

Installation Instructions Pellet Boiler P4 Pellet 8 - 105



Translation of the original German installation instructions for technicians

Read and follow the instructions and safety information!

Technical changes, typographical errors and omissions reserved!

M0931114_en | Edition 05/05/2014



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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

This manual contains information about the following sizes of the pellet boiler P4:
P4 Pellet 8, P4 Pellet 15, P4 Pellet 20, P4 Pellet 25, P4 Pellet 32, P4 Pellet 38,
P4 Pellet 45¹⁾, P4 Pellet 48, P4 Pellet 60, P4 Pellet 70²⁾, P4 Pellet 80,
P4 Pellet 100 (99kW)³⁾, P4 Pellet 100, P4 Pellet 105⁴⁾

1) P4 Pellet 45 is only available in the UK; 2) P4 Pellet 70 is only available in France;

3) P4 Pellet 100 with nominal heat output of 99kW is only available in the UK; 4) P4 Pellet 105 is only available in Germany

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 or damage to property.

2.2 Qualification of assembly staff



CAUTION

Assembly and installation by untrained personnel:

Risk of personal injury and damage to property.

During assembly and installation:

- ☐ Observe the instructions and information in the manuals
- ☐ Only allow trained staff to carry out assembly and installation

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 Protective equipment for assembly staff

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



- For transportation, setup and assembly:
 - suitable workwear
 - protective gloves
 - sturdy shoes

2.4 Design Information

2.4.1 Notes on standards

The system must be installed and commissioned in accordance with the local fire and building regulations. The following standards and regulations should always be observed:

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 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

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)

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 in water heating systems (Germany)
SWKI 97-1	Water quality for heating, steam, cooling and air conditioning systems (Switzerland)
D.P.R. n° 412	Regulations for the planning, installation, running/operation and maintenance of heating systems in buildings to reduce energy consumption with reference to Article 4, Comma 4 of the Legislative Decree of 9 January 1991, No. 10 (Italy)

Standards for permitted fuels

EN 14961-2	Solid biofuel, fuel specifications and classes. Part 2: Wood pellets for non-industrial use
1. BImSchV	First Ordinance of the German Federal Government for implementation of the Federal Emission Protection Law, BGBl. I P. 491, in the applicable version.

2.4.2 Installation and approval of the heating system

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

Note on standards

ÖNORM / DIN EN 12828 Heating Systems in Buildings

NOTICE! Each 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: Inform the civic/municipal building authorities.

Germany: Notify an approved chimney sweep and the building authorities.

2.4.3 General information for installation room (boiler room)*Boiler room characteristics*

- There must not be a potentially explosive atmosphere in the boiler room as the boiler is not suitable for use in potentially explosive environments.
- The boiler room must be frost-free.
- The boiler does not provide any light, so the customer must provide sufficient lighting in the boiler room in accordance with national workplace design regulations.
- When using the boiler over 2000 metres above sea level you should consult the manufacturer.
- Danger of fire due to flammable materials.
No flammable materials should be stored near the boiler. Flammable objects (e.g. clothing) must not be put on the boiler to dry.
- Damage due to impurities in combustion air.
Do not use any solvents or cleaning agents containing chlorine in the room where the boiler is installed.
- Keep the air suction opening of the boiler free from dust.

Ventilation of the boiler room

Ventilation air for the boiler room should be taken from and expelled directly outside, and the openings and air ducts should be designed to prevent weather conditions (foliage, snowdrifts, etc.) from obstructing the air flow.

Unless otherwise specified in the applicable building regulations for the boiler room, the following standards apply to the design and dimensions of the air ducts:

Note on standards

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

2.4.4 Requirements for central heating water

The following standards and guidelines apply:

Note on standards

Austria:	ÖNORM H 5195-1
Germany:	VDI 2035
Switzerland:	SWKI 97-1
Italy:	D.P.R. no. 412

NOTICE! Note on filling with make-up water: always bleed the filling hose before connecting, in order to prevent air from entering the system.

Observe the standards and also follow the recommendations below:

- ☐ Max. cumulative value for alkaline earth: 1.0 mmol/l or 100 mg/l (corresponds to 5.6 dH)
- ☐ Use softened water as the make-up water
- ☐ Avoid leaks and use a closed heating system to maintain water quality during operation

2.4.5 Notes for using 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**.

2.4.6 Use with storage tank

NOTICE

In principle it is not necessary to use a storage tank for the system to run smoothly. However, we recommend that you use the system with a storage tank, as this ensures a continuous supply of fuel in the ideal output range of the boiler.

For the correct dimensions of the storage tank and the line insulation (in accordance with ÖNORM M 7510 or guideline UZ37) please consult your installer or Froling.

⇒ See "Addresses" [page 50]

2.4.7 Chimney connection/chimney system



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 in this respect that flue gas temperatures lower than 160K above room temperature can occur in the permitted operating range of the boiler.

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

The connection between the boiler and the chimney system should be as short as possible. The upward angle of the connection should not exceed 30° - 45°. Insulate the connection. The entire flue gas system - chimney and connection - should be calculated in accordance with EN 13384-1.

Local regulations and other statutory regulations also apply.

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

NOTICE! TRVB H 118 (Austria only) stipulates that an explosion flap must be installed in the connecting piece (flue pipe) directly next to the boiler. It should be situated in such a way that it poses no risk to persons!

Draught limiter

The installation of a draught limiter is recommended.

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

Boiler data for planning the flue gas system

Description		P4 Pellet			
		8	15	20	25
Flue gas temperature at nominal load	°C	140	150	150	150
Flue gas mass flow at nominal load	kg/s	0,007	0,010	0,014	0,018
Flue gas mass flow at partial load		0,003	0,004	0,006	0,007
Required feed pressure at nominal load	mbar	0,08	0,08	0,08	0,08
Required feed pressure at partial load		0,06	0,06	0,06	0,06
Maximum permissible feed pressure	as per ÖNORM / DIN EN 303-5				
Flue spigot diameter	mm	130	130	130	130

Description		P4 Pellet			
		32	38	45 ¹⁾	48
Flue gas temperature at nominal load	°C	160	160	160	160
Flue gas mass flow at nominal load	kg/s	0,022	0,025	0,035	0,039
Flue gas mass flow at partial load		0,009	0,011	0,016	0,017
Required feed pressure at nominal load	mbar	0,08	0,08	0,08	0,08
Required feed pressure at partial load		0,06	0,06	0,06	0,06
Maximum permissible feed pressure	gem. ÖNORM / DIN EN 303-5				
Flue spigot diameter	mm	150	150	150	150
1. P4 Pellet 45 is only available in UK					

Description		P4 Pellet				
		60	70 ¹⁾	80	100	105 ²⁾
Flue gas temperature at nominal load	°C	170	160	160	170	170
Flue gas mass flow at nominal load	kg/s	0,043	0,055	0,060	0,076	0,079
Flue gas mass flow at partial load		0,019	0,020	0,021	0,026	0,028
Required feed pressure at nominal load	mbar	0,08	0,08	0,08	0,08	0,08
Required feed pressure at partial load		0,06	0,06	0,06	0,06	0,06
Maximum permissible feed pressure	gem. ÖNORM / DIN EN 303-5					
Flue spigot diameter	mm	150	200	200	200	200
1. P4 Pellet 70 is only available in France						
2. P4 Pellet 105 is only available in Germany						

2.4.8 Room air-independent operation

The P4 Pellet has a central air connection on the back of the boiler. If appropriate supply air and flue gas connections are installed, the boiler can be operated independently of room air as a type C₄₂ or type C₈₂ in the sense of EN 15035.

Definition of type C₈ as per EN 15035

A boiler that is connected via its combustion air supply and flue gas outlet, with a connecting piece that may be supplied, to a shared chimney with a shaft for combustion air supply and a shaft for flue gas outlet. The mouths of the air and flue gas chimney are either concentric or so close to each other that similar wind conditions apply.

NOTICE! Air is supplied by an air and flue gas system!

Definition of type C₈ as per EN 15035

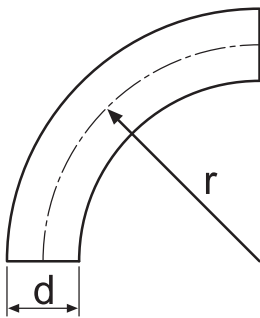
A boiler that is connected via its combustion air supply and flue gas outlet, with a connecting piece, to a wind protection device and a single or shared chimney.

NOTICE! Air supply via an air supply line that is independent from the chimney system!

NOTICE! This design requires a wind protection device. If a protective grating is fitted, you must ensure that the mesh size is sufficiently large to prevent a significant loss of pressure and/or seal from dirt!

The second index "2" (C₄₂ / C₈₂) indicates type C boilers with a blower fan downstream of the combustion chamber or the heat exchanger.

When dimensioning pipe bends in the supply air line you should note that:



The ratio of the radius of curvature (r) to pipe diameter (d) should be greater than 1
 $r:d \geq 1$

For example:

- Diameter of supply air connection = 80 mm
- Minimum radius of pipe bends 80 mm

Install the supply air line in as straight a line as possible and over the shortest path. Keep the number of pipe bends to a minimum (ideally a maximum of 4 bends)!

In addition, the following applies: The maximum resistance of the supply air line is 20 Pa!

You can find the necessary dimensions of the supply air connections in the boiler in the technical data sheets.

Minimum specification of connection lines

Connecting piece for the combustion air supply as per EN 1856-2

EN 1856-2 - T080 - N2 - D

Connecting piece for the flue gas outlet as per EN 1856-2

EN 1856-2 - T200 - P1 - W

TXXX	Temperature class (specified in °C)
N2	Pressure class with test pressure = 20 Pa
P1	Pressure class with test pressure = 200 Pa
D	Condensation resistance not required (dry)
W	Condensation resistance required (damp)

2.4.9 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

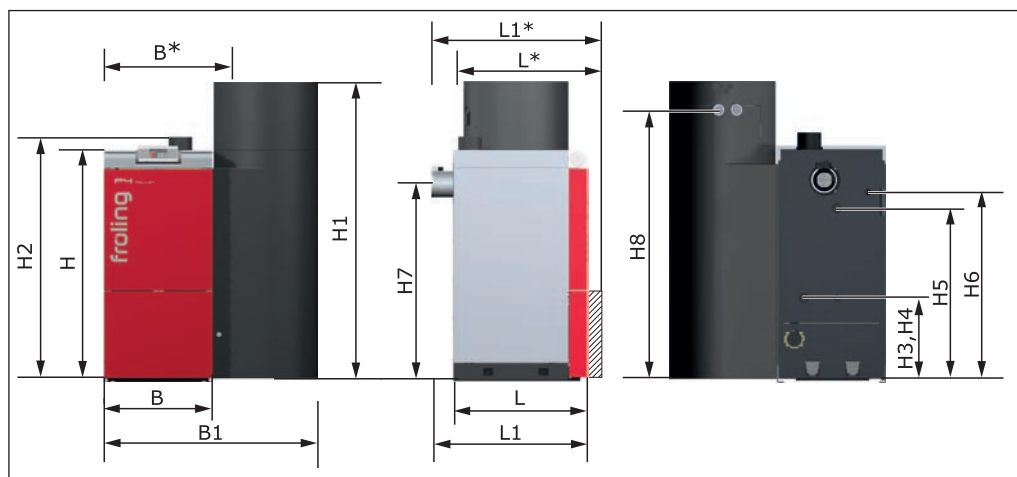
Tip: ☐ Fit a vertical pipe as a calming section in front of the automatic ventilating valve in such a way that the ventilating valve is positioned above the water level in the boiler

