

# Future-oriented - energy-efficient heating supply for buildings



***firematic-E***  
249-301



***firematic-E***  
349-501

- Large buildings
- Hotel complexes
- Housing estate projects

# Competence is our success ...

## HERZ FACTS:

- 50 subsidiaries
- Group headquarter in Austria
- Research & development in Austria
- Austrian owner
- 3,500 employees in over 100 countries
- 44 production sites



### HERZ Armaturen Ges.m.b.H – The company

Founded in 1896, HERZ has a continuous, more than 125-year-old market presence. With 44 locations in 12 European countries and over 3,500 employees in Austria and abroad, HERZ Armaturen Ges.m.b.H is the only Austrian and one of the most important international manufacturers of products for the entire heating and plumbing industry.

### HERZ Energietechnik GmbH

HERZ Energietechnik employs 200 people in production and sales. At the company site in Pinkafeld/Burgenland is state-of-the-art production as well as a research institute for new, innovative products. Proven cooperations with research and educational institutions can be intensified. Over the years, HERZ has established itself as a specialist in renewable energy systems. The main focus is on modern, cost-effective and environmentally friendly heating systems with maximum comfort and user-friendliness.



### BINDER Energietechnik Ges.m.b.H - Bärnbach

For more than 30 years, the factory site in Bärnbach in western Styria large scaled biomass boilers are produced for industry applications. More than 100 boilers up to 20.000 kW are manufactured at the site with a total of 5,070 m<sup>2</sup> of production and storage area. The service team at the site in Bärnbach / Austria ensures reliable service and maintenance. This is supported by 13 service and sales offices in 11 countries worldwide.

### HERZ for the environment

All HERZ biomass systems fall below the strictest emission regulations. Numerous environmental endorsements bear witness to this.

### HERZ quality

Our HERZ design engineers are in permanent contact with acknowledged research institutions in order to improve the very high standards continuously.



# Comfortable heating with latest technology from HERZ



## COMPACT

### System in modular design

Due to the compact design of the firematic-E 349 - 501 with burning chamber and heat exchanger module, the insertion and assembly can be done very fast & easy. Even in already existing boiler rooms with limited space, the system offers an optimal solution due to its low and compact design.

## FLEXIBLE

### Flexible, easy to place and connect

The induced draft fan of the firematic-E 349 - 501 can be either mounted at the back or on the side (right or left) and is in addition pivotable. The position of the flow and back flow as well as the insertion can be selected on the left or right. Therefore a flexible and easy connection of the system is possible. The induced draft fan of the firematic-E 249 - 301 is rigidly mounted at the rear.

## SIMPLE & SOPHISTICATED

### Multifunctional control concept

A multifunctional control concept has been developed with the user-friendly colour-touch-display control. With the "heart" of the boiler, many processes and parameters can be optimally matched.

## LOW EMISSIONS

### Combustion technology at the highest level

The in-house developed step grate technology, the compact combustion chamber geometry and the standard built-in lambda probe, which controls the air supply as well as the amount of material, result in flexible application options for fuels and lowest emission values.

## COMFORTABLE

### Automatic combustion & heat exchanger cleaning with automatic ash removal

The combustion chamber as well as the heat exchangers are automatically cleaned and thus kept clean. The automatic ash removal system, which automatically transports the ash into the front ash boxes or, if required, into a larger ash container via central ash discharge, ensures maximum convenience.

## Safety devices

- Back fire protection flap (BFP): currentless closing, airtight flap
- Self-contained extinguishing system (SES): sprinkler system with water tank
- Spark-back protection (SBP): fuel barrier layer
- Temperature monitoring in the combustion chamber (TMC)
- Temperature monitoring sensor in the storage room (TMS)

## Performance

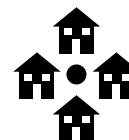
Boilers in left or right version available.

## The HERZ firematic-E is individually applicable ...



### Large buildings

such as hospitals, schools, public buildings, hotels, heating buildings as well as heating for swimming pools, spa areas,...



### Housing estate projects

for the heating of local areas, residential buildings,...



### Industrial companies

especially joineries, furniture manufacturers,...

# Easy, modern and comfortable with the ...



With the user-friendly 7" color-touch-screen-control T-Control, heating circuits, boilers, buffers and solar can be controlled in addition to the combustion process.

## **T-Control - the central control unit for:**

- Combustion control with lambda probe
- Lambda probe control (controls the combustion air and fuel input)
- Buffer management
- Control for domestic hot water preparation (via hot water tank or buffer with fresh water module)
- Back flow set (actuator drive and pump)
- Controlled heating circuits (actuator drive and pump)
- Solar circuit control
- Frost protection monitoring

## **T-CONTROL**



The convenient menu and simple screen layout with schematic 3D-representation ensures maximum user-friendliness.

The modular mode of operation of the T-Control offers extension options for 4 internal and up to 30 external modules. This allows the central control unit to process the combustion (with lambda sensor), buffer management, return temperature rise, heating circuits, hot water preparation, solar circuit and more optimal together. Additionally, the control system can be easily expanded or modified with the external modules.

## **Further advantages of the T-Control:**

- Power-saving standby mode
- Transmission of status and error messages via e-mail
- Data transfer and software updates via USB stick
- Integrated Modbus communication interface (TCP)
- Easy and clear presentation of the functions from various components (heating circuit pump, hot water tank loading pump, circulation pump, mixing valve, switching valve, actuator motors etc.)



## Remote access to the control via the myHERZ-portal very easy from everywhere

As an additional option, the T-Control offers the possibility for remote visualisation and remote maintenance via smartphone, PC or tablet. Operation is the same as on the boiler display. Processes and parameters can thus be read and changed at any time and location independent.

Remote access via **myherz.at**

## Cascade operation

With the HERZ T-Control up to 8 boilers can be switched in cascade. That means, several boilers are merged in order to achieve a higher performance. A particular advantage of the cascade connection is the more efficient utilisation of the boilers with lower heat consumption (e.g. in the transitional period) as well as rapid peak load coverage.





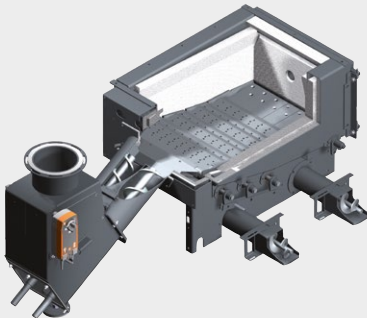
# Advantages and details ...



**T-Control - the userfriendly control with touch-display**

## Central control unit as standard for:

- Combustion control with lambda probe
- Buffer management
- Back flow set (actuator drive and pump)
- Lambda probe control (controls the combustion air and fuel input)
- Control for motor valve for fast heating up of heating circuits for buffer operation
- **Simple screen design and convenient menu guide.**
- **Extension possibilities up to 30 modules:**
  - Controlled heating circuits (actuator drive and pump)
  - Solar circuit control
  - Further buffer management
  - Control for domestic hot water preparation (via hot water tank or buffer with fresh water module)
  - Automatic switch for second boiler/additonal boiler
  - Net pump control



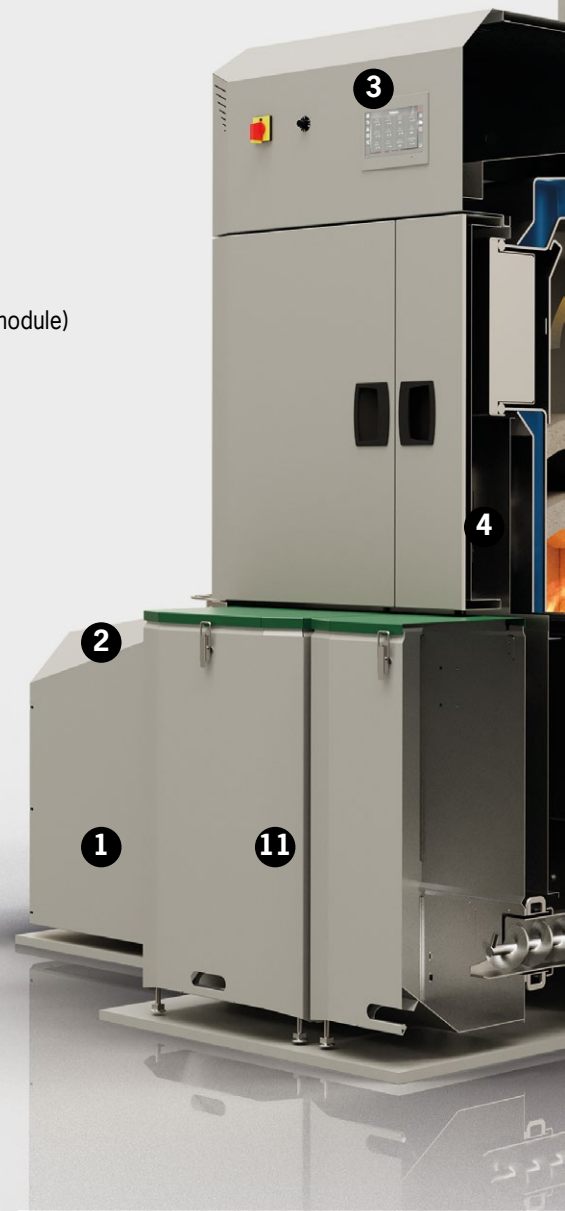
**Lateral insertion & step or moving grate burning chamber**

- Lateral insertion of wood chips or pellets into the combustion chamber via double insertion screw.
- The movement of the moving grate also cleans the step grate elements. These grate elements consist of special, high-quality cast iron. Due to the clean combustion grate an optimum air supply is guaranteed
- The movement of the step grate elements automatically pushes the ash onto the tilting grate element at the end of the step grate. This then allows the ash to fall onto the ash screw below and thus automatically cleans the burner chamber.



