

HAAS  
+  
SOHN

## HSP 4 Prato

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**Equipment sheet**  
Pellet stove

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**GB**

# Introduction

**We thank you very much for purchasing our product!**

The description of the heating device will inform you in detail about the design, technical specification and operation of the heating device. We recommend you to acquaint yourselves closely with these data. In this way, you will avoid possible faults during the proper assembly and operation.

**You will find** detailed conditions of installation and operation in General Manual of Operation (included in the scope of the delivery).

## Notes in the text

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Of utmost importance there are the notes entitled **WARNING**. The notes entitled **WARNING** advise you on **serious danger of damage to the heating device or of an injury**.



The note entitled **Notice** advises you on possible damage to your heating device.



The note entitled **Important** calls your attention to the information important for the operation of your heating device.



The note itself calls your attention to the information important for the operation of your heating device in general.

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# Important Information from Manufacturer!



## IMPORTANT

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**Please, observe the following instructions:**

### **Quality of wood pellets:**

Depending on the manufacturer, there are light, dark, shorter or longer pellets. **Even deliveries from one supplier may contain different qualities.** Standards for wood pellets are constantly tightened, but: The wood remains wood and has its peculiarities in terms of ash and slag.

### **Cleaning:**

Once you find ash and slag deposits in the cold combustion chamber, you must clean it. **See Chapter 4 and 5.** If you fail to do it, the layer will increase and the stove will no longer be able to self-ignite properly.

The pellets may accumulate in the combustion chamber. In the extreme case, the pellets can accumulate up to their filling chute. Possible consequences could result in their bursting in the flame and burning in the pellet container. **It would destroy your stove, which is not covered by the warranty.**

### **To ensure maximum service life and trouble-free operation:**

Read the installation and operating instructions carefully and completely. We recommend keeping it if required in future.

1. Enhanced daily control according to the instructions should be carried out on each new supply of pellets or if the stove has been shut down for a longer period of time – e.g. summer season.

#### **2. Recommendations:**

**Consign the first installation and their first cleaning and inspection to one of our contracted professional service organizations. Their employees are professionally trained and have the knowledge needed to install your new pellet stove safely, put it into operation and carry out its maintenance. They will personally familiarize you with the rules of its use and maintenance and will show you the stove in practice.**

Keep in mind that in the event of any malfunctions due to improper installation, operation or maintenance, your warranty claims will be lost.

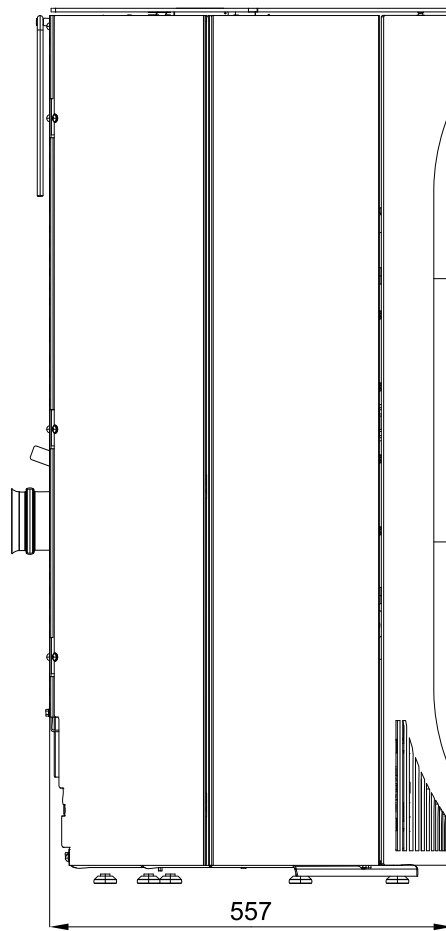
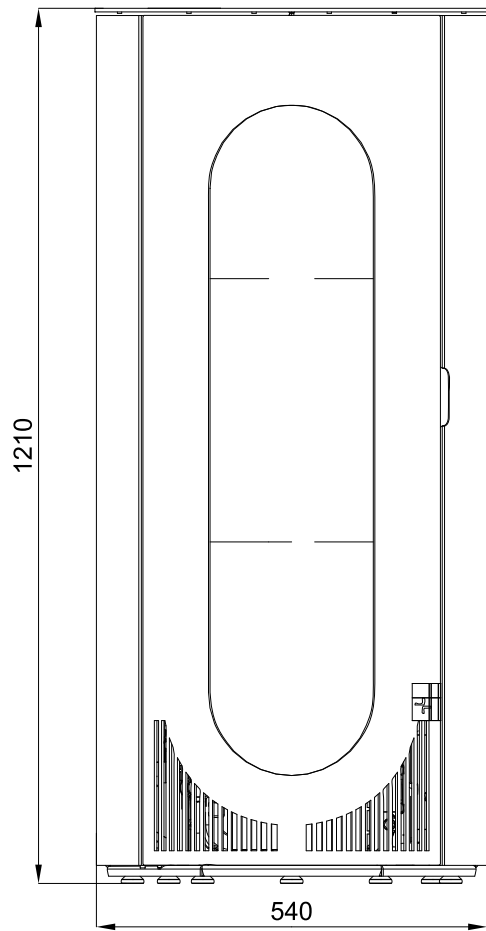
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# 1. Technical data

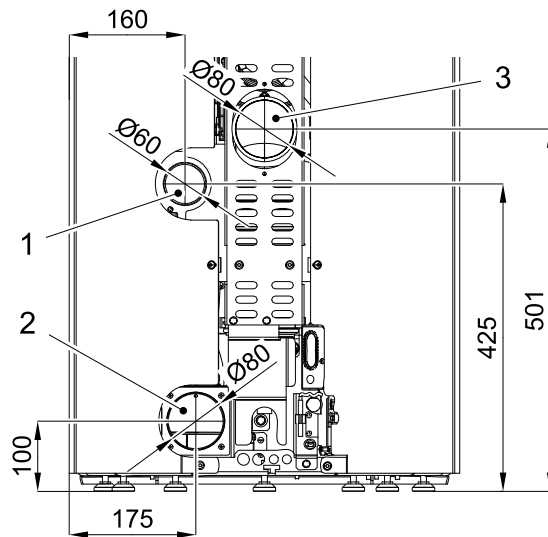
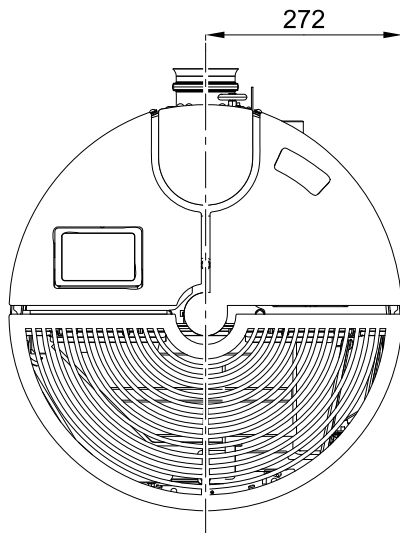
	HSP 4 Prato		
	Nominal output	Partial output 50%	Partial output 30%
Heat output range:	8,5 kW	4,0 kW	2,4 kW
Nominal heat output:	8,5 kW		
Test conditions defined by norm:	EN 14785		
Height:	1210 mm		
Width:	540 mm		
Depth:	557 mm		
Weight:	175 kg		
Diameter of flue elbow:	80 mm		
Flue gas temperature:	167 °C	100 °C	74 °C
Testing transport pressure:	12 Pa	7 Pa	6 Pa
Min. flue draft:	5 Pa		
Max. flue draft:	15 Pa		
Flue gas flow rate in g/s:	5,6 g/s	3,8 g/s	2,7 g/s
CO level in flue gas (%) (min./max.):	0,002 %	0,009 %	0,024 %
Efficiency:	91,9 %	94,2 %	95,3 %
CO level in flue gas:	24 mg/Nm <sup>3</sup>	116 mg/Nm <sup>3</sup>	295 mg/Nm <sup>3</sup>
NOx level in flue gas:	65 mg/Nm <sup>3</sup>	72 mg/Nm <sup>3</sup>	68 mg/Nm <sup>3</sup>
OGC level in flue gas:	3 mg/Nm <sup>3</sup>	2 mg/Nm <sup>3</sup>	11 mg/Nm <sup>3</sup>
Proportion of dust in flue gas:	9 mg/Nm <sup>3</sup>	10 mg/Nm <sup>3</sup>	18 mg/Nm <sup>3</sup>
Contents of storage container (pellet tank):	ca. 17 kg		
Duration of burn with one charge (min./max.):	ca. 9 h	ca. 18 h	ca. 18 h
Permitted fuel: Low-dust wood pellets	diameter: 6 mm		
to Ö-Norm M 7135, DIN plus, EN plus-A1	length: max. 30 mm		
Room heating capacity to Ö-Norm M 7521:	max. 230 m <sup>3</sup>		
Electricity supply:	230 V (50 Hz)		
in normal operation:	21 W		
Electric ignition (for max. 15 minutes on ignition):	max. 380 W		
Fuses for the ignition, screw conveyor motor, induced draught, (F1)	T 3,15 A, 250 V		

