



REMKO ALLMAT

Automatic Slow Combustion Heater



Technology

Edition GB - M04

REMKO - powerful like a bear.

Operating Instructions

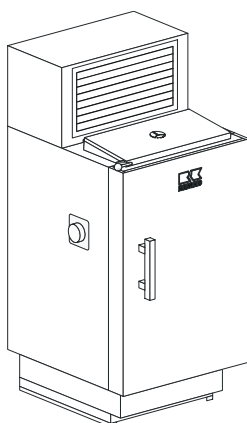
Make sure to read these instructions carefully before starting/using the unit!

Our guarantee will become void when the unit supplied by us is used and installed for inadequate purposes, or maintained incorrectly, etc., or if it is changed without our prior consent.

Subject to alterations!

Stationery slow combustion heater

REMKO Allmat



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Always keep these operating instructions near or on the unit!



Safety Instructions

Please make sure that the relevant local building and fire protection codes as well as the regulations of the employer's liability insurance associations are observed when the units are used.

 **Warning!** The unit's operating parts and housing can become very hot during operation. **Make sure to take appropriate safety measures before touching the unit.**

- ◇ The unit must be installed and operated in such a way that people are not exposed to radiant heat and fires cannot occur.
- ◇ When the unit is hot, make sure it is out of reach of children and animals.
- ◇ The unit may only be installed and operated in rooms that have adequate air supply for combustion.
- ◇ The unit may only be positioned on a non-combustible surface.
- ◇ The unit may not be positioned or operated in surroundings susceptible to fire or explosions.
- ◇ Use only suitable materials to help start the fire. *Never use petrol, thinning agents or other highly flammable materials.*
- ◇ The unit may not be positioned in traffic zones. *A safety zone of 1 m is to be maintained around the unit.*
- ◇ The suction inlets for the circulating air fan must always be kept free of dirt and loose objects.
- ◇ The blow-out grille may not be closed.
- ◇ The fire and furnace door must be shut after the unit is warmed up and during operation.
- ◇ The filling flap must always be kept shut while the unit is in operation
- ◇ Always open the filling flap slowly; never open it abruptly. *You can be burned by flames that blow back.*
- ◇ The ashpan must be emptied regularly. *It may only be filled up to the upper edge.*
- ◇ The fire grate must be kept free of combustion residue with pokers.
- ◇ The flue gas flap may never be completely shut during operation.
- ◇ Never open the fire door during operation. *Burning embers may fall out and start a fire.*
- ◇ The flue gas chimneys must be cleaned regularly.
- ◇ Use only suitable materials as fuel for the unit; keep smoke emissions low in slow combustion mode.
- ◇ Never pull the power plug out of the socket while the unit is in operation.
- ◇ Do not expose the unit to a direct stream of water.

Description of Device

The direct-fired unit generates warm air and is regulated automatically.

The unit works on the principle of sub-heating using exhaust post-combustion. It has been designed for many different uses and reliable slow combustion heating.

The unit is fuelled by solid fuels via the feeder chute that opens upwards.

The unit is equipped with a quiet axial fan requiring low maintenance, an adjustable air blow-out grille, an adjustable flue flap and a connection cable with plug.

The unit is safe and easy to operate and meets the relevant EU requirements.

The device is primarily used for industrial and commercial purposes to heat and/or regulate the temperature of:

- ◇ Workshops
- ◇ Showrooms
- ◇ Lounges and lobbies
- ◇ Exhibition spaces



The unit is not suitable for heating residences.

Device Functionality

The REMKO ALLMAT works on the principle of sub-heating using exhaust post-combustion. The feeder chute and furnace are completely lined with high-quality refractory bricks.

The unit has a generous feeder chute which opens upwards. It can be filled with fuel reserves if the unit is to be operated over a longer time period.

The feeder chute does not act as a furnace or combustion chamber. The fuel slides out of the feeder chute into the furnace depending on the burn rate.

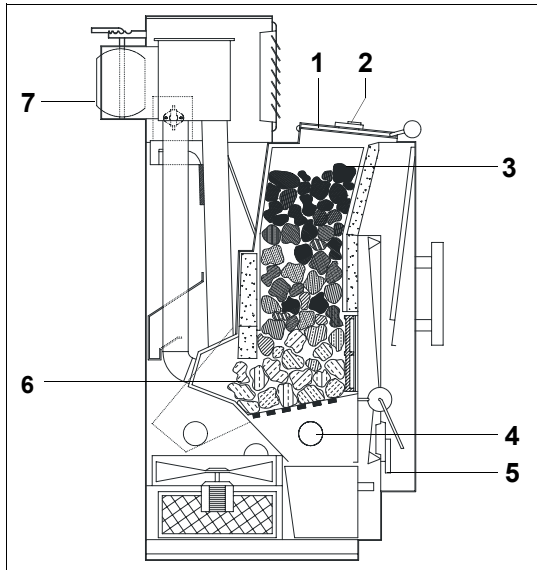
If heat is only necessary for several hours during the transition phase, the unit can also be fuelled with smaller quantities of fuel directly into the furnace. This does not adversely affect the low-smoke combustion, heating performance or effectiveness.

The standard air circulating fan is automatically switched on and off by a built-in thermostat. This ensures that only heated air is blown out.



