

RS4 / RS8 pellet suction system
4 times suction system manual
Suction screw system
1-2-3 suction screw system
Bag silo
Cube
Pellet mole



Heating with 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. Froling's extensive service network ensures that we can handle all inquiries quickly.



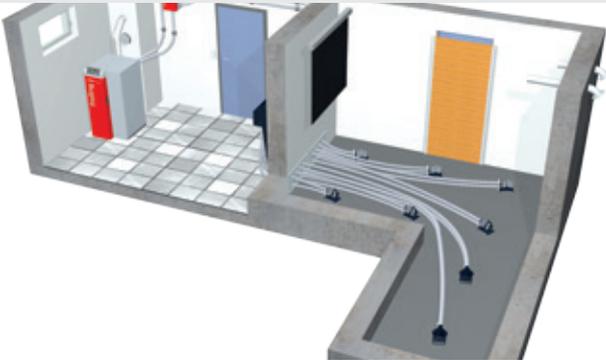
Make savings with pellets without compromising on comfort

The price changes for different energy sources in recent years show the benefits of wood pellets: the environmentally clean way of heating is also economically attractive. Wood is a renewable energy source that is also CO₂-neutral. Pellets are made of natural wood. The large quantity of wood shavings and sawdust produced by the 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.

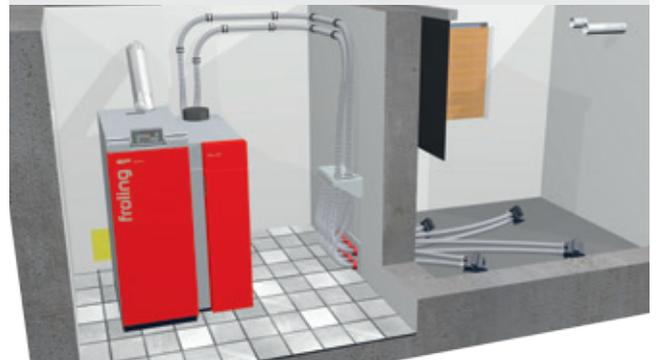


The right solution for every application:

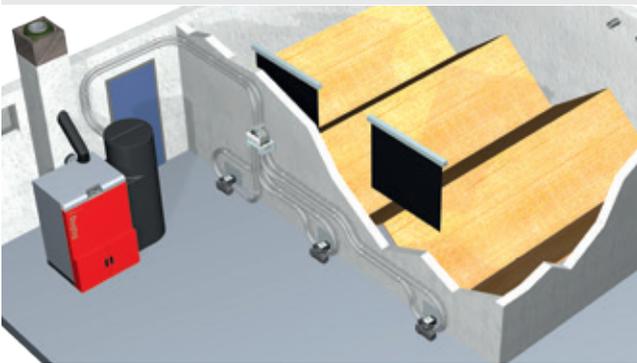
RS 4 / RS 8 pellet suction system



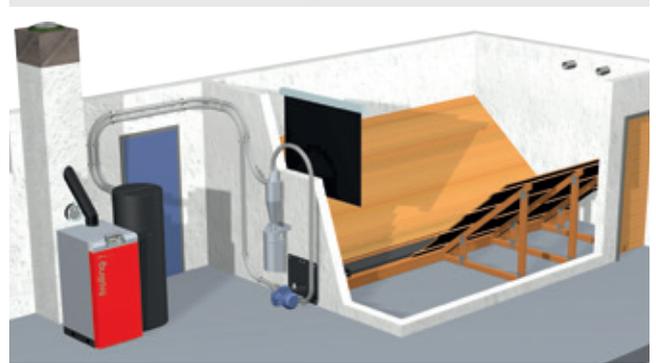
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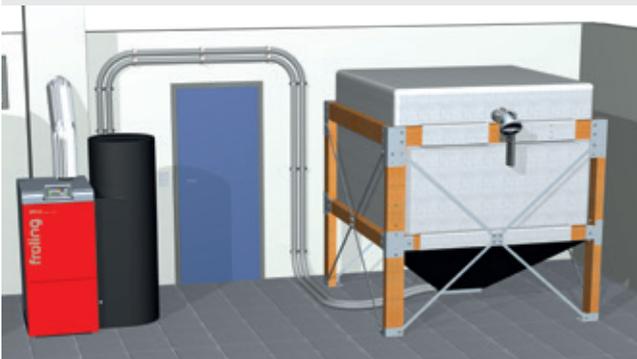
1-2-3 suction screw system



