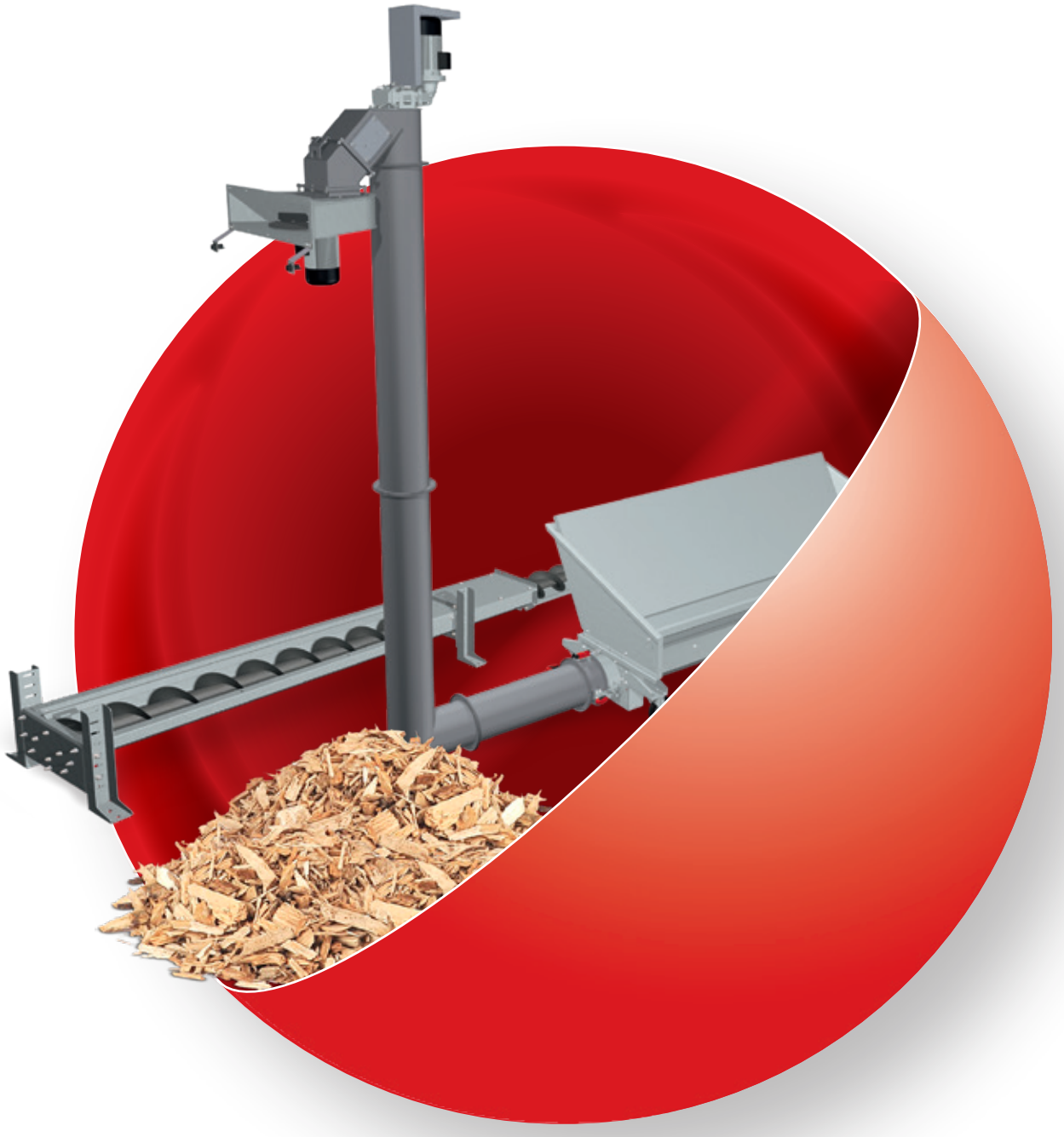
Bunker filling systems for wood chips

BUNKER FILLING SCREW BFS
BUNKER FILLING SYSTEM BFSV
BUNKER FILLING SYSTEM BFSU
BUNKER INLET NOZZLE BESH



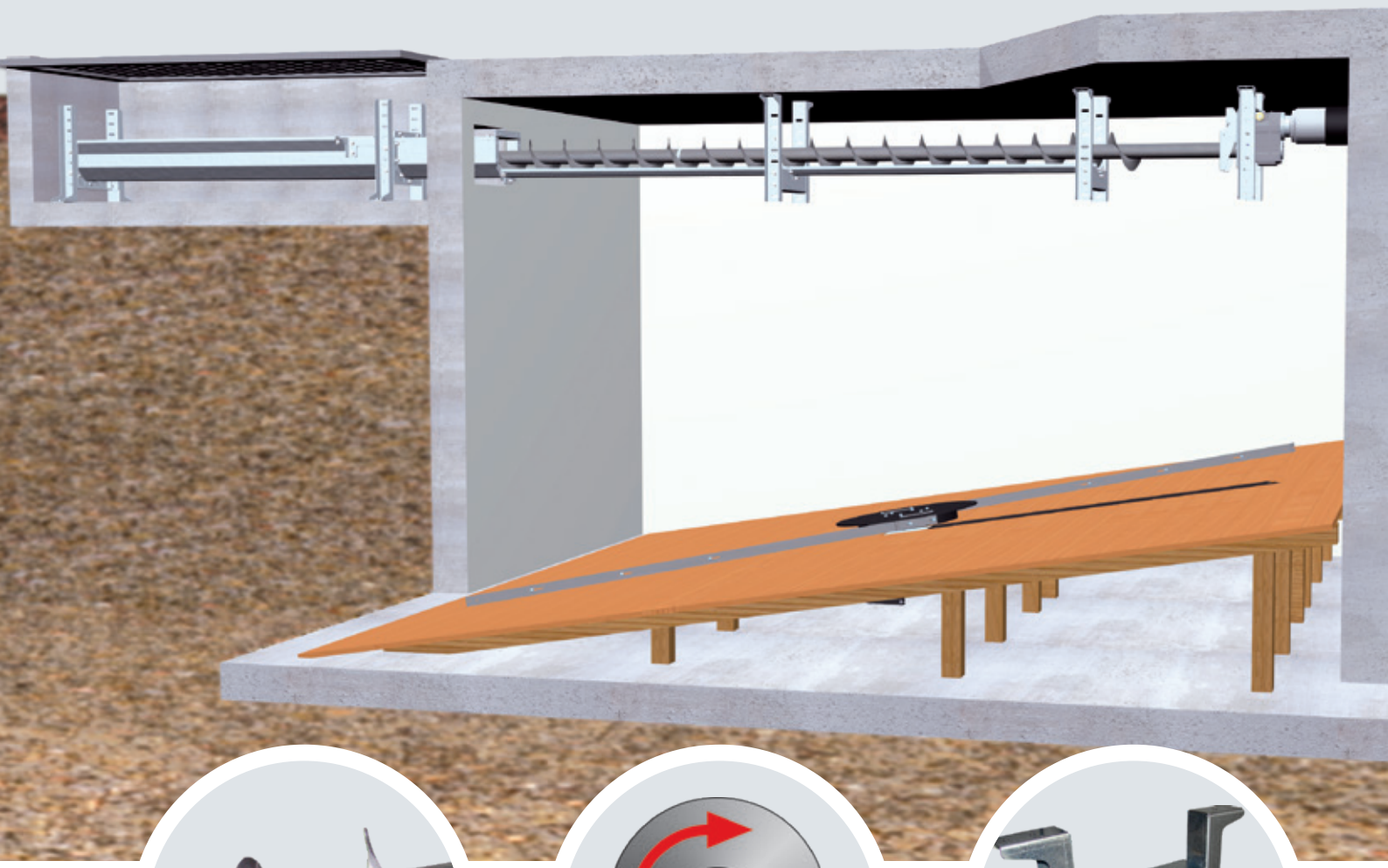
BETTER HEATING

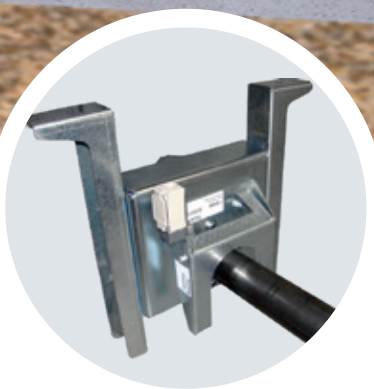
INNOVATIVE AND
CONVENIENT

fröling

BUNKER FILLING SCREW BFS

The Froling bunker filling screw is the ideal solution for filling underground bunkers. The fuel is transported using the bunker filling screw into the store space via the tipping chute which is located outside the store. The robust feed screw, together with the special shape of the open trough, ensures reliable material transport. An additional plus: The bunker filling screw stops automatically when the bunker is