To prevent damage to the unit resulting from overheating, do not unplug the unit during operation.

Unit Design



- 1) Filling flap
- 2) Secondary air air slide plate, can be adjusted in increments.
- 3) Feeder chute for manual fuel supply.
- 4) Combustion air regulated automatically by heat output regulator.
- 5) Primary air air slide plate, can be adjusted depending on fuel type.
- 6) Furnace more efficient as heat is supplied from below.
- 7) Flue gas flap for adjusting combustion to the chimney in increments.

BIMATIK Heat Output Regulator.

The REMKO ALLMAT is equipped with a BIMATIK thermal output regulator.

This automatically regulates the heat output that has been set on the regulator knob in the "min / max" area.

A temperature sensor records the respective temperature of the heat exchanger and automatically distributes the combustion air accordingly.

If the temperature falls below the set value, more combustion air is supplied to the furnace through the air slide plate. If the unit again reaches a higher temperature than is set, the amount of combustion air being supplied is reduced.

This regular cycle keeps the heat output within the selected range.

Proper functioning of the heat output regulator is, however, dependent on the operating conditions of the unit as well as a steady and stable chimney draught.

Fuel

Units for solid fuels up to 15 kW of rated heat output must be operated with low-smoke emission.

This requirement is met when the system is operated with air-drying fuels that generate little smoke.

The unit may be fuelled with the following in accordance with § 5 of the ordinance on small furnace systems 1. BImSchV (German federal emission protection laws):

1. Coal, non-pitch coal briquettes, coal coke,
2. Lignite, lignite briquettes, lignite coke,
3. Peat briquettes, combustible peat,
- 3a. Charcoal, charcoal briquettes,
4. Non-treated pieces of wood with attached bark.

In slow combustion mode, solids fuels must be burned so that the exhaust plume is lighter than gray scale

Important information about prohibited fuel types!

No fuels may be burned that contain chemical, PVC or similar additives, e.g. binding agents.

These types of materials, when burned, release aggressive and toxic steam that damages the environment and destroys the unit and the exhaust system.

Burning the materials above or similar materials is not only strictly prohibited, it also makes the guarantee completely null and void.

Firing egg-shaped coal briquettes and other fuels which carbonise at low temperatures are also not permitted!

Several calorific values.

approx. calorific value (dep. on consistency)	kW/kg
Wood, dry	4,9
Peat, pressed	4,4
Lignite briquettes	5,6
Coke	8,3
Anthracite	8,8

Required chimney draughts.

Wood	ca. 0,15 mbar.
Lignite briquettes	ca. 0,20 mbar.

If chimney draughts are exceeded, a draught limiter must be installed.

The draught limiter is adjusted with a draught gauge in operating mode.

To ensure optimum combustion, the chimney draughts must be adhered to! Chimney draughts that are too strong can damage the refractory.

Installation

The unit may only be installed in accordance with the applicable legal regulations and the ordinance on heating systems.

The unit must be securely placed on a non-combustible surface outside of traffic zones.

A safety zone of 1 m must be maintained around the unit.

The unit may not be placed too close to the wall or in a corner so that any cleaning and maintenance work can be performed in an unrestricted manner.

We recommend installing the unit on a sufficiently large plate made of non-combustible material.

The unit must be set up and operated in such a way that people are not exposed to exhaust or radiant heat and fires are prevented from occurring.

The unit may not be set up and operated in rooms and areas susceptible to fire or explosions.

The unit may not be operated in rooms that have above or below average pressure or rooms where this can occur.

Heating units for solid fuels that remove combustion air from the room where the unit is installed may not be set up in rooms where ventilation systems or fans exhaust or suck in air.

The unit may only be set up and operated in rooms if there is an adequate supply of air for combustion and the exhaust is expelled via exhaust flues.

A natural air supply sufficient for combustion exists when, for example, the room content in m³ is equivalent to at least 10 times the rated heat output in kW of all heating units in operation in the room and natural air ventilation is supplied through windows and doors or the ratio of room content to overall heat output does not fall below 4 m³ per kW.

If necessary, a separate combustion air supply must be installed from outside.

Good natural ventilation exists when, for example,


the room content in m³ equals 30 times the rated heat output of all units in operation in the room and natural ventilation is supplied through doors and windows or

there are non-closable openings for air output and intake close to the ceiling and floor whose size in m² equals at least 0.003 times the rated heat output in

Expulsion of combustion gases

The unit is designed in such a way that it can only function correctly if gases are properly expelled. The exhaust connection must be installed correctly and comply


The exhaust connection may only be used with approved chimneys. The chimneys can be made of bricks or metal. If the chimney is made of brick, make sure that the exhaust pipe does not protrude into the chimney, thereby having an adverse effect on the cross-section.

 **The chimney must have an adequate chimney draught.**

If a chimney draught stabiliser is not in use, the effective height of the chimney must be at least 4 m. By using a chimney draught stabiliser (accessory, ref. no. 1034250), the chimney can usually be constructed using the most ideal design. The chimney draught stabiliser generates the necessary upwards propulsion (chimney draught).

The chimney's diameter may not be smaller than 150 mm Ø.

The unit connection must be tightly sealed and secured against inadvertent loosening.