# 2. Dimensions

Dimensions



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- Pos. 1: for external air input
- Pos. 2: convection air for 2nd room
- Pos. 3: flue pipe: inner diameter 80 mm

# 3. Pellet Stove Installation and Connection to Chimney

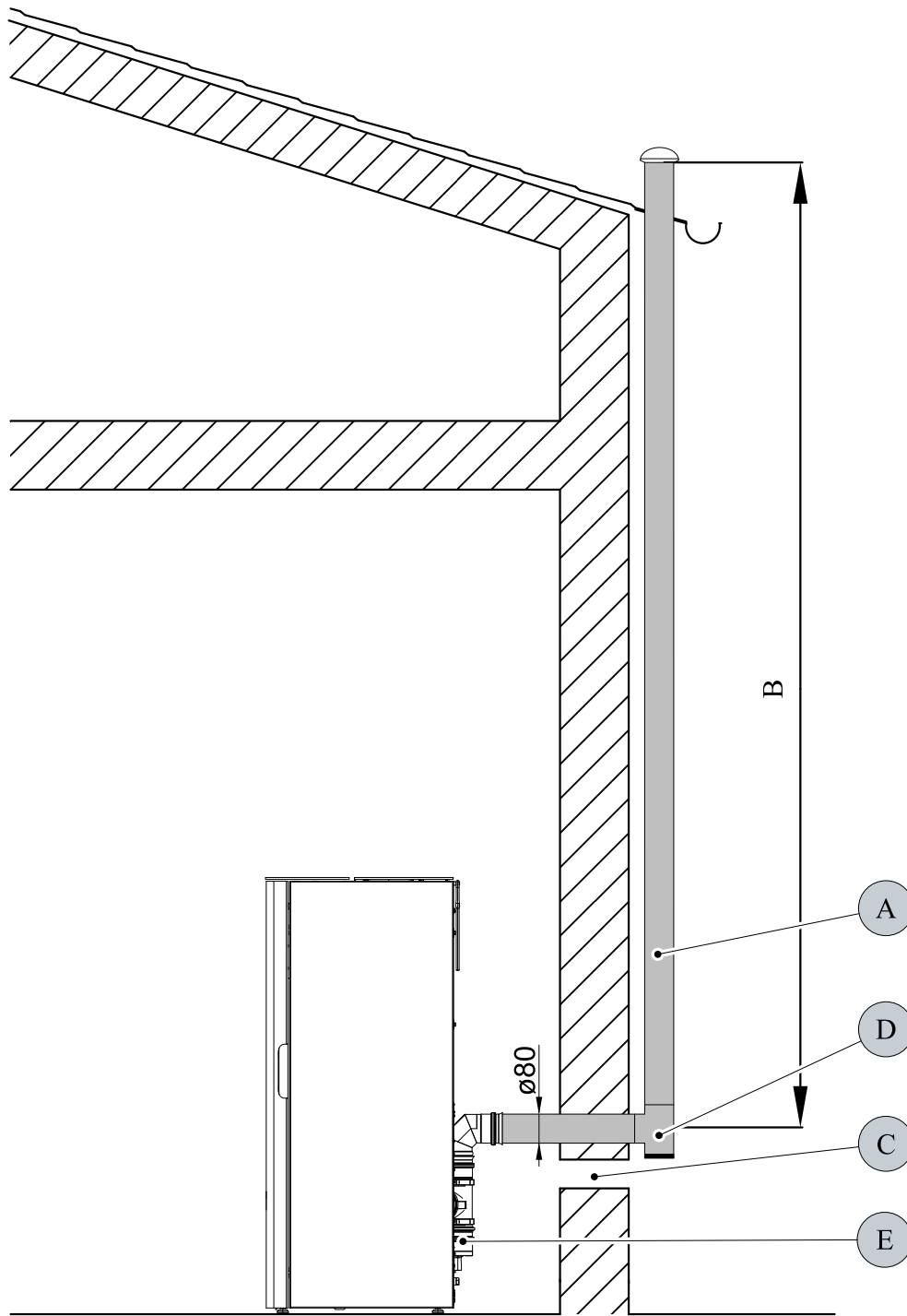
The pellet stoves must be connected to a separate chimney. It is not permissible to divert flue gas from other equipment to this chimney. Flue gases are fed through an 80 mm smoke duct connected to the stove smoke-flue being located on the rear side of the stoves. The smoke-flue should be fitted with a T-piece and stopper, see **fig. 1.1 - 1.2**. The smoke-flue must be made of steel or stainless steel tubes. The horizontal part of the smoke-flue must have an incline of **at least 5 % (3°)** upwards from the heater. The connection must be made in the shortest way with a maximum length of 1.5 m and max. 2 fittings (T-piece, elbow). The connection of the solid fuel heater to the chimney **must comply with the provisions of ČSN 73 4201 standard**. It is necessary to observe all requirements for the chimney body which are required by the standard.

**Under the Government Decree No. 91/2010 Coll. It is necessary to revise the combustion routes:**

- before the flue route is put into operation or after each chimney reconstruction
- before replacing or re-installing a fuel appliance

The inspection is carried out by a competent chimney sweep who is also a chimney inspection technician.