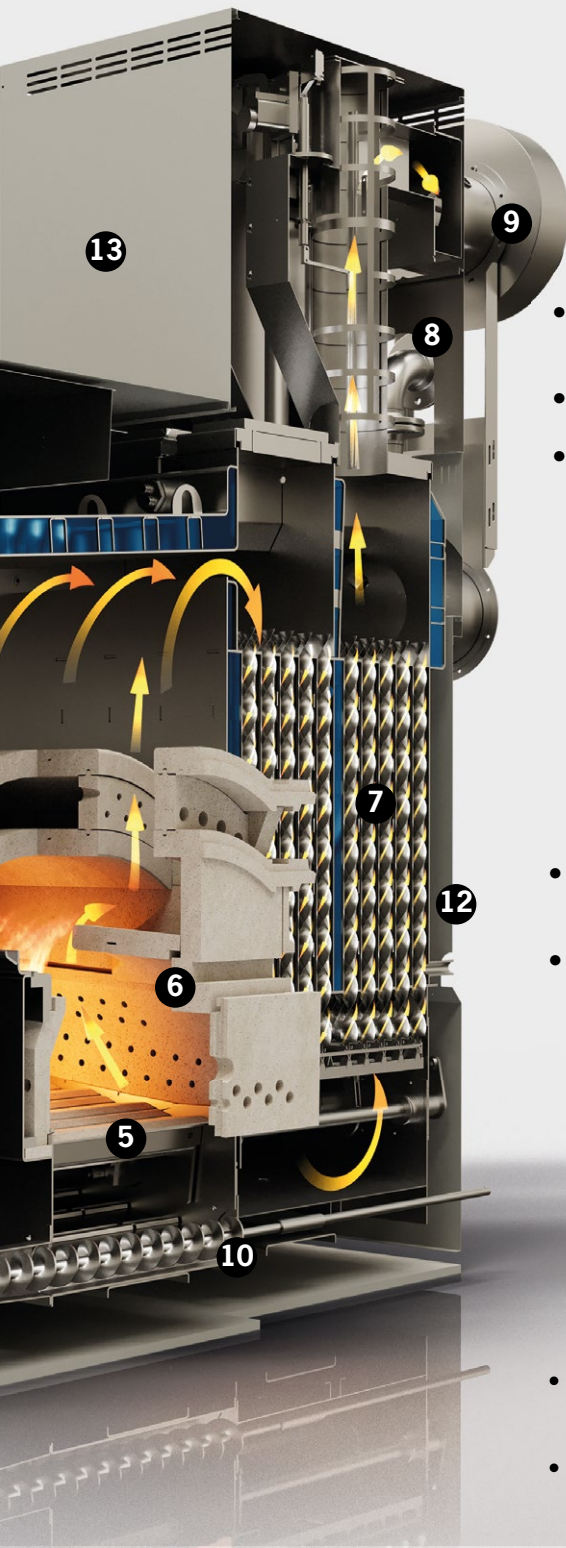
**Automatic de-ashing**

- Via the two ash discharge screws the combustion and fly ash is automatically transported into the front ash boxes.
- For even more comfort, there is the possibility of fully automatic ash removal into an external, bigger ash container. The larger volume of the container results in longer emptying intervals and thus time savings & increased convenience.



1. Level monitored interim hopper
2. (BFP) Certified back fire protection flap automatically tight closing flap  
(SES) Self-contained extinguishing system
3. Control T-Control central control unit

# ...of the HERZ firematic-E 249-301

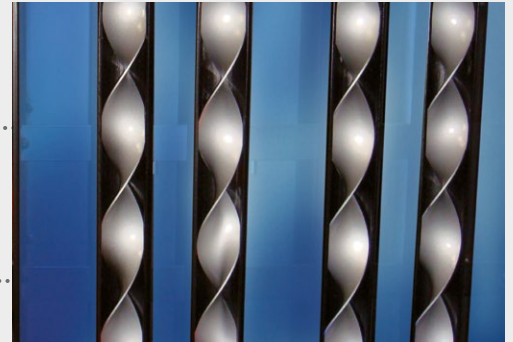


## Energy saving combustion due to the lambda probe control



- The built-in lambda sensor, which permanently monitors the residual oxygen and reacts to different fuel qualities, ensures that perfect combustion values and the lowest emission levels are always achieved.
- The lambda probe regulates the air and material supply and thus always achieves the cleanest combustion, even in part-load operation.
- The results are low fuel consumption and the lowest emission values even with different fuel qualities.

## Automatic cleaning of the heat exchanger



- The heat exchanger surface gets cleaned automatically via the integrated turbulators (by lifting and lowering), even during heating operation and therefore kept clean without manual effort. Consistent high efficiency due to cleaned heat exchanger surfaces ensures low fuel consumption.
- The fly ash is transported to the front ash hopper via screw.

## Integrated electrostatic filter



- The integrated electrostatic filter operates according to the electrostatic principle. Here, the fine dust particles flow through the exhaust duct with the exhaust air. Electrons are released by a high-voltage electrode, which move to the wall by electrostatic forces.
- In the process, the fine dust particles are loaded and also moved to the wall. The fine dust collects on the wall and clumps together to form coarse flakes. These deposits are simply removed during automatic or mechanical cleaning.

**4. Automatic ignition** using hot air fans

**5. Step or moving grate made of robust cast chrome steel** with automatic cleaning. Grate bars can be replaced individually.

**6. Split 2-zone combustion chamber with two secondary air zones** made of refractory concrete (temperature resistance up to 1550°C)

**7. Pipe heat exchanger** with turbulators and automatic cleaning mechanism

**8. Lambda probe control** automatic residual oxygen monitoring

**9. ID fan** - speed controlled and monitored for highest operation safety

**10. Ash discharge screws** for combustion and fly ash

**11. 2 front ash boxes** for combustion and fly ash

**12. Efficient heat insulation** for the lowest radiation losses

**13. Integrated electrostatic filter for fine dust separation**



# Advantages and details ...



**T-Control - the userfriendly control with touch-display**

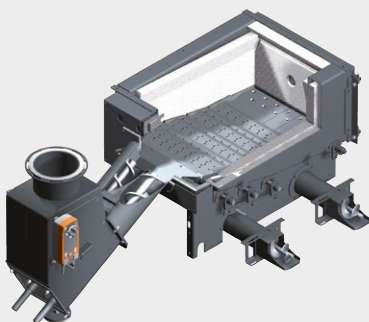
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**Lateral insertion & step or moving grate burning chamber**