 **Exhaust lines which bend in several places must be extended accordingly.**

Chimneys

The unit must be attached to chimneys.

Chimneys are structural systems either in or on buildings whose only function is to expel exhaust from fur-

 **The construction of chimneys always requires a permit.**

If the roof is also the ceiling of the room where the unit has been installed, the chimney can be made of sheet steel. Each furnace must have its own chimney. Merging sheet steel chimneys is prohibited.

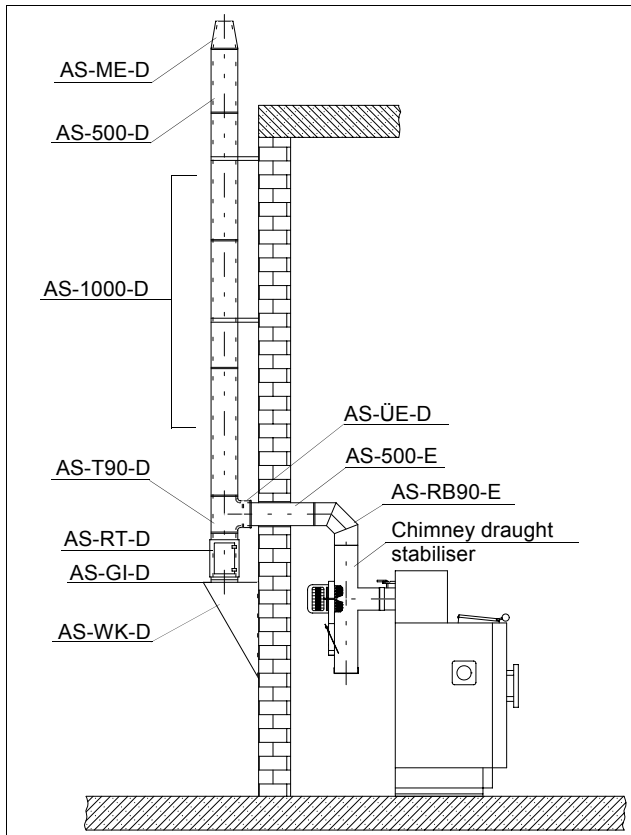
The chimney must be placed in a tube jointing sleeve when passing through wall or roof penetrations so that it can expand freely when heated.


The following are important when planning and constructing:

- ◇ The applicable furnace system ordinance.
- ◇ The applicable regional building code.

Example of Use:

Stainless steel chimney, double-walled, externally mounted with REMKO chimney draught stabiliser.



 **If a chimney draught stabiliser is not used, the effective chimney height must be at least 4 m. Observe chimney draught.**

Chimney Draught Stabiliser

To ensure that heating operation is steady, the chimney draught must remain constant and stable in all operating conditions and in each type of weather.

A constant chimney draught also ensures effective expulsion of flue gases and optimum suctioning of combustion air.

Changes in the temperature of the exhaust, in the temperature of the outside air, in the direction of the wind or gusts usually cause the chimney draught to rise or fall.

The chimney draught stabiliser increases and stabilises the upwards propulsion (chimney draught) if it is insufficient.

The chimney draught stabiliser stabilises operating conditions when:


- ◇ The unit heats up.
- ◇ The weather is unfavourable.
- ◇ The height of the chimney is inadequate.
- ◇ The chimney draught is inadequate.

The chimney draught stabiliser (REMKO accessory) consists of a T-bend with a special high-performance exhaust fan with an integrated draught limiter and an electric power cord with protective contact plug. It can be used for chimneys made of steel or brick.

Technical data for the chimney draught stabiliser:

Electrical connection 1~	230 V / 50Hz
Power consumption	60 W
Draft range	bis 0,3 mbar / 3 mm WS
Connection Ø	150 mm

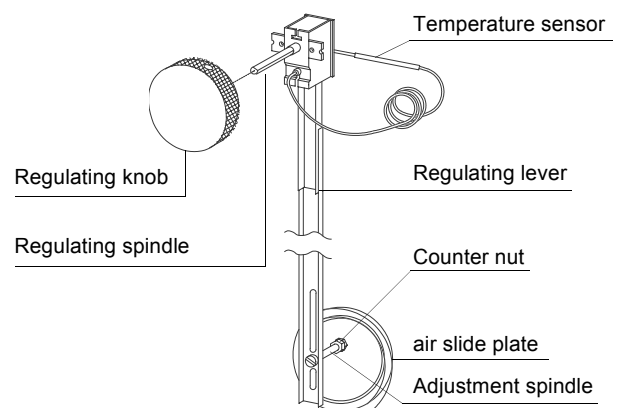
EDV-NO. 1034250

 **When using the chimney draught stabiliser, the exhaust flap on the ALLMAT must be opened all the way. The draught regulator is set using a draught gauge!**


Bimatik

Assembly instructions:

1. Disassemble the regulator knob and remove the lining plates of the unit.
2. Remove the defective heat output regulator.
3. Insert the new heat output regulator.
Do not damage the capillary tube or temperature sensor.
4. Turn the BIMATIK regulating spindle to the left until it clicks into the "min" position.
5. Adjust the air slide plate on the adjustment spindle so that the air intake opening closes without resistance.
Secure with counter nut.