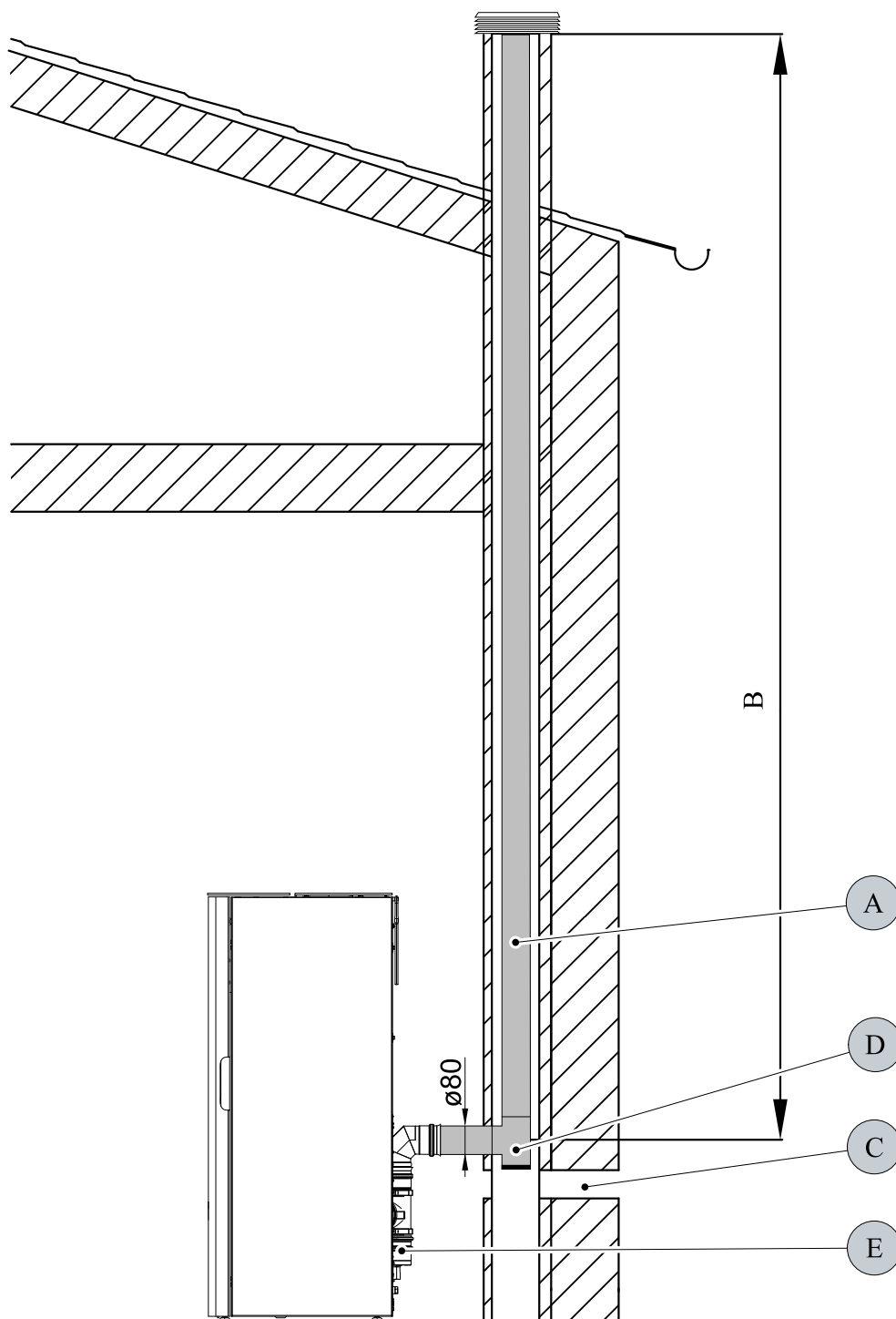
**Informative examples of pellet stove installation and connection to chimney:**



**Figure 1.1: Chimney outside the building**

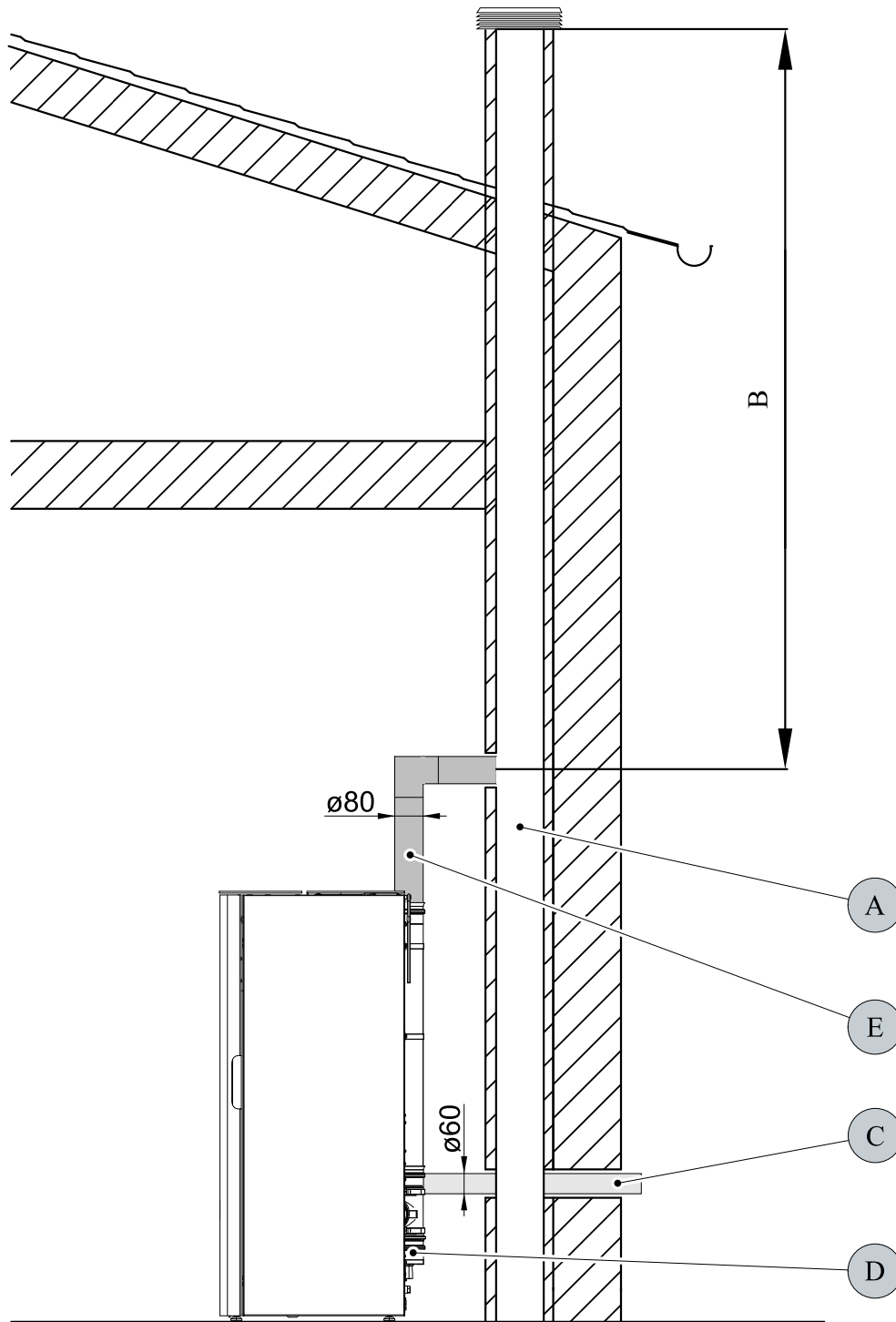
- A) Chimney situated outside the building
- B) Effective chimney height. The chimney must be led above the roof level and fitted with thermal insulation
- C) External air inlet to the heater
- D) T-piece with stopper
- E) Condensate collector





**Figure 1.2: Chimney as a part of building**

- A) The smoke-flue inserted into the existing chimney. Here, the possibility of cleaning is required.
- B) Effective chimney height.
- C) External air inlet to the heater
- D) T-piece with stopper
- E) Condensate collector



**Figure 1.3: Connection to the existing chimney**

- A) Existing chimney
- B) Effective chimney height.
- C) External air inlet to the heater
- D) Condensate collector
- E) Smoke-flue

# 4. Cleaning work



## WARNING

**Before starting any cleaning work, the stove must be cool down!**

**Once the cleaning work is completed, the correct operating status of the device must be re-established: Put the combustion pot in correctly, close the combustion chamber door.**

## 4.1. Cleaning the surface

Dirt on the upper surface of the stove may be cleaned off with a damp cloth or if necessary with mild soapy water. You are advised against using corrosive cleaning agents and solvents since these might damage the surfaces.

## 4.2. Cleaning the glass panel

To clean the viewing panel, you must first open the stove door. Dirt on the glass panel can be removed with a glass cleaner or with a damp sponge on which you have sprinkled some of the wood ash present. (Environmentally friendly). Cleaning the glass panel may only be done with a cooled down stove in the OFF operating mode.

## 4.3. Clean combustion chamber “function instruction” Error F040

- The whole combustion space must be cleaned after **50-hours operation at the latest, or once a week**.
- The requirement to clean the fire-box (flickering of the display) appears during heating, in case that the cleaning interval has elapsed.
- After the fire-box has been cleaned, the error message "Clean the fire-box" will be confirmed automatically. The condition for automatic confirmation of this error message is that the fire-box door is opened for more than **90 seconds**. This time is necessary for careful cleaning of the fore-box, including the burner.
- This reset of the operating hours counter occurs even if the cleaning of the combustion chamber is performed before the 50 operating hours have run provided that the stove is in “Off” operating status and the door is open for longer than 90 seconds during cleaning.

