

UNIQUE. INNOVATIVE.
Condensing technology
for combined boilers



SP Dual



Heating with firewood and pellets

For more than 50 years, Froling has specialised in efficiently using wood as a source of energy. Today the name Froling represents modern biomass heating technology. Froling firewood, wood chip and pellet boilers are successfully in operation all over Europe. All of our products are manufactured in our factories in Austria and Germany, and our extensive service network ensures that we can handle all inquiries quickly.



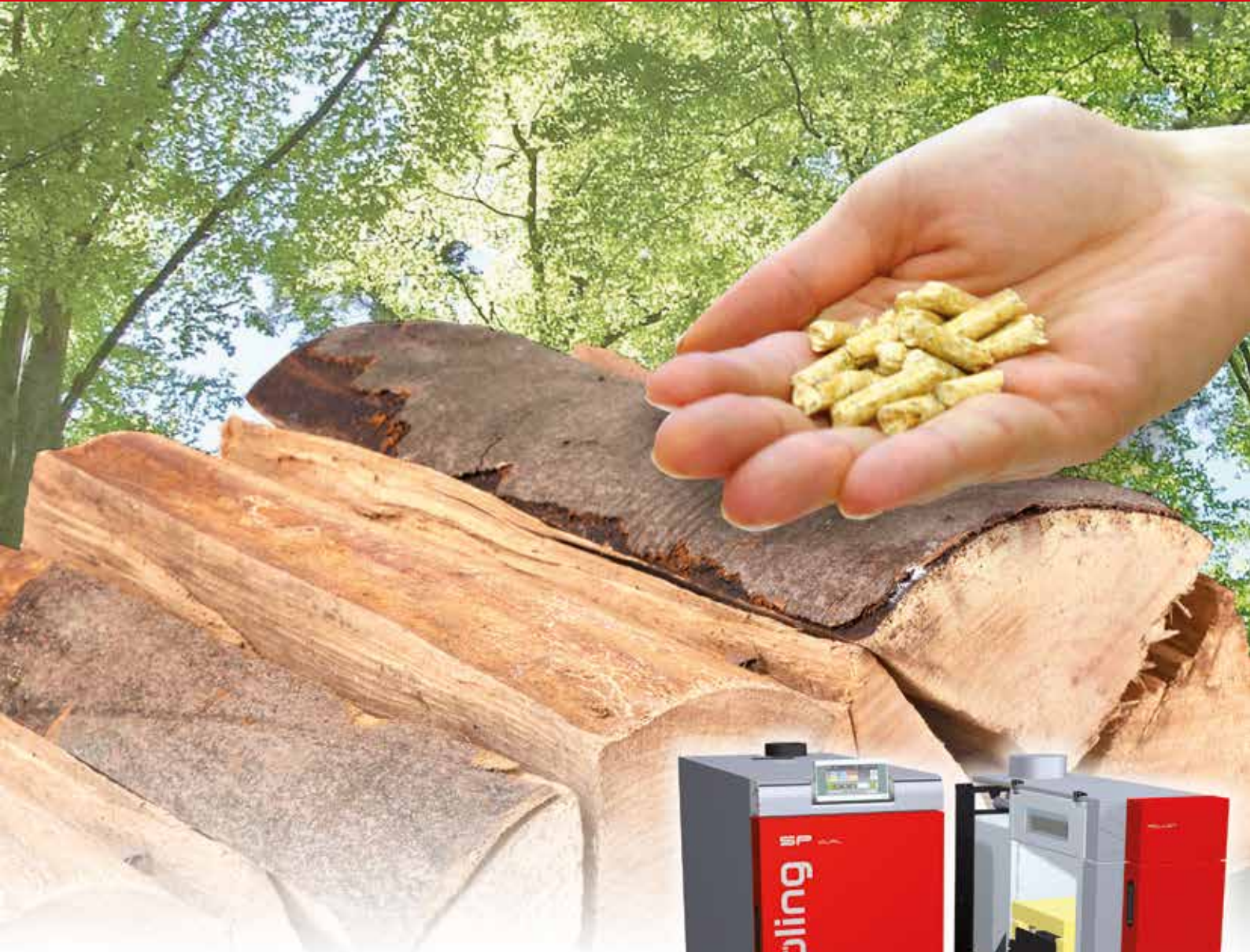
The fuels: firewood (up to 56 cm) and pellets



Wood is a home-grown and environmentally friendly fuel, that is highly sustainable. It is CO₂ neutral and is not affected by international crises. The production of firewood and pellets ensures stable jobs in the industry. Looking at it from an environmental and economical point of view, wood is the ideal fuel. The quality class is determined by the wood used.

Wood pellets are made of natural wood. The large volumes of wood shavings and sawdust generated by the wood-processing industry are compacted and pelleted without being treated beforehand. Pellets have a high energy output and are easy to deliver and store. These are just some of the advantages that make pellets the perfect fuel for fully automatic heating systems. Pellets are delivered by tanker and unloaded directly into your store.





Two systems perfectly combined - The new dual fuel boiler SP Dual

The SP Dual firewood and pellet boiler combines two well designed systems. It fulfills all the requirements for firewood and pellet fuels in two separate combustion chambers. Highly efficient and convenient, the SP Dual guarantees low emissions and energy costs.