7. Please note: if there are no settings left on the adjustment spindle, the regulating lever can be carefully moved in the necessary direction. The adjustment spindle can then be used for fine-tuning.
8. Mount the lining plates and the regulating knob.

 **The automatic regulator will only function properly if it has been installed and assembled correctly.**

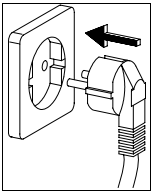
Starting

Important hints about operating the unit for the first time!


Because burned refractory bricks also contain residual moisture, proceed as follows when operating the unit for the first time:

1. Heat the unit up gradually.
2. Open the filling flap a little bit while the unit is cooling so that the steam from the refractory bricks can escape.
This prevents the refractory bricks from splitting or breaking later.
3. Repeat this heating process 3 to 4 times to get rid of any remaining moisture from the refractory bricks.


Preparations prior to heating.



1. Connect the unit plug to a power socket with the right connection.
230V/1~ 50Hz.
2. Keep in mind that the circulating air fan automatically switches on and off depending on the unit temperature.
3. If you are using a chimney draught stabiliser, plug it into a power socket with the right connection.
The 230 V / 1~ / 50 Hz power connection is only necessary for heating mode.
4. If applicable, adjust the draught limiter of the chimney draught stabiliser using a draught gauge.
Only necessary for initial operation.
5. Open the waste gas flap in the waste gas connection.
6. Set the BIMATIK heat output regulator to the "max." position with the regulating knob.
7. Clean the furnace and empty the ashpan.

 **The unit may not be unplugged from the power supply while in heating mode as this can damage the unit due to overheating.**

Heating Up the Unit

1. Ignite the fire with paper or fire starter and small pieces of wood on the fire grate.
-  **Never use petrol, thinning agents or other highly flammable materials.**
2. Once the kindling has begun to burn, add a small amount of fuel.
 3. Wait until this has burned through. Now the pre-fuelling process can be done continuously.
 4. Keep all furnace doors closed while the unit is heating up and during operation.
 5. Only open the air slide plate for secondary air (item 2 in the figure under "Device Functionality") a little bit to prevent air blockage.

Heating Mode

1. Fill up the feeder chute completely once approx. 50% of the fuel from the pre-fuelling process is burning.
2. Adjust the primary air slide plate in increments to the appropriate setting for the fuel.
3. Set the heat output in the "min / max" range using the regulating knob of the BIMATIK heat output regulator.
4. Adjust the flue gas flap in the waste gas connection according to the fuel being used and the chimney draught.

 **If you are using a chimney draught stabiliser, the flue gas flap must always be open all the way.**

5. Keep in mind that the circulating air fan only switches on automatically once the target temperature has been reached.
6. Only open the filling flap to add more fuel once the initial fuel has burned down to glowing embers.
Now the gasification process is complete. During this process, problems can occur with smoke if the feeder flap is opened while burning wood (similar for other fuels). It is now possible to add more fuel without a problem.
7. Stoke the fire grate with pokers to keep it clear of ash from time to time depending on the fuel and amount of ash during heating operation; empty the ashpan.

Important Information on Burning Wood.

Wood is a fuel that is very gaseous and produces large flames when burned. With enough combustion air, it burns extremely rapidly. As a result, when wood is in its final burning stages, it is not possible for combustion to be weak or slow until it has become glowing embers.


Only after it has become embers continued burning can be delayed by lowering the supply of combustion air via the BIMATIK heat output regulator and closing the primary air slide plate.

When adding more pieces of wood, be careful not to damage the refractory.


Information on Refractory Lining.

The life expectancy of the refractory lining is largely dependent on the operating conditions and how the unit is treated.

Due to natural temperature fluctuations, small cracks can appear in the refractory bricks but this does not adversely affect the functioning of the unit.

 **Do not subject the refractory to mechanical overload, e.g. from stoking the fire or throwing in fuel. Damaged or broken refractory bricks are not covered by the guarantee.**

Troubleshooting

 **Prior to starting any work make sure to pull the mains plug out of the mains socket!**

**The unit is generating too much heat or is overheated.
The refractory is at risk of being damaged.**

- ◇ The primary air slide plate **5** is open too wide.
- ◇ The furnace door or filling flap is not closed.
- ◇ The gasket of the furnace door is damaged.
- ◇ The chimney draught is too strong.
- ◇ Overpressure in the installation room.
- ◇ The blow-out grille is closed.
- ◇ The unit is operating without a power connection.
- ◇ Unsuitable fuels are being burned.

In case of smoke.

- ◇ The flue gas flap **7** is closed.
- ◇ The filling flap **1** is not closed.
- ◇ The chimney draught is insufficient.
- ◇ The supply of combustion air is inadequate.
Negative pressure in the installation room.
- ◇ Unsuitable or damp fuels are being burned.

The unit is not generating enough heat.

- ◇ The ashpan is too full.
No combustion air is reaching the furnace.
- ◇ There are ashes, cinders or other combustion residue on the fire grate.
- ◇ There is soot or flying ash in the exhaust chimneys or pipes.
- ◇ The flue gas flap **7** is not open wide enough.
- ◇ The BIMATIK setting is too low.
- ◇ The BIMATIK heat output regulator is defective.
- ◇ The chimney draught is inadequate.

