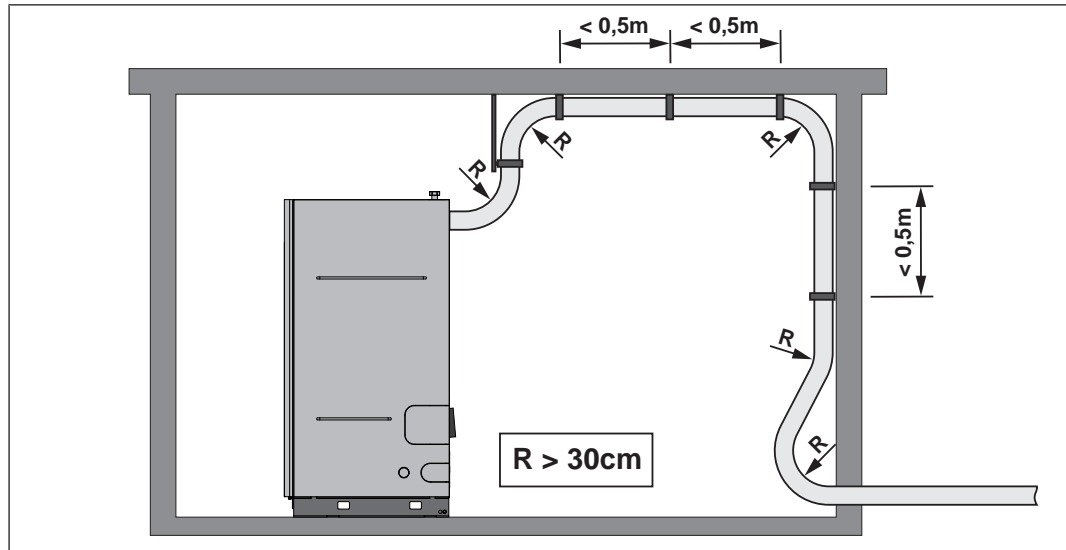
After installing the discharge system in accordance with the included installation manual, connect the suction and return air lines to the pellet unit.



- ☐ Insert the rear panel into the lug on the bottom of the boiler
- ☐ Run the suction hose (A) to the left-hand connection (pellet sticker)
- ☐ Run the return-air line (B) to the right-hand connection

NOTICE! When connecting the hose lines, pay attention to the equipotential bonding as per the installation instructions for the discharge system ➞ ["Potential equalisation" \[► 75\]](#)

6.11.2 Assembly information for hose lines

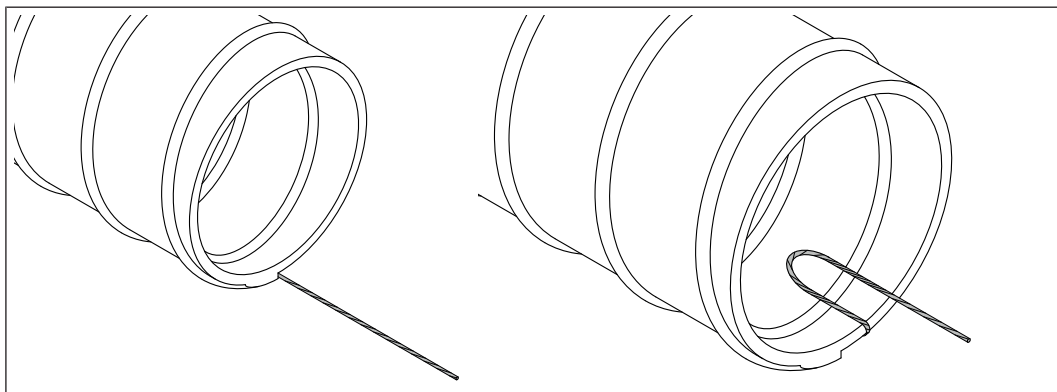


Please note the following with regard to the hose lines used in Froling vacuum discharge systems:

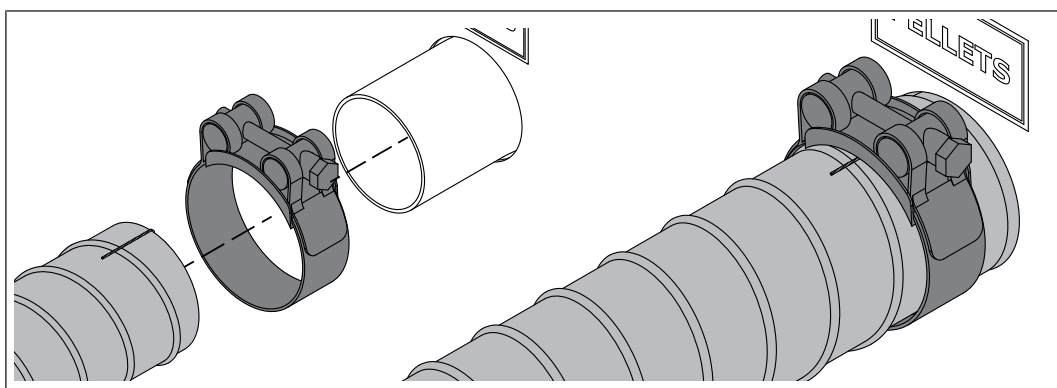
- Do not kink the hose lines! Minimum bending radius = 30cm
- Lay the hose lines as straight as possible! Sagging lines can lead to so-called “pockets”, which may cause problems with the pellet feed.
- Lay the hose lines in short sections away from walking areas.
- Hose lines are not UV-proof. Therefore: Do not lay the hose lines outdoors.
- Hose lines are suitable for temperatures up to 60°C. Therefore: Hose lines must not come into contact with flue gas pipes or uninsulated heating pipes.
- Hose lines must be earthed on both sides to ensure that no static charge builds up as a result of transporting the pellets.
- The suction hose to the boiler must be in a single section.
- The return-air line can be made up of several sections, but consistent potential equalisation must be established throughout the line.
- For systems over 35 kW, only suction hoses with PU inlet are recommended due to the increased load

Potential equalisation

When connecting the hose lines to the individual connections, ensure there is consistent potential equalisation throughout the line.

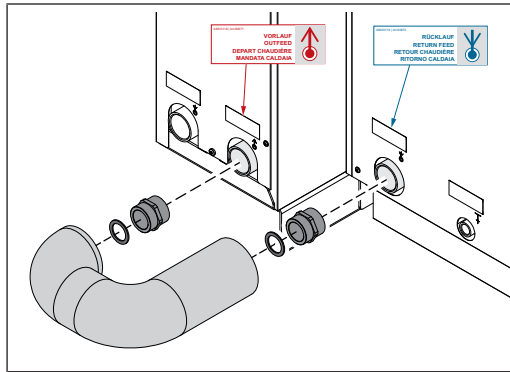


- ❑ Expose approximately 8 cm of the earth wire at the end of the hose line
 - ↪ **TIP:** Slit the insulation open along the wire with a knife
- ❑ Bend the earth wire inwards in a loop
 - ↪ This prevents the earth wire from being damaged by the pellet movement