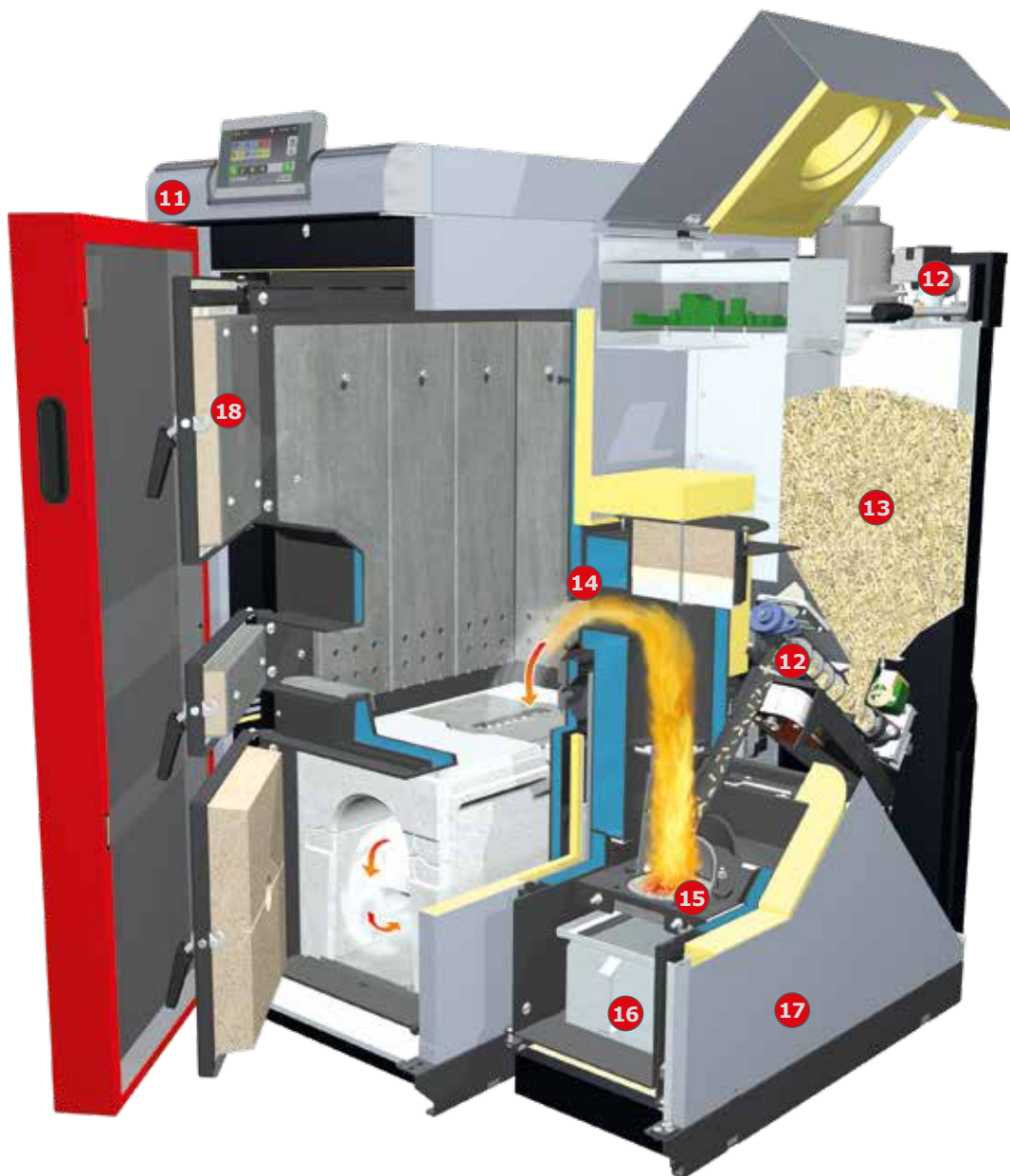
Pellet unit can be added any time

The S4 Turbo F with pellet flange is the ideal solution for people who are currently only burning firewood. It can easily be converted to a dual fuel boiler by fitting the pellet unit at any time.

The latest technology



- 1 Broadband lambda probe for optimal combustion
- 2 Speed-regulated, low-noise induced draught fan for maximum ease of use
- 3 WOS system (Efficiency Optimisation System) as standard, for high efficiency and user-friendly cleaning from outside Optional with automatic WOS-Technik
- 4 Servo-motors as standard for automatic control of primary and secondary air
- 5 Carbonisation gas extraction system prevents smoke escaping during reloading
- 6 Cladding to protect the inner wall of the boiler and for a longer service life
- 7 Large fuel loading chamber for logs up to 56 cm in length guarantees longer periods between refilling
- 8 Automatic heat up with special air ducts for faster heat up
- 9 Durable silicon combustion chamber with long combustion zone for very low emissions
- 10 Large maintenance openings for easy cleaning from the front



- 11 Lambdatronic S 3200 control with 7" touch display and innovative bus technology
- 12 Double slide valve system for maximum burn back protection
- 13 Spacious pellet container with stoker screw and external suction module
- 14 Water-cooled pellet flange with downward pointing design for safe operation
- 15 High-quality water-cooled pellet burner with sliding grate for automatic ash removal and cleaning
- 16 Practical, convenient ashcan for simple, dust-free emptying and long cleaning intervals
- 17 Fully insulated to minimize radiant heat loss
- 18 Large fuel loading chamber doors for easy and convenient loading of firewood

A well-planned inside

1 Feature: Large fuel loading chamber for logs up to 56 cm long with cladding

- Advantages:
- Easy filling
 - Long lasting combustion
 - Long service life

The SP Dual allows burning of firewood up to a length of 56 cm for all system output sizes. It is filled conveniently from the front of the unit and due to a large fuel loading chamber long refilling intervals are possible. Often it is only necessary to fill the boiler once a day. A cladding protects the interior walls of the boiler, guaranteeing a long service life.

2 Feature: Water-cooled pellet flange pointing downward

- Advantages:
- Safe operation
 - Pellet unit can be additionally fitted at any time

The downward pointing design of the pellet flange ensures that no impurities from the filling room can reach the combustion grate of the pellet unit.

3 Feature: High-temperature silicon carbide combustion chamber with new geometric design

- Advantages:
- Very long combustion zone
 - Low emissions
 - Long service life

The combustion chamber is coated with a highquality fireproof material (silicon carbide). Froling has refined the traditional cylindrically shaped combustion chamber and is setting new standards with an optimised heating gas duct. The exceptionally long combustion zone guarantees very low emissions.





4 Feature: Automatic ignition and continued operation

- Advantages:
- No additional equipping required
 - Automatic change between firewood and pellets

The firewood can be ignited automatically using the pellet burner.

Due to the separate combustion chamber design, it is possible to change between firewood and pellets when needed. When the firewood has burned down and is not replenished within a set period of time (0-24hrs), heating is automatically continued with pellets if required.