The unit cannot be regulated.

- ◇ The BIMATIK heat output regulator is defective.
- ◇ The filling flap **1** or furnace door is not shut.
- ◇ The chimney draught is too strong or inadequate.

The unit is not transporting any warm air.

- ◇ The unit is not being supplied with power.
- ◇ The fan thermostat is defective.
- ◇ The circulating air fan is defective.
- ◇ The blow-out grille is closed.
- ◇ The air suction inlets are blocked.

If any failure occurs though which cannot be eliminated by the operating person, please contact your dealer or contact person.

Maintenance and Service

Regular maintenance and observance of some basic principles are required to ensure a long service life and to keep the unit functioning properly.

- ◇ Keep the unit free of dust and other deposits.
- ◇ Use a clean, slightly moist cloth to remove external dirt from the surface of the unit.
Never place the unit under a direct stream of water.
- ◇ Do not use aggressive cleaning agents or those which contain solvents.
- ◇ Use only suitable cleaners even when the unit is extremely dirty.
- ◇ Regularly check protective mechanisms to ensure that they are working properly.
- ◇ Regularly check the air suction and blow-out grilles for dirt.
Clean if necessary.
- ◇ Make sure that the unit is being safely operated in accordance with the operating condition or when necessary.
At least once a year.
- ◇ Make sure to comply with the maintenance and service intervals.

Removing Ashes.

Clean the fire grate once or twice a day with the pokers supplied and remove all cinders, ashes and other combustion residue.

Empty the ashpan when necessary but at least once a day. The ashpan may only be filled up to the upper edge. Make absolutely sure that the ash cone never reaches the lower edge of the grate because this can cause damage.

Replace the empty ashpan as quickly as possible and close the front door to prevent an external draught.

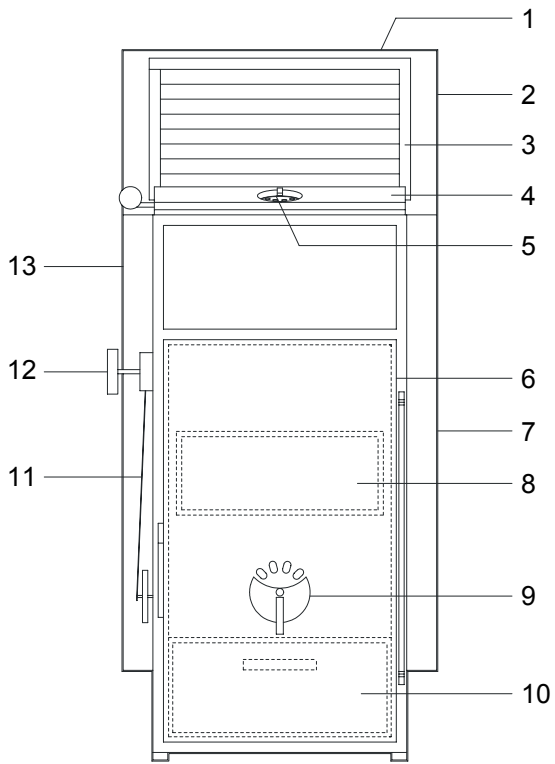
Cleaning.

The furnace and the attached flue gas chimneys must be cleaned on a regular basis depending on heating operation. Soot or flying ash deposits negatively affect heating performance.

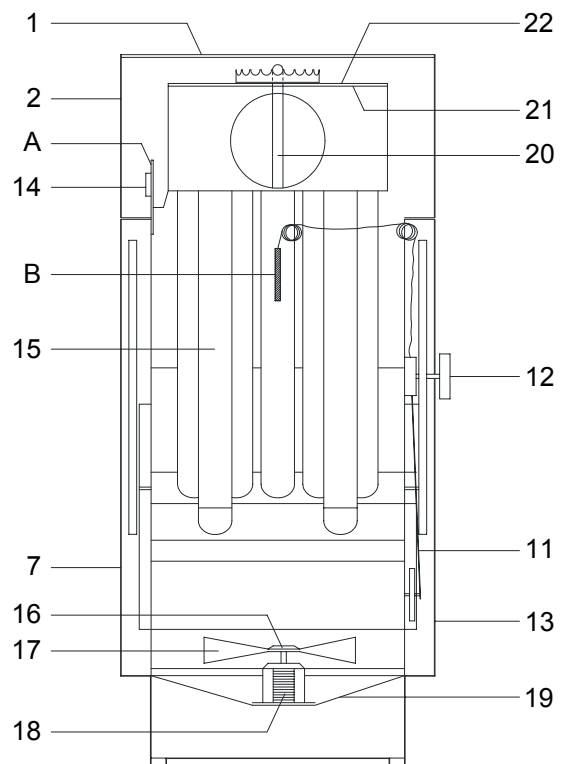
The collection box and the flue gas chimneys can be accessed once the plate for the warm air cover (item 1) and the cleaning opening (item 22) have been disassembled. The flue gas chimneys and the collection box must be cleaned with an appropriate brush. Before assembling the warm air cover, the gasket (item 21) must be checked and replaced if necessary.