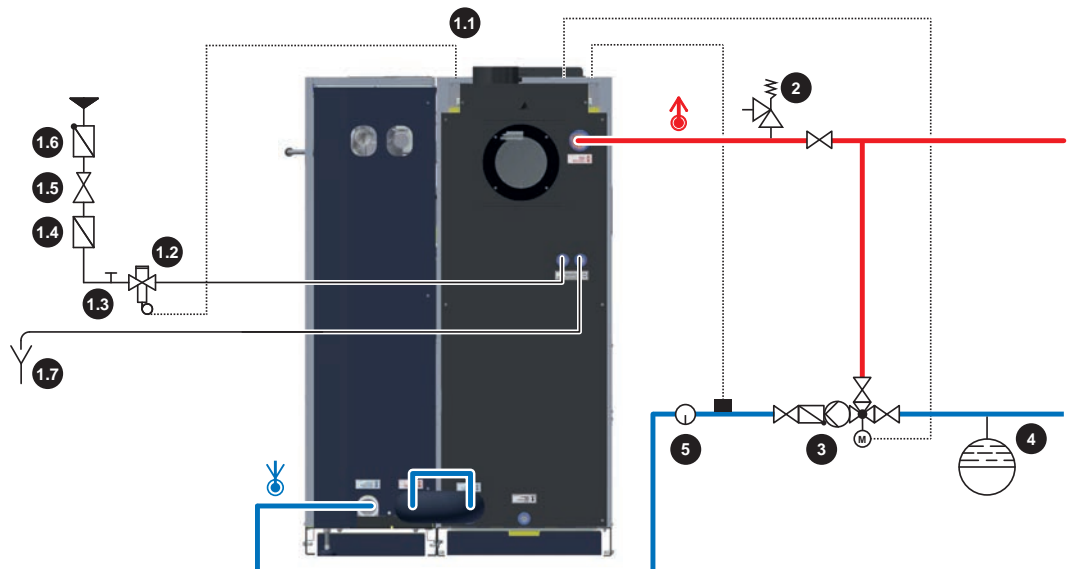


- ❑ Slide the hose clamp onto the hose line
- ❑ Attach the hose line to the connector
 - ↪ Ensure that contact is established between the earth wire and the connector.
Remove paint from the affected area if necessary
 - ↪ **TIP:** If stiffness occurs when trying to attach the hoses to the connectors, pour a few drops of water onto the pipe (do not use lubrication grease!)
- ❑ Secure the hose line with a hose clamp

6.12 Hydraulic connection



- ☐ Remove the protective cap from the pellet unit flow connection
- ☐ Fit the screw connection to the flow connection as shown
- ☐ Fit the second screw connection to the firewood boiler's return feed connection
- ☐ Fit the pipe union to the screw connections as shown
 - 🔧 Do not forget to fit the seals provided!



1 Thermal discharge valve

- The thermal discharge safety device must be connected in accordance with ÖNORM/ DIN EN 303-5 and as shown in the diagram above
- The discharge safety sensor must be connected to a pressurised cold water mains supply (temperature $\leq 15^{\circ}\text{C}$) in such a way that it cannot be shut off
- A pressure reducing valve (1.5) is required for a cold water pressure of ≥ 6 bar
Minimum cold water pressure = 2 bar

- 1.1 Sensor of thermal discharge safety device
- 1.2 Thermal discharge valve (opens at approx. 95°C)
- 1.3 Cleaning valve (T-piece)
- 1.4 Dirt trap
- 1.5 Pressure reducing valve
- 1.6 Backflow preventer to prevent stagnation water from entering the drinking water network
- 1.7 Free outlet without counter pressure with observable flow path (e.g. discharge funnel)

2 Safety valve

- Safety valve according to EN 12828 with a minimum diameter of DN15 (< 50 kW) or DN20 (50 – 100 kW)
- The setting pressure must not exceed 3 bar
- The safety valve must be installed in an accessible place on the heat generator or in direct proximity in the flow pipe in such a way that it cannot be shut off
- An unhindered and safe drainage of escaping steam or water must be ensured

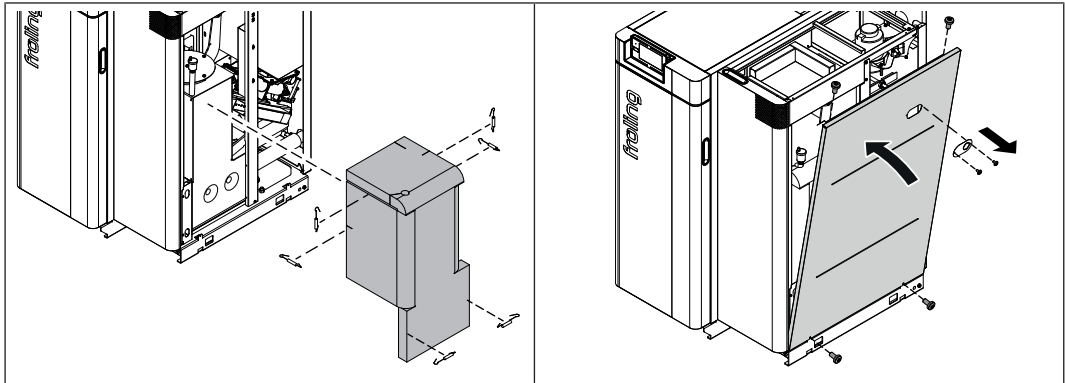
3 Return temperature control**4 Diaphragm expansion tank**

- The diaphragm pressurised expansion tank must conform to EN 13831 and hold at least the maximum expansion volume of the system's heated water including a water seal
- Its size must comply with the design information in EN 12828 - Appendix D
- Ideally it should be installed in the return line. Follow the manufacturer's installation instructions