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

3 Technology

NOTICE! Some sizes of the boiler P4 Pellet are not available in every country

3.1 Dimensions P4 Pellet 8-38



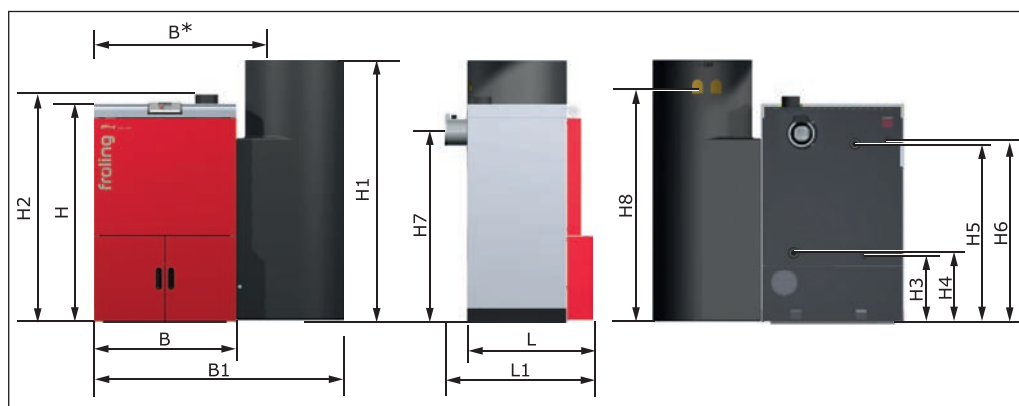
Item	Description	Unit	8 - 15	20 - 25	32 - 38
L	Length, boiler	mm	740	740	-
L*	Length, boiler	mm	-	-	820
L1	Total length incl. induced draught fan	mm	940	940	-
L1*	Total length incl. induced draught fan	mm	-	-	1020
B	Width, boiler	mm	600	770	860
B*	Width, boiler, incl. support for positioning unit ¹⁾	mm	705	875	965
B1	Total width including suction cyclone	mm	1185	1355	1445
H	Height, boiler ²⁾	mm	1280	1280	1430
H1	Total height incl. suction cyclone	mm	1660	1660	1900
H2	Height, flue gas pipe connection	mm	1350	1350	1530
H3	Height, drainage connection	mm	460	460	460
H4	Height, flow connection	mm	460	460	460
H5	Height, return connection	mm	940	955	1085
H6	Height, ventilation connection	mm	1030	1030	1155
H7	Height, induced draught fan connection	mm	1090	1090	1215
H8	Height, suction system connection	mm	1480	1480	1720

1. Corresponds to the minimum positioning width after removing the stoker assembly, suction cyclone and positioning unit
2. Corresponds to the minimum positioning height after removing the stoker assembly, suction cyclone and positioning unit

3.2 Dimensions P4 Pellet 45-105

NOTICE

Attention: Observe revised flow and return connection from P4 45 up to P4 105!

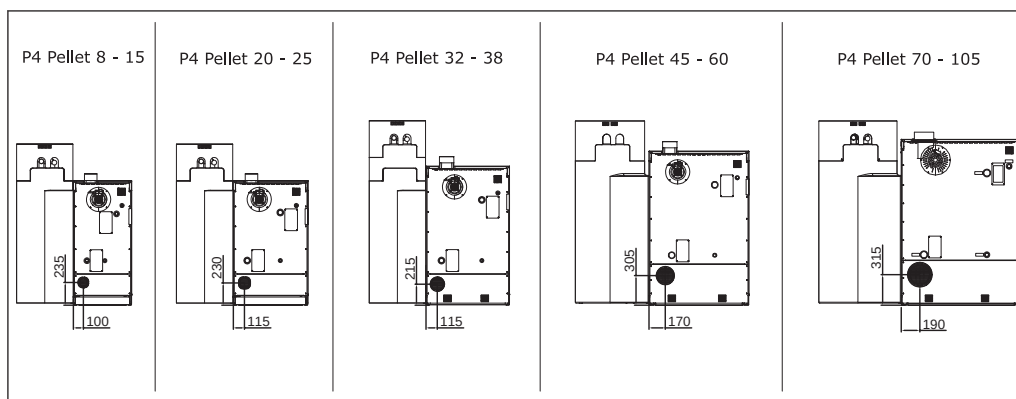


Item	Description	Unit	45 - 60	70 - 105
L	Length, boiler	mm	900	1000
L1	Total length incl. induced draught fan	mm	1100	1070
B	Width, boiler	mm	1030	1235
B*	Width, boiler, incl. support for positioning unit ¹⁾	mm	1275	1480
B1	Total width including suction cyclone	mm	1790	2085
H	Height, boiler ²⁾	mm	1585	1710
H1	Total height incl. suction cyclone	mm	1900	1900
H2	Height, flue gas pipe connection	mm	1685	1785
H3	Height, drainage connection	mm	490	500
H4	Height, return connection	mm	515	520
H5	Height, flow connection	mm	1290	1410
H6	Height, ventilation connection	mm	1310	1430
H7	Height, induced draught fan connection	mm	1375	1495
H8	Height, suction system connection	mm	1720	1720

1. Corresponds to the minimum positioning width after removing the stoker assembly, suction cyclone and positioning unit

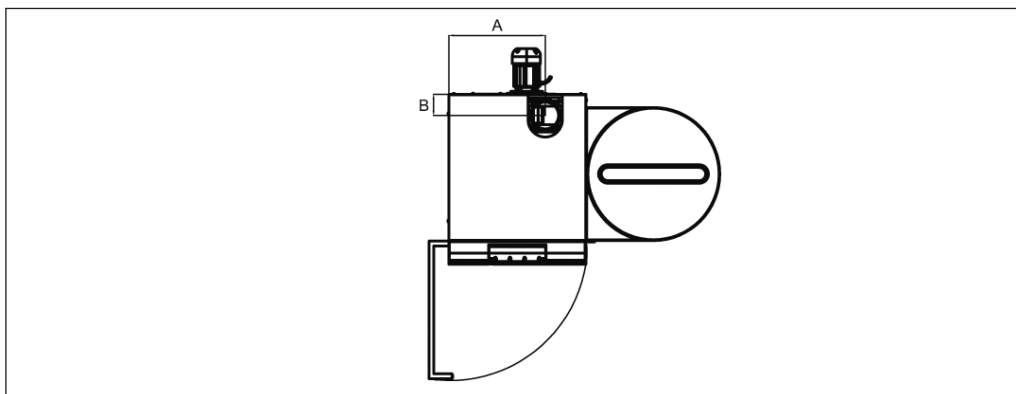
2. Corresponds to the minimum positioning height after removing the stoker assembly, suction cyclone and positioning unit

3.3 Supply air connections for room air-independent operation



Description	Unit	8 - 15	20 - 25	32 - 38	45 - 60	70 - 105
Supply air connection pipe (external diameter)	mm	80	100	125	160	200

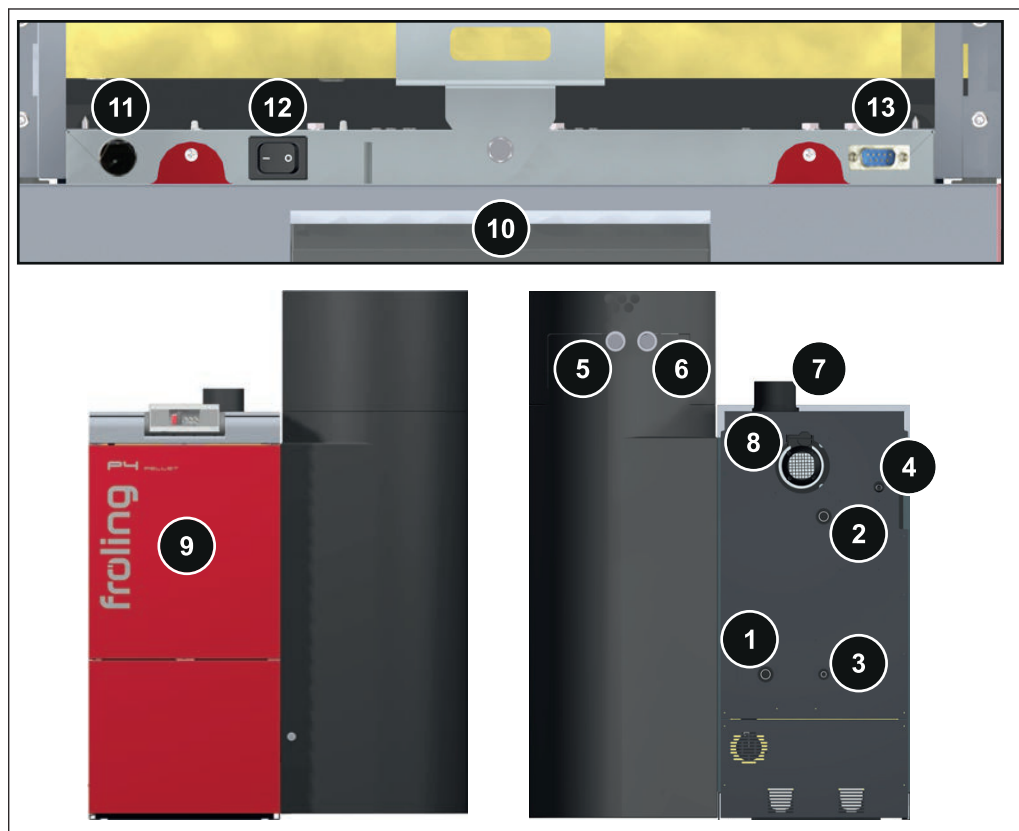
3.4 Flue gas pipe position



Description	Unit	8 - 15	20 - 25	32 - 38	45 - 60	70 - 105
A – Lateral distance	mm	420	585	650	815	1000
B – Depth distance	mm	90	90	85	90	80