## 4.4. Cleaning the combustion pot - weekly

During operation, deposits may form in the combustion pot. How quickly the combustion pot becomes dirty depends solely on fuel quality. The deposits or encrustations must be removed from time to time.



## WARNING

If this is not done, the clinker will continue to accumulate. Then the device will no longer be able to ignite properly. Pellets can pile up in the combustion pot. In extreme cases, this can reach all the way back to the pellet chute. Backfire in the pellet container and smouldering in the pellet tank might possibly result.

**This will destroy your device and is not covered in your guarantee.**



## **WARNING**

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**Cleaning the combustion pot may only be done with a cooled down stove in “OFF” operating mode. Otherwise there is a risk of burns!**

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- Clean the burner with the supplied tool. (By scraping the burner wall, dirt falls down through the cleaning roller into the ash pan.)



## **WARNING**

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**Do not dismantle the burner!**

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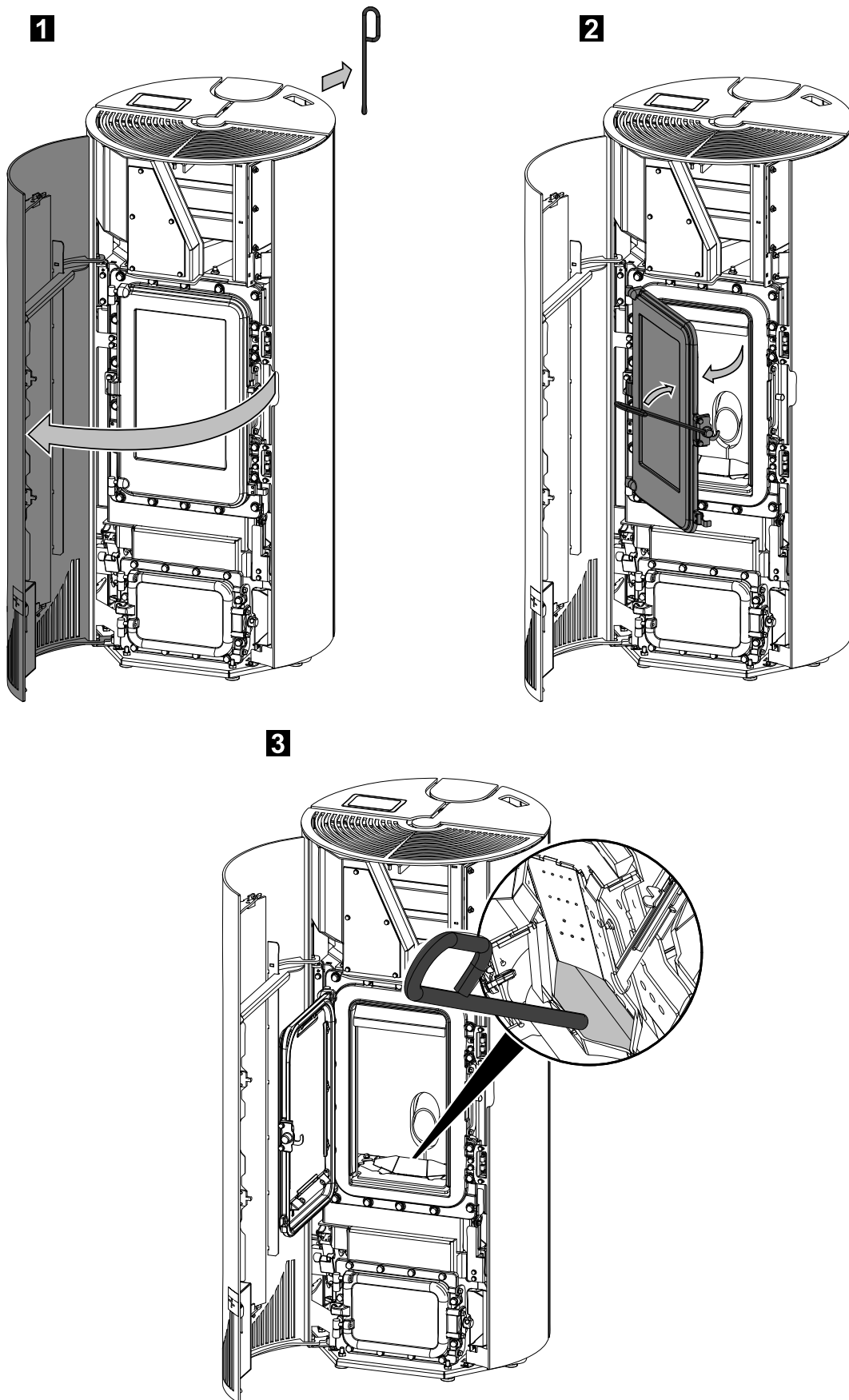


Figure 2: Cleaning the combustion pot (using the supplied tool)

# 5. Maintenance work



## WARNING

Before starting any cleaning work, the stove must be cool down! The mains plug must be pulled out of the power supply socket (always in advance)!

The frequency of maintenance in turn depends to a large extent on the pellet quality (ash content). Quality pellets have a low ash content of about 0.2-0.3%. However, if the ash content is higher (0.5% and over), the interval from maintenance to maintenance is reduced and the accumulation of ash increases by 2 or 3 times.



## WARNING

Devices that are not maintained in accordance with our specifications must not be operated. Failure to observe this point will invalidate all guarantee claims.

## 5.1. Cleaning of the ash pan - once a week

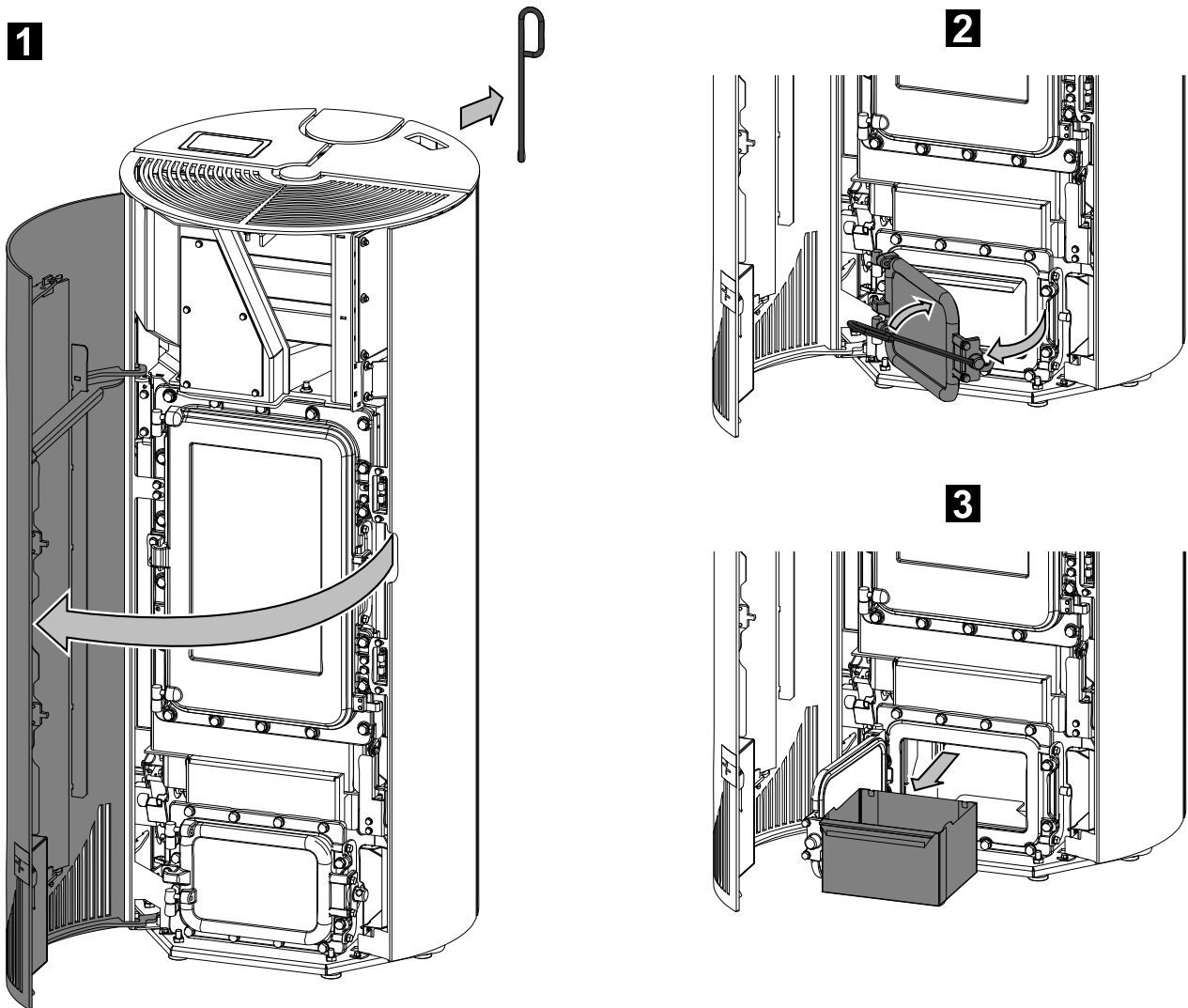


Figure 3

## 5.2. Cleaning the flue gas passes



### CAUTION

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Check and clean the flue-gas ways, exhaust (flue-gas) fan and flue-gas ducts at the latest after **1000 kg** of pellets have been consumed. Clean with a brush or an ash extractor.

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### CAUTION

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After completion of the cleaning make sure that when putting back the covers, the seals are seated in the right positions. It is essential to replace defective seals.

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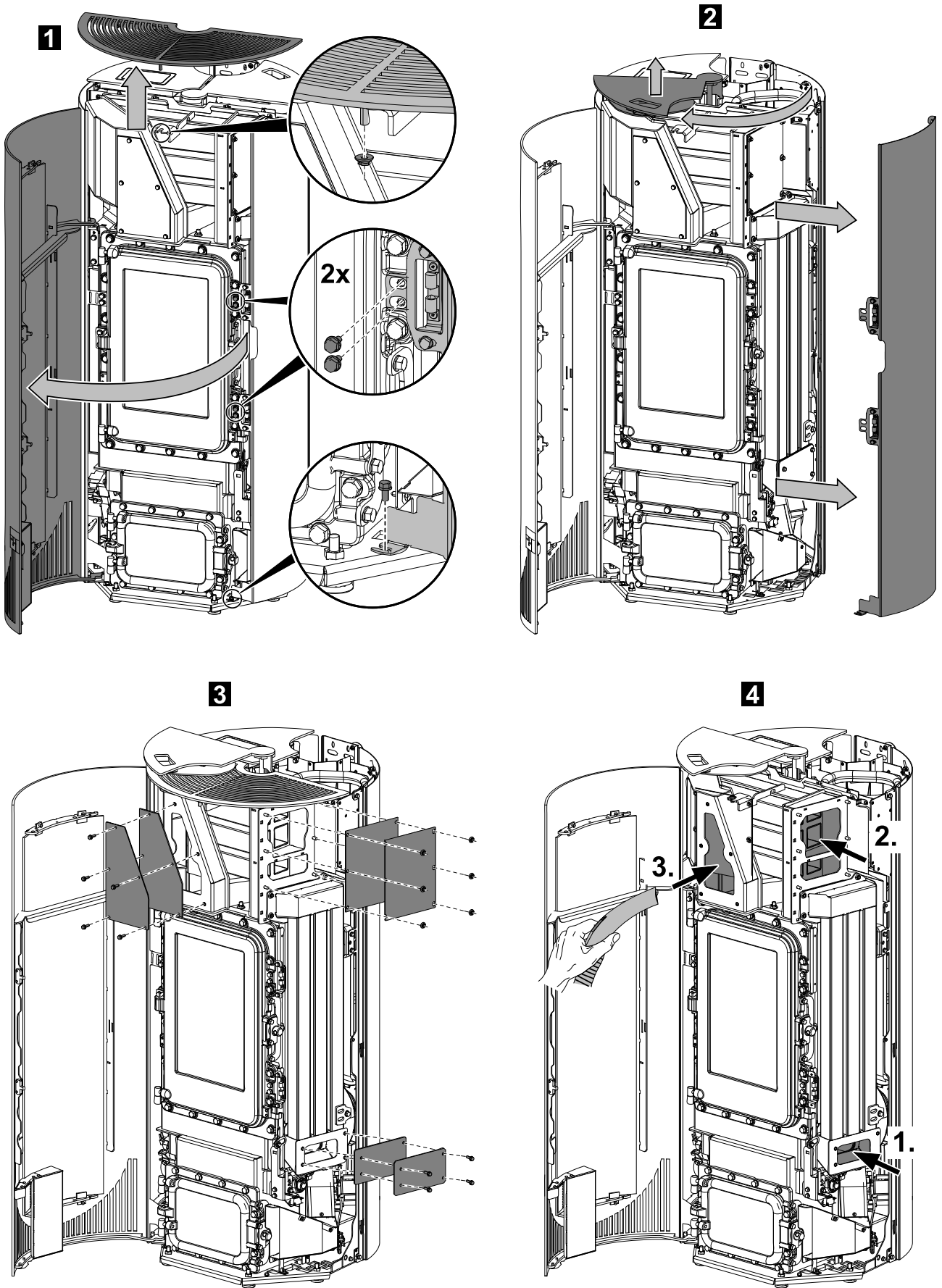


Figure 4: Removing the side wall



## 5.2.1. Cleaning the flue baffle

After consuming 1000 kg of pellets or after a year of operation, it is necessary to clean the deflector using the enclosed tool.



To remove the deflector, you must retract the flame temperature sensor - otherwise the deflector cannot be removed.