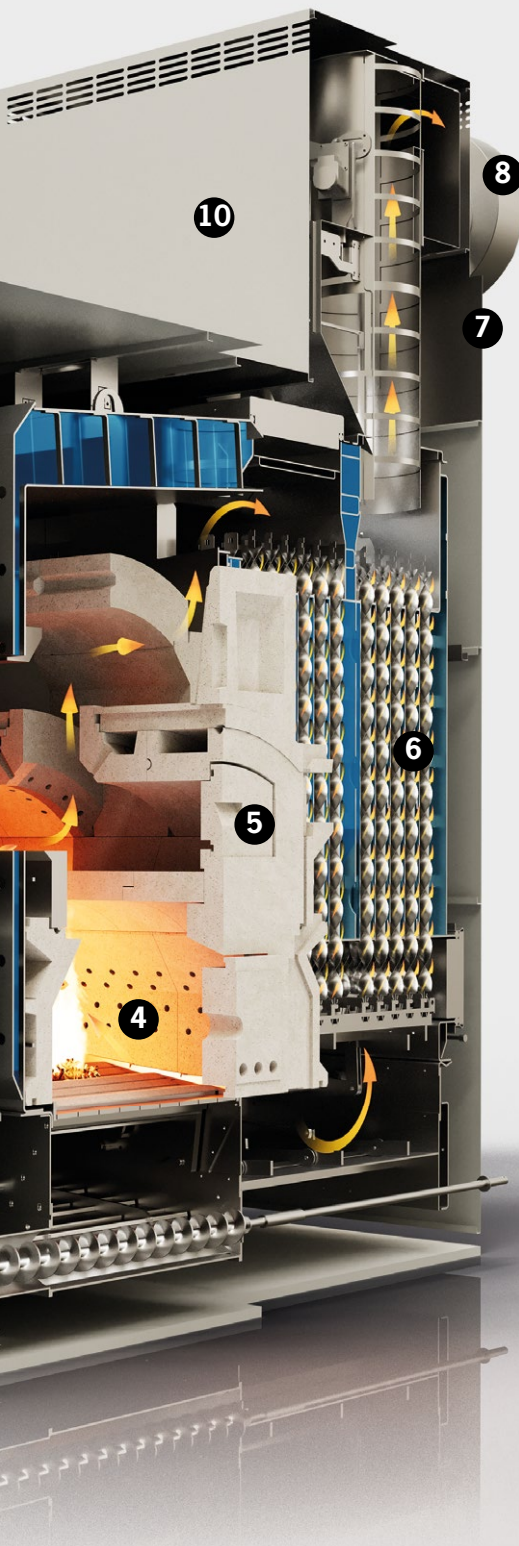
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via hot air fan



# ...of the HERZ firematic-E 349-501

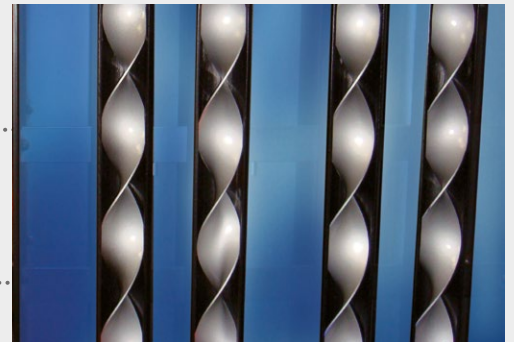


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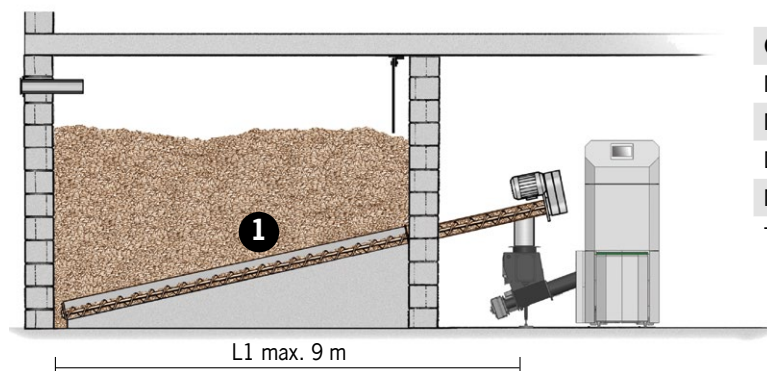
# Discharge systems ...

## Discharge via rigid pellet screw up to 501 kW

### Rigid pellet screw discharge system

Do you want to fire your boiler with pellets? Then the rigid pellet screw discharge system is just right. With its low-maintenance operation, this discharge variant offers high operational reliability. The pressure relief, which protects the screw from heavy loads, allows a bulking height of up to 4 m.

- 1. Basic set:** Screw with pressure relief and progressive pitch, gear motor 400V, closed screw channel



Guidelines	400 V
Max. bulk height for pellets [m]:	4
Max. length screw discharge [m]:	9
Discharge system splitted possible from a length of 4 m:	
Max. possible angle [°]:	0-35
The best emptying angle is with a horizontal installation achievable.	

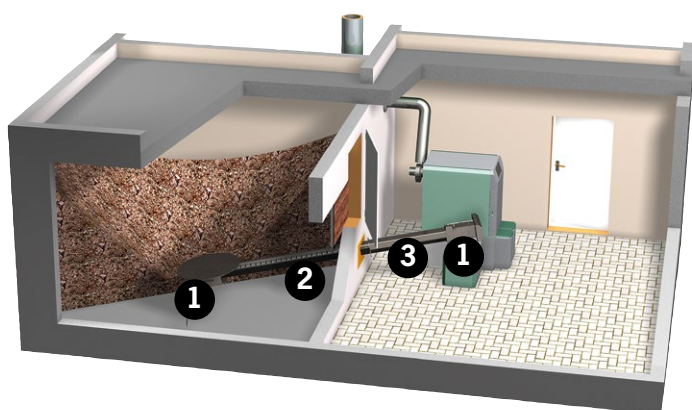
## Discharges via modular agitator system up to 501 kW - the smart variant for wood chips & wood pellets

If you want to burn wood chips in the system too, the discharge system with an agitator has to be used. Nevertheless, even with exclusive pellet operation, discharge via agitator is possible. The advantage here is the more efficient use of storage space and the possibility of also transporting wood chips to the boiler.

### Modular agitator

Robust agitator with heavy duty gearing and pressure relief for reliable operation. Agitator discharge system available up to 5 metres diameter.

- 1. Basic package:** agitator plate, pillar with screw, end piece, motor, motor stub, gearbox
- 2. Trough:** agitator springs, upper and lower part of screw trough incl. wall piece, screw
- 3. Extension:** closed screw channel, screw



Guidelines	230 V*	400 V*
Agitator Ø [m]:	2/2,5/3/3,5/ 4/4,5/5	2/2,5/3/3,5/ 4/4,5/5
Length open part (trough) [m]:	max. 2,5	max. 3
Length closed part (extension) [m]:	max. 2	max. 5
Max. bulk height for pellets [m]:	3	4
Max. bulk height for wood chips [m]:	4	6
Angle [°]: (The best emptying is with a horizontal installation achievable)	max. 25	max. 25

- \* 230 V firematic 20-201, firematic-E 80-201, firematic PELLET 120-201
- \* 400 V firematic 20-201, firematic-E 80-201, firematic PELLET 120-201
- \* 400 V firematic & firematic-E 249-351
- \* 400 V firematic & firematic-E 399-501

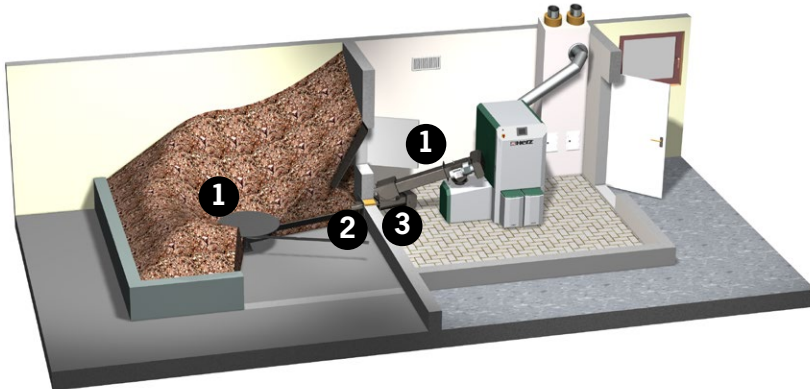


## Discharge via agitator with climbing screw with separate drive up to 501 kW

### Climbing screw with separate drive

Room discharge via horizontal spring agitator with climbing screw and separate drive has the advantage that the storage room volume can be better utilised by eliminating the slope.