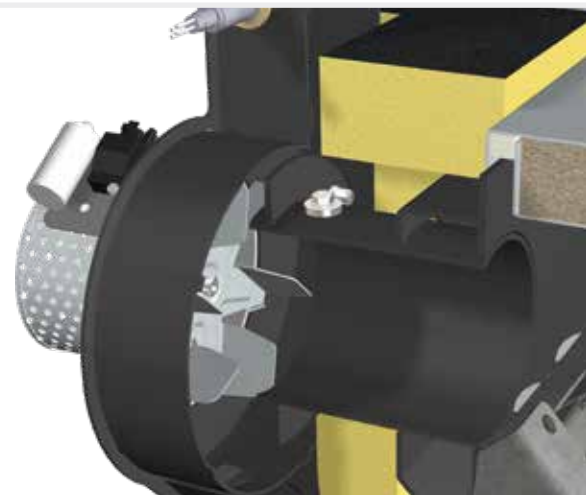
The SP Dual is designed to automatically interrupt pellet operation and to start firewood burning immediately when the loading chamber door is opened and filled with new firewood. The firewood can be ignited by the residual embers, manually or fully automatically using the pellet burner.

5 Feature: Comprehensive safety concept

- Advantages:
- The highest possible operating safety
 - Maximum reliability

A double slide valve system - consisting of the burner gate valve in the downpipe and the store gate valves - guarantees maximum burn-back protection. A built in sensor measures the speed of flow in the combustion air during each phase of pellet combustion, guaranteeing safe operation.

Intelligent details



Feature: Speed-regulated induced draught fan

- Advantages:
- Maximum ease of use
 - Problem-free boiler start
 - Constant stabilisation of combustion

Das serienmäßige, drehzahlgeregelte Saugzuggebläse sorgt für die exakte Luftmenge und permanenten Unterdruck während der gesamten Verbrennung. Die Drehzahlregelung des Saugzuggebläses stabilisiert somit die Verbrennung über die gesamte Brenndauer und passt die Leistung an die Erfordernisse an. Zudem arbeitet das Saugzuggebläse äußerst leise und stromsparend.

Feature: Quick heating-up (with manual ignition)

- Advantages:
- Just load the boiler, light the fuel, close the door and feel the heat
 - The boiler room stays clean

Das ist einzigartig! Aufgrund einer speziellen Primärluftführung kann beim SP Dual die Anheiztür im Gegensatz zu herkömmlichen Holzvergasern unmittelbar nach dem Anzünden geschlossen werden.



Feature: Special carbonisation gas extraction

- Advantages:
- No smoke escapes during re-filling
 - The boiler room stays clean

The specialised carbonisation gas extraction system prevents smoke from escaping even while topping off during refill. This is applicable at every stage of combustion.

**NEW! OPTIONAL WITH
AUTOM. WOS-TECHNIK**



Feature: WOS system as standard

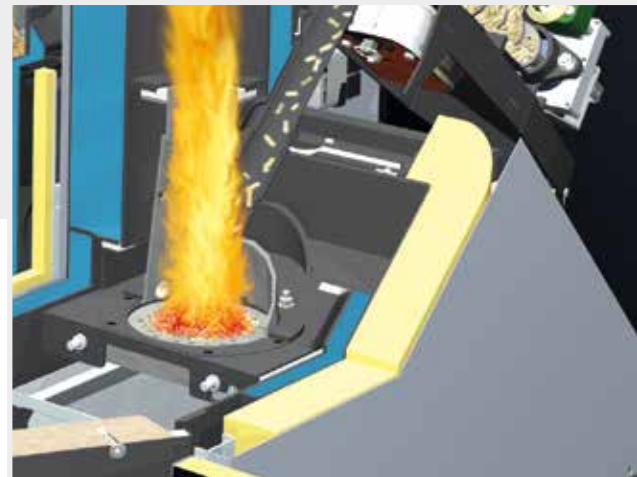
- Advantages:
- Even more efficient
 - Easy cleaning from outside
 - Fuel economy

We never compromise on convenience. The WOS (Efficiency Optimisation System), which comes as standard on the SP Dual compact, consists of special turbulators, which are placed in the heat exchanger pipes. The lever arm mechanism ensures easy cleaning of the heating surfaces from the outside. An additional benefit of this mechanism is that it ensures higher efficiency and fuel savings.

Feature: Water-cooled pellet burner with automatic sliding grate

- Advantages:
- high efficiency
 - Long lifespan
 - automatic ash removal

The water-cooled pellet burner is perfectly adapted to the fuel requirements enabling a particularly high level of efficiency. The sliding plate ensures automatic cleaning and ash removal into a large ashcan, thus ensuring convenient and maintenance-free operation.



Feature: Convenient ash drawer

- Advantages:
- Long emptying interval
 - Convenient emptying

Easy handling is our main concern. The falling ash is fed automatically into a large ash drawer. Putting on the transport cover emptying can be done without spilling dust.

Efficiencies
up to 102.8%

Innovative: Condensing technology for combined boilers



The Fröling SP Dual boiler series is unique worldwide thanks to its **innovative condensing technology** (optional). The hidden energy in flue gas which escapes unused through the chimney in conventional solutions is harnessed by an additional heat exchanger located at the rear of the boiler and fed to the heating system. The Fröling SP Dual boiler series thus achieves a **boiler efficiency of up to 100.1 percent (Hu)**. Already back in 1996, Fröling received the Innovation Award at the energy saving fair Wels for a calorific value application in the biomass sector, and the company is thus considered a pioneer in this technology. The heat exchanger is made from high-quality stainless steel. It is cleaned via a water rinsing system. The module can be retrofitted optionally.