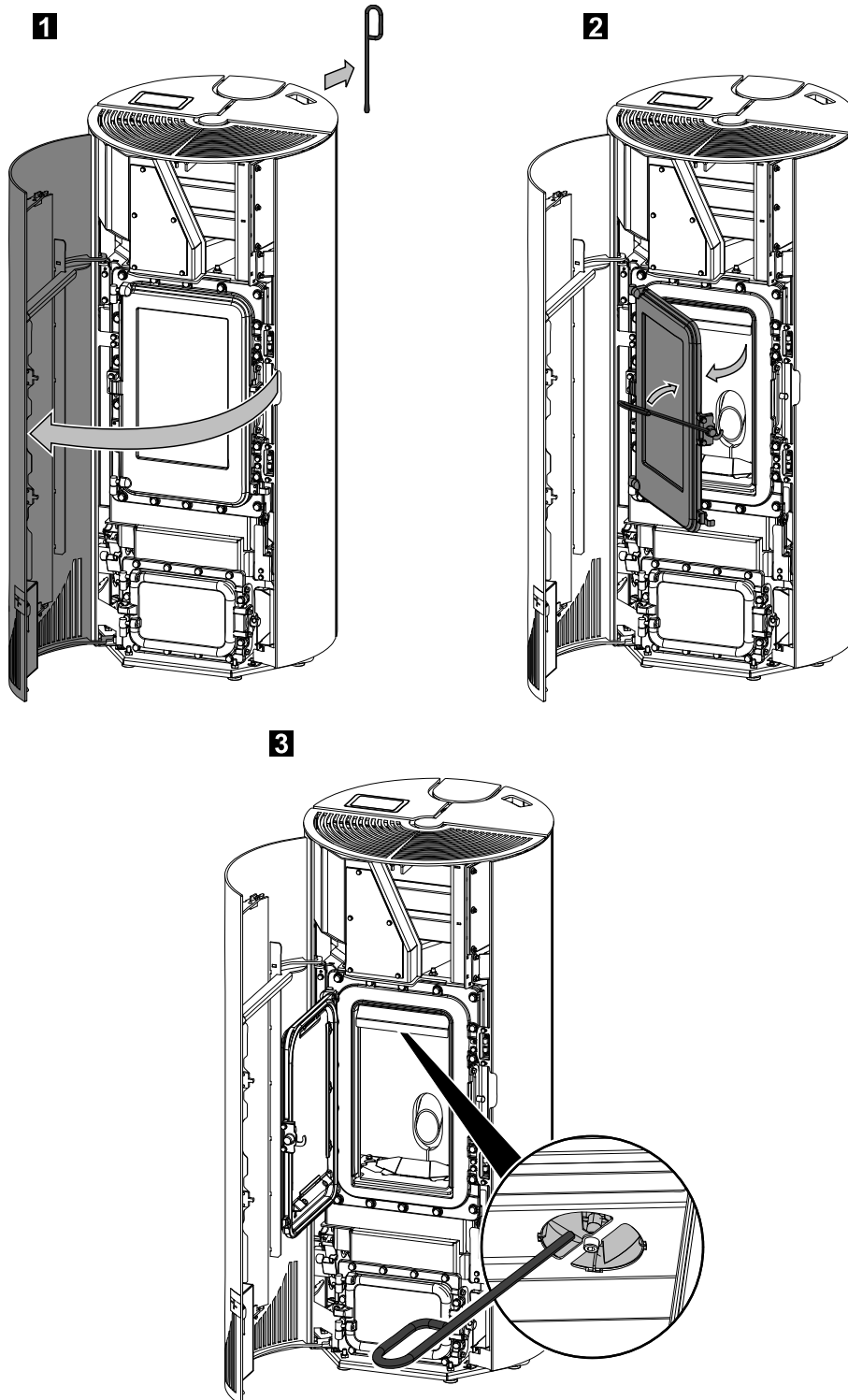


Figure 5: Cleaning the flue baffle

### 5.3. Cleaning the pellet container - annual maintenance

- Heat the pellet stove until the storage tank is completely empty.
- Then clean the tank and the intake of the screw conveyor housing with a vacuum cleaner.

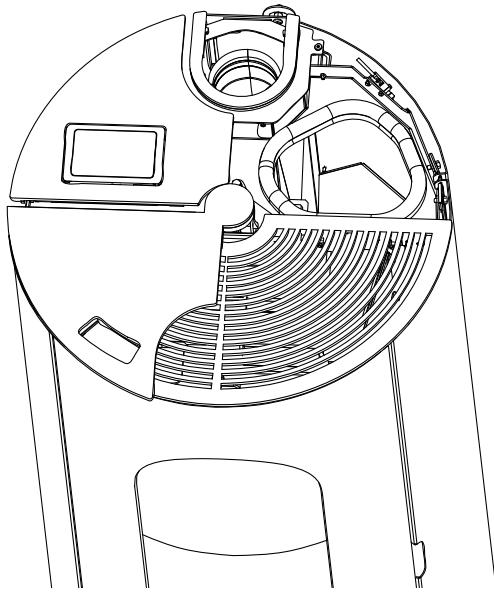
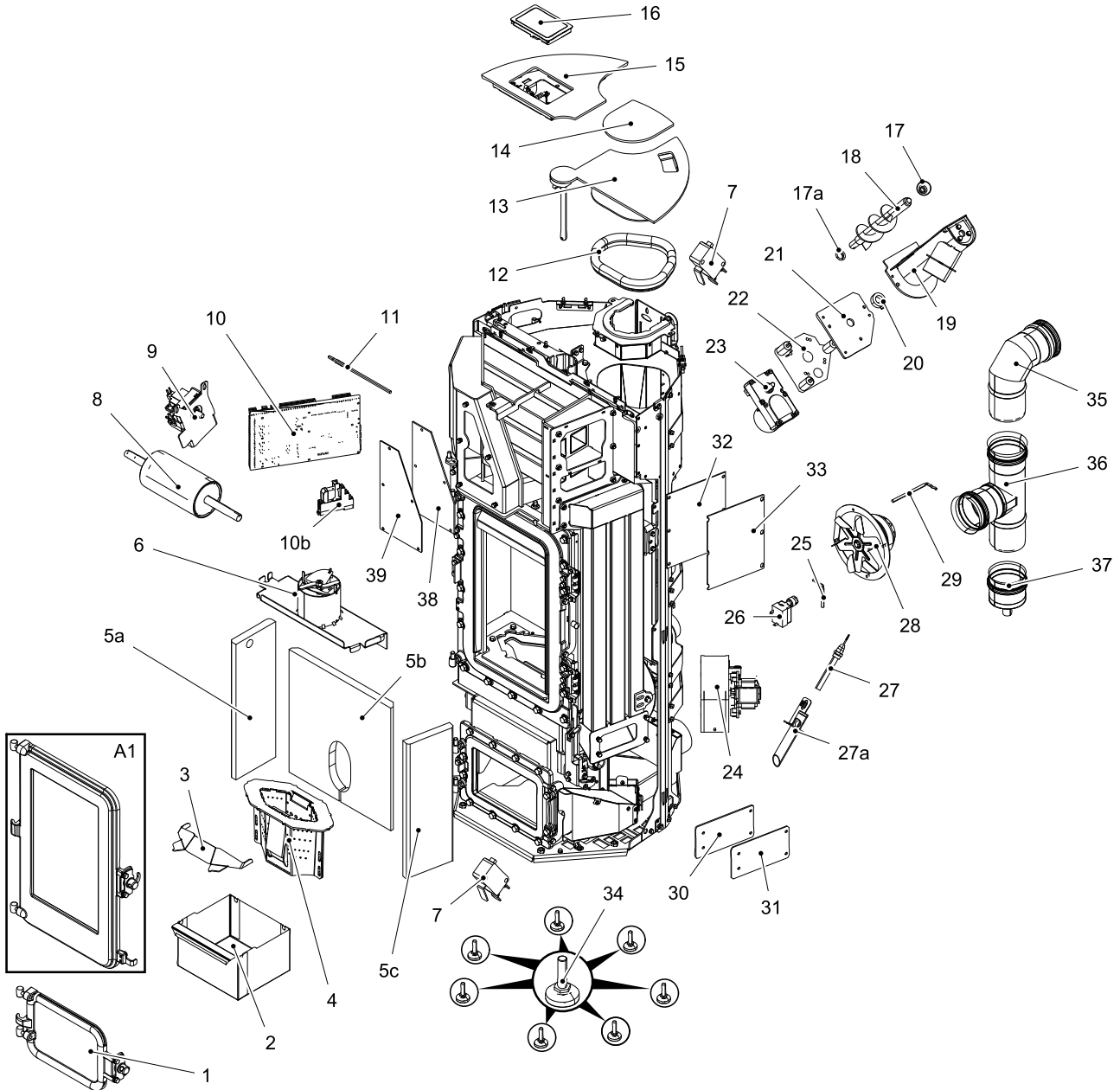