3.5 Components and connections

3.5.1 P4 Pellet 8-38

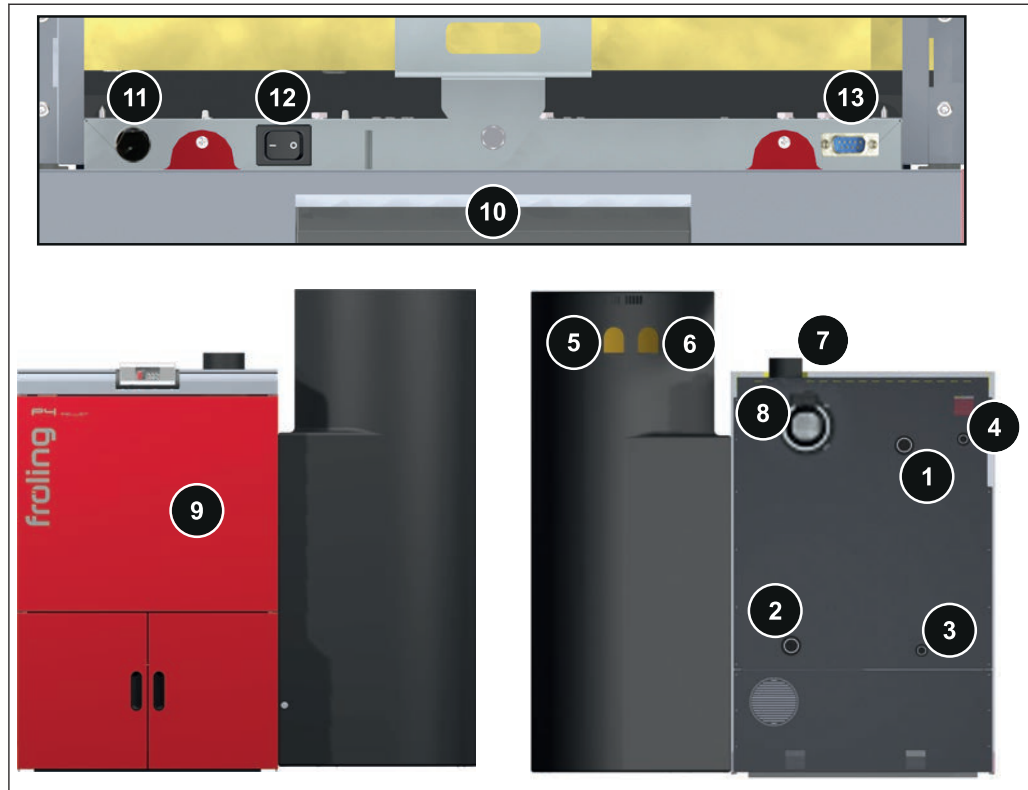


Item	Description	Unit	8 - 15	20 - 25	32 - 38
1	Boiler flow connection	inches	1	6/4	6/4
2	Boiler return connection	inches	1	6/4	6/4
3	Drainage connection	inches	1/2	1/2	1/2
4	Air vent connection	inches	1/2	1/2	1/2
5	Pellet suction line	mm	DA 60	DA 60	DA 60
6	Pellet return air line	mm	DA 60	DA 60	DA 60
7	Flue gas pipe connection (DM)	mm	130	130	150
8	Induced draught fan				
9	Controller box				
10	Lambdatronic P 3200 control				
11	High-limit thermostat (STL)				
12	Main switch				
13	Service interface				

3.5.2 P4 Pellet 45-105

NOTICE

Attention: Observe revised flow and return connection from P4 45 up to P4 105!



Item	Description	Unit	45 - 60	70 - 105
1	Boiler flow connection	inches	6/4	2
2	Boiler return connection	inches	6/4	2
3	Drainage connection	inches	1/2	1
4	Air vent connection	inches	1	1
5	Pellet suction line	mm	DA 60	DA 60
6	Pellet return air line	mm	DA 60	DA 60
7	Flue gas pipe connection (DM)	mm	150	200
8	Induced draught fan			
9	Controller box			
10	Lambdatronic P 3200 control			
11	High-limit thermostat (STL)			
12	Main switch			
13	Service interface			

3.6 Technical specifications

3.6.1 P4 Pellet 8 – 25

Description		P4 Pellet			
		8	15	20	25
Nominal heat output	kW	10,5	14,9	20,0	25,0
Heat output range		3,2-10,5	4,5-14,9	6,0-20,0	7,5-25,0
Electrical connection		230V / 50Hz / C16A			
Power consumption NL / PL	W	48 / 34	55 / 34	71 / 49	87 / 63
Boiler weight	kg	350	350	430	430
Boiler capacity (water)	l	70	70	80	80
Content ashcans heat exchanger / combustion chamber	l	13 / 13	13 / 13	25 / 15	25 / 15
Water pressure drop ($\Delta T = 20 \text{ K} / 10 \text{ K}$)	mbar	4,3 / 17,2	6,1 / 24,4	4,5 / 17,9	2,8 / 11,5
Min. boiler return temperature	°C	Not applicable due to internal return temperature control			
Max. permitted operating temperature	°C	80			
Min. operating temperature setting	°C	40			
Permitted operating pressure	bar	3			
Boiler class as per EN 303-5:2012		5			
Airborne sound level	dB(A)	< 70			
Permitted fuel as per EN 14961 ¹⁾		Part 2: Wood pellets class A1 / D06			

Description		Test report data			
		8	15	20	25
Testing institute		TÜV Süd ²⁾			
Test report no.		2211099-1	2211099-2	2213065-1 ³⁾	2213065-2 ³⁾
Date of issue		12.2.2011	12.2.2011	30.4.2013	30.4.2013
Boiler efficiency NL / PL	%	93,9 / 92,2	93,3 / 92,2	93,5 / 93,4	93,6 / 94,6
¹⁾ Detailed information on the fuel is included in the operating instructions, in the section on "Permitted fuels" ²⁾ TÜV SÜD, Landesgesellschaft Österreich GmbH, Grazer Straße 18, A – 8600 Bruck an der Mur ³⁾ As per ÖNORM / DIN EN 303-5, Section 5.1.3 type test: for a boiler from a range with a consistent structure it is sufficient, if the ratio of nominal heat output from the largest to the smallest boiler $\leq 2 : 1$, to carry out the tests with the smallest and the largest boilers. The boiler manufacturer must ensure that all boilers, including those that have not been tested in the range, whose values have been determined depending on the nominal heat output by interpolation, fulfill the requirements of the norm.					

Test data – Emissions in [mg/MJ] ¹⁾ (nominal load / partial load)					
Carbon monoxide (CO)	mg/MJ	8 / 15	8 / 15	14 / 31	20 / 46
Nitrous oxide (NO _x)	mg/MJ	72 / 58	76 / 58	77 / 64	79 / 70
Organic hydrocarbons (OGC)	mg/MJ	<1,0 / 1,0	1,0 / 1,0	1,0 / 1,0	1,0 / 1,0
Dust	mg/MJ	8,3 / 1,3	12,2 / 1,3	11,4 / 4,3	10,7 / 7,2
¹⁾ The pollutant concentration is specified as a mass based on the energy content of the fuel fed to the combustion system in mg/MJ					

Test data – Emissions in [mg/m ³] ¹⁾ (nominal load / partial load)					
Carbon monoxide (CO)	mg/m ³	12 / 23	12 / 23	22 / 48	31 / 72
Nitrous oxide (NO _x)	mg/m ³	110 / 89	117 / 89	119 / 98	121 / 107
Organic hydrocarbons (OGC)	mg/m ³	<1,0 / 1,0	1,0 / 1,0	1,0 / 1,3	1,0 / 1,7
Dust	mg/m ³	12,7 / 2,0	18,7 / 2,0	17,8 / 7,1	16,9 / 12,2
1. Emissions values based on dry flue gas at standard temperature and pressure (0°C, 1013 mbar) with a volume content of oxygen of 13%					

3.6.2 P4 Pellet 32 – 60

Description		P4 Pellet				
		32	38	45 ¹⁾	48	60
Nominal heat output	kW	32,0	38,0	45,0	48,0	58,5
Heat output range		9,6-32,0	11,4-38,0	13,5-45,0	14,4-48,0	17,6-58,5
Electrical connection		230V / 50Hz / C16A				
Power consumption NL/PL	W	104 / 78	110 / 78	113 / 78	114 / 45	119 / 80
Boiler weight	kg	530	530	760	760	760
Boiler capacity (water)	l	125	125	170	170	170
Content ash containers heat exchanger / combustion chamber	l	33 / 19	33 / 19	33 / 33	33 / 33	33 / 33
Water pressure drop (ΔT = 20 K / 10K)	mbar	1,5 / 6,2	2,1 / 8,7	3,2 / 9,9	3,7 / 10,5	5,3 / 12,3
Min. boiler return temperature	°C	Not applicable due to internal return temperature control				
Max. permitted operating temperature		80				
Min. operating temperature setting		40				
Permitted operating pressure	bar	3				
Boiler class as per EN 303-5:2012		5				
Airborne sound level	dB(A)	< 70				
Permitted fuel as per EN 14961 ¹⁾		Part 2: Wood pellets class A1 / D06				

Description		Test report data				
		32	38	45 ¹⁾	48	60
Testing institute		TÜV SÜD SZA ³⁾		TÜV Austria ⁴⁾		
Test report no.		K44302/6 ⁵⁾	K44302/4 ⁵⁾	13-U-584/ SD; 10- UW/Wels- EX-242 ⁵⁾	10-UW/ Wels- EX-242/3	08-UW/ Wels- EX-337
Date of issue		28.6.2007	28.6.2007	20.9.2013	10.5.2011	27.12.2008
Boiler efficiency NL / PL	%	93,5 / 95,7	92,6 / 95,7	92,4 / 94,5	92,4 / 92,3	92,1 / 92,3
1. P4 Pellet 45 is only available in UK 2. Detailed information on the fuel is included in the operating instructions, in the section on "Permitted fuels" 3. TÜV SÜD SZA Österreich, Technische Prüf-GmbH, Akkreditierte Erst- und Kesselprüfstelle gem. BGBl. Nr. 211/92 Arsenal, Objekt 207, A-1030 Wien 4. TÜV Austria Services GmbH, Geschäftsbereich Umweltschutz, Am Thalbach 15, A-4600 Thalheim/Wels 5. As per ÖNORM / DIN EN 303-5, Section 5.1.3 type test: for a boiler from a range with a consistent structure it is sufficient, if the ratio of nominal heat output from the largest to the smallest boiler $\leq 2 : 1$, to carry out the tests with the smallest and the largest boilers. The boiler manufacturer must ensure that all boilers, including those that have not been tested in the range, whose values have been determined depending on the nominal heat output by interpolation, fulfil the requirements of the norm.						

Test data – Emissions in [mg/MJ] ¹⁾ (nominal load / partial load)						
Carbon monoxide (CO)	mg/MJ	31 / 61	45 / 61	31 / 44	25 / 11	5 / 10
Nitrous oxide (NOx)	mg/MJ	79 / 75	77 / 75	77 / 72	77 / 60	77 / 66
Organic hydrocarbons (OGC)	mg/MJ	1,0 / 1,0	1,0 / 1,0	<2,0 / <2,0	<2,0 / <1,0	<2,0 / <2,0
Dust	mg/MJ	10,0 / 10,0	9,0 / 10,0	9,7 / 10,0	10,0 / 6,0	11,0 / 10,0
1. The pollutant concentration is specified as a mass based on the energy content of the fuel fed to the combustion system in mg/MJ						

Test data – Emissions in [mg/m³] ¹⁾ (nominal load / partial load)						
Carbon monoxide (CO)	mg/m³	48 / 95	70 / 95	46 / 68	39 / 17	7 / 15
Nitrous oxide (NOx)	mg/m³	122 / 116	119 / 116	117 / 110	117 / 88	114 / 97
Organic hydrocarbons (OGC)	mg/m³	1,0 / 2,0	1,0 / 2,0	<2,0 / <3,0	<2,0 / <2,0	<2,0 / <3,0
Dust	mg/m³	15,5 / 17,0	14,0 / 17,0	15,0 / 16,0	15,5 / 9,0	17,0 / 14,0
1. Emissions values based on dry flue gas at standard temperature and pressure (0°C, 1013 mbar) with a volume content of oxygen of 13%						