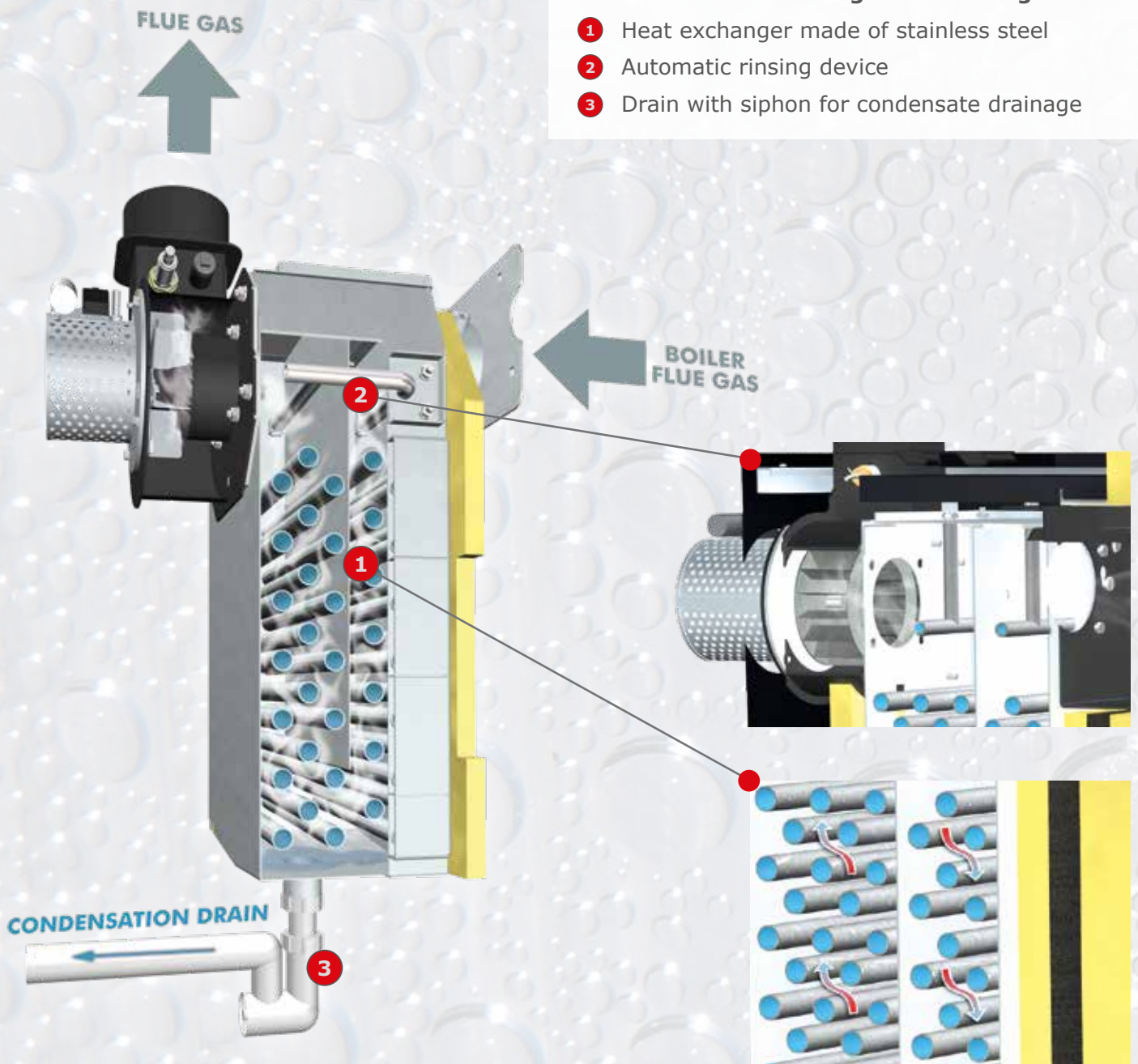


Advantages

- Lower fuel costs
- Filtration of the flue gas
- Reduced emissions
- Automatic cleaning
- The condensing module can also be retrofitted at any time

Overview of condensing heat exchanger:

- 1 Heat exchanger made of stainless steel
- 2 Automatic rinsing device
- 3 Drain with siphon for condensate drainage