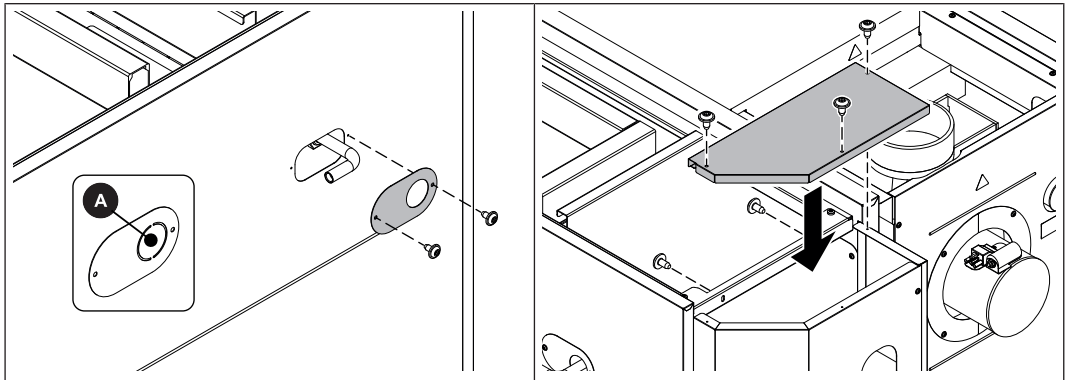
5 We recommend fitting some sort of control device (e.g. thermometer)

6.13 Concluding work

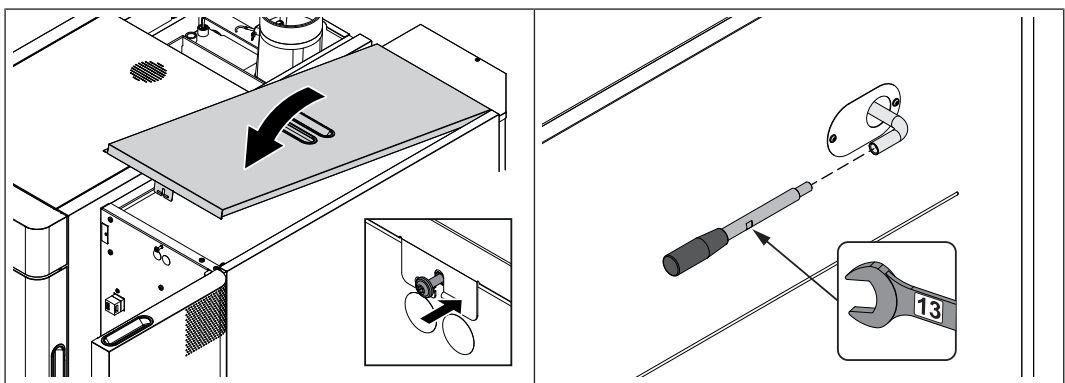
6.13.1 Fitting the cladding to the pellet unit



- ☐ Attach the thermal insulation to the pellet unit and fix in place using tension springs
- ☐ Remove the cover plate of the WOS lever from side panel
- ☐ Insert the side panel into the lug on the bottom of the boiler and fix in place

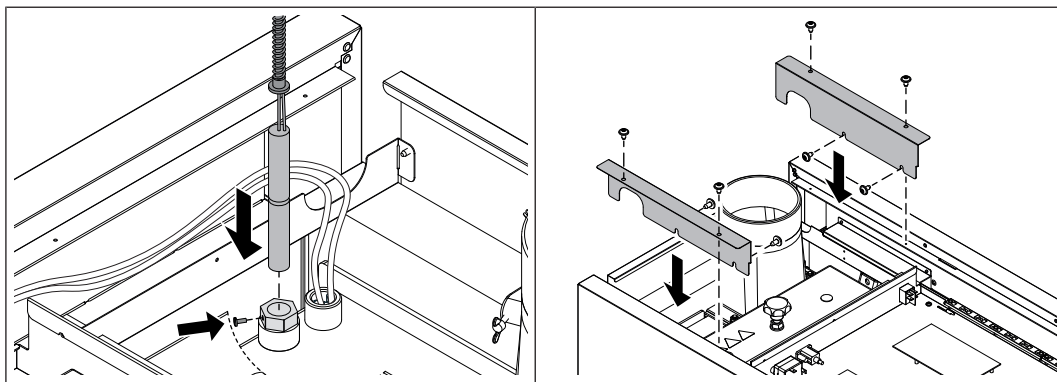


- ☐ Remove the piece from the pre-punched hole (A) for the WOS lever from the cover plate
 - ↳ Use a half-round file to file down any protruding pieces
- ☐ Slide the cover plate onto the WOS lever and attach to the side panel
- ☐ Install the cover on the rear panel of the pellet unit