Suction screw system



Bag silo discharge system



Cube 330 / 500 S



Pellet Mole®

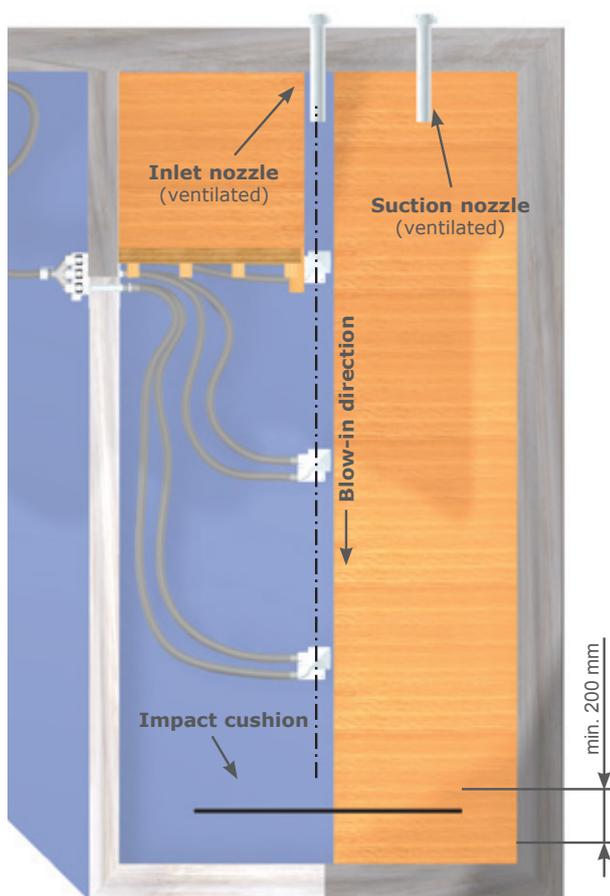


Store layout and construction

General notes on store design

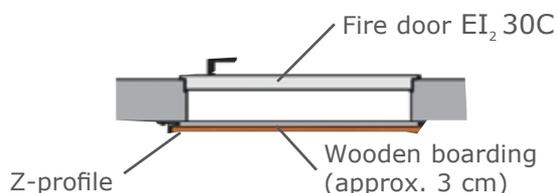
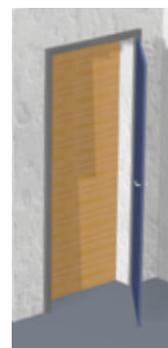
The ideal storeroom should provide enough space for a year's supply of pellets, be dry and preferably situated at an outer wall (for fitting inlet nozzles). In the case of a brick store which can be fitted either with the Froling suction or screw suction system, please make sure that the walls can support the static loads. A sloping floor (made of wood) is recommended for optimal emptying of the storeroom, but is not essential. The storeroom must allow for an air supply to regulate the CO concentration. If the filling pipe is installed indoors, the coupling cap must be air-tight with separate ventilation to outside. If the filling pipes leads outside, the Froling coupling cap is vented.

Technical equipment of the store



Store door

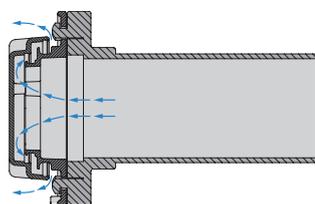
The store door must be a fire door with an EI₂30C fire resistance rating; it must have a seal. On the inside of the room you should install wooden boards to stop the pellets pressing against the door. Practice has shown that it is advisable to install an additional inspection window.



Impact cushion

The impact cushion is made of rubber and should be positioned opposite the filling pipes at least 20 cm from the wall at a right angle to the blow-in direction. During filling the cushion stops the pellets from hitting the wall and breaking up. The cushion also stops the pellets from knocking plaster off the wall. Froling can supply impact cushioning measuring 140 x 120 cm.

Filling couplings with venting cap



Filling pipe with venting cap

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. When installing in a lighting well, filling couplings with a 45° bend are used so that the filling hoses can be connected in a straight line.