1. **Basic set:** agitator plate, motor, gearbox, climbing screw
2. **Trough:** agitator springs, upper and lower part of screw trough incl. wall piece, screw
3. **Extension:** closed screw channel, screw



Guidelines	400 V
Agitator Ø [m]:	2/2,5/3/3,5/ 4/4,5/5
Length open part (trough) [m]:	max. 3
Length closed part (extension) [m]:	max. 3
Max. bulk height for pellets [m]:	4
Max. bulk height for wood chips [m]:	6
Angle [°]:	max. 30

## Discharge via agitator with vertical transport system up to 501 kW

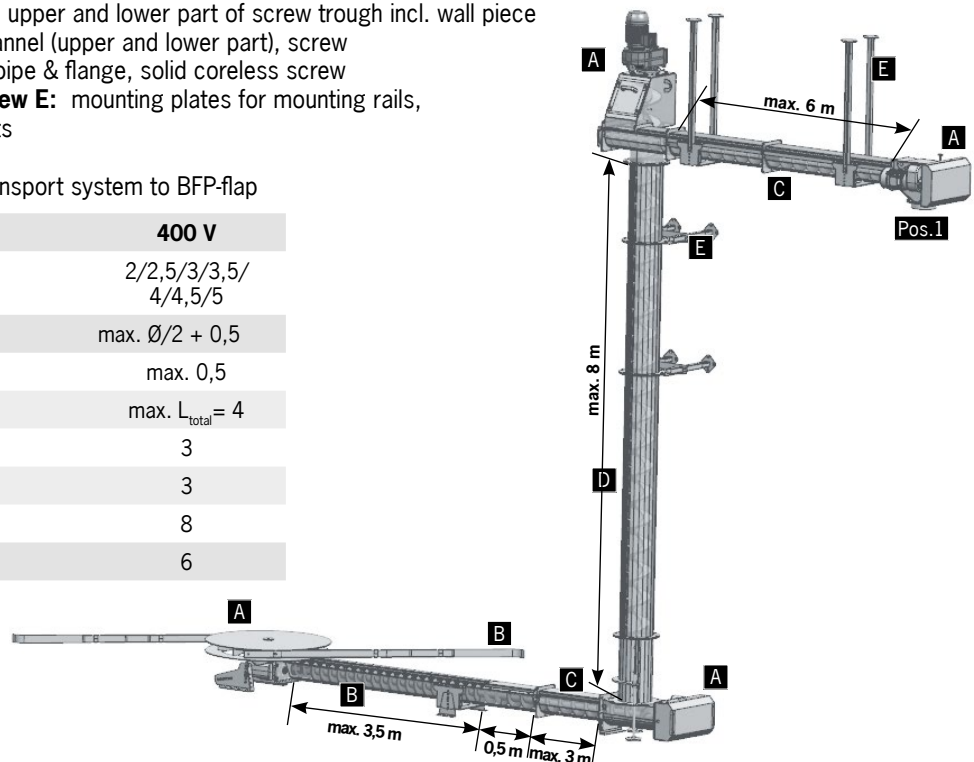
### Vertical transport screw system with horizontal dropping

If the storage room is a floor lower, the discharge via the HERZ vertical filling screw is the optimal solution because the space is utilised in the best way.

1. **Basic set:** Agitator plate, pillar and screw, 3 motors, end piece, gearbox, level monitoring, dropping head, transition between agitator and vertical screw, transition between vertical screw and horizontal screw, mounting option on the vertical transport system available (fastening to the building on site)
2. **Set trough B:** agitator springs, upper and lower part of screw trough incl. wall piece
3. **Extension C:** closed screw channel (upper and lower part), screw
4. **Extension pipe for screw D:** pipe & flange, solid coreless screw
5. **Mounting set for vertical screw E:** mounting plates for mounting rails, ceiling & wall mounting brackets

**Pos. 1:** Connection piece vertical transport system to BFP-flap

Guidelines	400 V
Agitator Ø [m]:	2/2,5/3/3,5/ 4/4,5/5
Open part [m]:	max. $\frac{\text{Ø}}{2} + 0,5$
Wall piece [m]:	max. 0,5
Total length (open part + wall piece) [m]:	max. $L_{\text{total}} = 4$
Max. length open channel [m]:	3
Max. length closed channel [m]:	3
Max. length vertical screw [m]:	8
Max. length horizontal screw [m]:	6



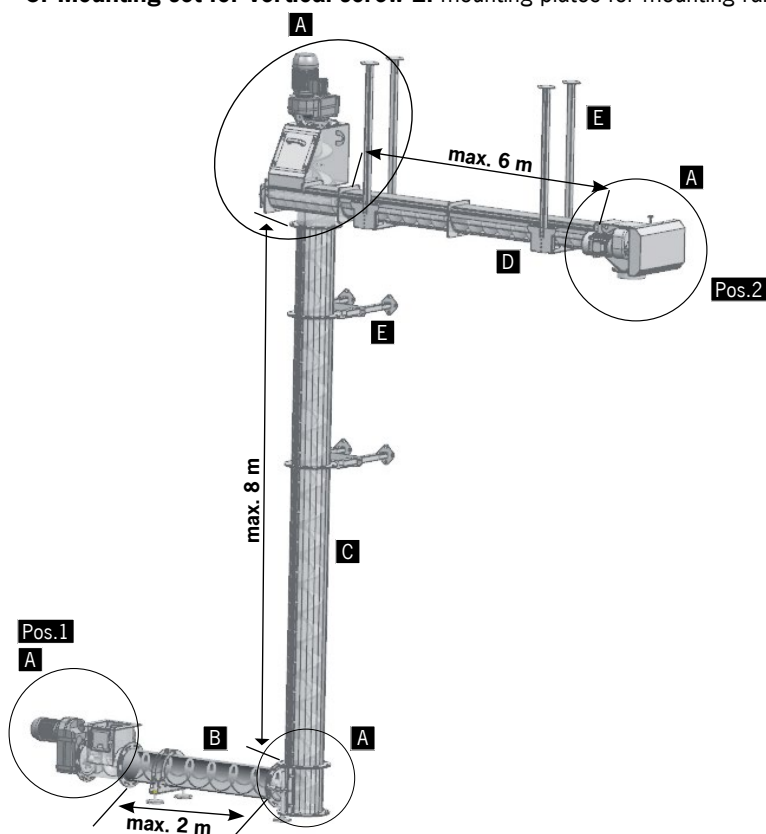
# Discharge systems ...

## Discharge via vertical filling system up to 501 kW

### Vertical transport screw system with horizontal dropping

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- 1. Basic set A:** 3 motors, cover limit switch at the transfer and discharge head, connection discharge system, transition between pressing screw and vertical screw, transition between vertical screw and horizontal screw, mounting possibilities on the vertical transport system available
- 2. Extension pipe for screw B:** pipe & flange, solid coreless screw
- 3. Extension pipe for screw C:** pipe & flange, solid coreless screw
- 4. Extension pipe for screw D:** closed screw channel, screw
- 5. Mounting set for vertical screw E:** mounting plates for mounting rails, ceiling & wall mounting brackets



**Pos. 1:** Connections piece discharge system agitator or rigid screw to vertical discharge screw

**Pos. 2:** Connection piece for vertical transport system to BFP-flap

Guidelines	400 V
Max. length pressing screw [m]:	2
Max. length vertical screw [m]:	8
Max. length horizontal screw [m]:	6

#### Suitable for:

##### Wood pellets Ø 6mm according to

- EN ISO 17225-2: Property class A1, A2
- ENplus, DINplus or Swissspellet

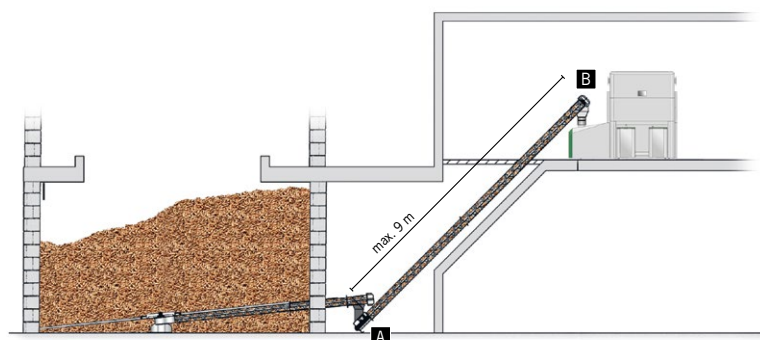
##### Wood chips according

- EN ISO 17225-4: Property class A1,A2, B1 and particle size P16S, P31S

## Combination with transport screw 501 kW

### Transport screw

For combination with modular agitator with separate drive and continuous screw or rigid pellet screw



Guidelines	400 V
Max. length [m]	9
Max. installation angle [°]:	45

#### Suitable for:

##### Wood pellets Ø 6mm according to

- EN ISO 17225-2: Property class A1, A2
- ENplus, DINplus or Swissspellet

##### Wood chips according

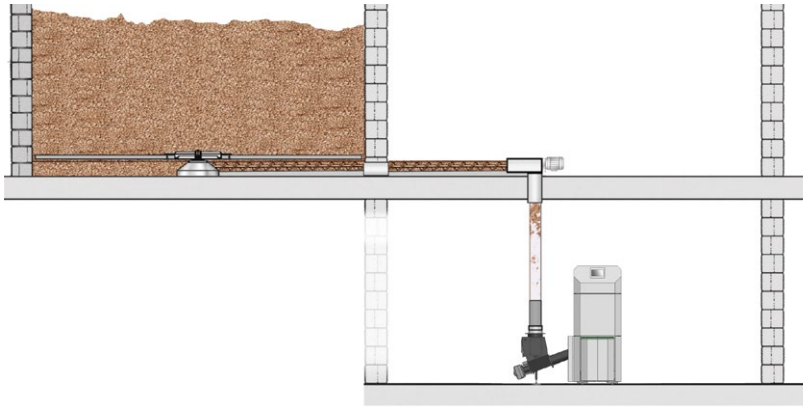
- EN ISO 17225-4: Property class A1,A2, B1 and particle size P16S, P31S



## Discharge via chute pipe system up to 501 kW

### Chute pipe systems

Chute pipe systems for combination with modular agitator or rigid pellet screw.