Figure 6: Pellet tank

# 6. Replacement parts list

## 6.1. Replacement parts list (without trim parts)

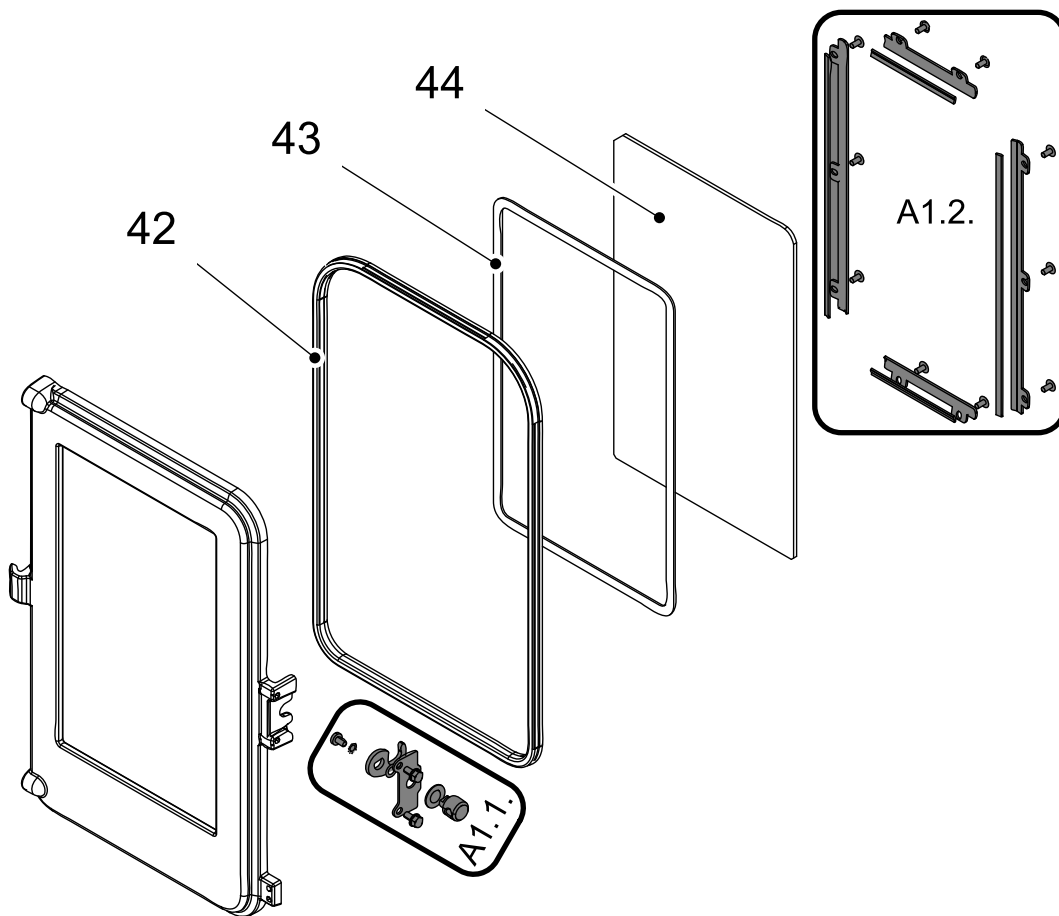


Pos.	Description	Piece	No. PR
<b>Replacement parts list (without trim parts)</b>			
<b>A1</b>	Complete combustion chamber door/ anthracite	1 piece	0545508005300
<b>1</b>	Ash-pan door/anthracite	1 piece	0545908005520
<b>2</b>	Ash pan	1 piece	0545908005604
<b>3</b>	Protection grate	1 piece	0545508005739
<b>4</b>	Burner	1 piece	0545508005820

<b>5a</b>	Combustion chamber cladding left	1 piece	0545508005211
<b>5b</b>	Combustion chamber cladding back	1 piece	0545908005710
<b>5c</b>	Combustion chamber cladding right	1 piece	0545508005212
<b>6</b>	Draught baffle plate	1 piece	0545908005700
<b>7</b>	Door contact switch	1 piece	0089500040005
<b>8</b>	Cleaning roller	1 piece	0545508905130
<b>9</b>	Screw conveyor motor	1 piece	0089500000006
<b>10</b>	Complete control unit	1 piece	0545508005576
<b>10a</b>	Backup battery CR 2032	1 piece	-
<b>10b</b>	Relay	1 piece	0545508005583
<b>11</b>	Flame temperature sensor	1 piece	0553808005541
<b>12</b>	Seal, tank cover (530 mm)	1 piece	0595015005913
<b>13</b>	Tank cover/black-glossy	1 piece	0545908006610
<b>14</b>	Blind flange/black-glossy	1 piece	0545908005606
<b>15</b>	Lid/black-glossy	1 piece	0545908005290
<b>16</b>	Operator console	1 piece	0545508005640
<b>17</b>	Upper screw conveyor bearing	1 piece	0571207005027
<b>17a</b>	Lower screw conveyor bearing	1 piece	0571207005026
<b>18</b>	Screw conveyor	1 piece	0545508016030
<b>19</b>	Conveyor	1 piece	0545908015010
<b>20</b>	Collet	1 piece	0089000345000
<b>21</b>	Motor plate 1	1 piece	0571207025041
<b>22</b>	Motor plate 2	1 piece	0545508015040
<b>23</b>	Screw conveyor motor	1 piece	0089500000006
<b>23a</b>	Connection cable — screw conveyor motor red/white (Pos. 23)	1 piece	0089500620006
<b>23b</b>	Connection cable — screw conveyor motor blue/white (Pos. 9)	1 piece	0089501210005
<b>24</b>	Conv. fan	1 piece	0545508005220
<b>25</b>	Room temperature sensor	1 piece	0089500390005
<b>26</b>	OC	1 piece	0089500080005
<b>27</b>	Ignition	1 piece	0541908005202
<b>27a</b>	Lighter case	1 piece	0545908005201
<b>28</b>	Induced draught fan	1 piece	0561008005808
<b>29</b>	Flue gas thermosensor	1 piece	0561008005540
<b>30</b>	Seal	1 piece	0545908005110
<b>31</b>	Cover	1 piece	0545908015112

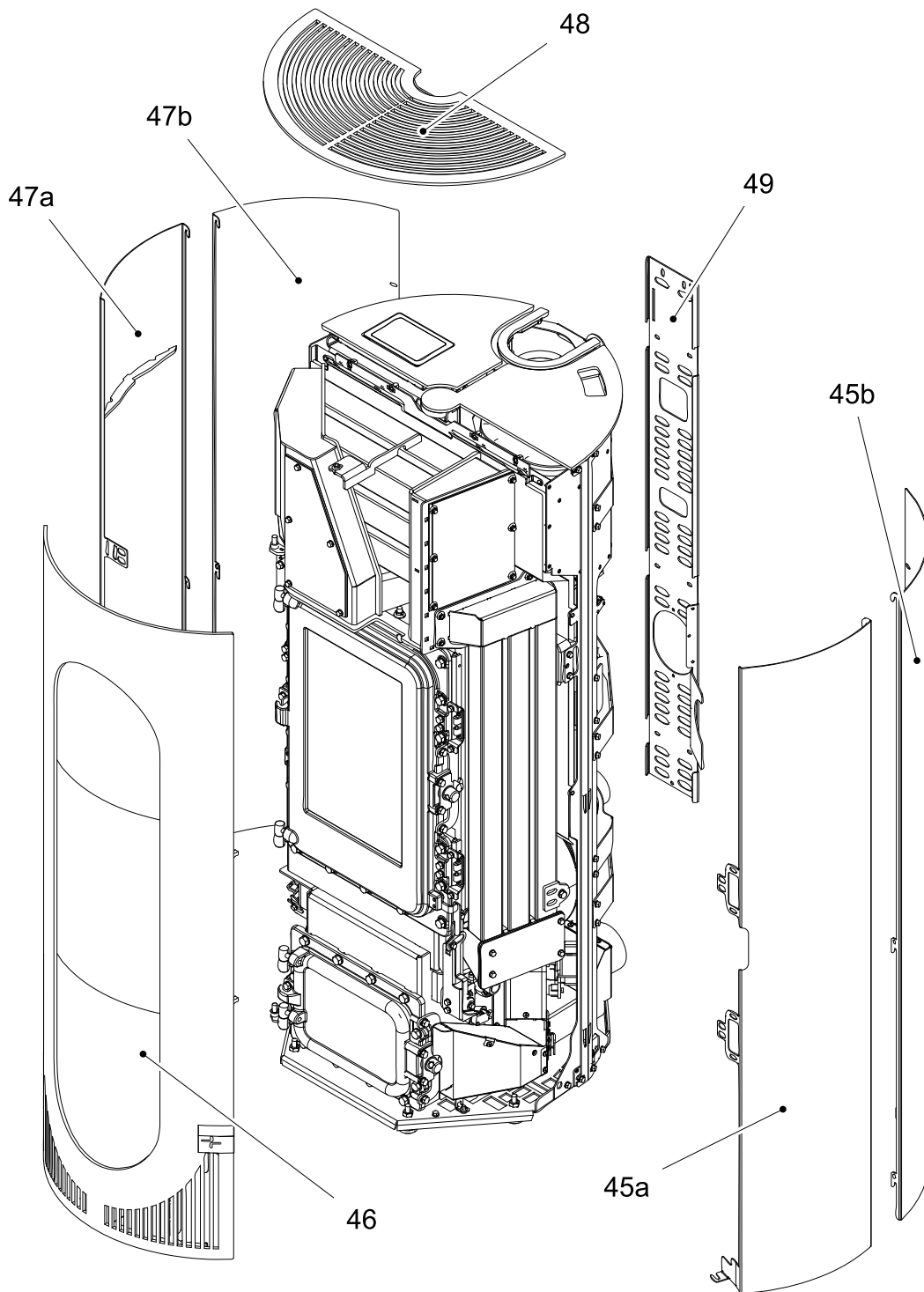
32	Seal	1 piece	0545908005077
33	Cover	1 piece	0545908015078
34	Stand	6 piece	0551908505005
35	Flue way bend	1 piece	0545508006145
36	Flue way T-piece	1 piece	0545508006120
37	Condensate collector	1 piece	0545508006130
38	Seal	1 piece	0545908005093
39	Cover	1 piece	0545908015094

## 6.2. Detail A1



Pos.	Description	Piece	No. PR
<b>Detail A1</b>			
A1.1.	Screwing door — Set	1 piece	0545508005301
A1.2.	Glass holder/anthracite - Set	1 piece	0545508005302
42	Seal door 16 mm (1500 mm)	1 piece	0040300160005
43	Seal glass 10x4 mm (1320 mm)	1 piece	0040210040005
44	Door glass (4x239x376)	1 piece	0545908005313

### 6.3. Replacement parts list



Pos.	Description	Piece	No. PR
<b>Replacement parts list</b>			
<b>45a</b>	Side wall right/black-glossy	1 piece	0545908005260
<b>45a</b>	Side wall right/white	1 piece	0545908015260
<b>45b</b>	Side wall rear right/black-glossy	1 piece	0545908005263
<b>45b</b>	Side wall rear right/white	1 piece	0545908015263

<b>46</b>	Front plate/black-glossy	1 piece	0545908005310
<b>46</b>	Front plate/white	1 piece	0545908015310
<b>47a</b>	Side wall left/black-glossy	1 piece	0545908016260
<b>47a</b>	Side wall left/white	1 piece	0545908026260
<b>47b</b>	Side wall rear left/black-glossy	1 piece	0545908005264
<b>47b</b>	Side wall rear left/white	1 piece	0545908015264
<b>48</b>	Cover plate/black-glossy	1 piece	0545908005279
<b>49</b>	Back wall	1 piece	0545908005268





**Description circuit diagram:**

No.:	Description cable harness
1	Mains plug / mains filter
2	Electric ignition
3	Screw conveyor motor — relay
4/5	OC
6	Screw conveyor motor — relay
7	Induced draught
8	Cleaning roller
9	Conv. fan
11	Screw conveyor motor — relay
12–14	Flue gas fan rotation speed
18–19	Open window detection (option)*
22/23	Tank cover
26/27	Door contact switch
28/29/35	Human presence detection (option)*
30/31	Flue gas temperature sensor
32/33	Flame temperature sensor
38/39	Room temperature sensor
50–53	Differential pressure
F1	Fuse T 3,15 A ignition, induced draught fan, screw conveyor motor

**\*The following types of motion sensor and window opening switch can be used:  
(not included in the Haas+Sohn range)**

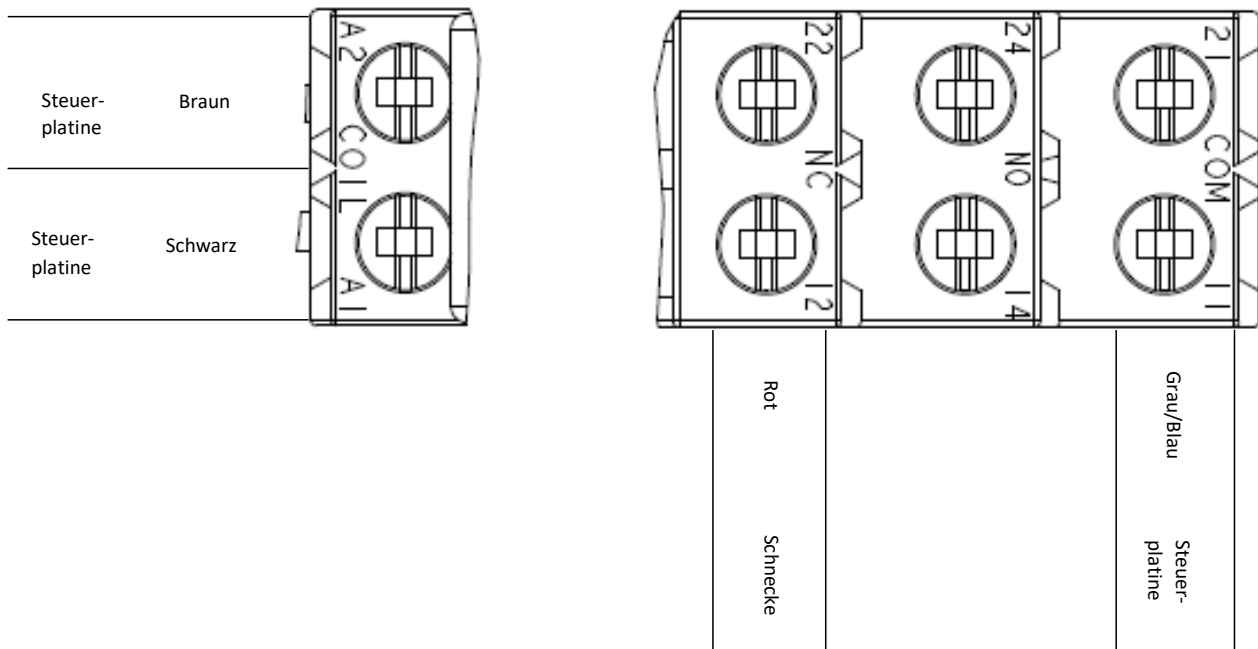
HUBER Motion 3LV 180° IP44 I 12 - 24V



RS PRO Reedkontakt Flach, 500mA 180V

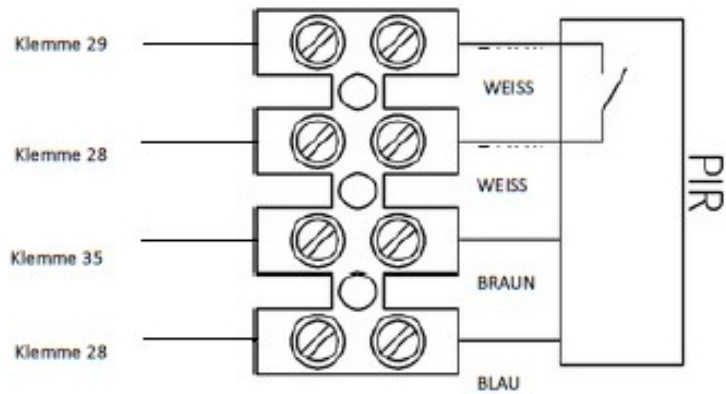


## 7.2. Circuit diagram relay + human presence detection



Description circuit diagram:

No.:	Description cable harness
A1/A2	Control board
11	Control board
12	Screw conveyor motor



Description circuit diagram human presence detection:

No.:	Description cable harness
28	Control board
29	Control board
35	Control board