Calculating the store size

Example: Store for P4 Pellet 15

10 m³ pellets = approx. 6,500 kg pellets
(approx. 3250 litres of heating oil)

Example: Store for P4 Pellet 15

Boiler heating load = storeroom volume
15 kW = 15 m³

Store volume / store height = area
15 m³ / 2.5 m = 6 m²



Pellet fuel specification (standardised to EN ISO 17225-2 class A1)

Energy content	4.9 kWh/kg	Surface	smooth
Diameter	6 mm	Bulk weight	min. 600 kg/m ³
Length	5 to 30 mm (1% to 45 mm)	Water content	max. 10%
		Proportion of ash	max. 0.7%
		Dust content	max. 1.0%
		Pressing aid	max. 2%

Comparison of fuels

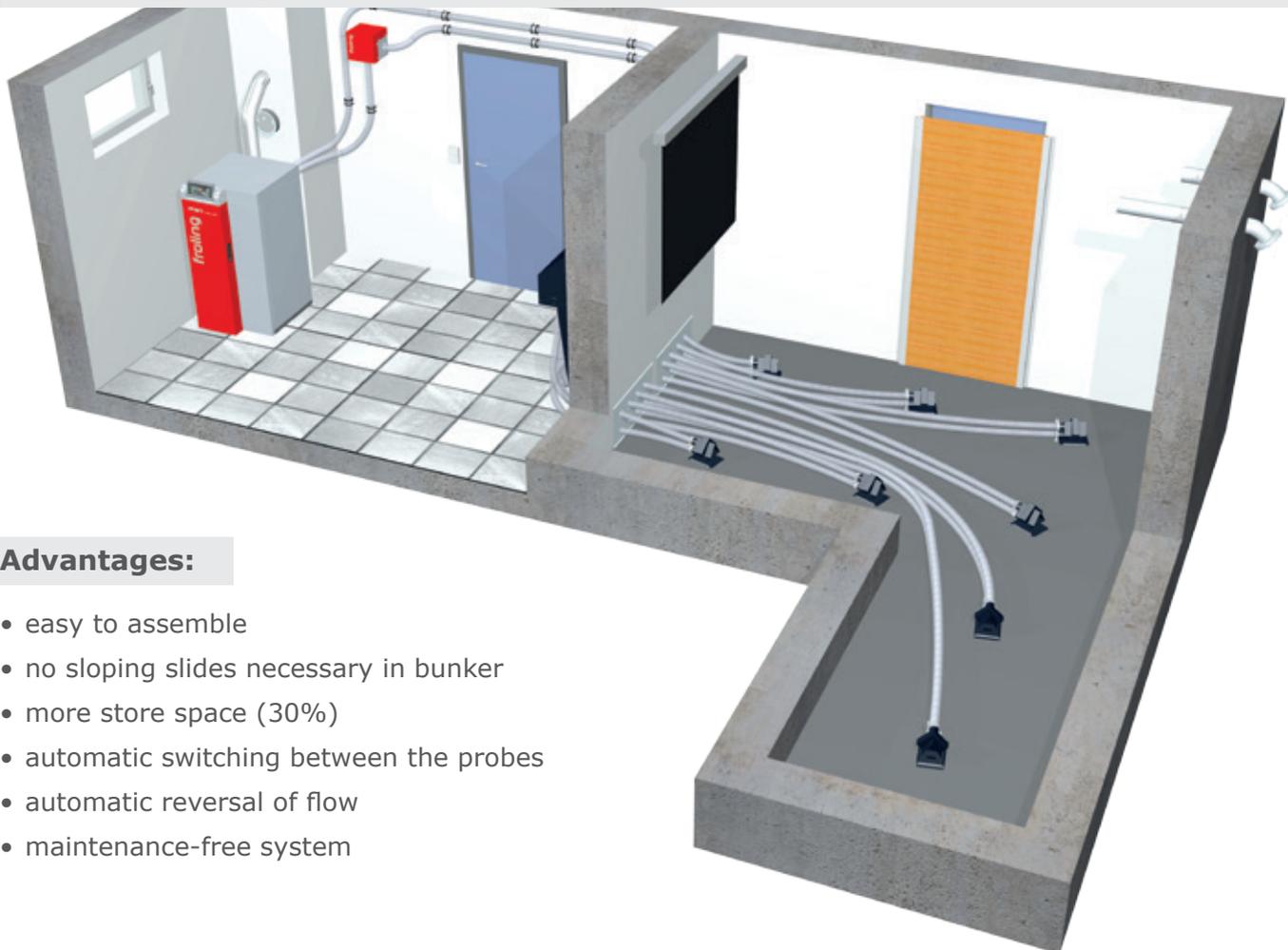
Wood pellets	4.9 kWh/kg	Anthracite coal	7 kWh/kg
Wood chips	750 - 850 kWh/m ³	Coke	7.5 - 8 kWh/kg
Wood fuel (soft)	1300 - 1700 kWh/m ³	Natural gas	9.5 - 10.2 kWh/m ³
Wood fuel (hard)	1700 - 2400 kWh/m ³	Liquefied gas	12.8 kWh/kg
		Heating oil EL	10 kWh/l