#### Guidelines

Max. length with rigid pellet screw [m]:	9
Max. length with modular agitator 400 V [m]:	9

#### Suitable for:

##### Wood pellets Ø 6mm according to

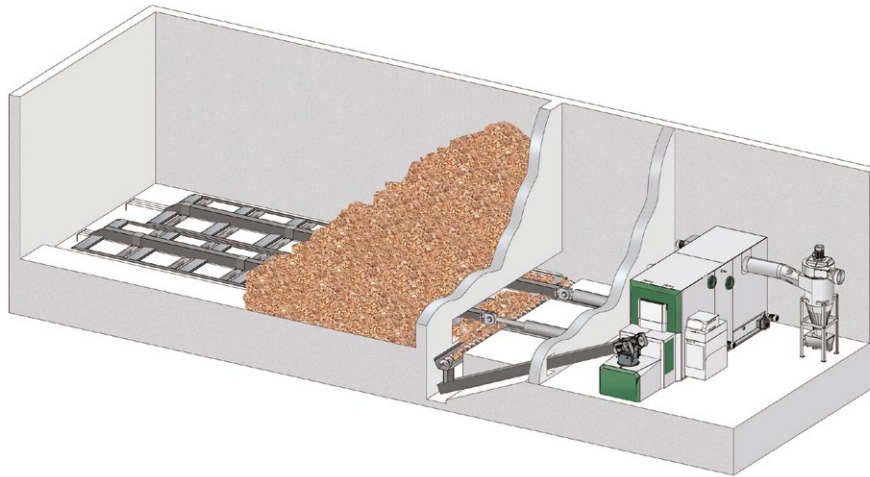
- EN ISO 17225-2: Property class A1, A2
- ENplus, DINplus or Swisspellet

##### Wood chips according

- EN ISO 17225-4: Property class A1, A2, B1 and particle size P16S, P31S

## Discharges via hydraulic walking floor system

The hydraulic walking floor system offers an optimal solution for large storage rooms. Due to the rectangular shape of the grids, the area of the storage room can be optimally used. This system is suitable for boilers with a power range of up to 3 MW. Due to the robust design of the grids, they are also insensitive to combustibles and therefore ideally suited for the P45S M50 wood chips.



#### Guidelines

**400 V**

Max. width of the grid [m]	2,25
Max. bunker length [m]:	13

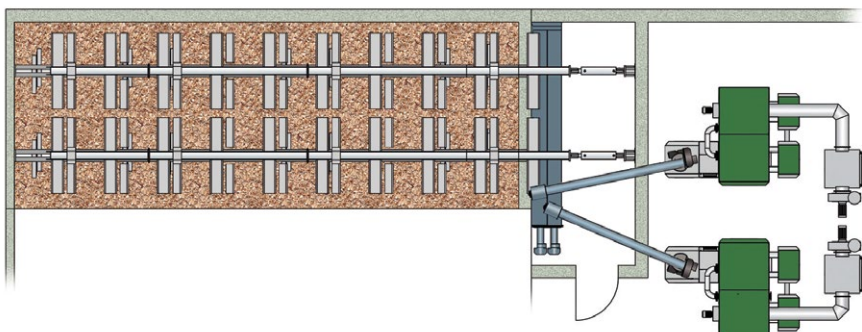
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##### Wood pellets Ø 6mm according to

- EN ISO 17225-2: Property class A1, A2
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##### Wood chips according

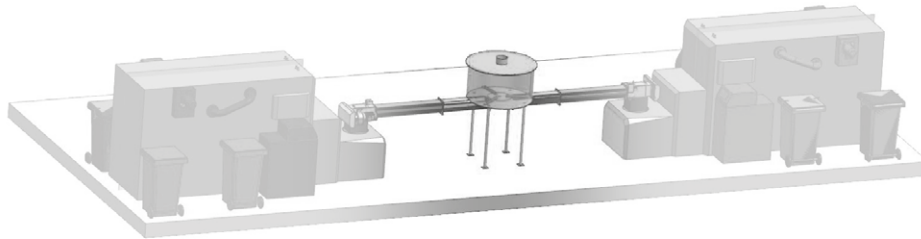
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# Discharge systems for wood chips & pellets

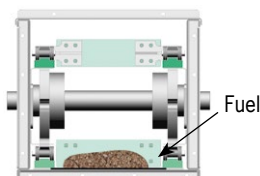
## Discharges via distribution hopper up to 501 kW

If two boilers are to be fed from one storage room and there is not enough space to install two discharge systems, the distribution hopper offers an optimal solution. From the storage room, the pellets or wood chips are transported to the distribution tank and from there the fuel is further distributed to the two boilers.



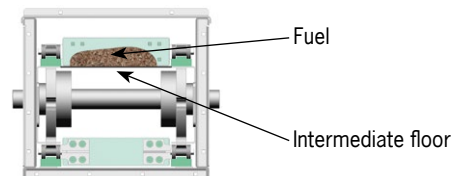
## Discharges via chain conveyor up to 501 kW

Chain conveyor systems have an endless chain with cross ribs which runs in a closed trough. The slope of the conveyor can be changed by the installation of bows. The chain conveyors are distinguished in 2 variants:



### 1. Bottom chord conveyor

The material is transported on the bottom chord.



### 2. Top chord conveyor

The fuel is located on an intermediate floor and is transported above the drive elements.

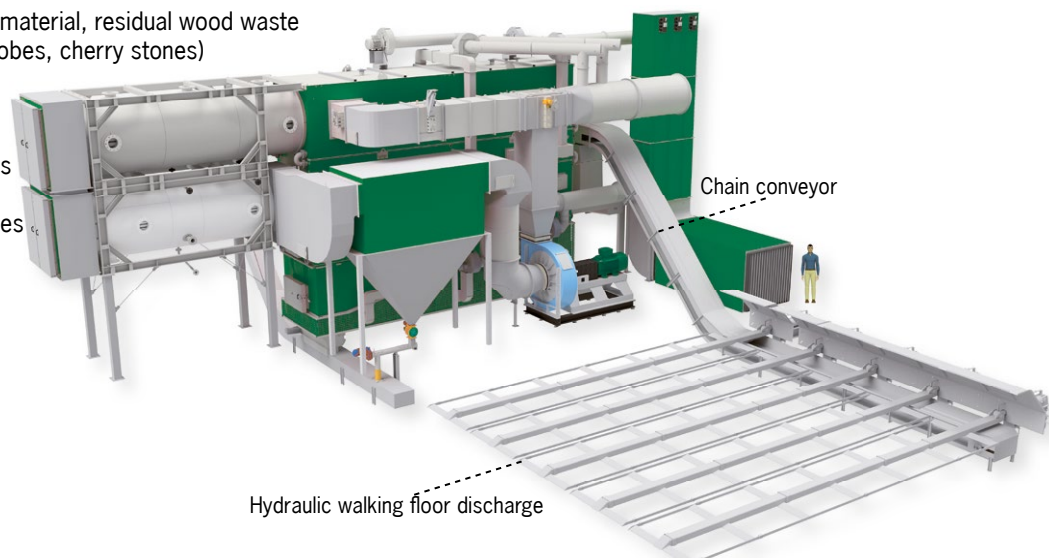
### Advantages:

- Ideal for fuel transport & fuel distribution
- Can be individually planned on existing floor plans
- Dust protected due to full covering
- Low maintenance effort due to easy replaceable wear parts
- Simple and robust construction
- Economical operation through the use of efficient drive technology
- Reliable transport of:
  - Wood chips & wood pellets
  - Sawdust, bark as accompanying material, residual wood waste
  - Special fuels (for instance: corncobes, cherry stones)
  - Ash, etc.

### The conveyors are useable as:

- Fuel transporter over longer distances up to 30 metres
- Compensation of large level differences
- Central ash discharge

**Illustration:** Illustration of a large system with hydraulic walking floor and chain conveyor



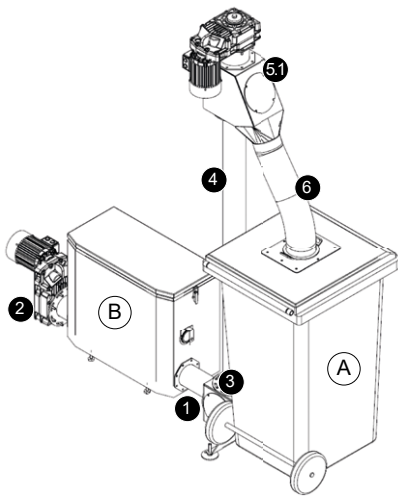


Central ash discharge via rigid screw (can be used with wood chips or pellets as fuel)

## Ash transport in a confined space

HERZ pays special attention to the best possible customer comfort. Thus, solutions are implemented for almost any space situation. By a central ash discharge with vertical transport of the ash a saving of space and optimum comfort is realised. The ash can be easily transported vertically over several metres to ash containers. A difficult and complicated ash removal from containers in the cellar or basement is now a thing of the past.