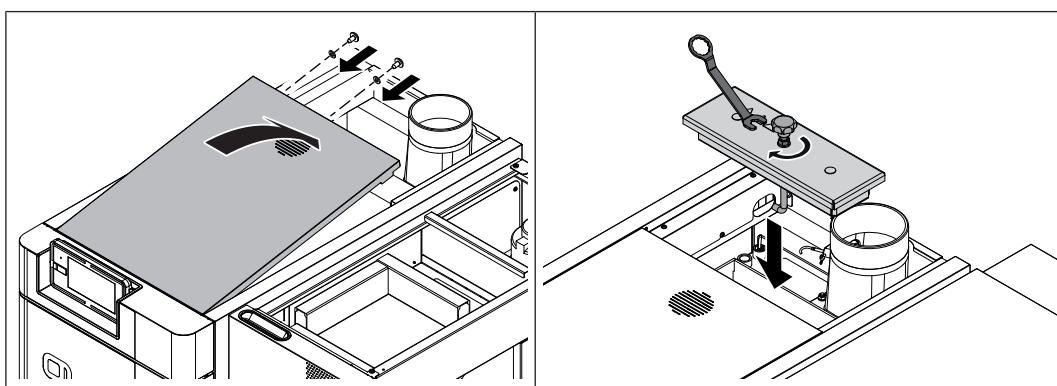


- ☐ Insert the top cover at the rear and attach it at the front with a retaining screw
- ☐ Screw the WOS handle into the lever
- ☐ Close the insulated door on the pellet unit

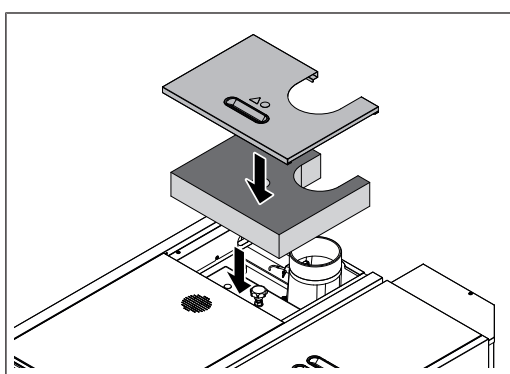
6.13.2 Install the cladding on the firewood boiler



- ☐ Slide the sensor and metal tube insulation of the thermal discharge safety valve into the immersion sleeve and secure with slotted screw
- ☐ Attach the left and right cover plates to the cable ducts

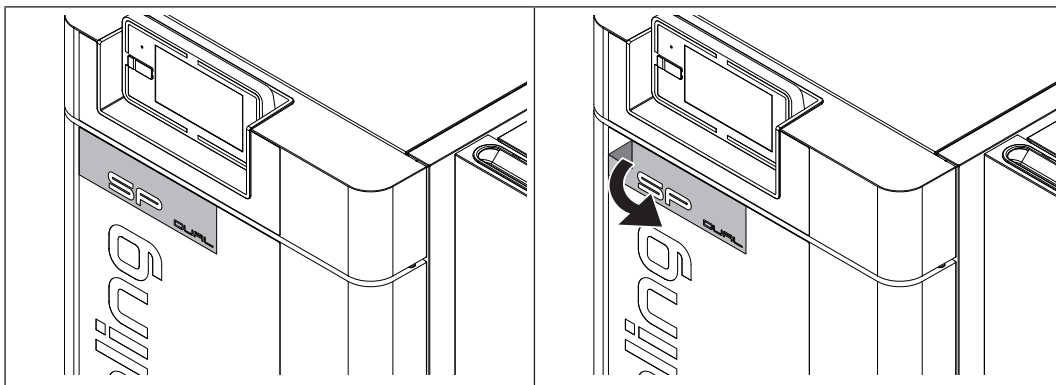


- ☐ Insert the cover behind the control and use screws and contact discs to attach at the back of the cover
- ☐ Put the heat exchanger cover on and fix it in place by turning the star knob screw
- ☐ Tighten the lock nut using a wrench