Comparison of pellets and heating oil EL

2 kg of pellets - approx. 1 litre of heating oil EL 650 kg of pellets - approx. 1m³ space required
3 m³ of pellets - approx. 1000 litres of heating oil EL

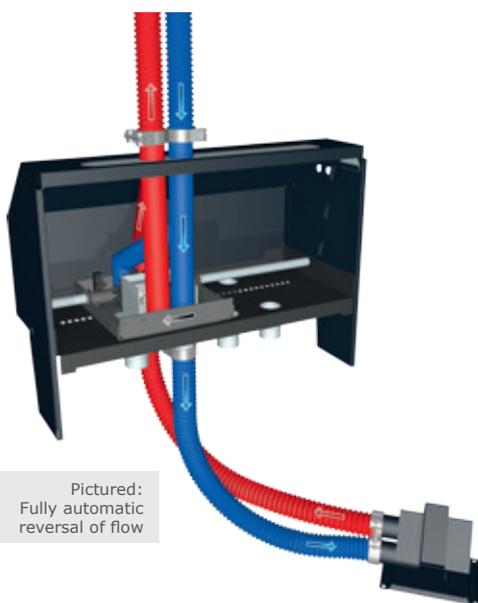
Pellet suction system

RS 4 / RS 8 pellet suction system



Advantages:

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



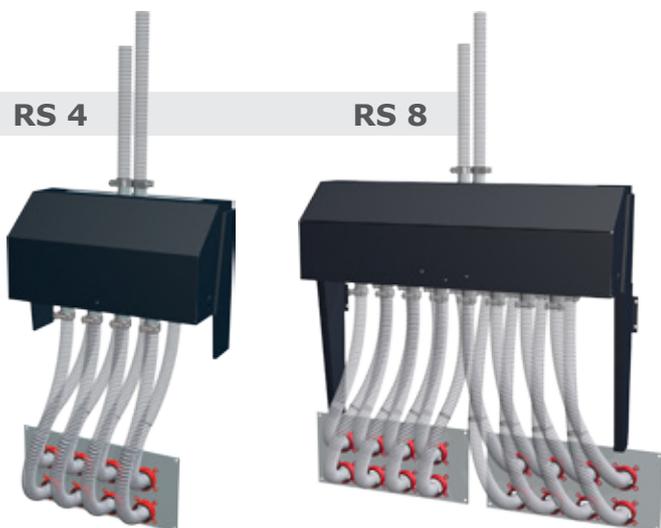
Pictured:
Fully automatic
reversal of flow

The intelligent slide system ensures defined probe selection and **fully automatic reversal of flow**.

The NEW RS 4 / RS 8 pellet suction system creates more space in your storeroom. 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)**.