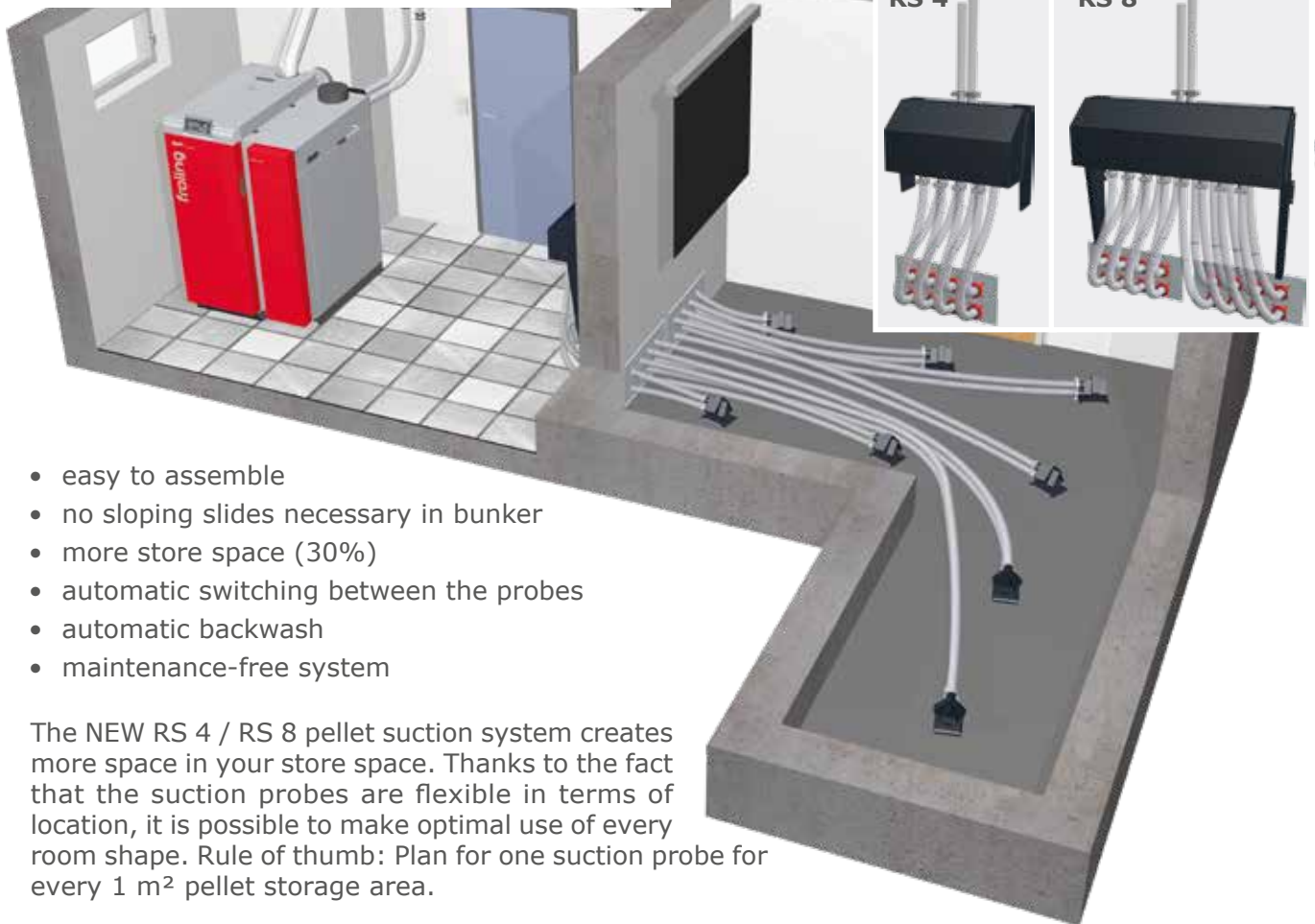


Requirements for optimal use of condensing technology:

- The return temperature should be as low as possible (e.g. floor or wall heating)
- Moisture-resistant and soot-fire-resistant exhaust system (W3G approval)
- Duct connection for condensate drainage and drainage of the rinse water

Feed systems

RS 4 / RS 8 pellet suction system



- easy to assemble
- no sloping slides necessary in bunker
- more store space (30%)
- automatic switching between the probes
- automatic backwash
- maintenance-free system

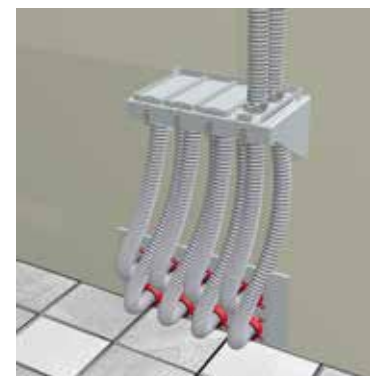
The NEW RS 4 / RS 8 pellet suction system creates more space in your store space. Thanks to the fact that the suction probes are flexible in terms of location, it is possible to make optimal use of every room shape. Rule of thumb: Plan for one suction probe for every 1 m² pellet storage area.



It automatically selects 4 or 8 suction probes in specified cycles, it is controlled by the pellet boiler. If, however, the suction probe fails unexpectedly, it is remedied by a **fully automatic reversal of the air supply (backwash)**.

Depiction: fully automatic reversal of flow

4 times suction system manual



Same as above but with the difference of the manual switching between the suction systems.

Sacksilo



The bag silo system is a flexible, simple way of storing pellets. Available in 9 different footprints (from 1.5 m x 1.25 m to 2.9 m x 2.9 m) with a capacity of between 1.6 and 7.4 tonnes, depending on the bulk density.

There are other advantages to using a bag silo. It is easy to assemble and dustproof. You can also fit rainproof and sunproof covers and install the silo outside.

Saugschneckensystem



The Froling screw suction system is the ideal solution for rectangular rooms with front-end removal. The deep and horizontal position of the discharge screw means the space in the room is used optimally and complete emptying of the store is guaranteed.

Combined with a suction system from Froling it also enables flexible boiler installation.

For more information see our "Outfeeders for pellets" brochure



Cube 330/500S pellet supply bin

The Cube 330/500S is the optimal and most cost-effective solution for low fuel requirements. Manually filled (e.g. pellets in sacks) it can store a total of 330 kg / 495 kg of pellets. The pellets are transported to the boiler by means of a suction probe, which is also included in delivery.



Pellet Mole®

This pellet discharge system is easy to install and makes full use of the store space. The Pellet Mole® draws the pellets from above, ensuring an optimum fuel feed to the boiler. The Pellet Mole moves automatically into every corner of the store to empty it as efficiently as possible.



Pellet filling pipes

The pellets are delivered by tanker and blown into the store through a filling pipe. The second pipe is used for controlled and dust free removal of the escaping air.

System convenience

Lambdatronic S 3200 control

With the new Lambdatronic S 3200 boiler controller, Froling is taking a step into the future. The control unit is optimised to suit any requirement. An individually adjustable viewing angle ensures that all operating statuses are clearly displayed. Exact combustion control thanks to lambda control **with broadband probe** as standard. The menu structure is ideally organised to ensure easy operation. All essential functions can be selected by simply pressing a button.



Lambdatronic S 3200 control

Advantages:

- Exact combustion control with broadband probe lambda control
- Large, clear control unit

NEW! 7" Touch-Display

Advantages:

- Individual installation of your own heating system
- Even more comfortable operation of the boiler thanks to a larger touch screen

NEW! SIMPLIFICATION OF BOILER SOFTWARE



Fig. 1 General overview of heating circuit



Fig. 2 Easy modifying of heating times



Fig. 3 Overview of the new holiday mode

Firewood reload calculation

Too much firewood can result in fuel that is not completely burnt despite the storage tank being loaded. The integrated reload calculation can be used through simple parameterization of the storage tank type and the storage tank volume. Taking into account the current storage tank charge, the boiler control calculates the missing energy. When the boiler door is opened, the required amount of fuel for loading the storage tank is displayed in kilogrammes.



NEW:

EVERYTHING AT A GLANCE WITH THE NEW FROLING APP

- ✓ Simple and intuitive operation of the boiler
- ✓ Status information can be called up and changed within seconds
- ✓ Individual naming of the heating circuits
- ✓ Status changes are transmitted directly to the user (e.g. via e-mail or push notifications)
- ✓ No additional hardware required (e.g. Internet gateway)



With the new Froling App, you can check and control your Froling boiler online from anywhere at any time. You can read and modify the main status information and settings easily and conveniently online. You can also specify which status messages you want to be informed about via SMS or e-mail (e.g. when the ash box is to be emptied or in the event of a fault message).

With optimized tablet view!

Froling boiler (software core module from version V50.04 B05.16) with boiler touch display (from version V60.01 B01.34), a (broadband) internet connection and a tablet/smartphone with IOS or Android operating system. Once the boiler has been connected to the internet and activated, the system can be accessed 24/7 from anywhere using a web-enabled device (mobile, tablet, PC, etc.). The app is available in the Android Play Store and IOS App Store.