3.6.3 P4 Pellet 70 – 105

Description		P4 Pellet				
		70 ¹⁾	80	100	100 ²⁾	105 ³⁾
Nominal heat output	kW	69,0	80,0	100,0	99,0	105,0
Heat output range		20,7-69	24-80	30-100	29,7-99	31,5-105
Electrical connection		230V / 50Hz / C16A				
Power consumption NL / PL	W	117 / 72	115 / 49	112 / 49	112 / 49	112 / 49
Boiler weight	kg	1090	1090	1100	1100	1100
Boiler capacity (water)	l	280	280	280	280	280
Content ash containers heat exchanger / combustion chamber	l	33 / 33	33 / 33	33 / 33	33 / 33	33 / 33

Description		P4 Pellet				
		70 ¹⁾	80	100	100 ²⁾	105 ³⁾
Water pressure drop ($\Delta T = 20 \text{ K} / 10 \text{ K}$)	mbar	5,0 / 12,8	4,8 / 14,3	4,3 / 14,3	4,3 / 14,3	4,3 / 14,3
Min. boiler return temperature	°C	Not applicable due to internal return temperature control				
Max. permitted operating temperature		80				
Min. operating temperature setting		40				
Permitted operating pressure	bar	3				
Boiler class as per EN 303-5:2012		5				
Airborne sound level	dB(A)	< 70				
Permitted fuel as per EN 14961 ¹⁾		Part 2: Wood pellets class A1 / D06				

Description		Test report data				
		70 ¹⁾	80	100	100 ²⁾	105 ³⁾
Testing institute	TÜV Austria ⁵⁾					
Test report no.		14-U-188/ SD; 14- UW/Wels- EX-024	10-UW/ Wels- EX242/4 ⁶⁾	10-UW/ Wels- EX-242/1	10-UW/ Wels- EX-242/5 ⁶⁾	10-UW/ Wels- EX-242/2
Date of issue		2.4.2014	27.11.2011	9.5.2011	14.3.2012	11.5.2011
Boiler efficiency NL / PL	%	92,7 / 92,7	93,2 / 93,7	94,3 / 93,7	94,3 / 93,7	94,3 / 93,7
1. P4 Pellet 70 is only available in France 2. P4 Pellet 100 (99kW) is only available in UK 3. P4 Pellet 105 is only available in Germany 4. Detailed information on the fuel is included in the operating instructions, in the section on "Permitted fuels" 5. TÜV Austria Services GmbH, Geschäftsbereich Umweltschutz, Am Thalbach 15, A-4600 Thalheim/Wels 6. As per ÖNORM / DIN EN 303-5, Section 5.1.3 type test: for a boiler from a range with a consistent structure it is sufficient, if the ratio of nominal heat output from the largest to the smallest boiler $\leq 2 : 1$, to carry out the tests with the smallest and the largest boilers. The boiler manufacturer must ensure that all boilers, including those that have not been tested in the range, whose values have been determined depending on the nominal heat output by interpolation, fulfil the requirements of the norm.						

Test data – Emissions in [mg/MJ] ¹⁾ (nominal load / partial load)						
Carbon monoxide (CO)	mg/MJ	5 / 15	6 / 29	6 / 29	6 / 29	6 / 29
Nitrous oxide (NOx)	mg/MJ	79 / 65	80 / 62	83 / 62	83 / 62	83 / 62
Organic hydrocarbons (OGC)	mg/MJ	<2 / <2	<2 / <1	<1 / <1	<1 / <1	<1 / <1
Dust	mg/MJ	12 / 10	12 / 10	13 / 10	13 / 10	13 / 10
1. The pollutant concentration is specified as a mass based on the energy content of the fuel fed to the combustion system in mg/MJ						

Test data – Emissions in [mg/m³] ¹⁾ (nominal load / partial load)						
Carbon monoxide (CO)	mg/m³	7 / 22	8 / 43	8 / 43	8 / 43	8 / 43
Nitrous oxide (NOx)	mg/m³	116 / 95	118 / 91	122 / 91	122 / 91	122 / 91
Organic hydrocarbons (OGC)	mg/m³	<2 / <3	<2 / <2	<1 / <2	<1 / <2	<1 / <2
Dust	mg/m³	17 / 14	18 / 15	18 / 15	18 / 15	18 / 15
1. Emissions values based on dry flue gas at standard temperature and pressure (0°C, 1013 mbar) with a volume content of oxygen of 13%						

3.6.4 Airborne sound level

The sound levels specified in the following table are based on a sound measurement on a P4 Pellet 15. (measuring device: Omega HHSL 1)

The sound level of the individual units was plotted at a distance of 1 m from the sound source.

Ambient level for measurement: 32 dBA

Unit	Measurement
Units in continuous operation:	
Induced draught fan (activation: 50%)	41 dBA
Induced draught fan (activation: 65%)	44 dBA
Induced draught fan (activation: 90%)	50 dBA
Units in non-continuous operation:	
Suction turbine	68 dBA
Grate motor	42 dBA
Stoker motor / Stoker screw	33 dBA
Ignition fan	53 dBA
WOS motor / WOS system	60 dBA
Burn back slide valve actuator (open)	34 dBA
Burn back slide valve actuator (close)	50 dBA

Please note that all the measurements were taken in-house and do not come from a certified test centre. This data should, therefore, be viewed as individual guideline measurements.

Please also note the sound levels required in the standards listed below, which must be fulfilled by planning and construction measures:

ÖNORM B 8115-2	Sound insulation and room acoustics in building construction - Requirements for sound insulation
ÖNORM H 5190	Heating systems - Acoustic insulation

4 Assembly

4.1 Materials supplied

The boiler comes pre-assembled on a pallet in cardboard packaging.



1	Pre-assembled boiler	Not pictured:
2	P4 Pellet 8-25: Transport covers of ashcans P4 Pellet 32-105: Insulated door(s) and ash container	In the suction cyclone container: ▪ ID fan ▪ Accessories package: adjusting spanner, heating circuit controller, DHW tank sensor boiler underlay, 2x hose clamps
3	Cleaning devices	Installation and operating instructions, guarantee certificate, identification plate

4.1.1 Tools required

The following tools are required for assembling the P4 Pellet:

- ☐ Socket set

4.2 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

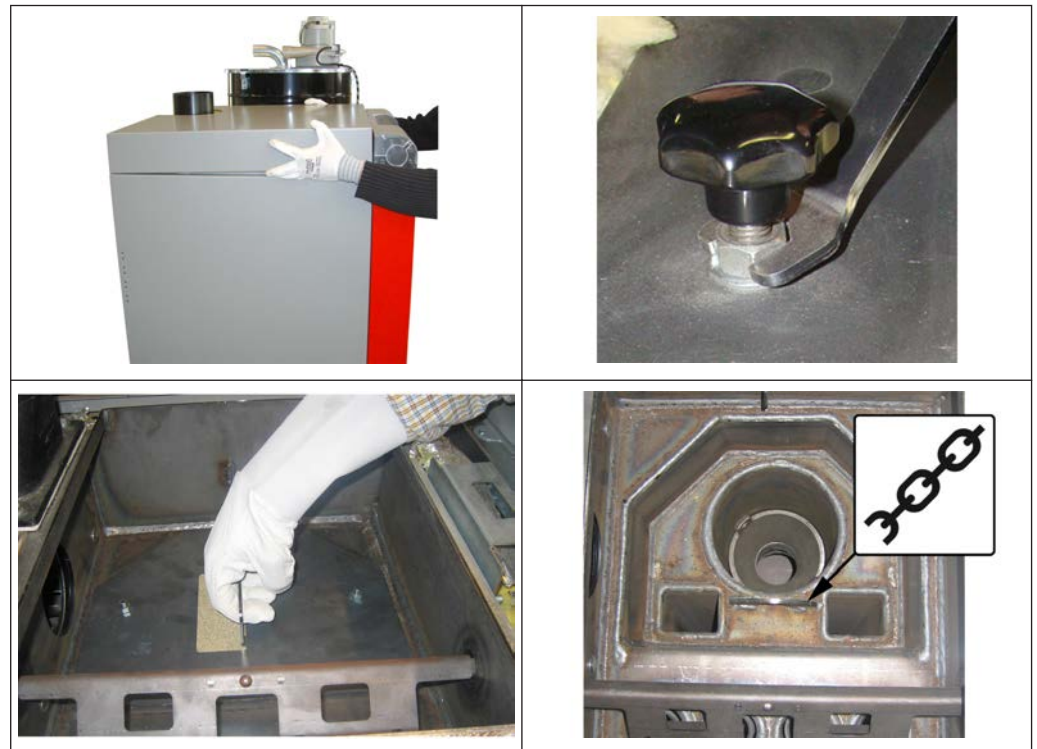
If the boiler cannot be brought in on the pallet:

- ☐ Remove the cardboard and remove the boiler from the pallet
⇒ See "Remove boiler from pallet" [page 26]

If you need to dismantle the boiler to bring it in:

- ☐ Dismantle the components of the boiler until it can be brought in
⇒ See "Dismantling for location where positioning is difficult" [page 29]

Positioning using a crane:



- ☐ Remove the insulating cover, heat exchanger cover and combustion chamber cover
- ☐ Correctly attach the crane hook to the attachment point for lifting eye bolt (underneath the cover) and position the boiler

4.3 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!

4.4 Setting up in the boiler room

4.4.1 Remove boiler from pallet



- ☐ Remove packing bands with suitable tools
- ☐ Lift off the cardboard



- ☐ Remove the transport covers (1) from the ashcan (P4 Pellet 8 – 25) / insulated door(s) and ash container (P4 Pellet 32 – 105) as well as the cleaning devices (2)
- ☐ Remove the protective casing

On the front of the boiler (P4 Pellet 8 - 25):



- ☐ Open the insulated door
- ☐ Remove securing devices used during transportation on the left and right side of the base
- ☐ Tilt the lock bolt for the door hinges forwards
- ☐ Lift the insulated door out of the hinges and remove
- ☐ Pull out floor insulation

On the front of the boiler (P4 Pellet 32 - 105):



- ☐ Remove securing devices used during transportation on the left and right side of the base
- ☐ Remove two screws each on the left and right of the ash collecting plate and remove the collecting plate
- ☐ Pull out the floor insulation behind

At the back of the boiler:



- ☐ Remove securing devices used during transportation on the left and right side of the base

- ☐ Lift boiler off pallet



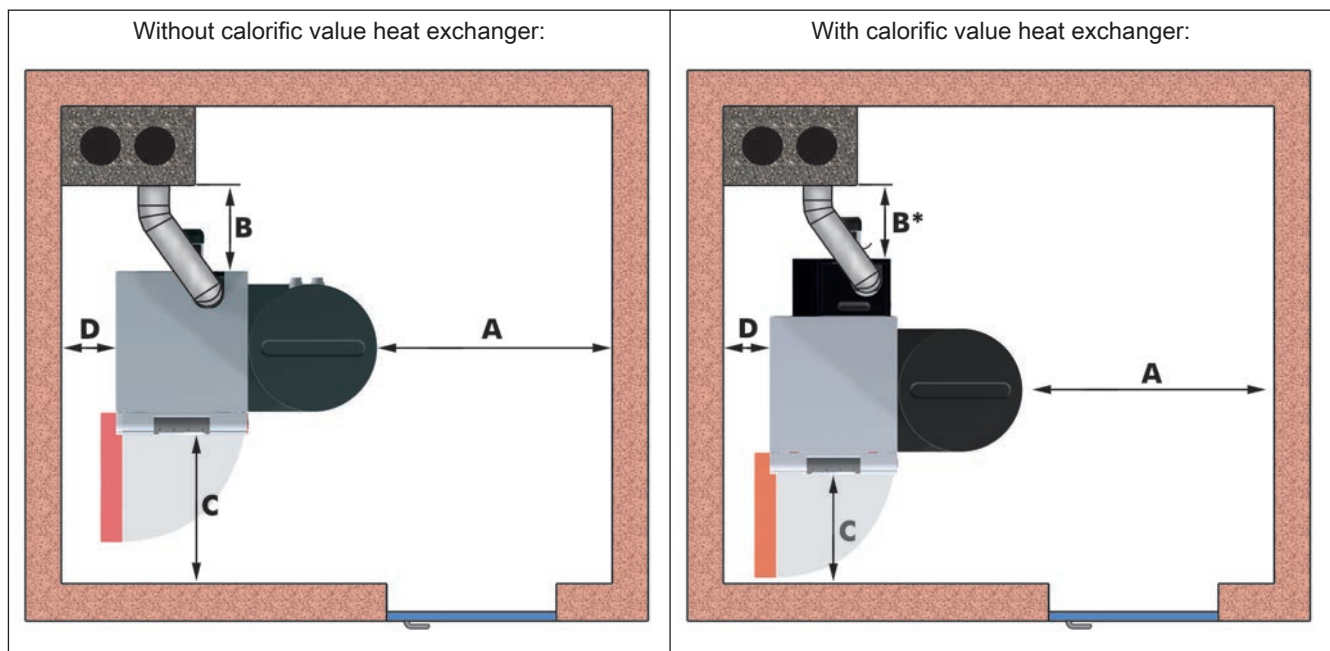
TIP: Use Froling's KHV 1400 boiler lifting system to help remove the pallet!