full. By request, the BFS bunker filling screw is also available in a reinforced version for commercial systems.





Feed screw

The robust feed screw (Ø 200 mm) has an extremely long service life and transports the material reliably and quickly from the tipping chute into the store space.

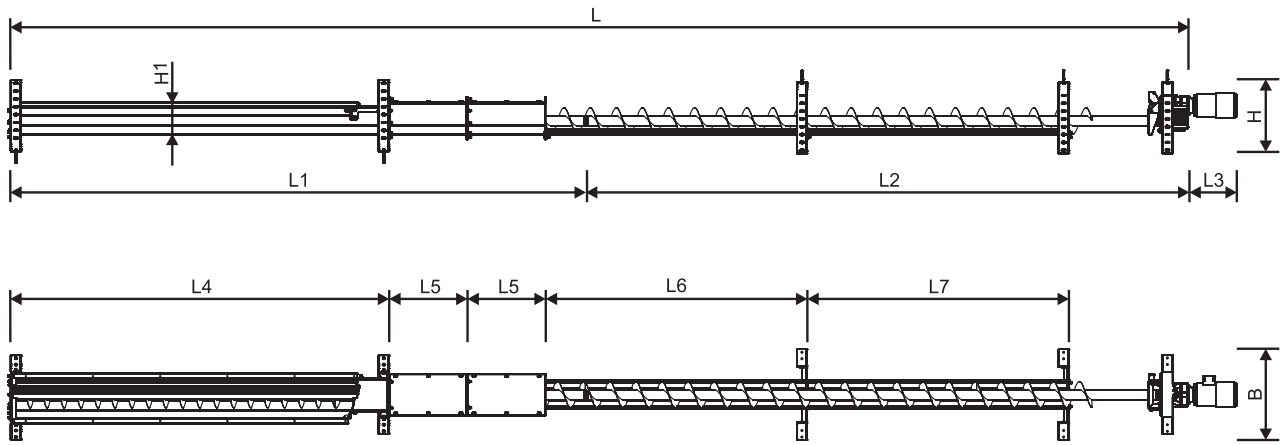
Open trough

The special shape of the trough ensures optimum fuel transport. The system is easy to operate, so it saves energy even when feeding in the maximum amount of pellets.

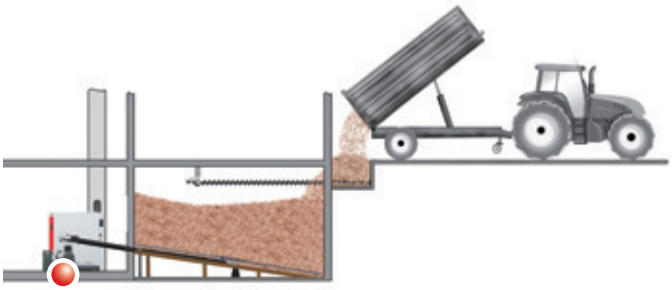
Rocker switch

If the store space is full, the material presses against the rocker switch and the bunker filling process stops automatically. All of the drives in the store space feature explosion protection.