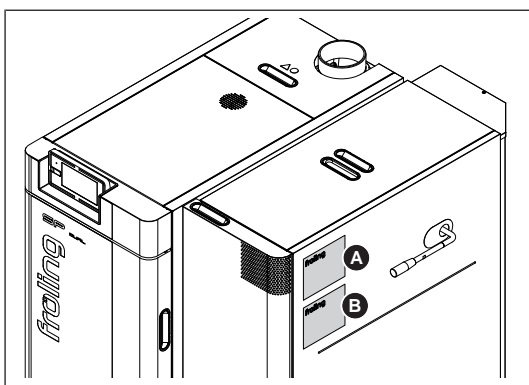
- ☐ Place the thermal insulation and the rear cover on the heat exchanger cover

6.13.3 Positioning the boiler stickers



- ☐ Remove the protective film from the sticker
- ☐ Position the backing film featuring “SP Dual” in the upper left corner of the insulated door, ensuring all of the air bubbles have been removed
- ☐ Make several passes over the sticker so the writing adheres to the insulated door
- ☐ Carefully pull off the transparent backing film

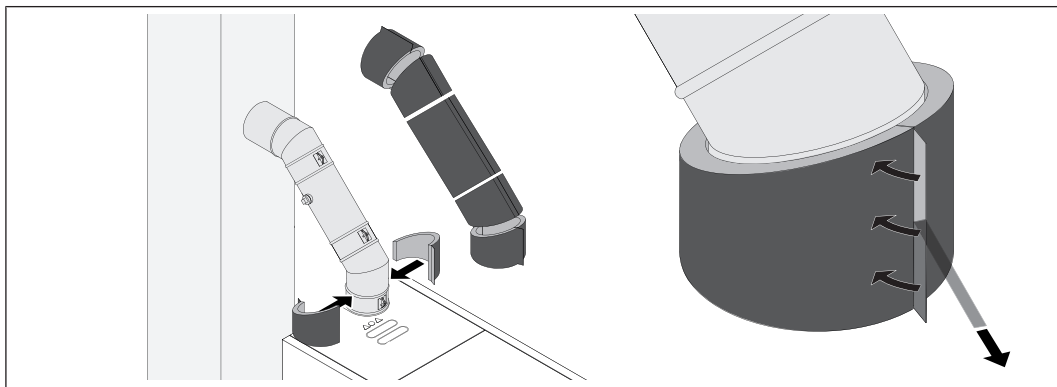
6.13.4 Affixing the identification plate



- ☐ Affix the supplied identification plates for the firewood boiler (A) and pellet unit (B) in a free space on the boiler

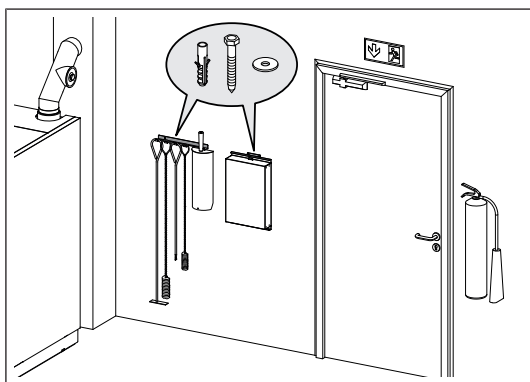
6.13.5 Insulate the connection line

When using the optionally available thermal insulation supplied by Fröling GesmbH, perform the following steps:



- ☐ Cut the half shells of thermal insulation to length and lay them on the connection line
- ☐ Create an opening for access to the measuring port
- ☐ Apply protective foil at the projecting lugs
- ☐ Glue the half shells to each other

6.13.6 Install the brackets for accessories



- ☐ Using appropriate fasteners, attach the brackets to the wall on the boiler
- ☐ Attach the accessories to the brackets

7 Start-up

7.1 Before commissioning / configuring the boiler

The boiler must be configured to the heating system during initial start-up!

NOTICE

Optimum efficiency and efficient, low-emission operation can only be guaranteed if the system is set up by trained professionals and the standard factory settings are observed.

Take the following precautions:

- ☐ Initial startup should be carried out with an authorised installer or with Froling customer services

NOTICE

Foreign bodies in the heating system impair its operational safety and can result in damage to property.