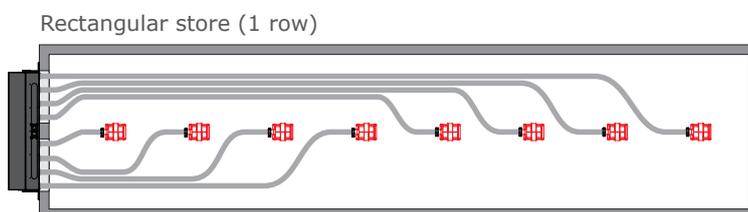
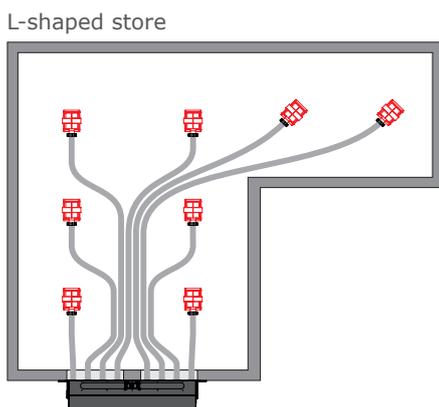
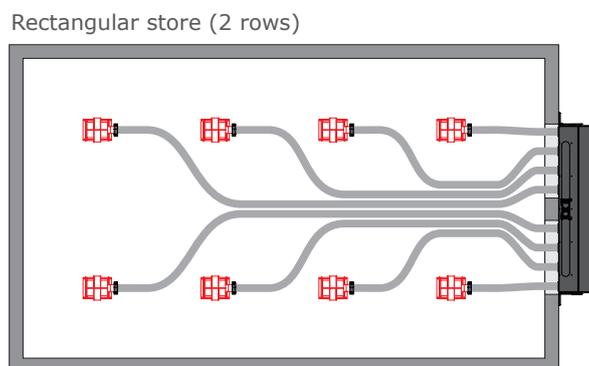
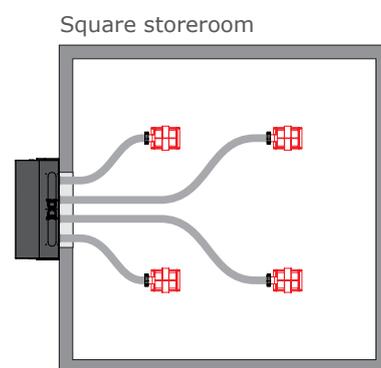
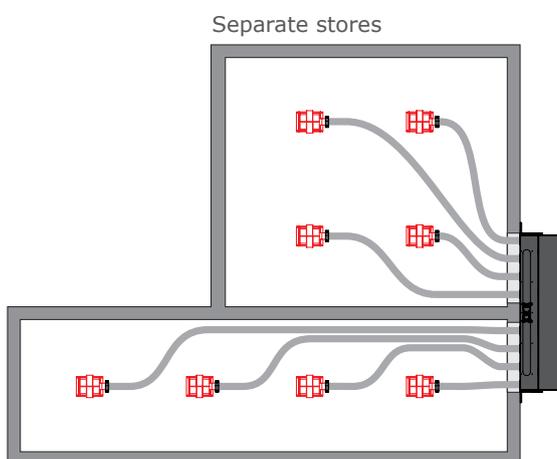