**SMART
HOME**

FLEXIBLE SOLUTION



Enjoy smart, convenient and piece-of-mind living with the Smart Home connection options from Froling.

Loxone: Combine your Froling heating system with the Loxone Miniserver and the new Froling Extension and implement individual boiler control on the basis of the single room control of the Loxone Smart Home.

Advantages: Easy operation and viewing of the heating circuit via the Loxone Miniserver, immediate notification of status changes and individual operating modes for each situation (presence, holiday, economy mode, etc.)



Mod bus: Via the Froling mod bus interface, the system can be integrated into a building management system.

System convenience

Accessories for even greater ease of use



FRA room temperature sensor

By using the Froling FRA room temperature sensor (measuring only 8x8 cm), the main modes of the corresponding heating circuit can be easily selected and adjusted. The FRA room temperature sensor can be connected with or without affecting the room area. The adjusting wheel allows you to change the room temperature by up to $\pm 3^{\circ}\text{C}$.



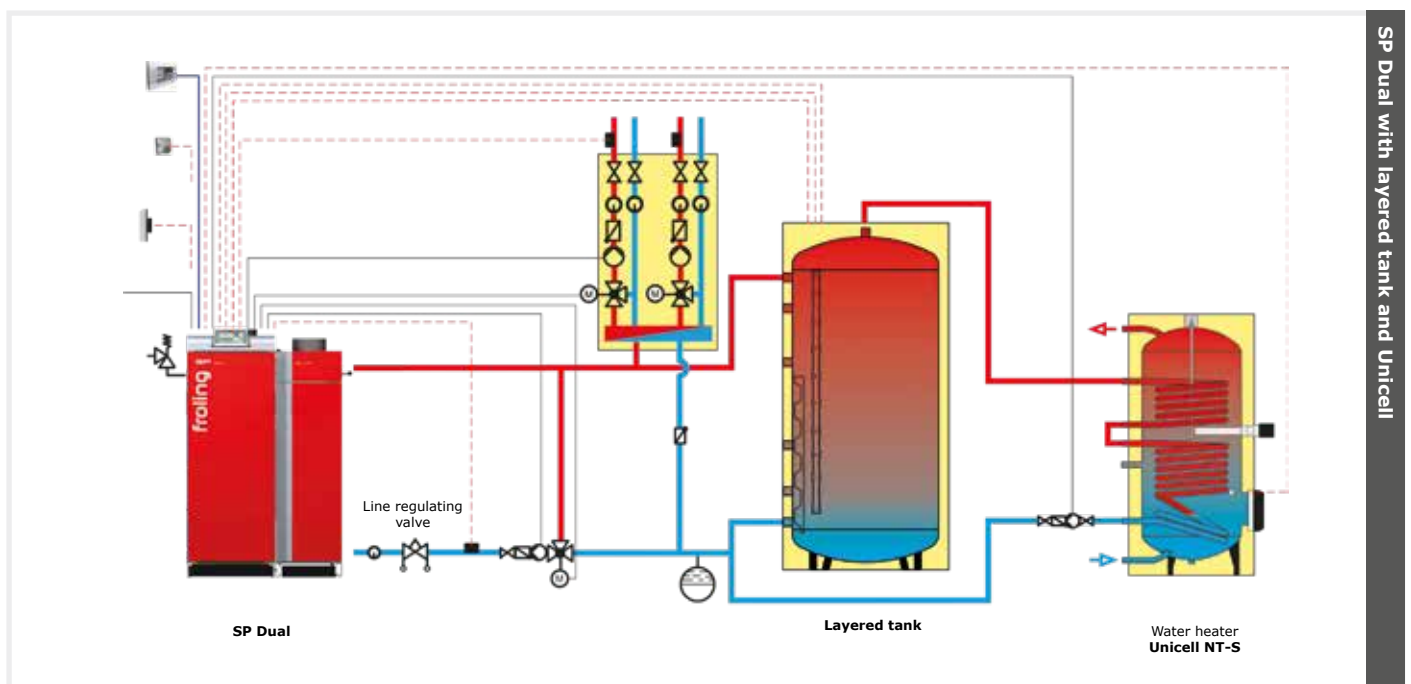
RBG 3200 Touch room console

The RBG 3200 Touch has an impressive touchpad interface. The menu structure means it is intuitive and easy to use. The 17x10 cm console with colour screen shows the most important functions at a glance and automatically adjusts the background lighting to the conditions. The room consoles are connected to the boiler controller using a bus cable.

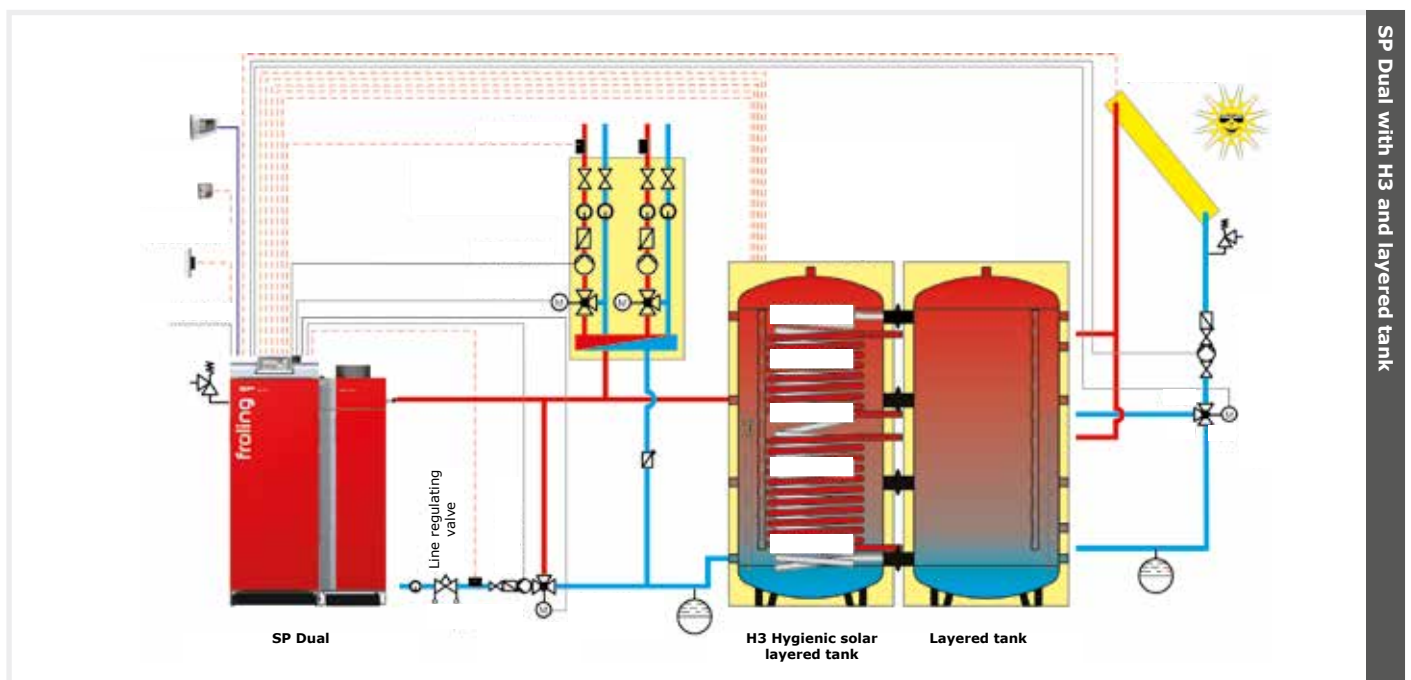
Feature: Systems engineering for optimum energy consumption

- Advantages:
- Complete solutions for all requirements
 - The components work perfectly together.
 - Integrated solar power

Frothing systems engineering enables efficient energy management. Up to 4 storage tanks, 8 hot water tanks and 18 heating circuits can influence the heat management system. An additional benefit is the ability to integrate alternative means of energy production, such as solar panels.

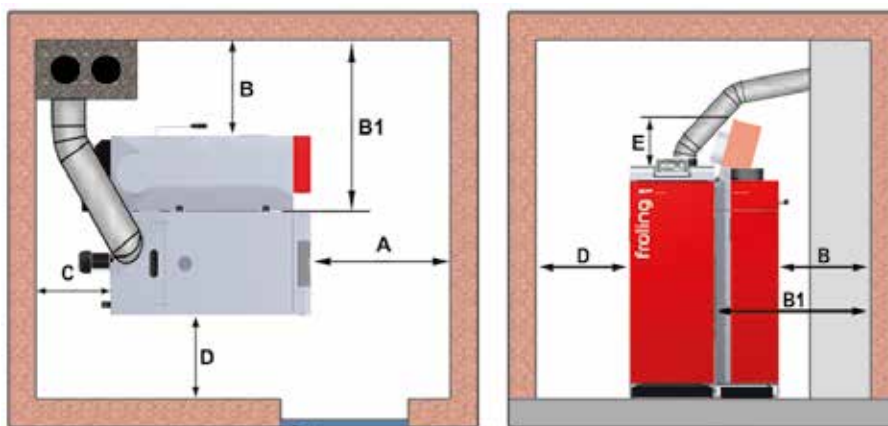


SP Dual with layered tank and Unicell

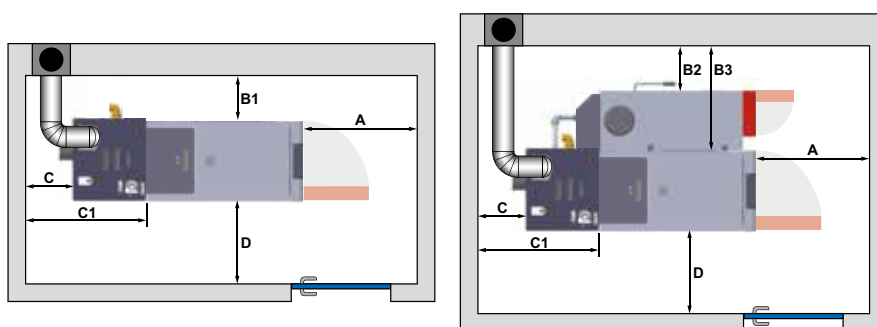


SP Dual with H3 and layered tank

Minimum distances in the boiler room

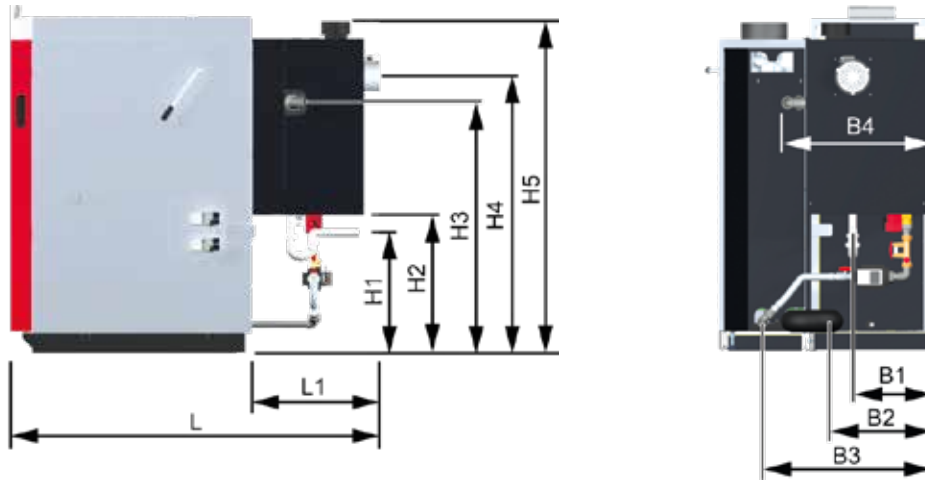


Minimum distances - SP Dual		15 / 22 / 28	34 / 40
A	Distance between insulated door and wall	[mm]	800
B	Distance – boiler side with WOS lever and pellet unit to wall	[mm]	600
B1	Distance – boiler side without pellet unit to wall	[mm]	1030
C	Distance between rear of boiler and wall	[mm]	500
D	Distance between side of boiler and wall	[mm]	200
E	Space required for open cover	[mm]	300



Minimum distances - SP Dual to condensing technology		28	
A	Distance from insulated door to wall	[mm]	800
B1	Distance from boiler side to wall, S4 Turbo	[mm]	800 (200)*
B2	Distance from boiler side to wall, SP Dual	[mm]	600
B3	Distance from boiler side to wall, S4 Turbo with retrofitted pellet unit	[mm]	1030
C	Space requirement including maintenance area for draft fan with condensing heat exchanger	[mm]	350
C1	Space requirement for retrofitting a condensing heat exchanger	[mm]	1125
B	Distance from boiler side to wall	[mm]	200 (800)*

* The boiler should be set up on the side with the WOS lever (B or D) with a distance of at least 800 mm to the wall in order to ensure accessibility for connecting the device as well as for maintenance tasks (e.g. induced draft).

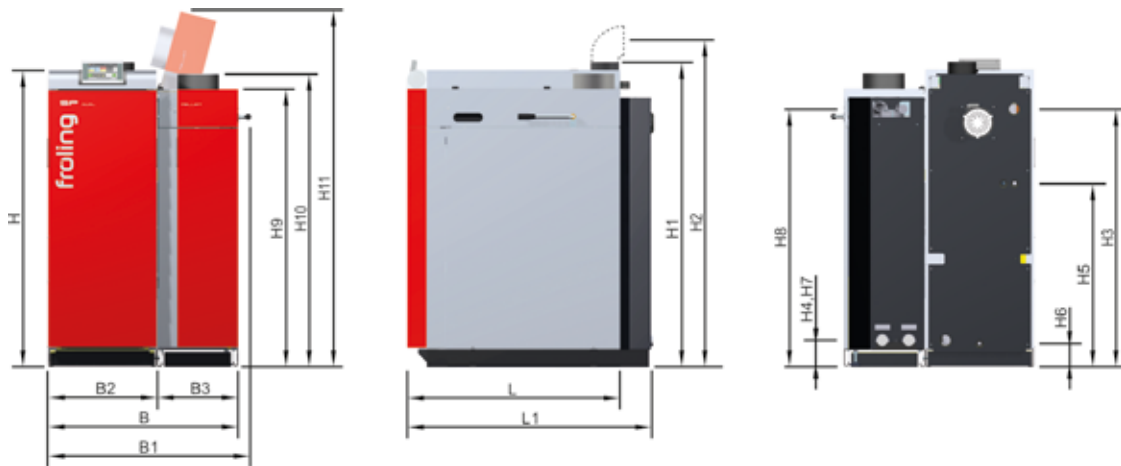


Dimensions - SP Dual with condensing technology		28
L	Length of boiler without draft	[mm] 1815
L1	Length of boiler + condensing heat exchanger	[mm] 1815
B	Width of boiler with return connection	[mm] 700
B1	Distance from condensate drain to boiler side	[mm] 365
H1	Height of exhaust pipe connection	[mm] 1545
H2	Height of draft fan connection	[mm] 1290
H3	Height of condensate drain connection	[mm] 390 - 680
H4	Height of return connection	[mm] 1170
H5	Height of rinsing device connection	[mm] 1100
DI	Exhaust connection	[mm] 132
	Exhaust diameter	[mm] 130

Technical data - SP Dual with condensing technology		28
	Nominal heat output - firewood operation / pellets operation	[kW] 32/27,6
	Boiler efficiency - firewood operation / pellets operation	[%] 100,1 / 99,4 - 102,1
	Electrical power	[W] 55 - 72
	Hopper capacity	[l] 145
	Filling door (width/height)	[mm] 380 / 360
	Water content	[l] 165
	Boiler weight	[kg] 1055
	Energy label for SP Dual 28 kW**	

* Configuration label (boiler + control + calorific value)

Technical data



Dimensions - SP Dual		15	22	28	34	40
L	Length, firewood boiler	[mm]	1125	1125	1125	1215
L1	Length, pellet unit	[mm]	1285	1285	1285	1370
B	SP Dual width	[mm]	1000	1000	1000	1100
B1	Total width, SP Dual incl. heat exchanger lever	[mm]	1050	1050	1050	1150
B2	Width, firewood boiler	[mm]	570	570	570	670
B3	Width, pellet unit	[mm]	430	430	430	430
H	Height, boiler	[mm]	1565	1565	1565	1565
H1	Total height incl. flue gas nozzle	[mm]	1610	1610	1610	1610
H2	Height, flue pipe connection	[mm]	1830	1830	1830	1830
H3	Height, flow - firewood boiler connection	[mm]	1360	1360	1360	1360
H4	Height, return - firewood boiler connection	[mm]	140	140	140	140
H5	Height, safety heat exchanger connection	[mm]	970	970	970	970
H6	Height, drainage connection	[mm]	120	120	120	120
H7	Height, flow and return - pellet unit connection	[mm]	140	140	140	160
H8	Height, suction system connection	[mm]	1370	1370	1370	1360
H9	Height, pellet unit	[mm]	1465	1465	1465	1465
H10	Total height, pellet unit incl. suction turbine	[mm]	1545	1545	1545	1545
H11	Total space with cover open	[mm]	1865	1865	1865	1865
	Flue pipe diameter	[mm]	149	149	149	149

Technische Daten - SP Dual		15	22	28	34	40
Nominal heat output - firewood operation / pellets operation	[kW]	15 / 15,6	22 / 22	28 / 25	34 / 34	40 / 38
Heat output range - pellets operation	[kW]	4,7 - 15,6	4,7 - 22	4,7 - 25	9,3 - 34	9,3 - 38
Energy (ErP) label*		A ⁺	A ⁺	A ⁺	A ⁺	A ⁺
Weight - firewood boiler / pellet unit	[kg]	640 / 305	645 / 310	650 / 315	735 / 320	745 / 330
Water content - firewood boiler / pellet unit	[l]	115 / 42	115 / 42	115 / 42	175 / 45	175 / 45
Fuel loading door dimensions - firewood boiler (width/height)	[mm]	380 / 360	380 / 360	380 / 360	380 / 360	380 / 360
Fuel loading chamber capacity - firewood boiler	[l]	145	145	145	190	190
Pellet container capacity (automatic feed)	[l]	approx. 80	approx. 80	approx. 80	approx. 90	approx. 90

* Composite label (boiler + controls)

Ihr Fröling-Partner:



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