4.4.2 Moving the boiler in the boiler room

- ☐ Position a fork-lift or similar lifting device with a suitable load-bearing capacity at the base frame
- ☐ Lift and transport to the intended position in the installation room
 - ➔ Observe the minimum distances in the boiler room.

4.4.3 Minimum distances in the boiler room

- 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 minimum distances!
- Observe the applicable standards and regulations when setting up the system.
- Observe additional standards for noise protection (ÖNORM H 5190 - Noise protection measures)



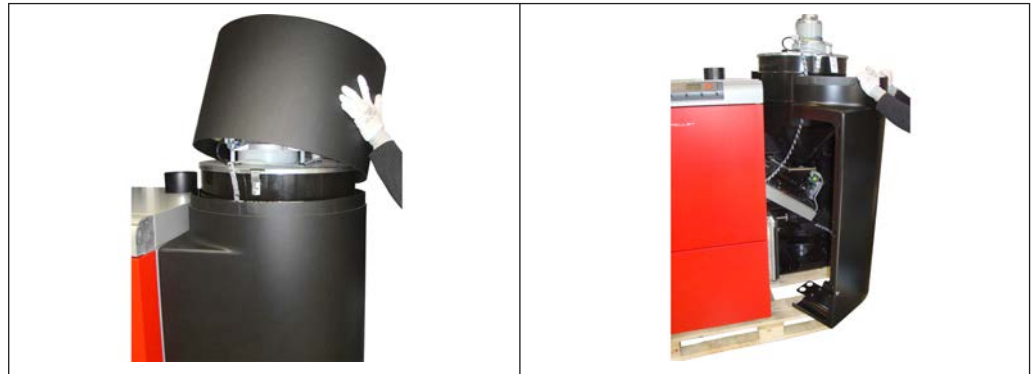
			P4 Pellet				
	Description	Unit	8 - 15	20 - 25	32 - 38	45 - 60	70 - 105
A	Minimum distance to stoker assembly	mm	300	300	300	300	300
B	Induced draught fan maintenance area		300	300	300	300	300
B*	Space required incl. maintenance area for induced draught fan with calorific value heat exchanger		600	600	-	-	-
C	Space for insulated door		550	720	830	490	590
	Space requirement with plug-in insulated door		400	400	300	-	-
D	Minimum distance to side of boiler		200	200	200	200	200

4.5 Dismantling for location where positioning is difficult

If there is not enough room to bring in the pre-assembled boiler, certain components can be dismantled.

This section shows the maximum possible disassembly. Only dismantle the parts absolutely necessary to bring in the boiler.

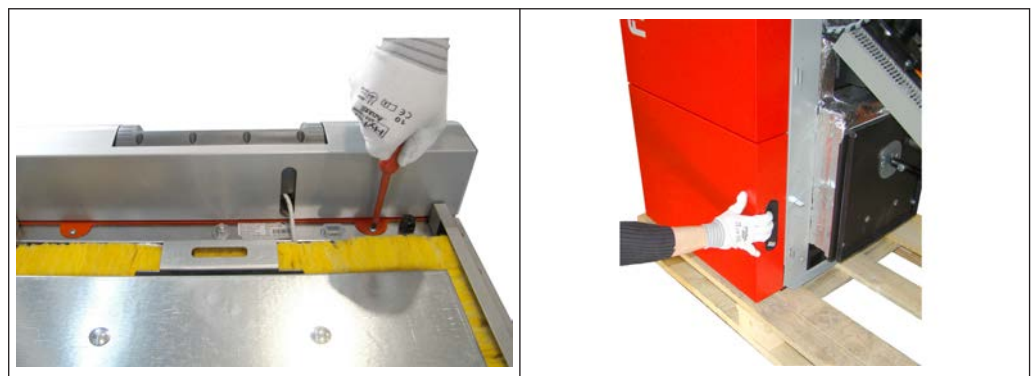
4.5.1 Removing the stoker assembly and insulation



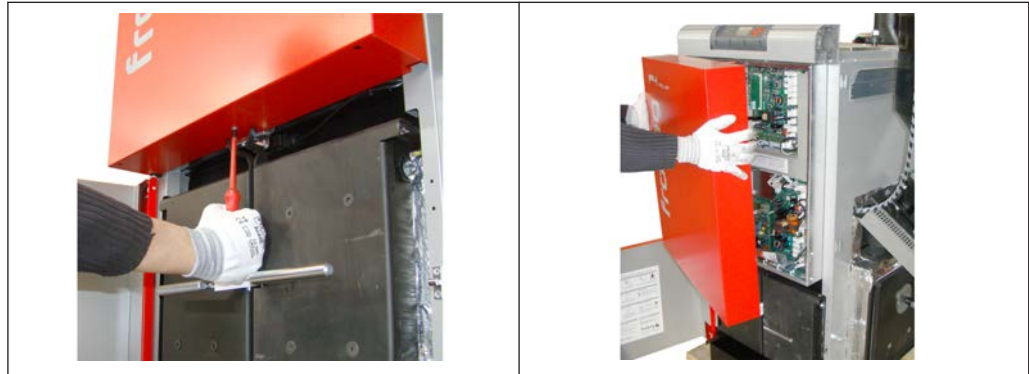
- ☐ Remove the locking screws on the sound insulation hood of the stoker assembly and remove the sound insulation hood
- ☐ Lift the front part of the stoker assembly up and remove



- ☐ Lift the back part of the stoker assembly up and remove
- ☐ Remove the insulating cover



- ☐ Remove the two screws and contact washers from the flaps of the controller cover
 - Caution: Do not lose the contact washers!
- ☐ Open the insulated door (P4 Pellet 8/15/20/25)



- ☐ Remove the screw and contact washer on the bottom of the controller cover
- ☐ Remove the controller cover

4.5.2 Removing the door and ash drawer (P4 Pellet 8 - 25)



- ☐ Tilt the lock bolt for the door hinges forwards
- ☐ Lift the insulated door out of the hinges and remove



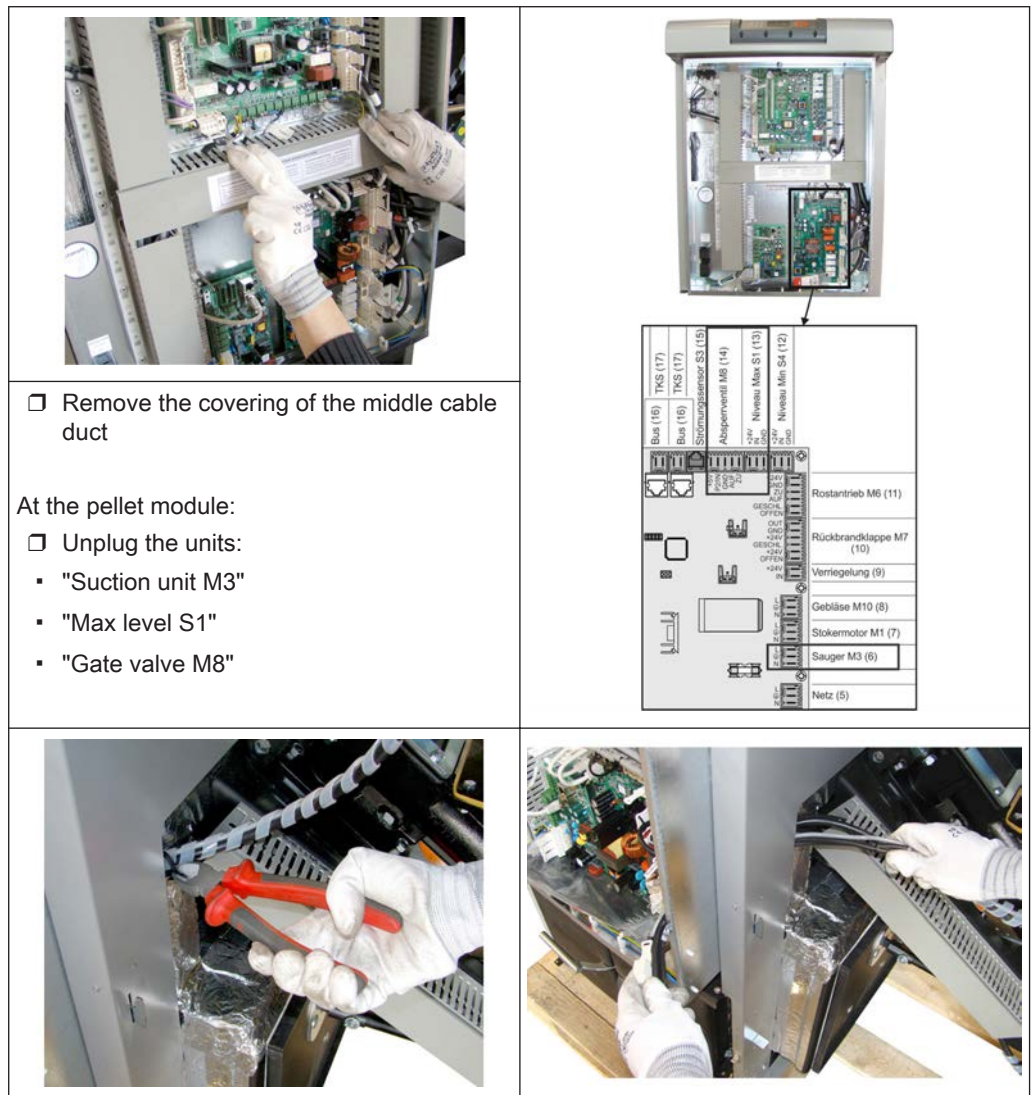
- ☐ Open both ash doors and remove the ash drawer

Optional:



- ☐ Remove the heat exchanger cover and combustion chamber cover to further reduce the weight

4.5.3 Dismantling the suction cyclone cover



- ☐ Remove the covering of the middle cable duct

At the pellet module:

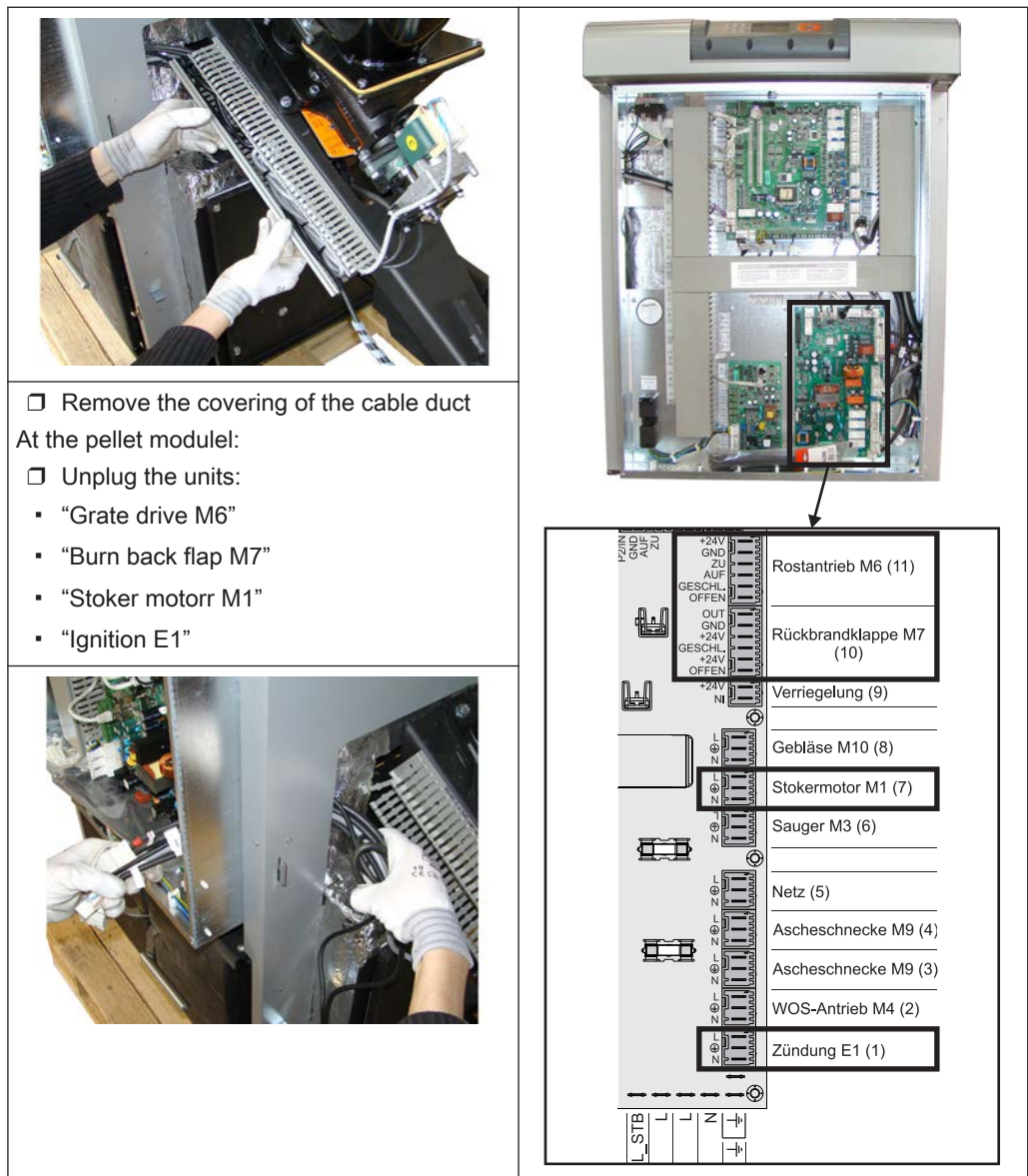
- ☐ Unplug the units:
 - "Suction unit M3"
 - "Max level S1"
 - "Gate valve M8"

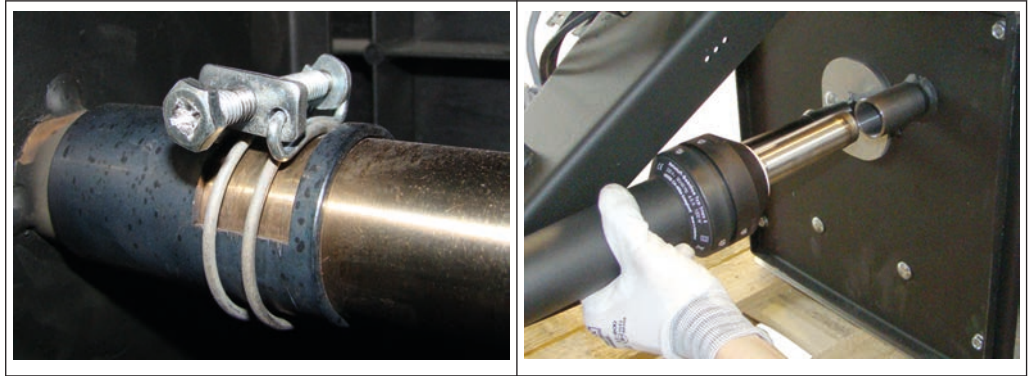
- ☐ Undo the cable ties at the cable leadthrough
- ☐ Pull out the cables of the unplugged units



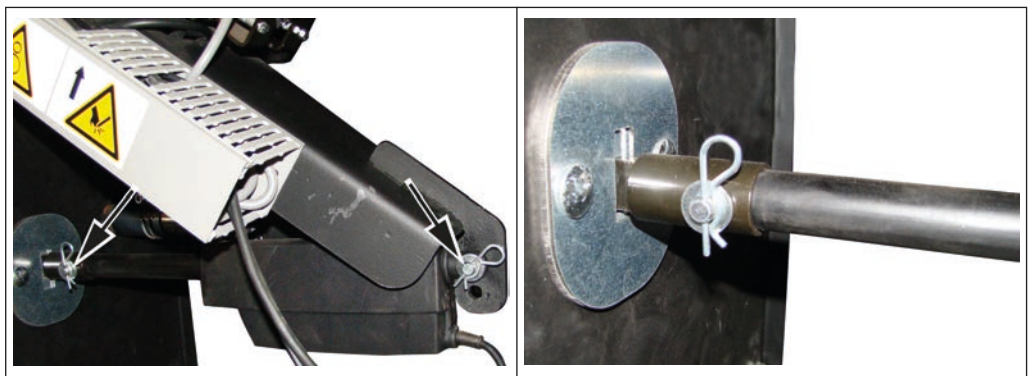
- ☐ Wind up the unplugged cables on the units
- ☐ Open the clamps and take off the cover

4.5.4 Dismantling the stoker unit





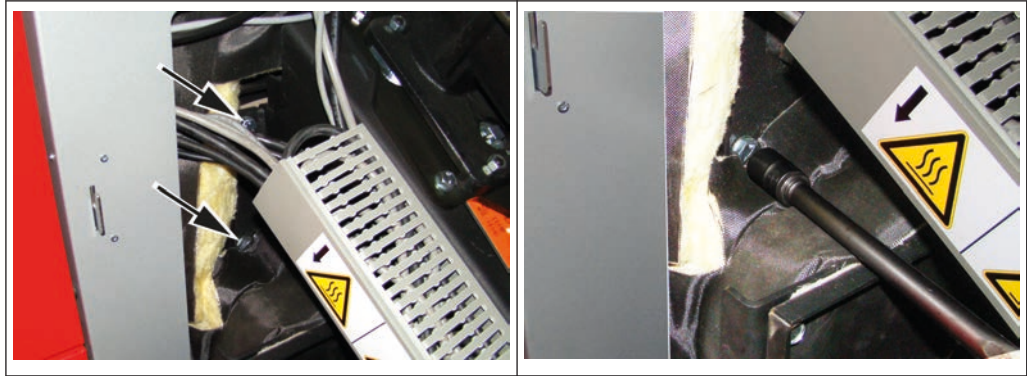
- ☐ Undo the screw and remove the clamp on the ignition blower fan
- ☐ Remove the ignition fan



- ☐ Remove the spring cotter at the front and back of the grate drive and remove the bolts
- ➔ CAUTION: Secure the grate motor so that it does not fall!



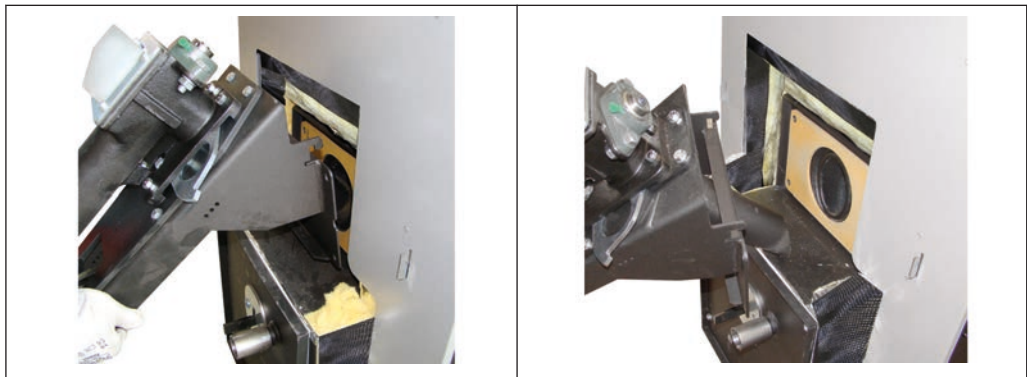
- ☐ Push the sleeve on the grate rod back
- ☐ Remove the grate motor



- ☐ Push the heat insulation mat aside slightly and remove two screws each from the right and left of the flange of the stoker unit
 - You can remove the screws completely as the stoker unit is secured to the boiler with two hooks

The following steps require two people **NOTICE! !**

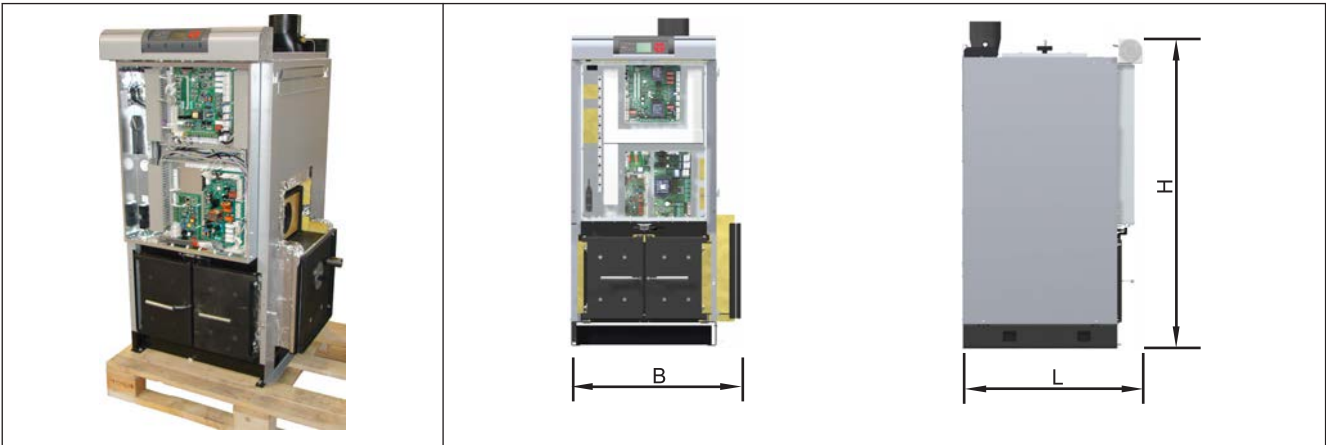
- Weight of stoker unit P4 Pellet 8 – 25: approx. 32kg
- Weight of stoker unit P4 Pellet 32 – 38: approx. 36 kg
- Weight of stoker unit P4 Pellet 45 – 60: approx. 46 kg
- Weight of stoker unit P4 Pellet 70 –105: approx. 68 kg



- ☐ Pull the stoker unit up slightly until the hooks come out of the stoker flange
- ☐ Tip the unit back slightly and lift away

The P4 is now fully dismantled and can be brought in.