In addition to daily maintenance, we recommend a thorough cleaning and maintenance of the entire unit after each heating period. Any damaged parts must be replaced to prevent more serious damage from occurring.

Exploded View

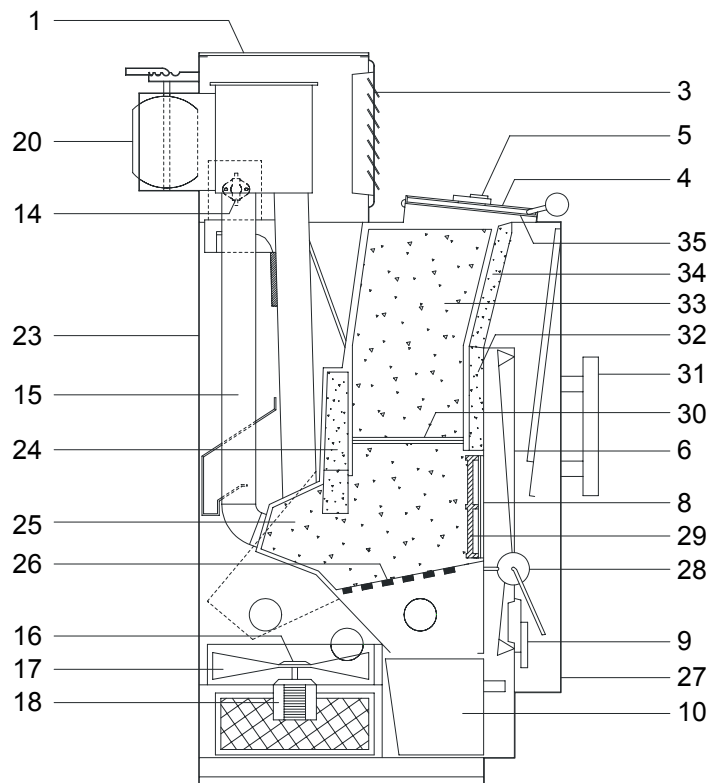


Front view without front door



Back view without rear plate

A = Mount for fan thermostat
B = Mount for BIMATIK temperature sensor



Side view – sectional drawing

We reserve the right to make modifications in dimensions and construction in the interests of technical progress.

Spare Part List

No.	Description	Ref-Nr.
1	Cover (warm air hood)	1104082
2	Warm air hood	1104025
3	Blow-out grille	1104030
4	Filling flap	1104035
5	Air slide plate (secondary air)	1104037
6	Furnace door, cpl.	1104040
7	Side panel, right	1104000
8	Furnace door, without brick	1104045
9	Air slide plate (primary air)	1104041
10	Ashpan	1104055
11	BIMATIK heat output regulator	1104080
12	BIMATIK regulating knob	1104091
13	Side panel, left	1104005
14	Thermostat (fan)	1104065
15	Heat-exchanger with combustion chamber	1104089
16	Clutch plate (fan blade)	1101255
17	Fan blade	1101150
18	Fan motor	1101254
19	Motor bracket	1104060
20	Flue gas flap with shaft	1108000
21	Gasket (cleaning opening)	1104076
22	Cover (cleaning opening)	1104075
23	Plate (rear)	1104020
24	Refractory brick, rear	1108303
25	Refractory brick, side/lower	1108304
26	Fire grate	1104050
27	Front door	1104010
28	Closure (furnace door)	1104042
29	Refractory brick, furnace door	1108406
30	Double U-profile	1104088
31	Handle	1101142
32	Refractory brick (front/lower)	1108302
33	Refractory brick (side/top)	1108300
34	Refractory brick (front/top)	1108301
35	Heat shield (filling flap)	1108010

Not shown

Gasket (filling flap)	1104036
Magnetic lock (front door)	1104015
Thermostat cable	1104084
Connecting cable with plug	1101320
Lever ashpan	1104056
Pokers	1104086
Cleaning brush for heat-exchanger pipes	1104087
Chimney draught regulator for chimney installation	1007661
REMKO chimney draught stabiliser	1034250