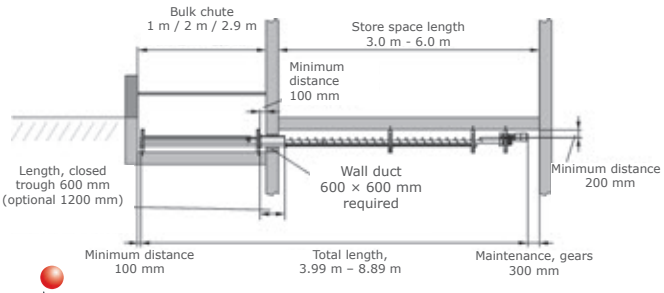
TECHNICAL SPECIFICATIONS & INSTALLATION EXAMPLES



Technical specifications - BFS [mm]		
L	Total length excluding geared motor	3600 - 9000
L1	Length, basic screw	2500 / 3500 / 4400
L2	Length, extension screw	1100 / 1600 / 2100 / 2600 / 3100 / 3600 / 4100 / 4600
L3	Length, geared motor	390
L4	Length, bulk chute	1000 / 2000 / 2900
L5	Length, wall duct	600
L6	Length, open trough	1000 / 1500 / 2000 / 2500
L7	Length, open trough	1500 / 2500
H	Total height	550
H1	Height, bulk chute	270
W	Total width	700
Feed output	[m³/h]	approx. 30



The wood chips are simply tipped into the bulk chute outside and then the feed screw transports them in a fully automatic process into the store space.



Thanks to the wide variety of basic and extension modules, this system is ideal for adaptation to local conditions.

BUNKER FILLING SYSTEM

BFSV / BFSU / BFSV-H bunker filling system

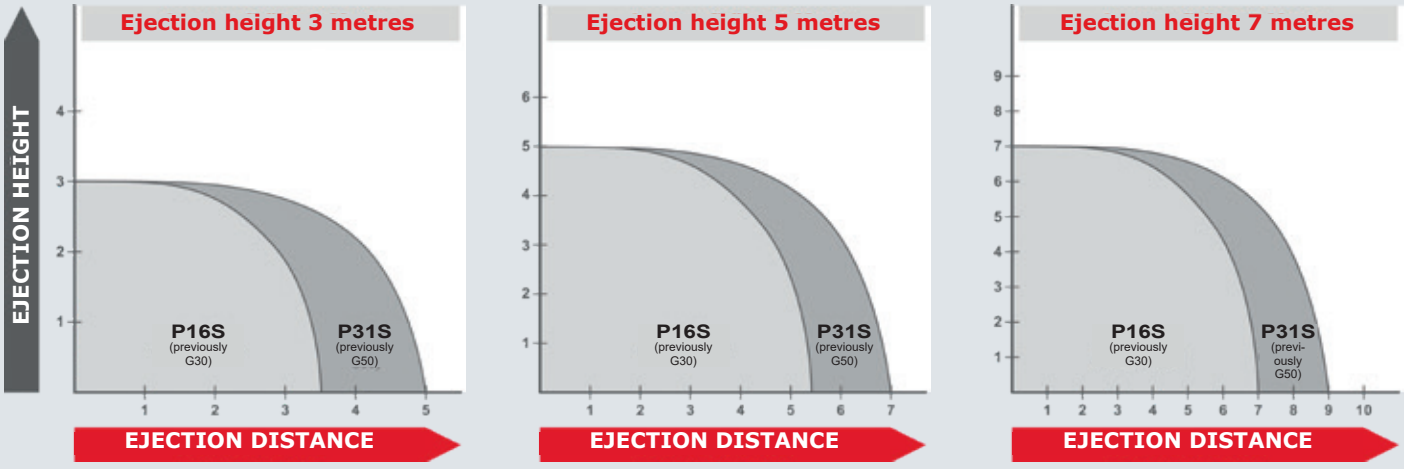
Froling bunker filling systems, both vertical (with vertical feed screw BFSV) and horizontal (with horizontal feed screw BFSU) set new standards for feed output (up to 30 m³/h), operating safety and bunker filling.

A screw transports the wood chips from the tipping gutter into the vertical feed system, which transports the fuel to the desired height for the centrifugal disc. In this way, the Froling bunker filling systems fill the store space without producing much dust and ensure the best possible distribution of the fuel in the bunker.

Advantages:
- Easy to assemble
- High feed output (up to 30 m³/h)
- Great ejection distance (up to 9 m)
- Optimum fuel distribution
- Suitable for P16S - P31S wood chips (previously G30 / G50)

High feed output and maximum ejection distance

The separate drive for the high speed centrifugal disc enables a particularly good ejection distance. However, the ejection distance depends on the grain size and the weight of the fuel and the position of the centrifugal disc. The coarser and heavier the wood chips and the higher the position of the ejection head, the greater the trajectory. Depending on the fuel characteristics and local conditions, ejection distances of up to 9 metres can be achieved.

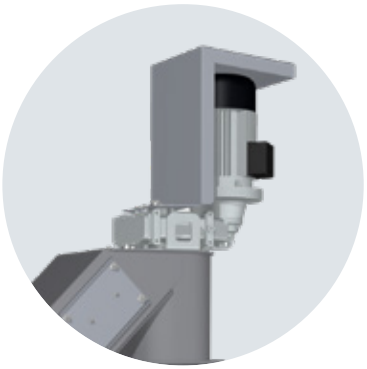


Fill level recognition

Two sensors recognize when the store space is full and automatically stop the fuel feed.