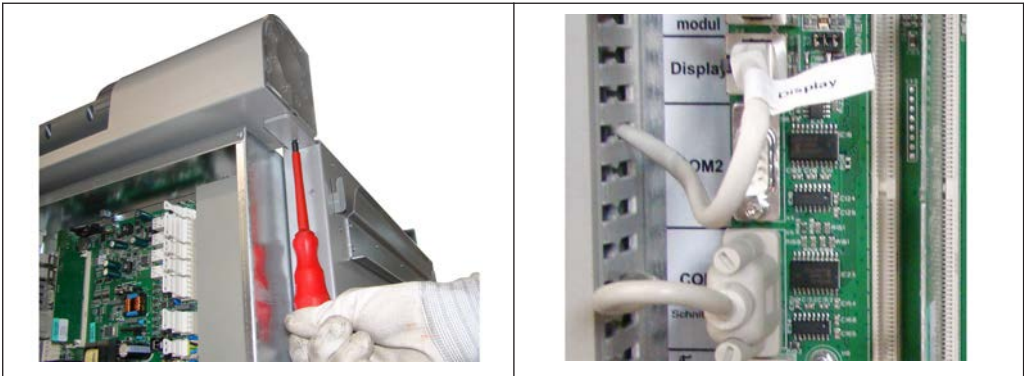
4.5.5 Positioning dimensions after dismantling



			P4 Pellet				
Dimension	Description		8 - 15	20 - 25	32 - 38	45 - 60	70 - 105
L	Length, boiler	mm	740	740	740	820 ¹⁾	910 ²⁾
B	Width, boiler		705	875	965	1275	1480
H	Height, boiler		1280	1280	1430	1585	1710
1. You can reduce the size to 780 mm by removing the control (e.g. to fit through a door with a clearance of 800 mm)							
2. You can reduce the size to 880 mm by removing the control (e.g. to fit through a door with a clearance of 900 mm)							

Removing the control

- ☐ Remove the left and right end caps



- ☐ Secure the bottom nuts to the bracket of the control
- ☐ Remove the screws on the right and left of the control
- ☐ Unplug the cable marked "Display" and pull up out of the controller
- ☐ Remove the control

4.5.6 Notes for reassembly

- ☐ After positioning, reassemble the boiler in the reverse order

It is particularly important to carry out the following steps during assembly:

Assembling the grate motor:

P4 Pellet 8-38:

- ☐ Correct position at back support:
 - P4 Pellet 8 – 15: top position
 - P4 Pellet 20 - 38: bottom position



- ☐ Check that the housing is in the right position at the grate rod (see figure)



Ignition fan

- ☐ Fit the clamp to the igniter tube using screws
 - Fix the cable with the cable ties supplied.
 - There must not be any loose cables in the area of the igniter.
 - Only connect the power supply after completing assembly.



NOTICE! The individual units should be checked by a qualified technician and adjusted if necessary during initial start-up.

4.6 Assembling the pellet boiler

4.6.1 Before Installation

Checking the seal of the ash doors

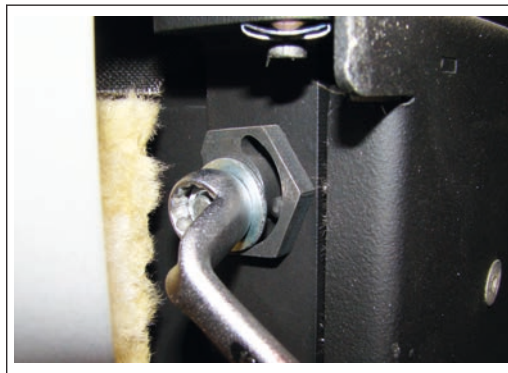
- ☐ Open the door



- ☐ Insert a sheet of paper at the top between the door and boiler
- ☐ Close the door
- ☐ Try to pull the sheet of paper out
 - If the paper cannot be removed:
The door seal is OK and the settings are correct
 - If the paper can be removed:
The door is not sealed properly and must be adjusted!
- ☐ Check the seal again after positioning the doors
- ☐ Repeat the procedure at the bottom of the ash door and on the side of the door handle above and below the door handle as well as at the same positions on the other ash door

Adjusting the doors

P4 Pellet 8 – 25:



- ☐ Using an Allen key (13 mm), loosen the lock nuts on the locking cams at the top and bottom
- ☐ Close the door
 - With a gap of approx. 2 to 3 cm there should be a noticeable resistance



- ☐ If the resistance is too low or too high, move the locking cams backwards or forwards using an Allen key (32 mm)
 - The movement of the locking cams causes the hinged plate to move, allowing the contact pressure to be adjusted
 - Caution: The two locking cams (top and bottom) must be aligned
- ☐ Close the door
- ☐ If the door will not close, move the locking cams forward slightly
 - Caution: The two locking cams (top and bottom) must be aligned
- ☐ Secure the lock nuts again

The locking plate can be moved in the same way using the locking cam at the side of the door handle, allowing the contact pressure to be adjusted on this side

- P4 Pellet 32 – 105:** On the side with the door stop:
- ☐ Adjust the doors with the locking cam as explained above

On the side with the door handle:

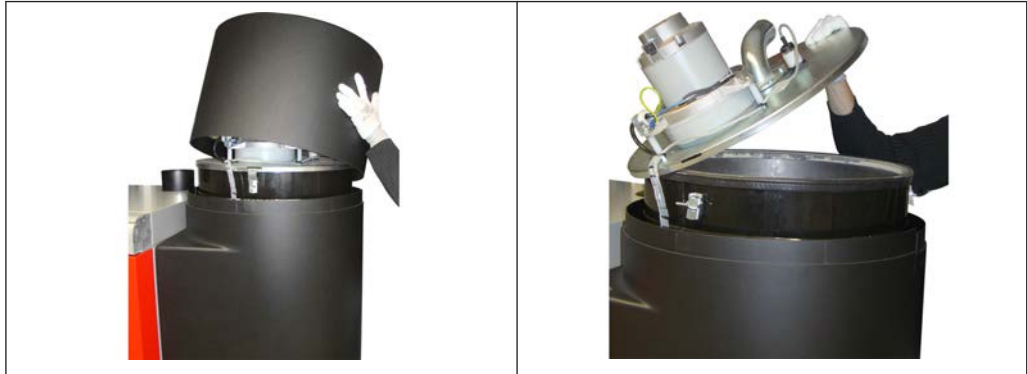


- ☐ Loosen the lock nuts at the top and bottom of the locking plate using an Allen key (13 mm)
- ☐ Close the door
 - With a gap of approx. 2 to 3 cm there should be a noticeable resistance



- ☐ If the resistance is too low or too high, move the locking plate backwards or forwards using appropriate tools (e.g. screwdriver and hammer)
 - Caution: The locking plate must be aligned at the top and bottom.
- ☐ Close the door
- ☐ If the door will not close, move the locking plate forward slightly
 - Caution: The locking plate must be aligned at the top and bottom.
- ☐ Secure the lock nuts again

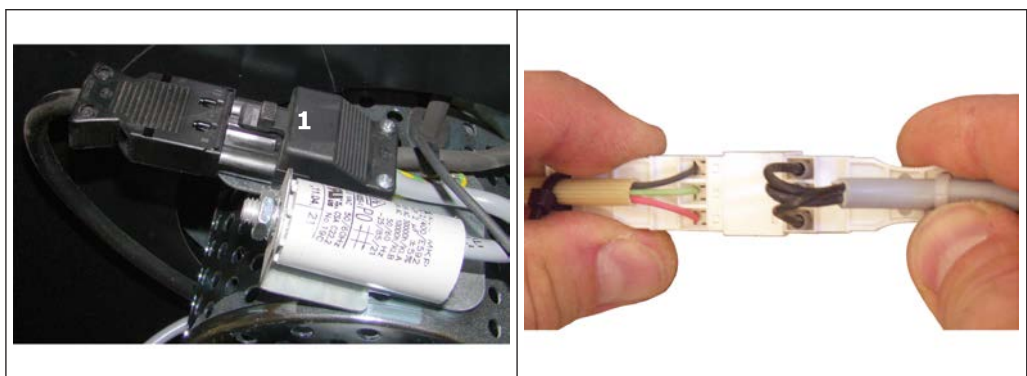
4.6.2 Fitting the induced draught fan



- ☐ Remove the locking screws on the sound insulation hood of the stoker assembly and remove the sound insulation hood
- ☐ Open the clamps on the suction cyclone container and remove the cover
- ☐ Remove the cardboard containing the induced draught fan and accessories package from the suction cyclone container

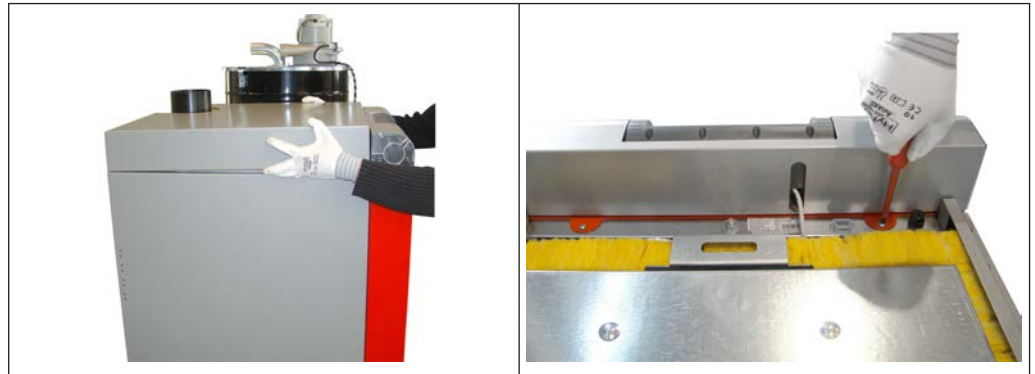


- ☐ Remove the pre-assembled induced draught cover plates
- ☐ Remove the pre-assembled nuts and spacer washers for induced draught
- ☐ Attach and fit the ID fan as illustrated

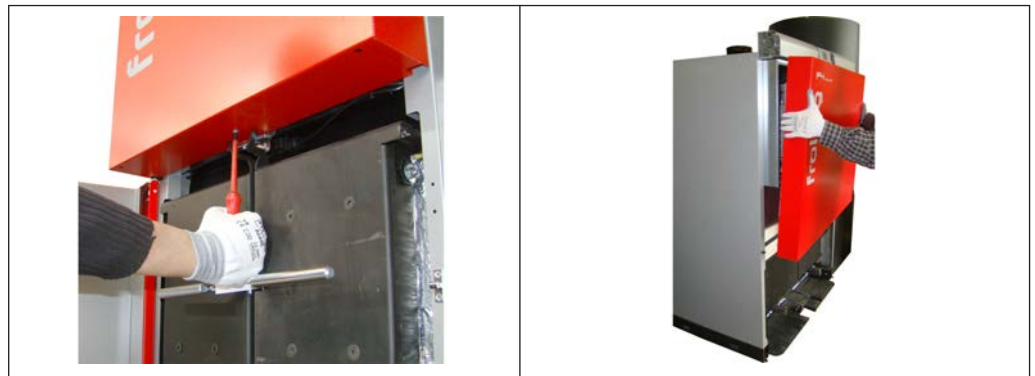


- ☐ Join the two cables of the ID fan with the pre-installed cables
 - The locking device (1) must click into place.
- ☐ Push the cable behind the cladding and replace the induced draught cover plates.

4.6.3 Fitting the ash container and doors (P4 Pellet 32 - 105)



- ☐ Remove the insulating cover
- ☐ Remove the two screws and contact washers from the flaps of the controller cover
 - Caution: Do not lose the contact washers!



- ☐ Remove the screw and contact washer on the bottom of the controller cover
- ☐ Remove the controller cover



- ☐ Hang the insulated door to the boiler base and secure with lock bolt



- ☐ Take the two covers for the ash containers out of the ash containers, position and secure with clamps
- ☐ Put the left and right ash containers onto the ash screws and secure with lever
- ☐ Replace the controller cover after connecting to the power supply

4.7 Connecting the discharge system

- ☐ Fit the discharge system according to the installation instructions enclosed



- ☐ Connect the suction hose and return air line at the back of the boiler:
 - Left port (1) = suction hose (Pellets sticker)
 - Right port (2) = return air line

NOTICE! Ensure the potential equalisation matches the discharge system assembly instructions when connecting the lines!

4.8 Power connection



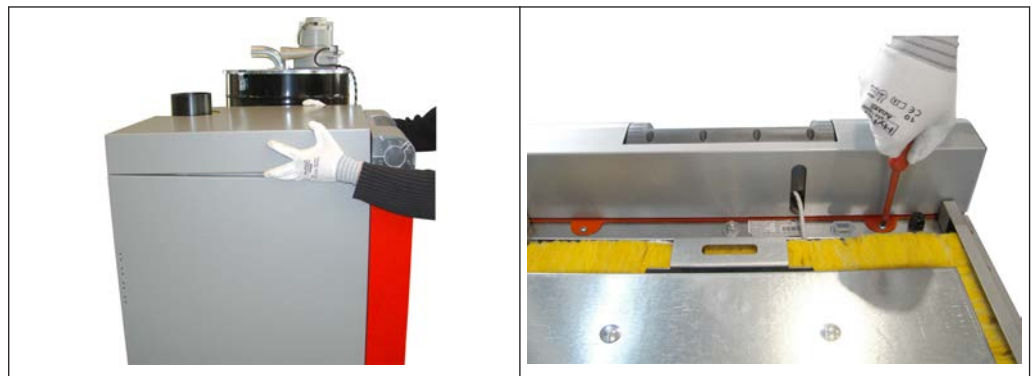
DANGER

When working on electrical components:

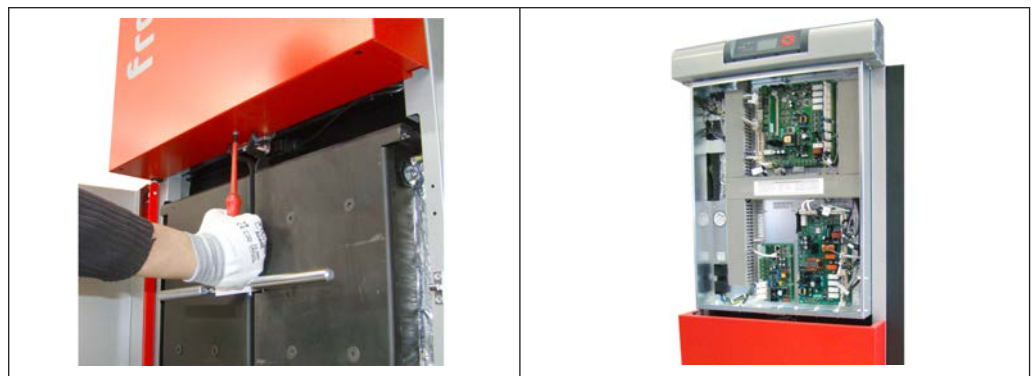
Risk of electrocution!

When work is carried out on electrical components:

- ☐ Only 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
-
- ☐ Flexible sheathed cable must be used for the wiring; this must be of the correct size to comply with applicable regional standards and regulations.
 - ☐ The power supply line (mains connection) must be fitted with a C16A fuse by the customer.



- ☐ Remove the insulating cover
- ☐ Remove the two screws and contact washers from the flaps of the controller cover
 - ➔ Caution: Do not lose the contact washers!
- ☐ Open the insulated door (P4 Pellet 8/15/20/25)



- ☐ Remove the screw and contact washer on the bottom of the controller cover
- ☐ Remove the controller cover

- ☐ Wire the connections in accordance with the circuit diagram
 - For circuit diagrams see operating instructions for "Lambdatronic P 3200"
- ☐ To reassemble the controller cover and insulating cover, perform the disassembly steps in the reverse order

4.8.1 Information on circulating pumps

NOTICE

According to 2012/622/EU external, wet running circulating pumps must comply with the following limit values of the Energy Efficiency Index (EEI):

- Effective from 01/01/2013: Wet running circulating pumps with $EEI \leq 0.27$
- Effective from 08/01/2015: Wet running circulating pumps with $EEI \leq 0.23$

Only high efficiency pumps with a connection option for a control signal (PDM / 0-10V) should be connected to speed-controlled pump outputs (pump 1 on the core module and pump outputs on the hydraulic module). In this case, the control line is connected to the corresponding PDM outputs of the boards. Observe the connection instructions in the boiler controller documentation!

CAUTION



When using high efficiency pumps without an additional control line at speed-controlled pump outputs:

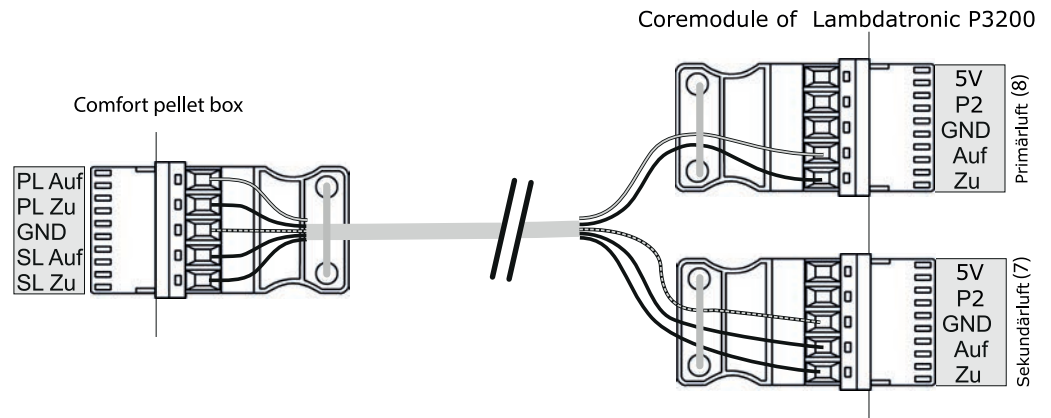
Malfunctions of the boiler, the pump and the hydraulic system may occur!

Therefore:

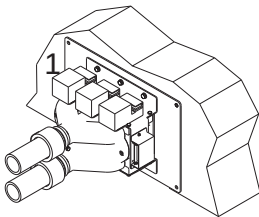
- ☐ Do not connect EC motor pumps without a control line to the speed-controlled pump outputs of the boards.
 - Only use special high efficiency pumps with a connection option for a control line (PDM/0-10V)!
 - Observe the additional instructions and information on board outputs in the operation instructions for the boiler controller.

4.8.2 Comfort pellet box port

With the automatic universal suction system, the Comfort pellet box is connected to the core module using flexible cable (5x0.75mm², YMM as per ÖVE-K41-5 or H05VV-F as per DIN VDE 0881-5). This is a 24V control line.



The previous figure shows the plugged-in 5-pin connecting plug of the Comfort pellet box and the accompanying connection layout at the Lambdatronic P 3200 controller.



To check the plug configuration:

- ☐ Perform check using the board's labels
 - ➔ The actuators (1) of the pellet box must be switched to the "R" position.

The actuators are ready to plug in and are connected to the board.
The pellet box comes with all the necessary plug clips.

5 Start-up

5.1 Before commissioning / configuring the boiler

The boiler must be adjusted to the heating system during commissioning.

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 Froeling customer services

- ☐ Adjust the boiler controller to the system type
- ☐ Apply boiler standard values

NOTICE! The keypad assignment and the steps necessary to modify the parameters are detailed in the operating instructions for the boiler control unit.

- ☐ Check the system pressure of the heating system
- ☐ Check that the heating system is completely vented
- ☐ Check that the safety devices are present and working correctly
- ☐ 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 that drives and actuators are working and turning in the right direction

NOTICE! For how to check the analogue and digital outputs, see the operating instructions for the boiler controller

- ☐ Check that the door contact switch is working correctly

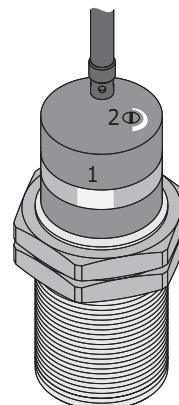
NOTICE! For how to check the digital inputs see the operating instructions for the boiler controller.

5.1.1 Setting the "Max level and Min level" sensor

In delivery configuration, the factory settings of the sensor are secured with a seal. Changes to the settings should only be carried out by qualified technicians.

The monitoring LED should only light up when materials are detected.

- ☐ If the monitoring LED stays on permanently, the sensitivity is set too high
 - Reduce the sensitivity by turning the adjusting screw to the left
- ☐ If the monitoring LED does not react when pellets are being fed in, the sensitivity is set too low.
 - Increase the sensitivity of the adjusting screw by turning to the right



5.2 Initial startup

5.2.1 Permitted fuels

Wood pellets

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

Note on standards

EU:	Fuel acc. to EN 14961 - Part 2: Wood pellets class A1 / D06
and/or:	Certification program ENplus or DINplus

General note:

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

5.2.2 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

5.2.3 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.

NOTICE! See boiler controller operating instructions for all the steps necessary to start up for the first time Lambdatronic P 3200

6 Decommissioning

6.1 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

6.2 Disassembly

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

6.3 Disposal

- ☐ Ensure that they are disposed of in an environmentally friendly way in accordance with waste management regulations.
- ☐ You can separate and clean recyclable materials and send them to a recycling centre.

7 Appendix

7.1 Addresses

7.1.1 Address of manufacturer

FRÖLING
Heizkessel- und Behälterbau GesmbH

Industriestraße 12
A-4710 Grieskirchen
AUSTRIA

TEL 0043 (0)7248 606 0
FAX 0043 (0)7248 606 600
INTERNET www.froeling.com

7.1.2 Address of the installer

Stamp