Suction probe

Specially developed suction probe for pellet suction and reversal of flow



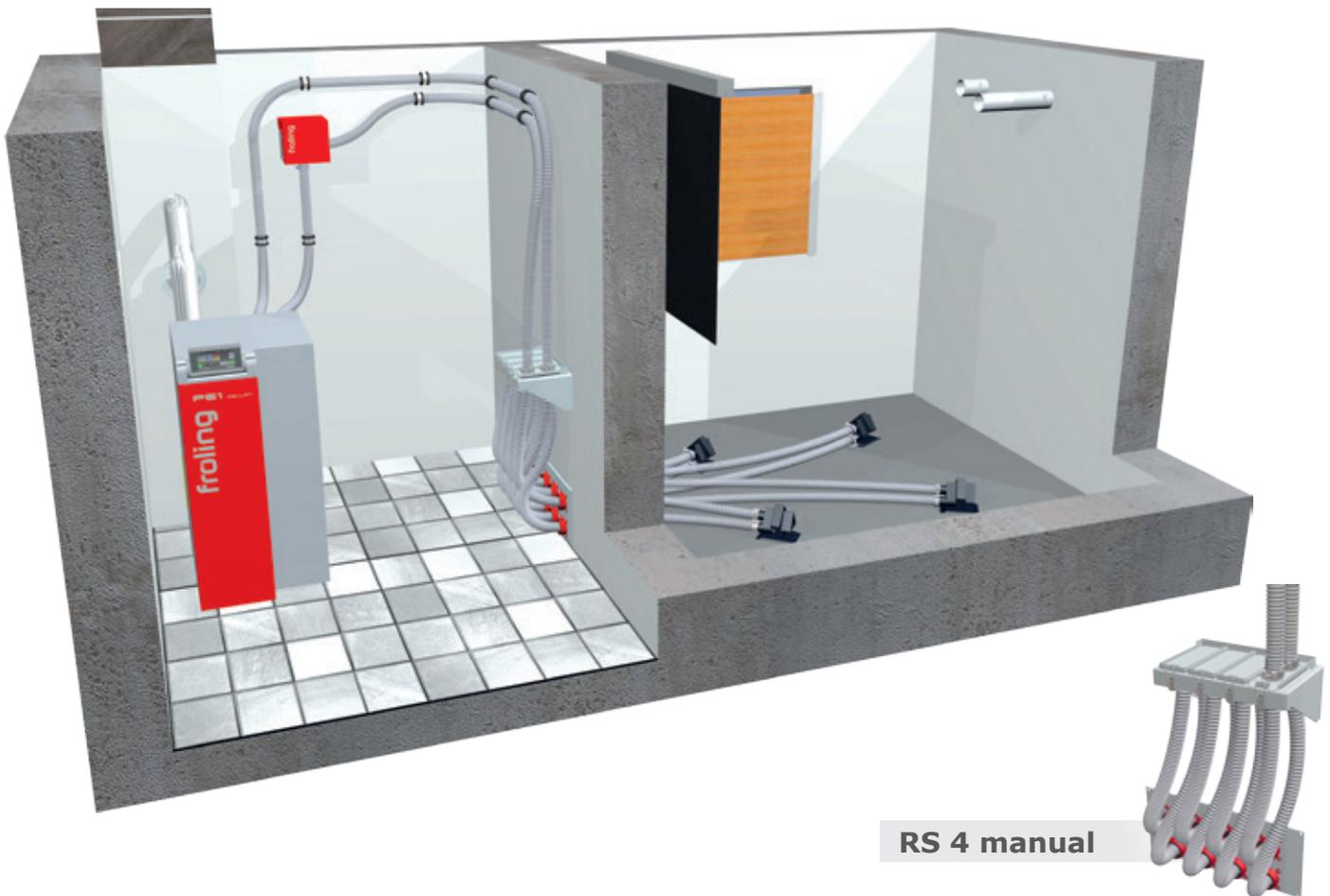
Flexible storeroom layout - optimally used:



Manual suction system

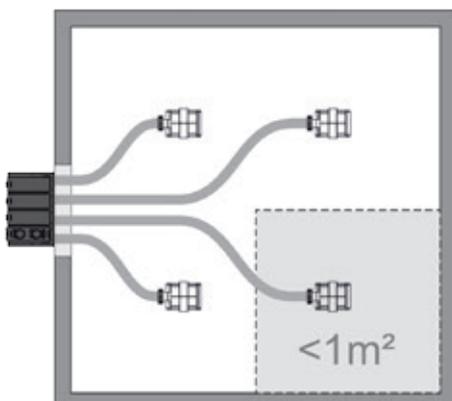
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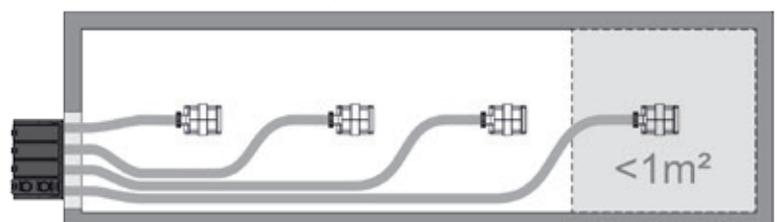


Flexible storeroom layout - optimally used:

Square storeroom



Rectangular store (1 row)

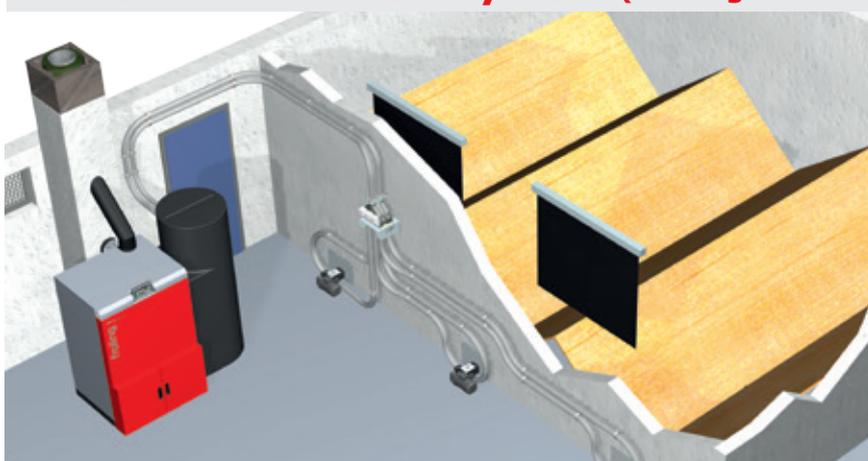


Suction screw system (for oblong storerooms)



The Froling suction screw 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.

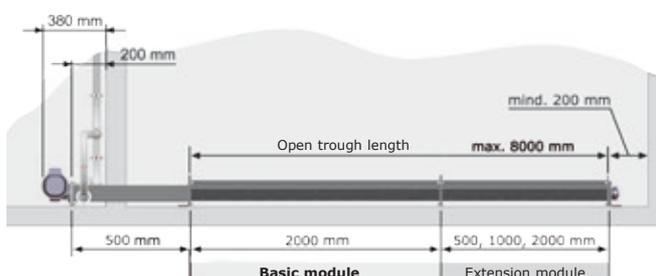
1-2-3 suction screw system (for large and oblong stores - up to 10 m)



The 1-2-3 suction screw system from Froling is the ideal solution for large stores. Depending on the size, two or three discharge screws are positioned parallel to each other and integrated into the fuel feed of the suction system. The automatic screw selector automatically switches between the suction screws in predefined cycles, thus ensuring that the store is emptied evenly.

Flexible lengths

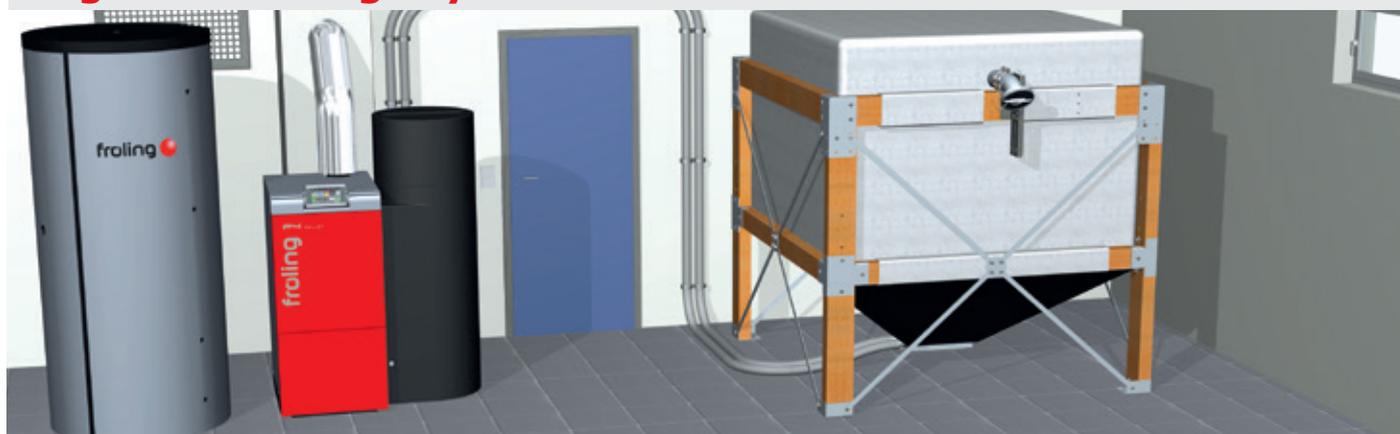
The suction screw discharge system is flexible and modular. A total of 6 metres of extension modules can be added to the basic module measuring 2 metres, providing a total length of 8.5 metres (open trough length 8 metres). The screws (80mm diameter) have a sturdy design and reliably convey the pellets to the suction hose, from where they are transported on to the boiler by suction turbine. We recommend a max. suction hose length of 15 metres.



flexible composition of modules													
Basic module (2000 mm)	1x												
+++ PLUS +++													
Extension 500 mm		1x	1x										
Extension 1000 mm			1x	1x		1x	1x			1x	1x		
Extension 2000 mm					1x	1x	1x	1x	2x	2x	2x	3x	
equals an open trough length of	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000

Bag silo discharge system

Bag silo discharge system



The bag silo system is a flexible, simple way of storing pellets. Available in 8 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.