As a result:

- ☐ The whole system should be rinsed out before initial start-up in accordance with EN 14336.
- ☐ Recommendation: Make sure the hose diameter of the flush nozzles in the flow and return complies with ÖNORM H 5195 and is the same as the hose diameter in the heating system, however not more than DN 50.

- ☐ Turn on the main switch
- ☐ Set the boiler controller to the system type.
- ☐ Load the boiler default values.

NOTICE! For the keypad layout and instructions for modifying the parameters, see the instruction manual for the boiler controller.

- ☐ Check the system pressure of the heating system.
- ☐ Check that the heating system is fully ventilated
- ☐ Check all quick vent valves of the entire heating system for leaks

NOTICE! The factory-fitted quick vent valve of the pellet unit is located behind the front insulated door

- ☐ Check that all water connections are tightly sealed
 - ↳ Pay particular attention to those connections from which plugs were removed during assembly.
- ☐ Check that all necessary safety devices are in place
- ☐ Check that there is sufficient ventilation in the boiler room.
- ☐ Check the seal of the boiler.
 - ↳ All doors and inspection openings must be tightly sealed.
- ☐ Check all blanking plugs (e.g. drainage) for tightness
- ☐ Check that the drives and servo motors are working and turning in the right direction
- ☐ Check that the door contact switch is working efficiently.

NOTICE! Check the digital and analogue inputs and outputs - See the instruction manual for the boiler controller.

7.2 Initial startup

7.2.1 Permitted fuels

Wood pellets

Wood pellets made from natural wood with a diameter of 6 mm

Note on standards

EU:	Fuel acc. to EN ISO 17225 - Part 2: Wood pellets class A1 / D06
and/or:	ENplus / DINplus certification scheme

General note:

Before refilling the store, check for pellet dust and clean if necessary.

TIP: Fit the Froling PST pellet deduster for separating the dust particles contained in the return air

Firewood

Firewood up to max. 55 cm long.

Water content

Water content (w) greater than 15% (equivalent to wood moisture $u > 17\%$)
Water content (w) less than 25% (equivalent to wood moisture $u < 33\%$)

Note on standards

EU:	Fuel as per EN ISO 17225 – Part 5: Firewood class A2 / D15 L50
Additional for Germany:	Fuel class 4 (§3 of the First Federal Emissions Protection Ordinance (BimSchV) in the last amended version)

Tips for storing wood

- Use wind-exposed areas where possible for storage (e.g. store at edge of forest instead of in forest)
- Walls of buildings facing the sun are ideal
- Create a dry underlay, where possible with air access (line with round timber, pallets, etc.)
- stack split wood and store in such a way that it is protected from the elements
- If possible, stock fuel for the day in a warm place (e.g. in boiler room) (pre-heats the fuel!)

Storage time dependent upon water content

	Wood type	Water content	
		15 – 25%	less than 15 %
Storage in heated and ventilated room (approx. 20°C)	Soft wood (e.g. spruce)	approx. 6 months	from 1 year
	Hardwood (e.g. beech)	1 – 1.5 years	from 2 years
Outdoor storage (protected from elements, exposed to wind)	Soft wood (e.g. spruce)	2 summers	from 2 years
	Hardwood (e.g. beech)	3 summers	from 3 years

Freshly cut wood has an approximate water content of 50 to 60%. As the above table shows, the water content of the firewood decreases the longer the wood is stored depending on how dry and warm the storage location is. The ideal water content of firewood is between 15 and 25%. If the water content falls below 15%, we recommend you adjust the combustion control to the fuel.

7.2.2 Fuels permitted under certain conditions

Wood briquettes

Wood briquettes for non-industrial use with a diameter of 5-10 cm and 5-50 cm long.

Note on standards

EU:	Fuel as per EN ISO 17225 - Part 3: wood briquettes class B / D100 L500 Form 1 - 3
Additional for Germany:	Fuel class 5a (§3 of the First Federal Emissions Protection Ordinance (BImSchV) - applicable version)

Notes on use

- When burning wood briquettes use the settings for extremely dry fuel
- Wood briquettes must be heated up with firewood as per EN ISO 17225-5 (at least two layers of firewood under the wood briquettes)
- The fuel loading chamber must not be filled more than 3/4 full, as the wood briquettes expand during combustion
- Even when using the settings for dry fuel, burning wood briquettes can cause combustion problems. In such cases, repairs must be carried out by qualified staff. Please contact Froling customer services or your installer.