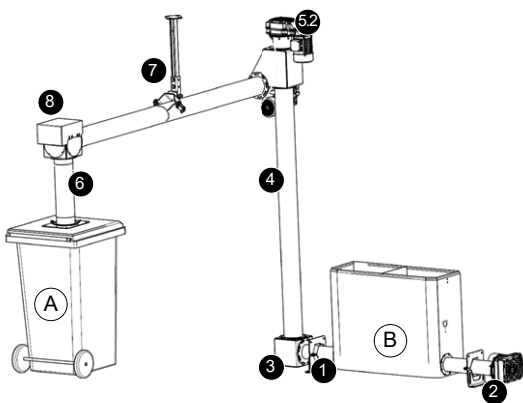
### Basic set "direct drop"



Basic set "direct drop" (1~ 230V or 3~ 400V):

- (A) External ash container optionally with 240 / 660 or 1100 litres
- (B) Ash box of the boiler + light barrier
- (1) Container screw
- (2) Discharge motor
- (3) Transfer hopper
- (4) Screw vertical
- (5.1) Dropping head + motor
- (6) Dropping tube

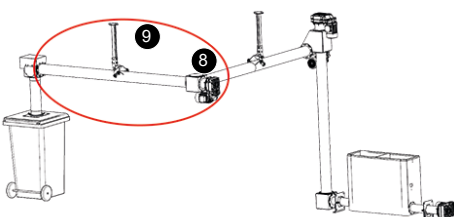
### Basic set "transfer system"



Basic set „Transfer system“ (3~ 400 V):

- (A) External ash container optionally with 240 / 660 or 1100 litres
- (B) Ash box of the boiler + light barrier
- (1) Container screw
- (2) Discharge motor
- (3) Transfer hopper
- (4) Screw vertical
- (5.2) Transfer head + motor
- (6) Dropping tube
- (7) Screw horizontal
- (8) Transfer hopper
- (9) Additional screw

### Transfer with additional screw



# Vertical filling system

## Optimal storage room filling technology for wood chips and pellets

### Vertical filling system

The vertical filling system of Herz offers the opportunity to fill the storage room optimally. Wood chips or pellets are transported via a vertical screw into the storage room and are distributed optimally via a horizontal screw in the storage room.

- 1. Basic set:** 3x motor, weatherproof cover for motor, connection to trough, coreless screw horizontal, transition between trough and vertical screw, transition between vertical screw and storage room, coreless screw vertical, mounting and small parts, inspection openings & crane hook, bearing for storage room screw
- 2. Extension trough / double trough:** trough in galvanised design, coreless screw, fastening and small parts
- 3. Extension pipe to trough:** pipe and flange galvanised, coreless screw
- 4. Extension pipe vertical:** pipe and flange galvanised, coreless screw
- 5. Extension pipe storage room:** pipe and flange galvanised, screw with mandrel
- 6. Filling screw storageroom with mandrel**

Guidelines	400 V
Filling trough length max. [m]	6
Modular extensions of the filling trough [m]	0,6 up to 1,2
Vertical height max. [m]	10
Storage room filling screw max. length [m]	12
Flow rate [m³/h]	< 40
Flow rate for double systems [m³/h]	< 80

#### The great advantages

- Hinged, galvanised cover of the filling trough
- High corrosion resistance due to fully galvanised components for permanent outdoor installation
- Weatherproof motors
- Perfectly wood chip distribution in the storage room by a storage room filling screw (up to 12 metres possible)

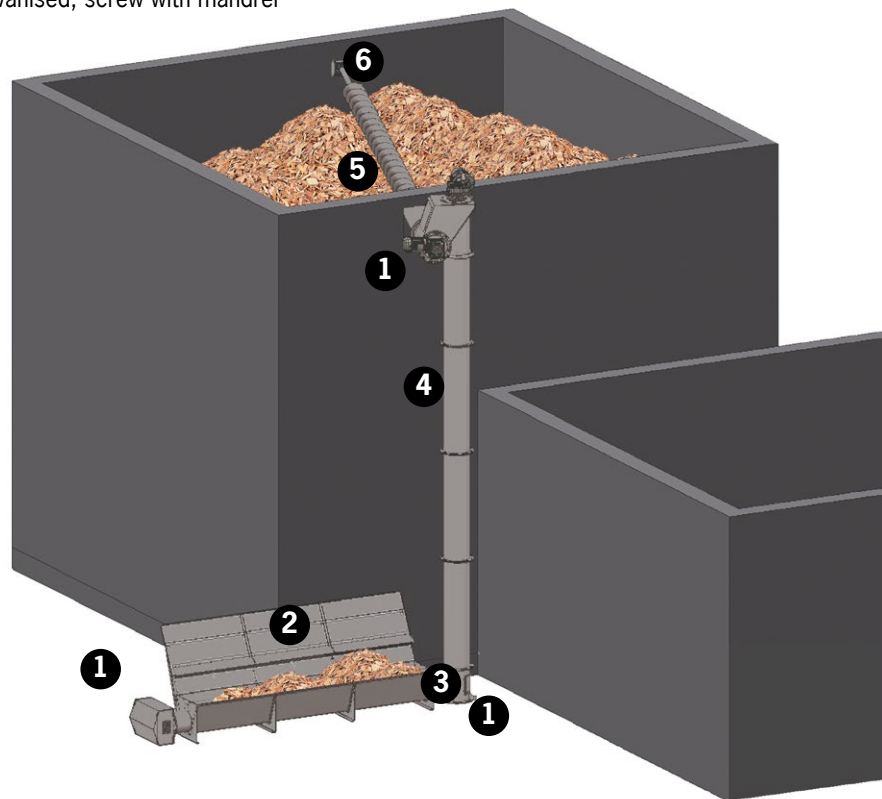
#### Suitable for:

##### Wood pellets Ø 6mm according to

- EN ISO 17225-2: Property class A1, A2
- ENplus, DINplus or Swisspellet

##### Wood chips P45S + M50 according

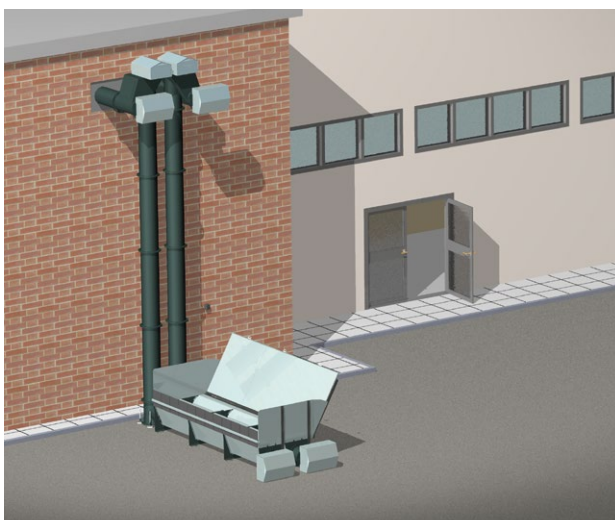
- EN ISO 17225-4: property class A1,A2,B1 and particle size P16S, P31S, P45S



Single trough also available as detachable version with wheels!

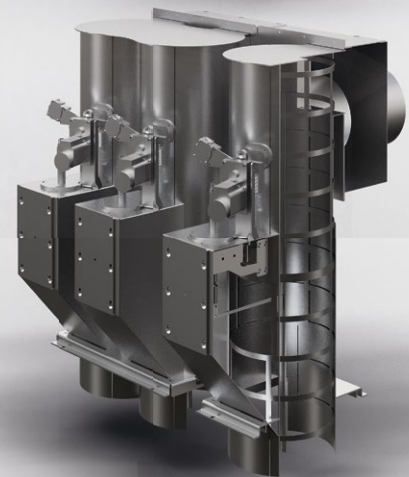
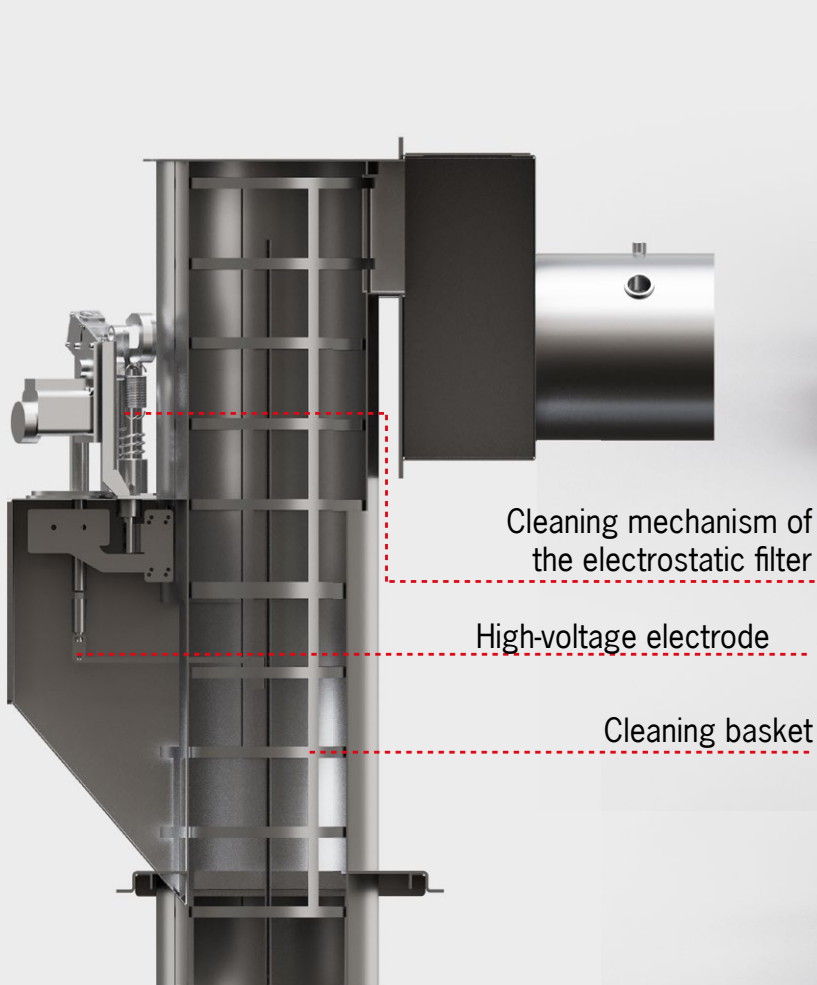
Illustration: version left

### Illustration double vertical filling system

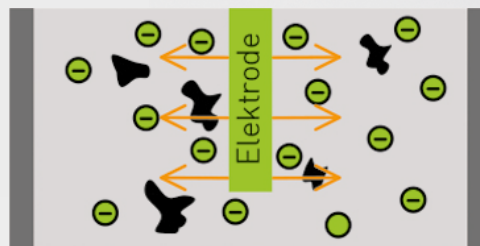




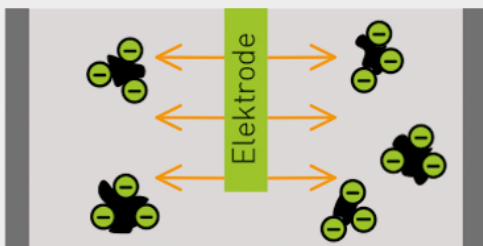
# Design of an electrostatic filter



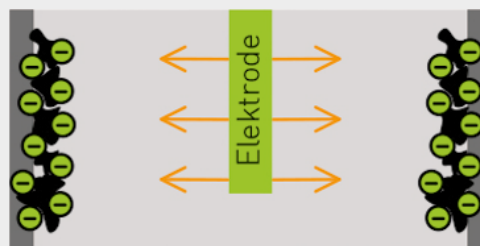
**01** The fine dust particles flow with the flue gas through the heat exchanger and then into the integrated filter tubes



**02** The electrons are released by a high-voltage electrode



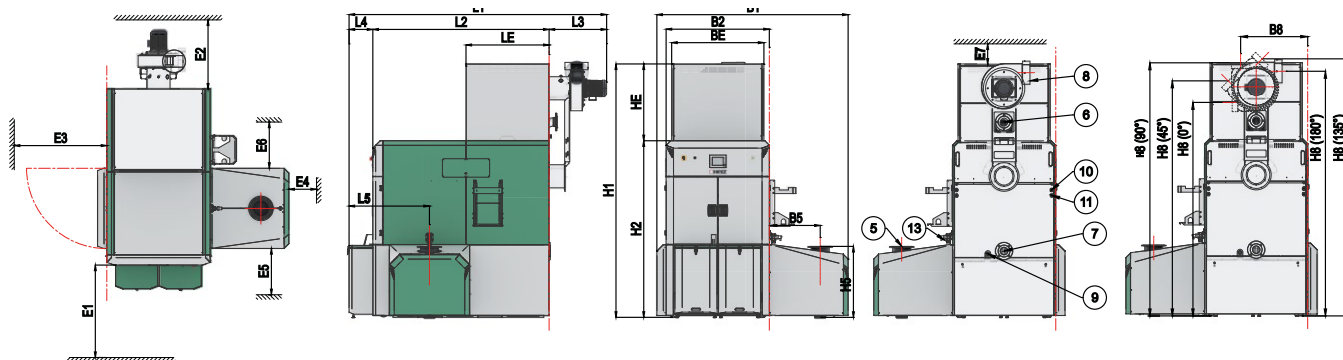
**03** The electrons move towards the wall of the inline filter due to the electrostatic forces. The fine dust particles are charged and also move towards the wall.



**04** The fine dust then collects on the wall of the filter tube and clumps together to form large flakes. This deposit is then cleaned fully automatically.

The electrostatic filter operates according to the electrostatic principle. The high-voltage electrode, which is positioned exactly in the middle of the filter tube, has the task of negatively charging the fine dust particles; this process is called 'ionisation'. The high voltage is generated by a separate module, which can be mounted on the right or left side of the boiler. The negative charge of the particles causes them to stick to the cleaning basket. The basket is then pulled upwards by the cleaning mechanism and then dropped downwards with the additional help of a spring. As a result, the dust particles fall through the boiler's heat exchanger and are transported fully automatically by the ash discharge screw into the front-mounted ash box.

## Technical data ...



## Technical data

Technical data		249	251	299	301
Output range according to type plate wood chips	kW	72,5 - 249	72,5 - 251	72,5 - 299	72,5 - 301
Output range according to type plate wood pellets	kW	71,5 - 249	71,5 - 251	71,5 - 299	71,5 - 301
Efficiency rate nominal load wood chips *	%	94,9	94,9	94	94
Efficiency rate nominal load wood pellets *	%	95,1	95,1	94,3	94,3
Boiler weight	kg	2430	2430	2430	2430
Max. permissible operating temperature	°C	90	90	90	90
Operating overpressure [min-max]	bar	1,5 - 5	1,5 - 5	1,5 - 5	1,5 - 5
Water capacity	ltrs.	436	436	436	436

### Boiler data for calculation of the flue gas system

Boiler data for calculation of the flue gas system		249	251	299	301
Flue gas temperature woodchip nominal load / part load	°C	~ 130 / ~ 80	~ 130 / ~ 80	~ 150 / ~ 80	~ 150 / ~ 80
Flue gas mass flow rate wood chips nominal load / part load	kg/h	531,3 / 189,3	531,3 / 189,3	643,2 / 189,3	643,2 / 189,3
CO <sub>2</sub> content wood chips nominal load / part load	Vol. %	13,3 / 12,03	13,3 / 12,03	13,3 / 12,03	13,3 / 12,03
Flue gas temperature pellets nominal load / part load	°C	~ 130 / ~ 80	~ 130 / ~ 80	~ 130 / ~ 80	~ 130 / ~ 80
Flue gas mass flow rate pellets nominal load / part load	kg/h	512,7 / 176,9	512,7 / 176,9	615,10 / 176,9	615,10 / 176,9
CO <sub>2</sub> content pellets nominal load / part load	Vol. %	13,59 / 11,37	13,59 / 11,37	13,59 / 11,37	13,59 / 11,37

**Dimensions** 249 - 251 - 299 - 301

L1	Length	mm	2785
L2	Length	mm	1910
L3	Length	mm	625
L4	Length	mm	260
B1	Width	mm	2070
B2	Width	mm	1120
H1	Height	mm	2740
H2	Height	mm	1910

<b>Dimensions electrostatic filter</b>	<b>249 - 251 - 299 - 301</b>
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LE	Length	mm	900
BE	Width	mm	1000
HE	Height	mm	830

## Minimal free areas 249 - 251 - 299 - 301

E1	Free areas front [min]	mm	1000
E2	Free areas back [min]	mm	750
E3	Free areas left [min]	mm	700
E4	Free areas right [min]	mm	300
E5	Free areas insertion	mm	500
E6	Free areas insertion	mm	500
E7	Free areas top [min]	mm	220

**Insertion dimensions** 249 - 251 - 299 - 301

Length	mm	2080
Width	mm	1120
Height	mm	1910

**Connections** 249 - 251 - 299 - 301

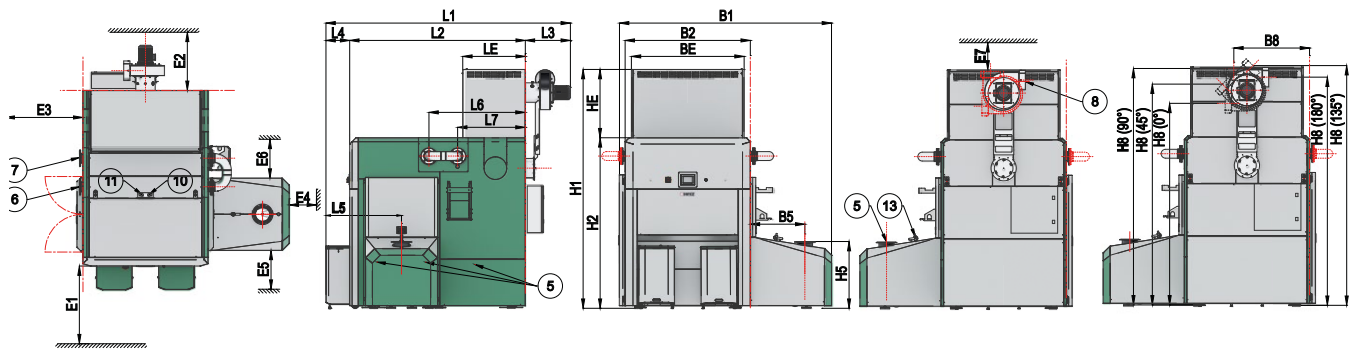
5	Insertion flange back fire protection	mm	Øi 182,5
L5	BFP-flap length	mm	850
B5	BFP-flap width	mm	550
H5	BFP-flap height	mm	760
6	Flow		DN / PN6
B6	Flow width	mm	560
H6	Flow height	mm	2115
7	Back flow		DN / PN6
B7	Back flow width	mm	560
H7	Back flow height	mm	720
8	Flue pipe connection	mm	Øo 250
B8	Flue pipe connection (90°)	mm	725
H8	Flue pipe connection (90°)	mm	2740
H8	Flue pipe connection (0°)	mm	2310
H8	Flue pipe connection (45°)	mm	2545
H8	Flue pipe connection (135°)	mm	2780
H8	Flue pipe connection (180°)	mm	2645
9	Filling/emptying		3/4" IT
B9	Filling/emptying width	mm	735
H9	Filling/emptying height	mm	690
10	Safety heat exchanger input		1/2" IT
B10	SWT width	mm	45
H10	SWT height	mm	1380
11	Safety heat exchanger output		1/2" IT
B11	SWT width	mm	45
H11	SWT height	mm	1320
13	Self-contained extinguishing water system		

$\varnothing_o$  outside diameter;  $\varnothing_i$  inside diameter; IT internal thread

Subject to change in the interest of technical progress!  
The specified free areas must be observed when carrying out maintenance and service work.

\*measured data from test report





## Technical data

		349/351	399 / 401	449/451	499	501
Output range according to type plate wood chips	kW	103,9 - 349 (351)	103,9 - 399 (401)	103,9 - 449 (451)	103,9 - 499	103,9 - 501
Output range according to type plate wood pellets	kW	103,9 - 349 (351)	103,9 - 399 (401)	103,9 - 449 (451)	103,9 - 499	103,9 - 501
Efficiency rate nominal load wood chips*	%	95,1	95,1	95,1	93,3	93,3
Efficiency rate nominal load wood pellets*	%	94,7	94,7	94,7	93,7	93,7
Boiler weight	kg	4582	4582	4582	4582	4582
Max. permissible operating temperature	°C	90	90	90	90	90
Operating overpressure [min-max]	bar	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6	1,5 - 6
Water capacity	ltrs.	1130	1130	1130	1130	1130

## Boiler data for calculation of the flue gas system

		349	399 / 401	449/451	499	501
Flue gas temperature woodchip nominal load / part load	°C	~ 120 / ~ 80	~ 130 / ~ 80	~ 135 / ~ 80	~ 140 / ~ 80	
Flue gas mass flow rate wood chips nominal load / part load	kg/h	862,4 / 286,5	985,2 / 286,5	1108,1 / 286,5	1276,1 / 286,5	
CO <sub>2</sub> content wood chips nominal load / part load	Vol. %	13,54 / 11,78	13,54 / 11,78	13,54 / 11,78	13,61 / 11,78	13,61 / 11,78
Flue gas temperature pellets nominal load / part load	°C	~ 120 / ~ 80	~ 130 / ~ 80	~ 135 / ~ 80	~ 140 / ~ 80	
Flue gas mass flow rate pellets nominal load / part load	kg/h	760,2 / 247,9	864,2 / 247,9	976,8 / 247,9	1058,7 / 247,9	
CO <sub>2</sub> content pellets nominal load / part load	Vol. %	13,69 / 11,85	13,69 / 11,85	13,69 / 11,85	14,09 / 11,85	14,09 / 11,85

## Dimensions

		349 - 501
L1	Length	mm 3145
L2	Length	mm 2260
L3	Length	mm 580
L4	Length	mm 305
B1	Width	mm 2730
B2	Width	mm 1685
H1	Height	mm 3075
H2	Height	mm 2195

## Dimensions electrostatic filter

		349 - 501
LE	Length	mm 805
BE	Width	mm 1450
HE	Height	mm 880

## Minimal free areas

		349 - 501
E1	Free areas front [min]	mm 1000
E2	Free areas back [min]	mm 1000
E3	Free areas left [min]	mm 750
E4	Free areas right [min]	mm 500
E5	Free areas insertion	mm 500
E6	Free areas insertion	mm 500
E7	Free areas top [min]	mm 220

## Insertion dimensions

		349 - 501
	Length	mm 2375
	Width	mm 1695
	Height	mm 2195

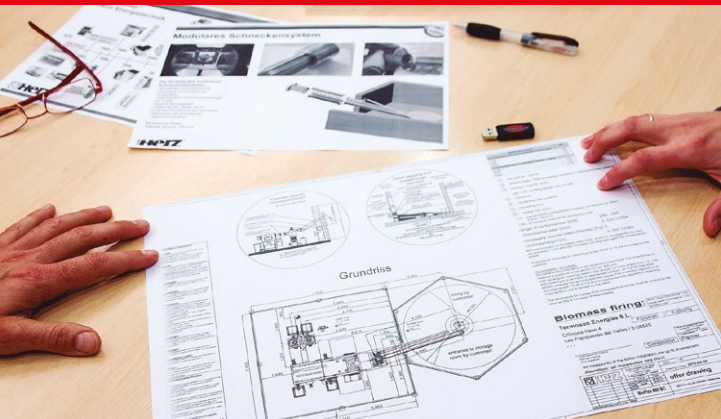
## Connections

		349 - 501
5	Insertion flange back fire protection	mm Ø182,5
L5	BFP-flap length	mm 975
B5	BFP-flap width	mm 700
H5	BFP-flap height	mm 860
6	Flow	DN100 / PN6
L6	Flow length	mm 1240
H6	Flow height	mm 1960
7	Back flow	DN100 / PN6
L7	Back flow length	mm 870
H7	Back flow height	mm 1960
8	Flue pipe connection	Øo 250 mm
B8	Flue pipe connection (90°)	mm 975
H8	Flue pipe connection (90°)	mm 3056
H8	Flue pipe connection (0°)	mm 2607
H8	Flue pipe connection (45°)	mm 2855
H8	Flue pipe connection (135°)	mm 3093
H8	Flue pipe connection (180°)	mm 2944
9	Filling/emptying (under the casing)	3/4" IT
10	Safety heat exchanger input	1" IT
L10	SHE length	mm 1345
B10	SWT width	mm 850
11	Safety heat exchanger output	1" IT
L11	SHE length	mm 1345
B11	SWT width	mm 760
13	Self-contained extinguishing water system	

\* measured data from test report  
 Øo outside diameter; Øi inside diameter; IT internal thread

Subject to change in the interest of technical progress!  
 The specified free areas must be observed when carrying out maintenance and service work.

# HERZ customer-oriented...



- **Advising in planning phase**
- **Planning of discharge system according to customer requirements and local conditions**
- **Area covered service**
- **HERZ training:**
  - for operators
  - for planners, technical departments
  - for plumbers
  - as well as continuous training of the maintenance staff



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