Bag silo			Type 7	Type 8	Type 9	Type 10	Type 20	Type 30	Type 40	Type 50
B	Bag silo frame width	m	1.5	2.0	2.0	2.0	2.3	2.9	2.0	2.3
L	Bag silo frame length	m	1.25	1.25	1.5	2.0	2.3	2.9	2.9	2.9
S1	Wall to filling coupling gap	m	min. 0.30							
S2	Wall to frame gap	m	min. 0.10							
H	Bag silo frame height	m	1.9			1.82		1.9		
H1	Height including filling coupling	m	2.1			2.05		2.1		
Required storeroom height ¹⁾ Filling pipe below/above crossbar		m	1.95 / 2.2			1.90 / 2.15		1.95 / 2.2		
H2	Ideal storeroom height ²⁾	m	2.3							
Number of filling coupling ⁴⁾		units	1	1	1	1	1	2 ³⁾	2 ³⁾	2 ³⁾
Bulk weight		t/m ³	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Tonnage ⁴⁾ Filling pipe above crossbar		t	1.6	2.0	2.4	3.7	4.7	7.4	5.0	5.9
Tonnage ⁴⁾ Filling pipe below crossbar		t	1.4	1.7	2.0	2.8	3.5	5.3	3.6	4.3

1) Minimum room height for connection to filler pipe in installation room. With bag silo type 7 - 50, the filling pipe can be fitted either above or below the crossbar. This will affect the required height of the store and the tonnage.

2) When completely full, the bag silo forms a hood shape.

3) 2x filling couplings for even filling, extraction is not required.

4) After clearing of the suction probe, you should expect there to be a residual amount of at least 10% (depending on the quality of the pellets).

Cube 330 / 500 S pellet supply bin

The Cube 330 / 500 S is the optimal and most cost-effective solution for low fuel requirements. It is filled manually (e.g. pellets in sacks) and can store a total of 330 kg / 500 kg of pellets (22 / 33 sacks of 15 kg). The pellets are transported to the boiler by means of a suction probe, which is also included in delivery.

Dimensions Cube 300: 690 x 690 x 1230 mm (BxTxH)
 Dimensions Cube 500 S: 760 x 1000 x 1250 mm (BxTxH)

Filling opening Cube 300: 600 x 295 mm (BxT)
 Filling opening Cube 500 S: 670 x 340 mm (BxT)



Option: Fuel tuning with the PST pellet deduster

Wood pellets are clean and of very high quality. Any remaining wood dust can be filtered from the fuel using the PST pellet deduster. This optimises the efficiency of the combustion zone over the years. The PST pellet deduster can be fitted in any position in the return air line of the pellet suction system.

The suction cyclone design means that the dust particles are separated from the return air and deposited internally. The container is convenient to remove and transport to the emptying point. The system can be retrofitted at any time and it is maintenance-free.



Pellet Mole®



This 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.

The pellet mole can be fitted either with a manual hoist or the Comfort module. The Comfort module is an automatic lifting system which automatically moves the pellet mole to the stand-by position when the switch is at "Fill" and lowers the pellet mole onto the pellets when the switch is at "Operate".

NEW: E3® pellet mole



The new E3® pellet mole is a simple removal system based on the tried and tested pellet mole. The store can be optimally emptied without slopes.

The E3® pellet mole supplies an annual pellet requirement of several hundred tons to pellet boilers of approx. 50 to 300 kW. A typical store size is around up to 40 tons of pellets or 60m³ capacity in various shapes - from round and square to rectangular, making the E3® pellet mole hugely versatile.

Better heating with pellet systems from Froling

Froling has been the mark of quality for heating with wood and biomass for over 50 years. Today, Froling is recognised in Europe and beyond for highly efficient heating technology used for everything from single family homes to industrial facilities with highly technical demands. We offer a unique product range with up-to-the minute technology and pioneering innovations incorporating experience from over 150,000 operating systems with a capacity range from 7 to 1,000 kW.



Your Froling partner:

froling 

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