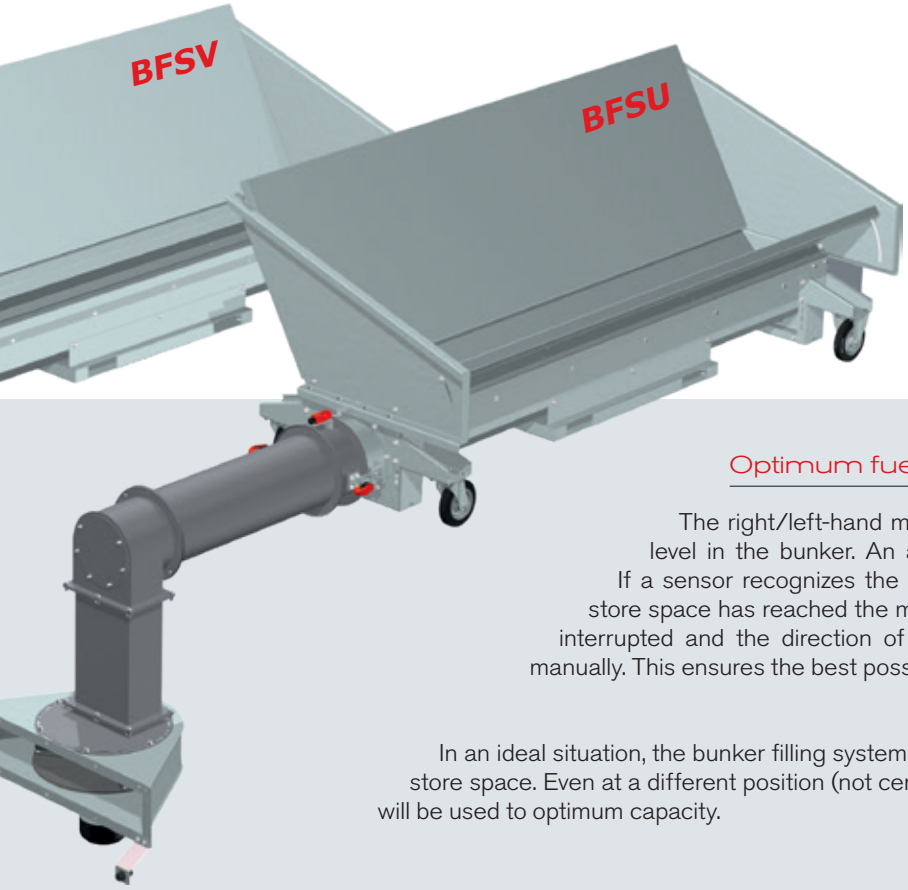
Feed screw

The coreless feed screw (Ø 225 mm) guarantees long service life and smooth operation, even with coarse wood chips.



Energy saving drives

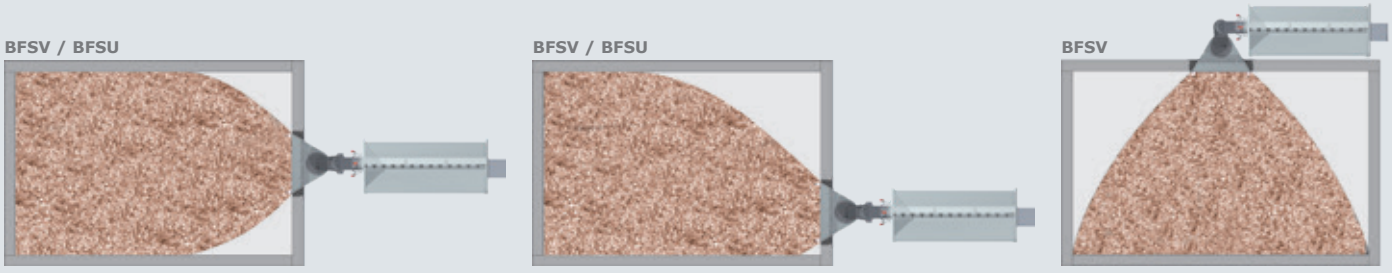
All of the drives have an a efficiency rate of over 90% and ensure low energy operation. All of the drives in the store space feature explosion protection.



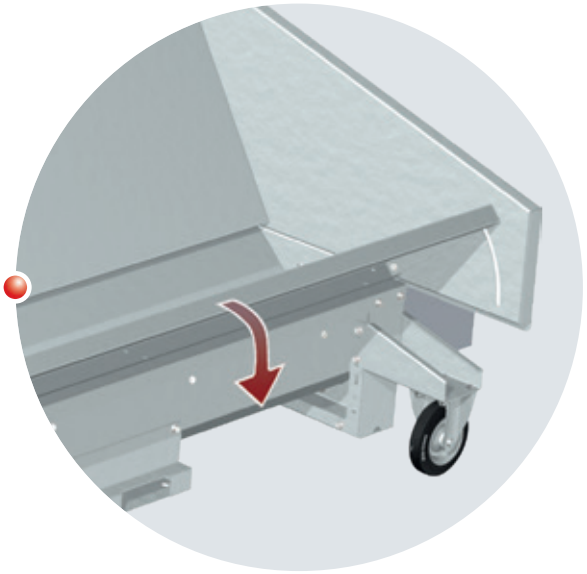
Optimum fuel distribution

The right/left-hand motion of the centrifugal disc ensures a good filling level in the bunker. An additional plus is the semi-automatic turn control. If a sensor recognizes the fill level indication that the fuel in this area of the store space has reached the maximum fill level, the fuel transport is automatically interrupted and the direction of rotation of the centrifugal disc can be changed manually. This ensures the best possible fuel distribution in the bunker.

In an ideal situation, the bunker filling system is positioned in the centre at the narrow end of the store space. Even at a different position (not centred, at the wide end, etc.), the store space volume will be used to optimum capacity.



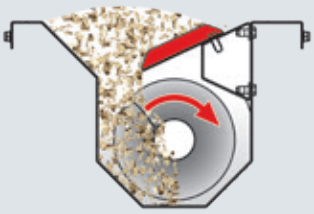
WELL PLANNED IN EVERY DETAIL



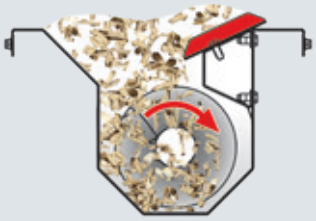
Flexible inlet plate

The front section of the bulk chute can be adjusted, enabling the bunker filling system to be adapted with respect to the height of the delivery vehicle (e.g. dumper). This allows the bulk chute to be filled easily.