7.2.3 Non-permitted fuels

The use of fuels not defined in the "Permitted fuels" section, and particularly the burning of refuse, is not permitted.

CAUTION

In case of use of non-permitted fuels:

Burning non-permitted fuels increases the cleaning requirements and leads to a build-up of aggressive sedimentation and condensation, which can damage the boiler and also invalidates the guarantee. Using non-standard fuels can also lead to serious problems with combustion.

For this reason, when operating the boiler:

- ☐ Only use permitted fuels

7.2.4 Heating up for the first time

Follow the relevant assembly instructions for the firewood boiler when heating up in firewood mode for the first time or when screed drying the combustion chamber.

NOTICE

If condensation escapes during the initial heat-up phase, this does not indicate a fault.

- ☐ Tip: If this occurs, clean up using a cleaning rag.

NOTICE! See boiler controller instruction manual for all the steps necessary to start up for the first time.

7.2.5 Heating up for the first time

NOTICE

If condensation escapes during the initial heat-up phase, this does not indicate a fault.

- ☐ Tip: If this occurs, clean up using a cleaning rag.

CAUTION

If the boiler heats up too quickly on initial start-up:

If the output during the heating-up process is too great, cracks in the combustion chamber may appear as a result of drying out too rapidly!

For this reason the following applies the first time you heat up the boiler:

- ☐ Carry out initial start-up of the firewood boiler with less amount of fuel

8 Decommissioning

8.1 Mothballing

The following measures should be taken if the boiler is to remain out of service for several weeks (e.g. during the summer):

- ☐ Clean the boiler thoroughly and close the doors fully

If the boiler is to remain out of service during the winter:

- ☐ Have the system completely drained by a qualified technician
 - ↳ Protection against frost

8.2 Disassembly

To disassemble the system, follow the steps for assembly in reverse order.

8.3 Disposal

- ☐ Ensure that they are disposed of in an environmentally friendly way in accordance with waste management regulations in the country (e.g. AWG in Austria)
- ☐ You can separate and clean recyclable materials and send them to a recycling centre.
- ☐ The combustion chamber must be disposed of as builders' waste.

9 Appendix

9.1 Pressure equipment regulation

ZERTIFIKAT ♦ CERTIFICATE ♦ 認証証書 ♦ СЕРТИФИКАТ ♦ CERTIFICADO ♦ CERTIFICAT




Landesgesellschaft
Österreich

EU- Entwurfsmusterprüfbescheinigung Certificate

EU-Entwurfsmusterprüfung (Modul B 3.2) nach Richtlinie 2014/68/EU
EU-Design-examination (Module B 3.2) according to directive 2014/68/EU

Zertifikat-Nr.: Certificate-No.:	0531-PED-725108377-2		
Zeichen des Auftraggebers: Reference of Applicant:	Auftragsdatum: Date of Application:	Inspektionsbericht-Nr.: Inspection report Nr.:	
	19.09.2018	VE725108377-2-JKo	
Hersteller: Manufacturer:	Fröling GmbH		
In/ of	Industriestraße 12 A- 4710 Grieskirchen		

Hiermit wird bestätigt, dass das hier genannte EG-Entwurfsmuster die Anforderungen der Richtlinie 2014/68/EU erfüllt.

We herewith certify that the design-examination mentioned meets the requirements of the Directive 2014/68/EU.

Fertigungsstätte: Manufacturing Plant:			
Geprüft nach: Tested in accordance with:	Richtlinie 2014/68/EU, Artikel 4(2)		
Beschreibung des Produktes: Description of product:	Scheitholzkessel S4 Turbo 15, 15F, 22, 22F, 28, 28F, 32, 32F, 34, 34F, 40, 40F, 50, 50F, 60 und 60F Bedienungsanleitung Scheitholzkessel S4 Turbo Dokument B1510318_de Ausgabe 05.10.2018, Montageanleitung Scheitholzkessel S4 Turbo Dokument M0971318_de Ausgabe 16.11.2018		
Gültig bis: Valid to:	27.11.2028		

Wien, den 27.11.2018

Bitte beachten Sie die Hinweise auf der zweiten Seite.
Please note the remarks on the second page.



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