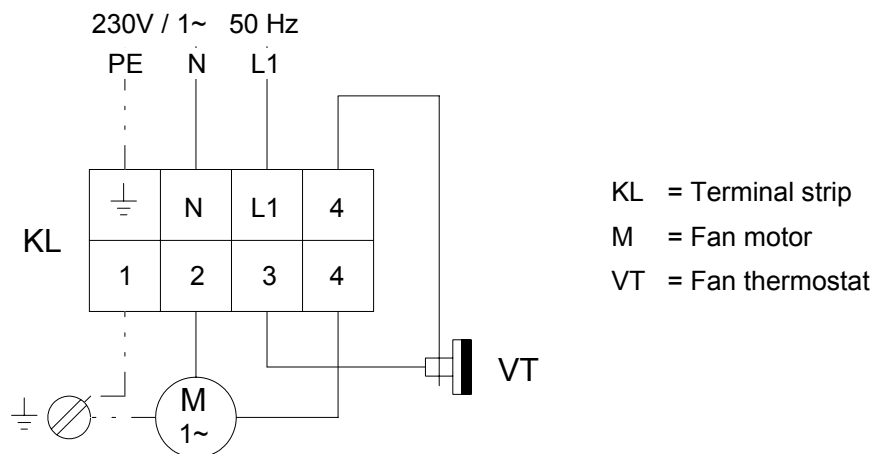
Technical Data

Series	ALLMAT	
Rated heat output	kW	11
Air output	m³/h	750
Fuel ¹⁾		
Electrical connection 1~	V / Hz	230 / 50
Rated current	A	0,6
Power consumption	kW	0,1
Feeder opening	mm	380x220
Feeder chute capacity	l	60
Feeder chute dimensions (W / D / H)	mm	360 / 200 / 590
Required chimney draught	mbar	0,2
Exhaust connections Ø	mm	150
Distance from ground to middle of exhaust connections	mm	1105
Sound pressure level L _{pA 1m} ²⁾	dB(A)	58
Weight	kg	150
Dimensions:		
Height	mm	1300
Width, total	mm	560
Depth, total	mm	600

1) In accordance with ordinance on small furnace systems

2) Noise measuring DIN 45635 - 01 - KL3

Wiring Diagram

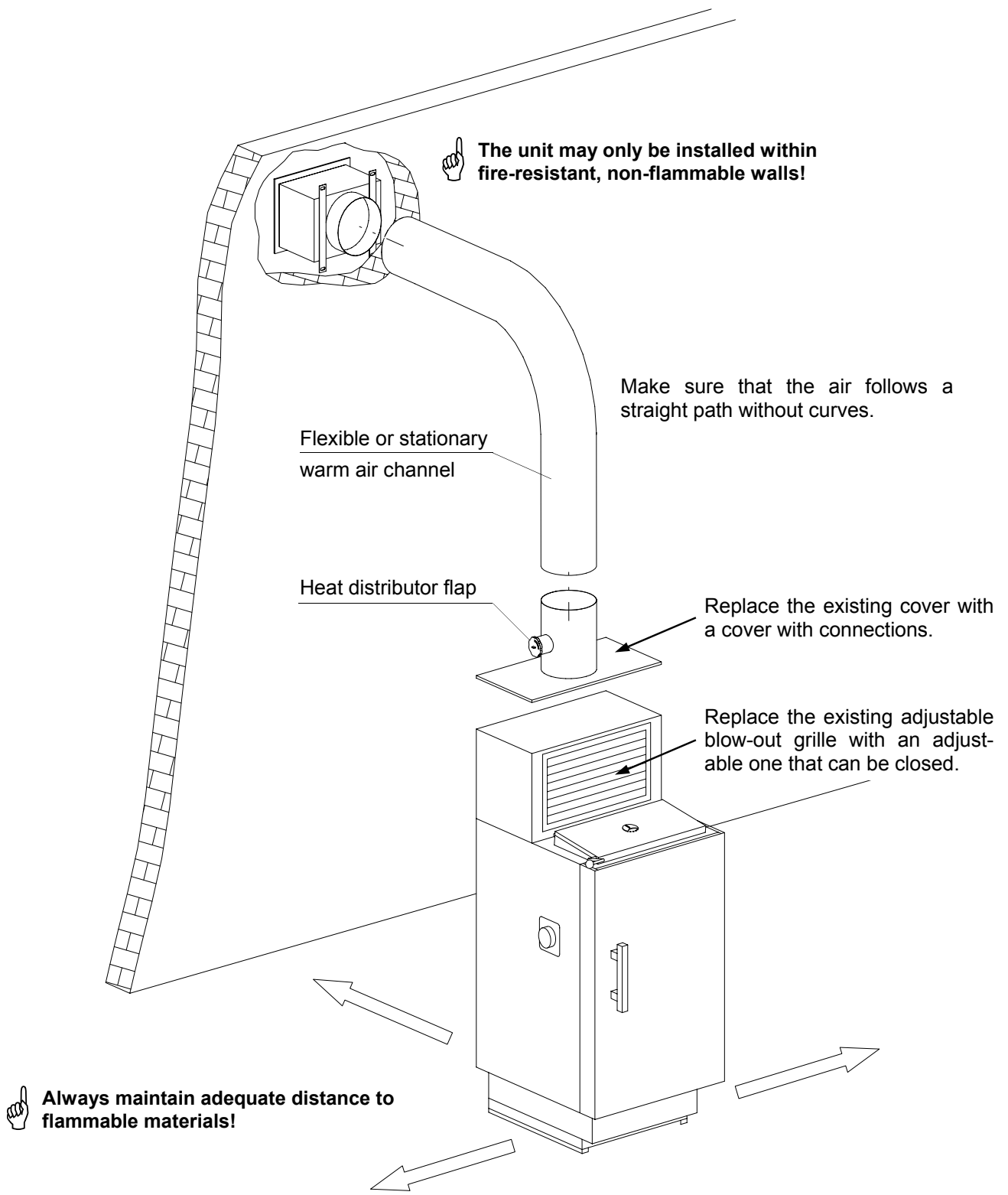



Service and Guarantee

Any claims under guarantee regarding materials can be accepted only when the orderer or his customer has filled in completely the "guarantee certificate" which is enclosed with every REMKO-heater and has returned it to REMKO GmbH & Co. KG in due time after the unit's sale and commissioning.