Advantages:
- Adjustment of the loading sill
- Quick, easy filling



Fine wood chip



Coarse wood chips

Adjustable cover plates

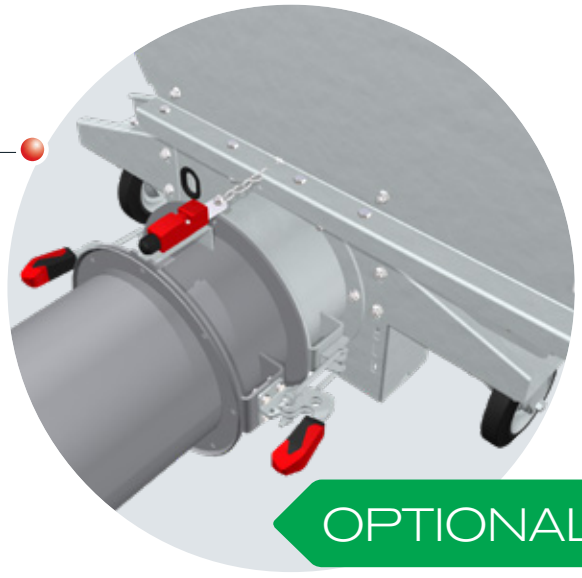
The adjustable cover plates of the bulk chute allow the feed output to be adapted with respect to the fuel. Depending on the grain size (G30 to G50), the cover plates can be set so that the feed output is adapted perfectly to ensure smooth operation and optimum distribution results.

Advantages:
- Adjustment of the feed output
- Optimum fuel transport

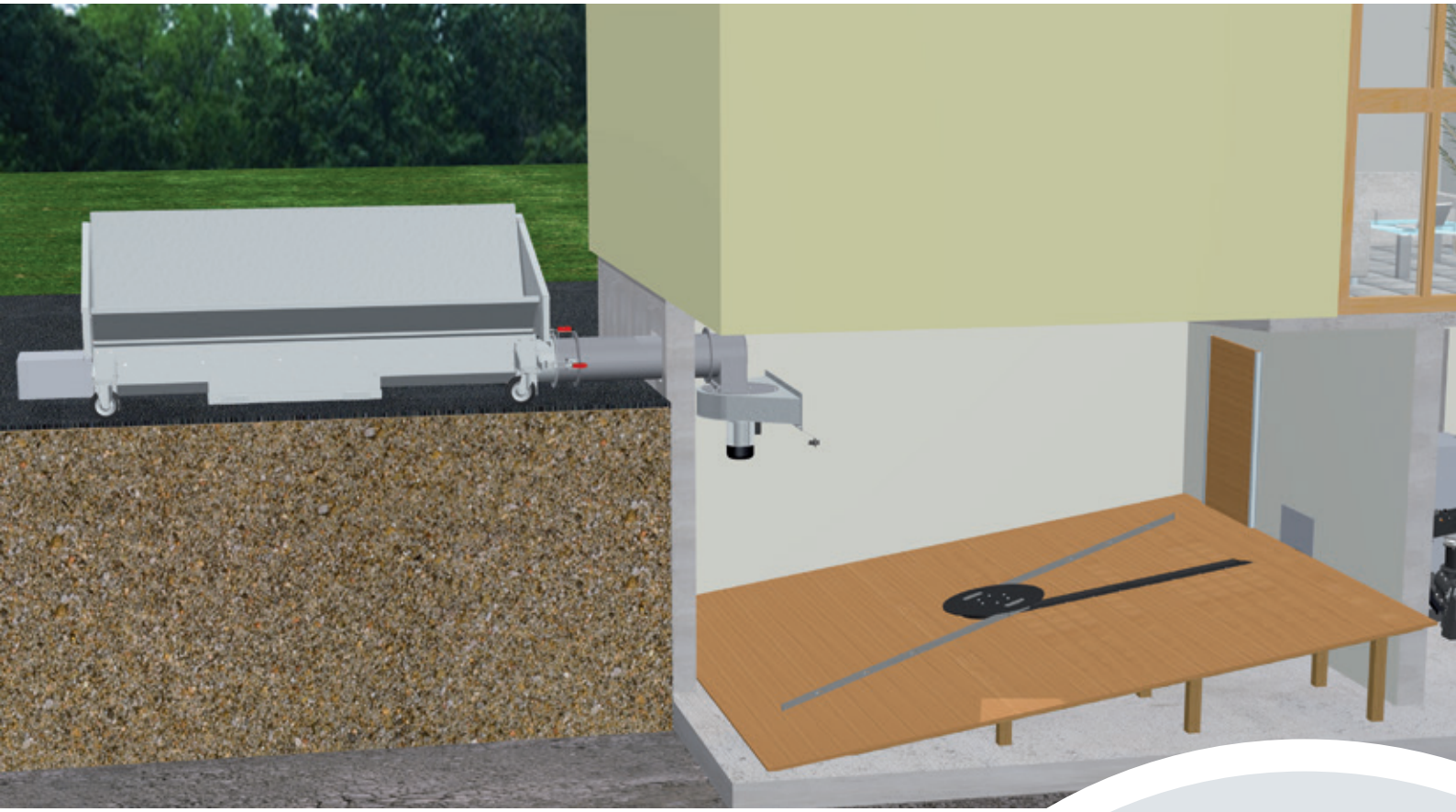
Quick fastener and transport wheels and/or lifting system

The quick fastener can be used to detach the bulk chute quickly and easily after use. An integrated safety switch prevents the system from starting after the bulk chute has been detached. The transport wheels or the optional lifting system for transport with a forklift can be used to move the bulk chute easily.

Advantages:
- Maximum safety
- Easy transport



BFSV / BFSU



Intelligent system design

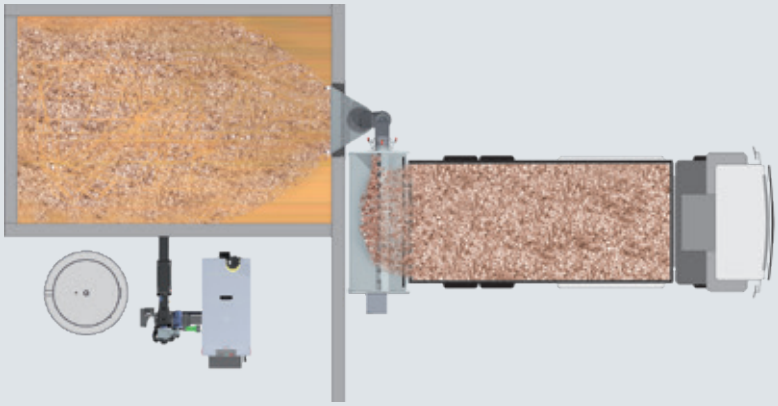
The Froling bunker filling systems (vertical, BFSV and horizontal, BFSU) offer the ideal solution for the easy filling of single or multiple storey bunkers and cellar store spaces. The many options for set-up and wide variety of basic and extension modules enable the Froling bunker filling systems BFSV and BFSU to be adapted perfectly for your requirements.

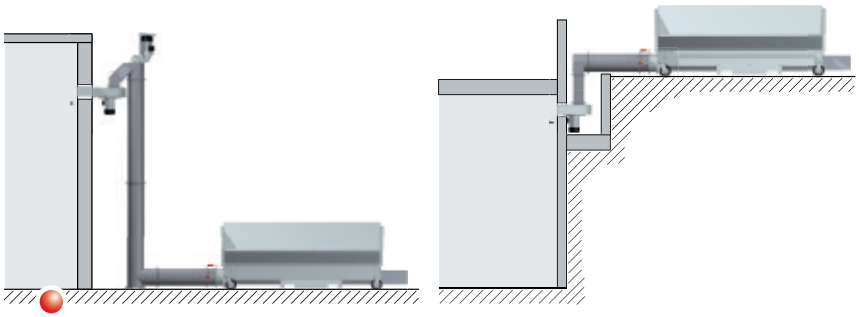
Advantages:
- A wide variety of implementation options
- Optimum filling of the fuel store space

Also possible with horizontal distribution screw

FLEXIBLE SET-UP OPTIONS

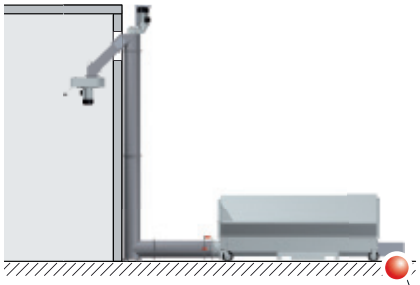
The fuel is simply tipped into the bulk chute outside of the bunker and the feed screw transports it to the ejection head, which distributes it evenly with a centrifugal action into the store space. Thanks to the flexible set-up options, the bunker filling system can be adapted perfectly to local conditions. This ensures optimum bunker filling.





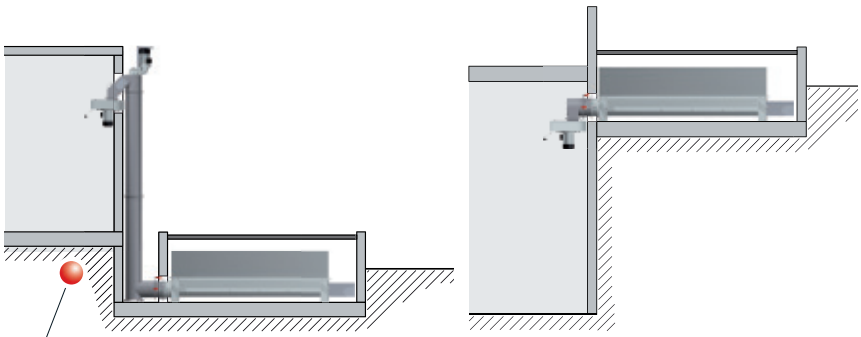
All of the components are outside

All of the bunker filling system components are situated on the outside. Depending on the thickness of the wall, a wall duct (300 mm / 600 mm) is necessary for mounting the ejection head.



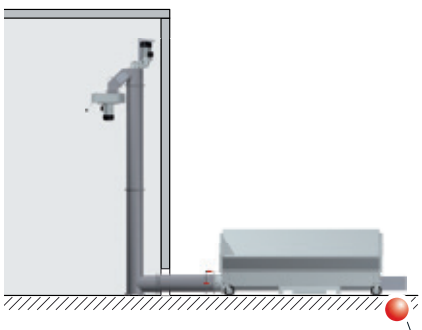
Ejection head inside

The ejection head can be situated in the wall duct or, when using an extended discharge shaft, in the store space.



Bulk chute in shaft

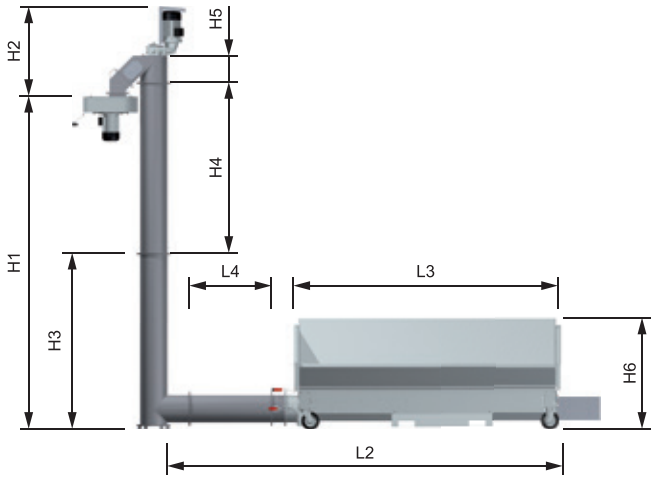
The bulk chute can also be positioned in a shaft. In this case, the the built-in bulk chute (without transport wheels) is used.

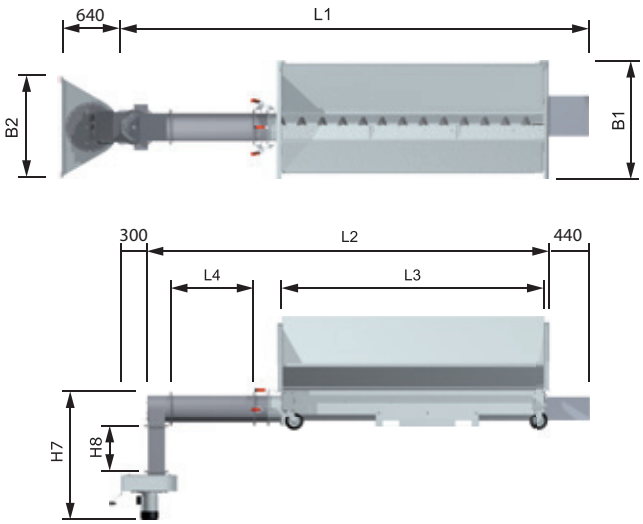


Vertical screw inside

A horizontal screw extension is generally required if the vertical screw is positioned in the store space.

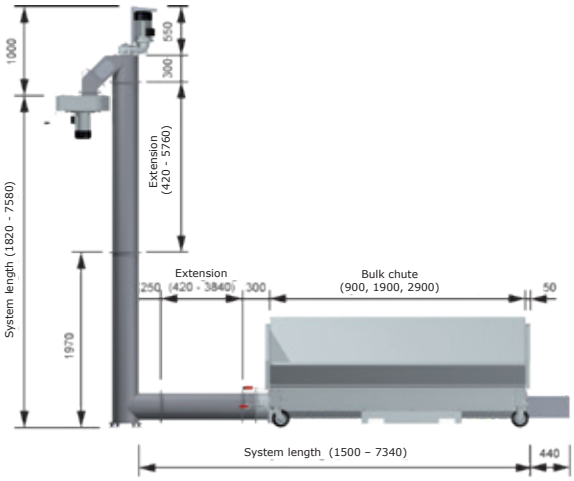
DIMENSIONS & TECHNICAL SPECIFICATIONS

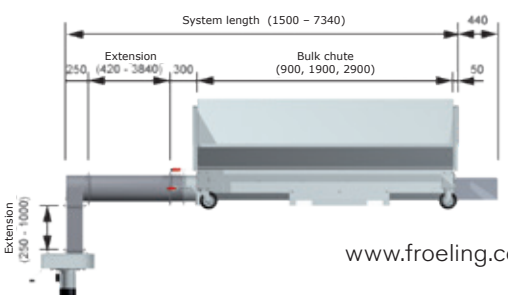




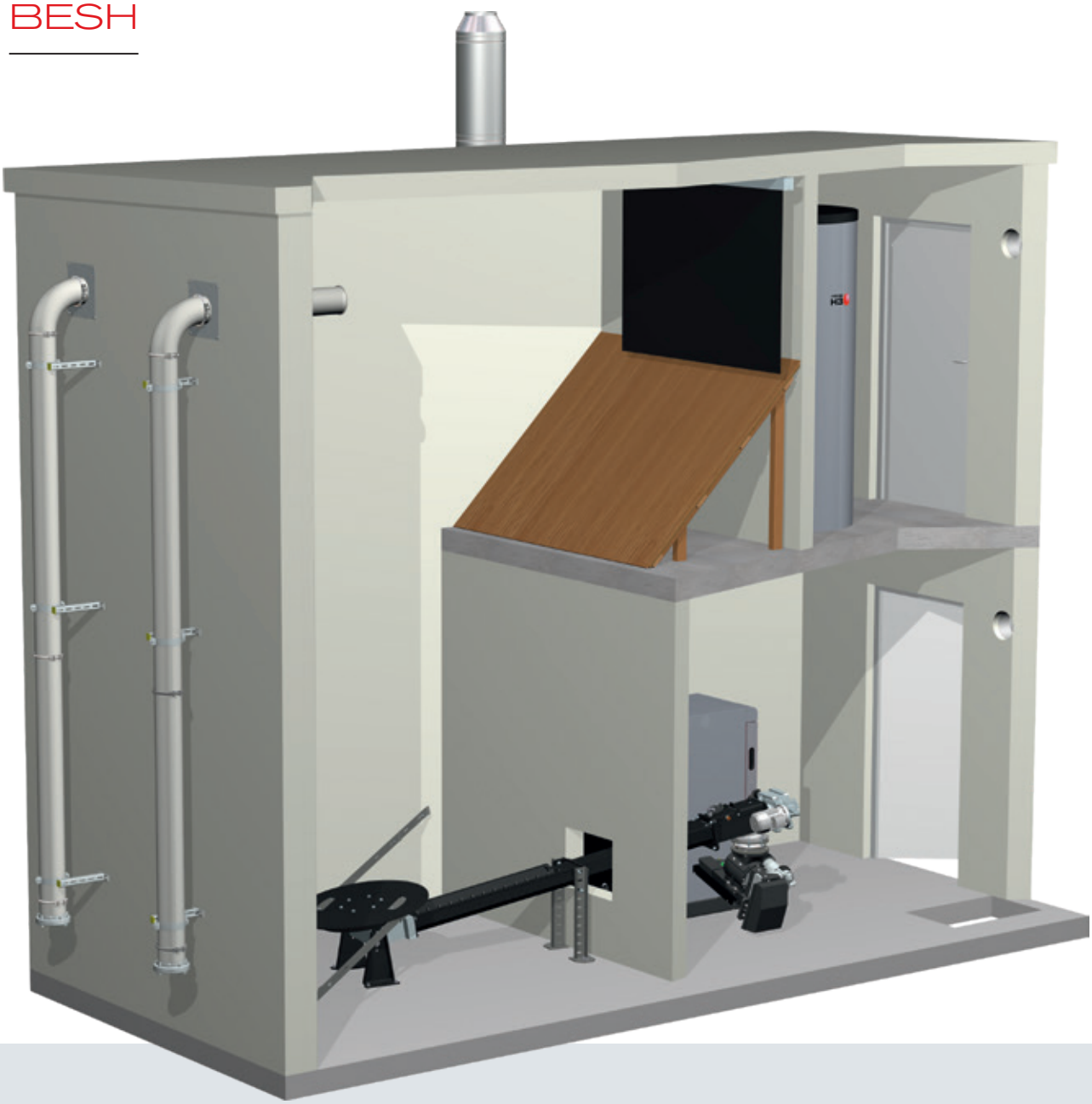
BFSV / BFSU [mm]		
L1	Total length of system	2240 - 8080
L2	System length	1500 - 7340
L3	Length, bulk chute	900 / 1900 / 2900
L4	Length, extension pipe	420 / 920 / 1920
H1	System height[1]	1820 - 7580
H2	High drive unit with discharge shaft[1]	1000
H3	Base unit, vertical screw[1]	1970
H4	Extension pipe, vertical screw[1]	420 / 920 / 1920
H5	High pipe end piece with ejecting flange[1]	300
H6	Height, bulk chute	1260
H7	Total height, ejection unit with drive[2]	870 - 1870
H8	Extension, ejection shaft[2]	250 / 500
B1	Width, bulk chute	1350
B2	Width, ejection head	1140
Feed output	[m³/h]	up to 30

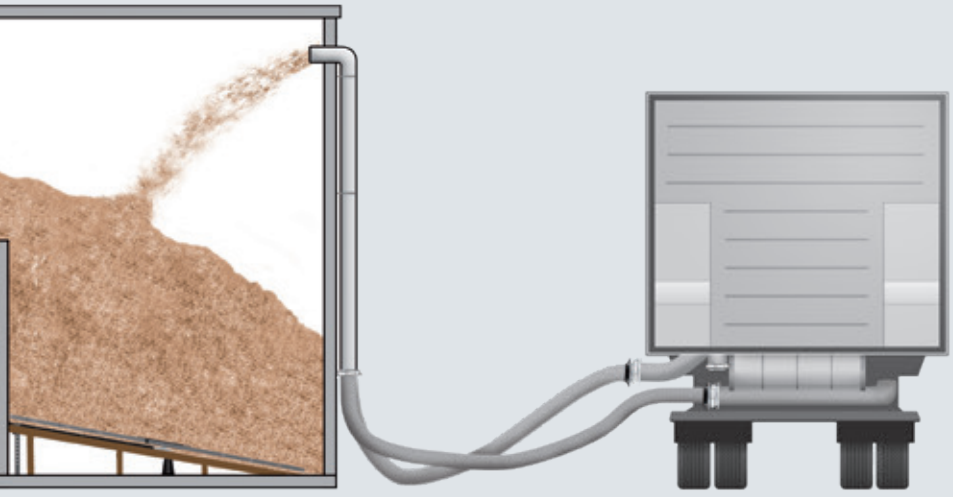
[1] For bunker filling system BFSV / BFSU
[2] For bunker filling system BFSU





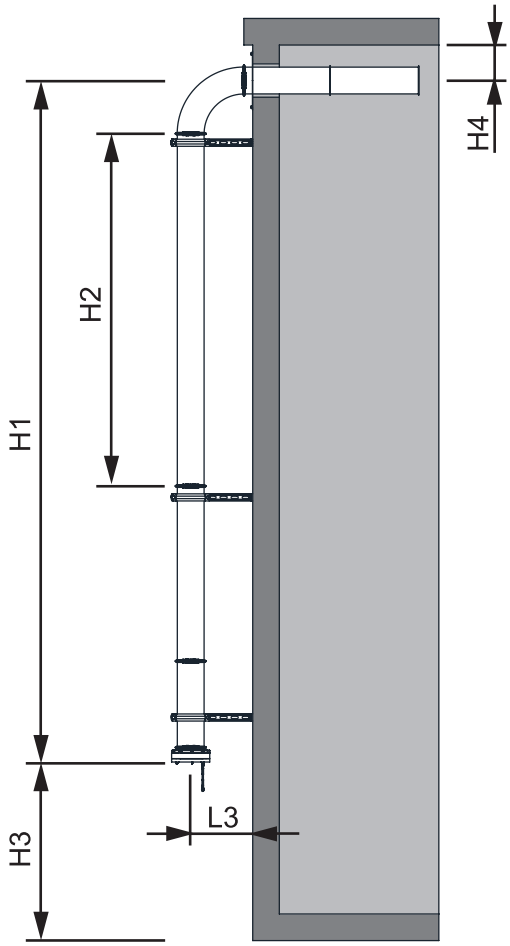
BUNKER BLOW-IN SYSTEM
BESH

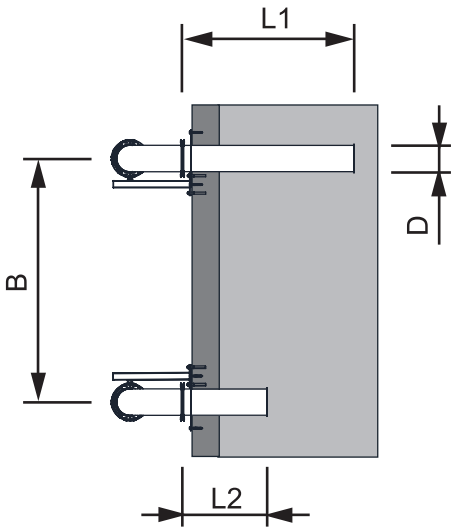




The wood chips are conveniently delivered by tanker and blown into the store space through the blow-in pipe. The second pipe is used for controlled and dust free suction of the escaping air. Thanks to the various extension modules, the bunker blow-in system can be adapted perfectly to local conditions.

TECHNICAL SPECIFICATIONS





BESH [mm]	
L1 Length, long blow-in pipe	986
L2 Length, short blow-in pipe	486
L3 Distance, centre of pipe to wall	350
H1 System height	2350 - 8300
H2 Installation height, clamping ring pipe	486 / 986 / 1986
H3 Distance, connection coupling to floor	min. 1000
H4 Distance, pipe centre to store space ceiling	min. 200
B Distance between blow-in pipes	min. 500
D Pipe diameter	150

Pellet boiler

PE1 Pellet	7 - 35 kW
PE1c Pellet	16 - 22 kW
P4 Pellet	48 - 105 kW

Firewood boiler

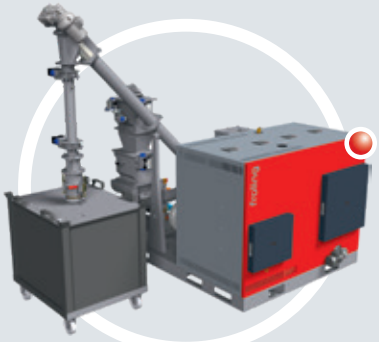
S1 Turbo	15 - 20 kW
S3 Turbo	20 - 45 kW
S4 Turbo	22 - 60 kW

Dual fuel boiler

SP Dual compact	15 - 20 kW
SP Dual	22 - 40 kW

Wood chip / Large boilers

T4e	20 - 350 kW
Turbomat	150 - 550 kW
TI	350 kW
Lambdamat	750 - 1500 kW



Wood combined heat and power

Fixed-bed gasifier CHP	45 - 500 kWel

Your Froling partner

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