An operation/use other than that indicated in these instructions is prohibited! In the case of non-observation we will not be held responsible and our guarantee will become void.

Heating Adjacent Rooms



 The unit may only be installed within fire-resistant, non-flammable walls!

Make sure that the air follows a straight path without curves.



Flexible or stationary warm air channel

Heat distributor flap

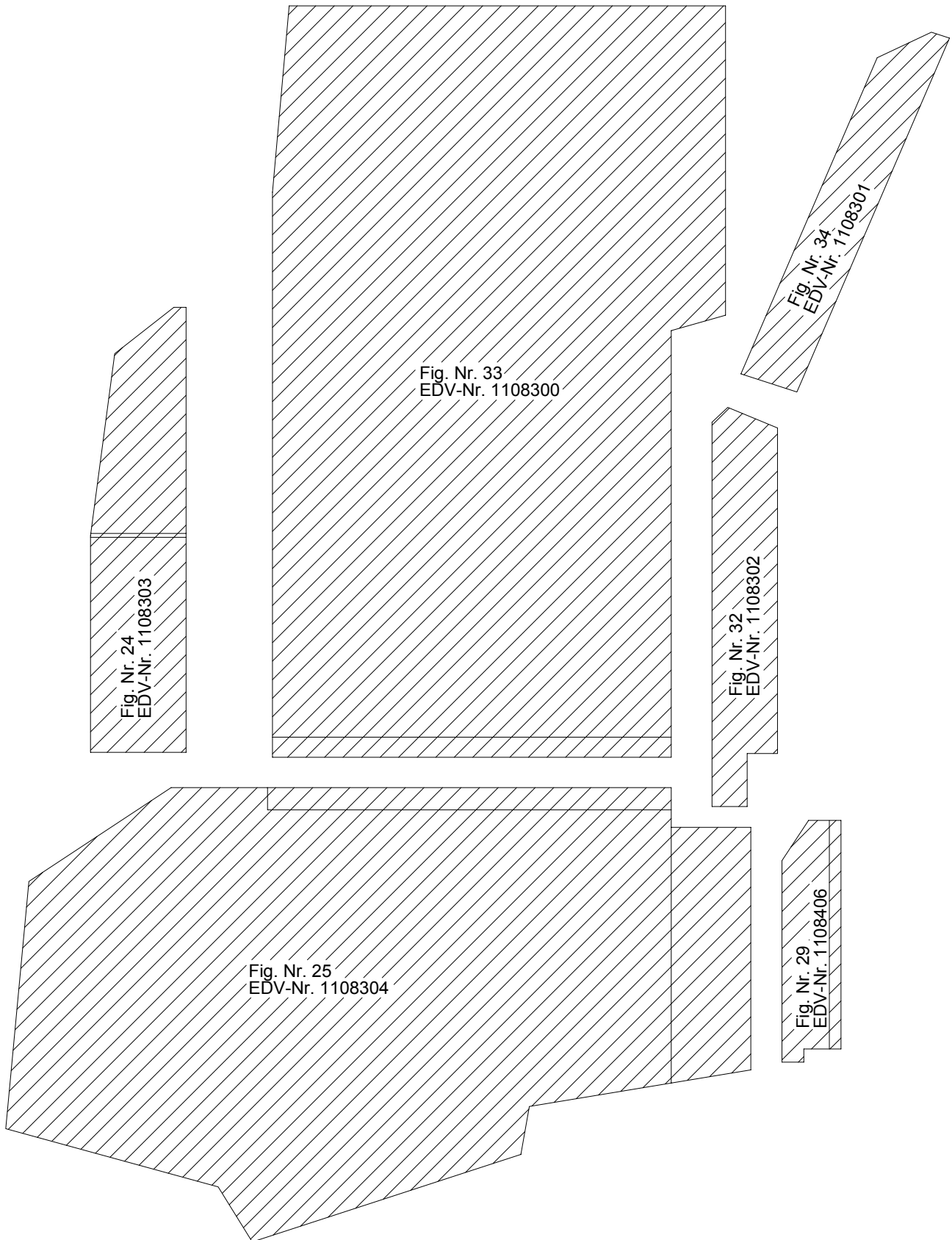
Replace the existing cover with a cover with connections.

Replace the existing adjustable blow-out grille with an adjustable one that can be closed.

 Always maintain adequate distance to flammable materials!

 The components are hot when the unit is in operation. They can burn you when touched. 
The warm air channel may not be extended and must be placed on an upwards incline.

Arrangement of Refractory Lining



REMKO Organisation Throughout the whole of Europe and a distributor near to you. Take advantage of our experience and consulting.



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Consultation.

We keep the expertise of our specialist dealers up to date with intensive trainings. That has earned us the reputation of being more than just a good, reliable supplier. REMKO - a partner that helps to solve problems.

Sales.

REMKO does not only support an extensive sales network at home and abroad, but also exceptionally well qualified experts in the sales department. REMKO's staff in the field is more than just sales staff: most of all they have to be customer consultants for air conditioning and heating technology.

Customer Service.

Our units operate precisely and reliably. Should an unexpected fault occur, the REMKO service department will react promptly.

Our extensive network of experienced specialist dealers guarantees a quick and reliable service.

Your specialist dealer:

