Operating and installation instructions

REMKO ATK series
Automatic oil heater with built-in oil burner and tank with outlet nozzle

ATK 25

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CE

Carefully read this operating manual prior to commissioning/using the units!
This operating manual is a translation of the German original.

This manual is an integral part of the unit and must always be kept in the vicinity of the installation location or on the unit itself.

Subject to modifications. No liability accepted for errors or misprints!

Safety notes

Always observe the respective local building code and fire prevention guidelines as well as the guidelines of the accident prevention and insurance associations when using the units.

The units have been subjected to extensive material, functional and quality inspections prior to delivery. However, dangers can arise from the units if they are used improperly or not as intended by untrained personnel!
Please observe the following notes:

- The power plug must be pulled out of the mains socket before maintenance and repair work
- The units may only be operated by persons that have been instructed in their operation
- The units must be installed and operated in such a way that personnel are not endangered by exhaust gases and radiant heat and no fires may occur
- The units must then only be operated in areas where the units can be supplied with an adequate amount of air for combustion
- Without exhaust gas system, the units may only be operated in well ventilated spaces. Personnel must not remain in the installation area. **Appropriate prohibition signs must be displayed at the entrances!**
- Only set the units down on a steady, level and non-combustible base
- The units must not be installed or operated in potentially flammable or explosive environments
- The units must not be installed or operated in atmospheres containing oil, sulphur or salt
- A safety zone of 1.5 m must be maintained around the units, incl. to non-combustible items
- The protective grille of the intake must always be kept free of dirt and loose objects
- Never insert foreign objects into the unit
- The units may not be exposed to direct jets of water. such as a **high-pressure cleaner etc.**
- All electrical cables for the units must be protected against damage (e.g. by animals etc.)
- Safety devices must not be bypassed or disabled
- According to its design, permanently fixed unit installation is not intended for this unit type

Environmental protection and recycling

Disposing of packaging

When disposing of packaging material, please consider our environment.
Our units are carefully packed and delivered in stable transport packaging and, if applicable, on a wooden pallet.
The packaging materials are environmentally friendly and can be recycled.
By recycling packaging materials, you make a valuable contribution to the reduction of waste and conservation of raw materials.
Therefore, only dispose of packaging material at appropriate collection points.

Disposal of the old unit

The manufacturing process for the units is subject to continuous quality control.

Only high-grade materials are processed, the majority of which are recyclable.

You also contribute to environmental protection by ensuring that your old equipment is only disposed of in an environment friendly manner.

Therefore, only bring the old unit to an authorised recycling business or to an appropriate collection point.

Unit description

The units are portable, directly fired fan-assisted heaters (WLE) with heat exchanger and exhaust gas connections exclusively for commercial applications.

The units can be directly fired with EL heating oil or diesel fuel and may be operated with or without an exhaust gas duct.

The units are equipped with fuel tanks mounted beneath the unit, automatic tank heating, 4-part filter system, low-maintenance axial fans, high-pressure atomisation burner with optical flame monitoring, a room thermostat socket and power cable with protective contact plug.

The units conform to the fundamental health and safety requirements of the appropriate EU stipulations. The units are reliable and easy to operate.

The units may be used among other things for the following:

- Drying newly completed buildings
- Spot heating of outdoor workplaces
- Spot heating workplaces in open, non-flammable manufacturing facilities and halls
- Temporarily heating enclosed and open spaces
- De-icing machines, vehicles and non-combustible warehoused goods
- Maintaining the temperature of frost-sensitive parts

Operating sequence

The supply air fan switches on once the units are switched on or if heat is required (fully automatic unit operation with room thermostat).
The solenoid valve opens the fuel supply to the oil nozzle following burner pre-ventilation.

The fuel atomised under high pressure is enriched with a quantity of oxygen appropriate to the heating capacity and ignited by an electrical spark.
As soon as a flawless flame has been generated, the automatic burner begins optical flame monitoring.
Warm air is blown out after a short period of time.

The automatic burner executes all unit functions fully automatically and ensures reliable monitoring.

In the event of malfunctions or an unstable or extinguished flame, the automatic burner switches the units off.
The reset lamp lights up.
The units can only be restarted after manually resetting the automatic burner.

After switching off the units via the operating switch or the room thermostat, the supply air fan runs to cool the combustion chamber for a certain time and then switches off automatically.

Depending on the heat requirement, the operating sequence described is repeated fully automatically when in thermostat mode.

Safety temperature limiter (STB)

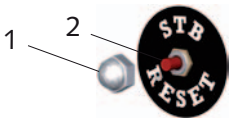
The heating function is permanently interrupted by the safety temperature limiter (STB) in the event of the units overheating or malfunctioning.
In the event that the STB is triggered, a fault shutdown of the automatic burner occurs.
A manual reset of the STB can only be implemented after the units have cooled down.

⚠ CAUTION

If the safety temperature limiter has been triggered, the cause of the malfunction must be identified and rectified before a reset is performed.

The STB is reset by actuating the reset key [2].

1. Unscrew protective cap [1].



2. Carefully press in the reset key [2] with a suitable tool.
3. Screw the protective cap [1] back on again.
4. Reset the automatic burner.

NOTE

In order to prevent a renewed exceedance of the triggering temperature the operating conditions of the unit should be checked before resetting the STB.

⚠ CAUTION

Safety devices must not be bypassed or disabled.

Specifications for fan-assisted heaters

When using the units the respective applicable guidelines must always be observed.

- Combustion plant order (FeuVo) for the individual federal states
- Accident prevention regulations (UVV) "Heating, flaming and melting devices for construction and installation work" (VBG 43)
- Workplace directives ASR 5
- Workplace regulations §§ 5 and 14

Extract from the accident prevention regulations (VBG 43)

§ 37 Operating personnel

The units may only be operated by persons that have been instructed in the operation of the equipment.

§ 38 Installation

(1) The units must be installed on a stable base.

(2) The units must be installed and operated in such a way that persons are not endangered by exhaust gases and radiant heat and no fires may occur.

(3) The units must then only be installed and operated in areas where the units can be supplied with an adequate amount of air for the combustion and the exhaust gases can be routed to the outside via exhaust gas ducting.
There is enough natural air supply for the combustion if, for example, the space in m^3 is at least 10 times the nominal heating capacity in kW of all of the units operating in the space and if the natural change of air is guaranteed by windows and doors.

(4) In derogation from point 3, the units may be operated in a space without exhaust gas ducting if this is well ventilated (both incoming and outgoing air) and the proportion of health endangering substances in the breathing air does not reach a detrimental concentration.
There is good natural ventilation if, for example:
1. the room volume in m^3 is at least 30 times the nominal heating capacity of all of the units operating in the space and if the natural change of air is guaranteed by windows and doors or 2. there are non-closable openings for incoming and outgoing air in the vicinity of the ceiling and floor whose size in m^2 is at least 0.003 times the nominal heating capacity of all of the units operating in the space.

(5) The units may not be installed or operated in potentially flammable or explosive environments or areas.

§ 44 Space drying

(2) In derogation from § 38 section 3 heating units can be used for drying areas with adequate air supply for combustion without having to route the exhaust gases through exhaust gas ducting to the outside.
It is forbidden for personnel to remain in these areas for extended periods.
Appropriate prohibition signs should be put up at the entrances.

§ 53 Testing

(2) In accordance with the operating conditions, the units must, if necessary, be checked at least yearly by a specialist to ensure that they are in a condition that is safe to use.
The exhaust gas values for the burners must also be checked.

§ 54 Monitoring

(1) The personnel tasked with operating the units must check the units for visible defects on the operating and safety devices as well as the presence of the protective devices at the start of work.

(2) If defects are discovered these must be reported to the supervisor.

(3) In the case of defects that endanger the operational safety of the unit, it must be taken out of service immediately.

§ 55 Infringements

Infringements in the sense of § 710 section 1 of the Imperial Insurance Code (RVO) pertain to an intentional or negligent breach of the provisions of VBG 43.

Installation instructions

The safety regulations of the accident prevention and insurance associations, the respective regional building regulations and the combustion appliances regulations apply to operation of the unit.

NOTE

Overpressure and underpressure in the installation area should be avoided as this will inevitably lead to combustion-related faults.

- Make sure that there is an adequate fresh air supply appropriate to the respective forced-air burner capacity (see name plate)

Outdoor installation

- Operation of the units must not present a hazard or unreasonable discomfort
- The unit operator must ensure that it is impossible for unauthorised persons to manipulate either the unit or the power supply
- To prevent damage due to inclement weather, units installed outdoors must be adequately protected

NOTE

The burner setting must be checked after every change of location and adapted to the new environmental conditions and atmospheric conditions if necessary.

Installation in enclosed, well ventilated areas without exhaust gas connection

- The operation of the units is permissible if the minimum air quantity cited in § 38 section 4 for combustion is supplied
- Reliable extraction of the combustion gases must be guaranteed in all cases in order to exclude impermissible contamination of the room air with hazardous substances **Fresh air is fed from below. Exhaust gases are routed upwards**

Room heating

- The units may only be operated for room heating with a room thermostat (accessory)
- The fresh air supply required for trouble-free combustion must be ensured. It is practical to have the fresh air supply provided by windows and doors or through appropriately dimensioned openings in the outside wall

CAUTION

The units must only be installed in well ventilated spaces and not in living areas or similar recreational areas.

NOTE

For optimum operation the units should not be operated above an ambient temperature of 25 °C.

Safety distances

- In order to guarantee safe operation and maintenance of the units, a 1.5 m safety distance must be maintained around the unit
- Flooring and ceilings must be fire retardant
- Intake and outlet diameters must not be narrowed or blocked with foreign objects

Electrical wiring

- The units are operated with 230 V/50 Hz alternating current

- The electrical connection is made using a built-in mains cable with earthed safety plug

NOTE

The electrical connection for the units must be made at a separate feed point with a residual current device in accordance with VDE 0100, Section 55.

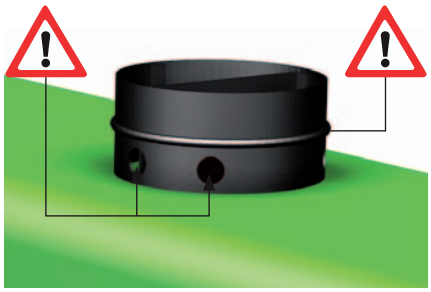
- Extensions to the cable may only be carried out by authorised electricians, subject to the length of the cable, connected load of the unit and taking into consideration how the unit is used at its location

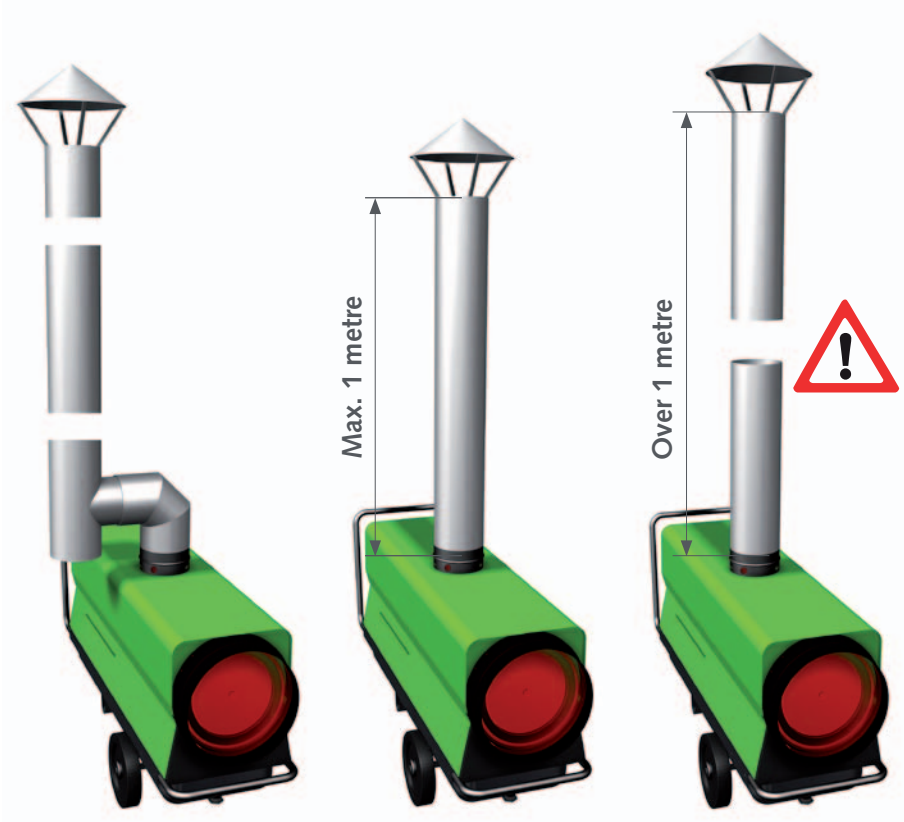
REMKO ATK series

Exhaust gas ducting

It is also possible to operate the units outdoors or in open spaces without exhaust ducting.
However, we recommend fitting a 1m exhaust gas duct with a rain hood on top (example 2) in order to prevent the ingress of rainwater and dirt.
If the units are used for temporary room heating then the combustion gases must be routed away, to the outside if necessary.

- The exhaust gas ducting must be designed so that the thermal lift of the exhaust gases is guaranteed at all times
- The exhaust gas ducting must be so designed so that no counter-pressure can be generated
- Fault-free operation is guaranteed if the exhaust gas ducting is fitted in a rising arrangement and with a vertical end pipe
- The exhaust gas ducting should end at least above the height of the eaves but ideally above the height of the ridge, in order to prevent any counter-pressure being caused by weather conditions (e.g. wind)
- The minimum distance of 0.6 m to combustible parts must be met
- Exhaust gas ducting parts and fastening materials are available as accessories
- All parts of the exhaust gas ducting must be reliably fastened. Its diameter must not be smaller than the outlet nozzle of the unit
- The lower secondary air openings in the exhaust gas connection must not be closed or covered
- The exhaust pipe must not be pushed beyond the stop (swage)





Example 1

Operation with extended exhaust gas ducting

Condensate trap required

Example 2

Operation without extended exhaust gas ducting

Max. 1 metre

Example 3

Impermissible layout

Notes for implementing the 1st. BImSchV

Units that are not expected to be operated for longer than 3 months in the same location are not subject to any approvals or monitoring as per the 1st. BImSchV.

In order to avoid the combustion chamber being damaged due to condensation of moisture (condensate) in example 3, make sure that the exhaust gas ducting is correctly installed with a condensate trap as shown in example 1.

NOTE

There must be no counter pressure arising from incorrect installation of the exhaust gas ducting under any circumstances.

Commissioning

The units should be checked for visible defects on the operating and safety devices as well as proper installation and correct electrical connections before commissioning.

A person, who has been adequately trained in the handling of the units, must be tasked with operation and monitoring of the units.

⚠ CAUTION

In the event of defects that endanger the operational safety of the units, operation of the units must be discontinued immediately and the supervisor informed!

- Set up the units in a stable position
- Ensure there is an adequate supply of combustion air
- Check that the inlet and outlet are free
- Prevent overpressure and underpressure in the installation area
- Ensure there is adequate fuel supply
- The fuel tank may only be filled with clean heating oil or diesel fuel when the unit is switched off
  Do not use biodiesel!
- Use only clean and suitable tanks for filling

NOTE

The exhaust gas values must be checked and/or adjusted by authorised and qualified technicians according to the local conditions.

Paraffin formation with low outside temperatures.

Even at low temperatures, an adequate supply of flowing heating oil must be ensured.

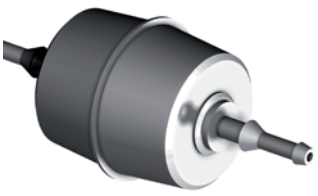
- The in-built tank heater is activated only when the power plug is connected to a functional mains socket and the ambient temperature is lower than 10°C
- It is not possible to rectify paraffin separation that has already occurred with the tank heater. If paraffin has already formed it is necessary to clean out the complete fuel system

NOTE

Paraffin formation can start at temperatures below 5°C. To avoid this appropriate preventative measures must be implemented, e.g. winter Diesel.

Fuel filter

The fuel filter must be checked for dirt or paraffin formation before the unit is started and after every filling of the tank.



The filter is directly adjacent to the tank filler necks. The fuel tank may only be filled with the tank filter inserted into the filler necks.

Connecting the units to the electrical power supply

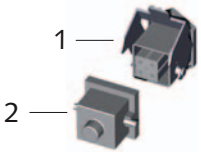
1. Move the operating switch to the "0" (Off) position.
2. Connect the power plug to a properly installed and appropriately safeguarded **230 V/50 Hz** mains socket.

NOTE

The electrical connection for the units must be made at a separate feed point with a residual current device in accordance with VDE 0100, Section 55.

Heating without room thermostat

The units are operating in permanent operating mode.



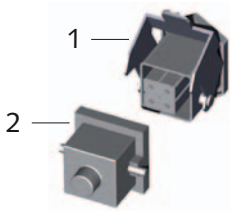
1. Move the operating switch to the "I" (ON) position.

▶ ▶ ▶

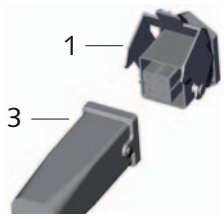
Heating with room thermostat
(Accessories)

The units operate fully automatically and according to the room temperature.

1. Pull out the strapping plug [2].



2. Connect the room thermostat [4] plug [3] with the thermostat receptacle [1] on the unit.



3. Place the room thermostat [4] at a suitable location in the room.
   The thermostat sensor must not be located directly in the warm air flow and must not be placed directly on a cold floor.

4. Set the desired room temperature on the room thermostat [4].

5. Move the operating switch to the "II" (Auto) position.

The unit starts automatically after a brief burner pre-ventilation if heat is required and then runs fully automatically.

Shutdown

1. Move the operating switch to the "0" (Off) position.

The supply air fan runs to cool the combustion chamber and switches off independently.

2. With longer periods of inactivity, disconnectthe units from the mains power supply.

⚠ CAUTION

Never interrupt the power supply prior to the completion of the follow-up cooling phase. There is no guarantee entitlement in case of damage to the units due to overheating.

NOTE

In the case of longer periods of inactivity or if the units are in storage, please ensure that the fuel tank is always filled with heating oil or diesel.

Care and maintenance

Regular care and observation of some basic requirements will ensure trouble-free operation and a long service life of the units. The complete units, including combustion chamber and burner, must be cleared of soot deposits, dust and dirt after every heating period or according to the operating conditions. The oil filters must be cleaned and/or replaced at least once annually or more frequently according to the contamination of the fuel.

⚠ CAUTION

Before undertaking any work on the units, the power plug must be removed from the mains socket. There is an acute risk of injury from automatic fan switch-on, especially when the unit enclosure is opened.

NOTE

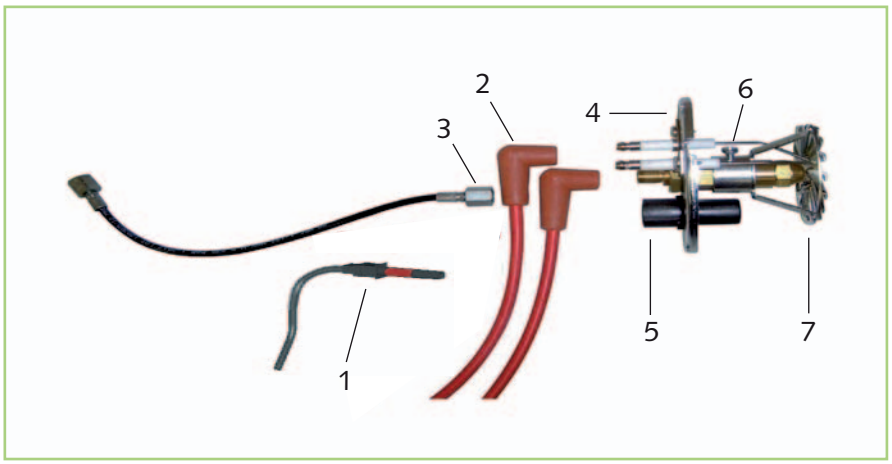
Adjustment and maintenance work may only be carried out by authorised and qualified technicians.

- Keep the units free of dust and other deposits
- Only clean the units with a dry or moistened cloth
- Never subject to direct jets of water.
  e.g. pressure washers etc.
- Never use abrasive or solvent-based cleaners

- Use only suitable cleaners, even for heavy contamination
- Use only clean EL heating oil or diesel fuel
  Beware of paraffin formation!
- The fuel tank must be emptied and then rinsed with clean fuel at least twice a year
  Do not use water!
- Keep the burner head clean
- Wear parts such as the oil nozzle and seals must be checked regularly and replaced if necessary
  The oil nozzle must be replaced before the start of each heating season!
- Depending on its condition, the fuel filter must be replaced before each heating season
  Note the direction of flow!
- Clean the tank filter in the filler neck of the fuel tank regularly
- Only a specialist may clean the plastic filter in the fuel pump and replace the nozzle
- Check that the safety devices are operating correctly at regular intervals
- In the event of diminishing heat capacity, smoke formation and/or poor ignition, perform a unit and burner inspection
- Observe the regular maintenance and care intervals

Maintaining the burner

Clean the burner components as described:

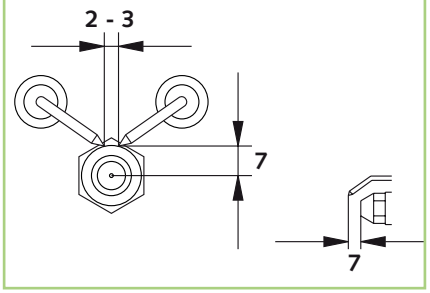


1. Remove the photocell [1] from its mounting [5].
2. Remove the ignition cable [2] from the ignition electrodes [6].
3. Remove the union nut [3] from the nozzle mounting.
   Beware of dripping fuel!
4. Remove the locking screw from the mounting plate [4] and, by turning the plate [4] slightly in an anti-clockwise direction, remove the burner from the burner pipe.
5. Clean the ignition electrodes [6], baffle plate [7] and the opening [5] for the light incidence.
6. Position the ignition electrodes [6] in accordance with reference values.
7. After the maintenance work is complete, refit all parts carefully in reverse order.

NOTE

When positioning the baffle plate 7, always ensure that the aperture 5 is not obscured by a strut on the plate. Position the fastening screw of the baffle plate 7 above/ in the middle of the ignition electrodes.

Setting the ignition electrodes



All sizes are approximate values and are in mm.

The optimum setting must be adapted to the unit-specific conditions.

NOTE

Use only suitable tools to remove the oil nozzle and use the nozzle mounting for resistance!

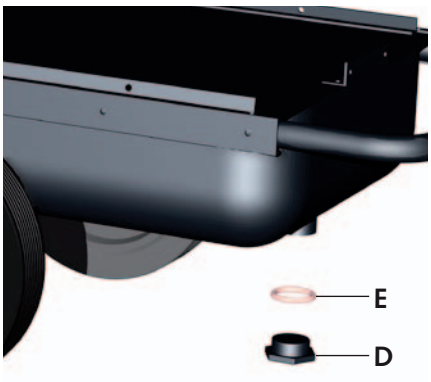
Setting the air slide

The air slide is factory set. The combustion air may only be adjusted to the unit-specific or local conditions by an authorised and qualified technician.

After loosening the clamping screw [K], the air slide is fine adjusted by means of exhaust gas measurement.

CO_2 - value: approx. 11 - 12 %;
Soot level: 0 - 1 in acc. with Bacharach

Cleaning the fuel tank



The fuel tank must be cleaned:

- After each heating period or earlier according to the operating conditions
- Before and after extended periods out of operation
- In the event of frequent contamination of the fuel filter
- In the event of condensate formation in the fuel

Proceed as follows to clean the fuel tank:

1. Unscrew the drain screw [D] and drain the remaining (old) fuel into a suitable container.
2. Rinse the fuel tank thoroughly with clean heating oil or other suitable agent (several times if necessary).
   Do not use water for rinsing!
3. Do not use solvent-based cleaners.
   This can damage the internal coating of the fuel tank!
4. Avoid the use of pressure washers.
5. After cleaning, replace the drain screw [D].
   The sealing ring [E] must be replaced on each occasion!
6. The fuel tank must be filled with clean heating oil or diesel fuel.
   Do not use biodiesel!
7. Start the unit, run for approx. 5 min and check everywhere for leaks.

Exhaust gas analysis

Due to the construction related design of the exhaust gas connection (connection nozzles with secondary air openings), it is not possible to carry out an exhaust gas analysis in the conventional way (measurement in the exhaust pipe behind the exhaust gas connection).

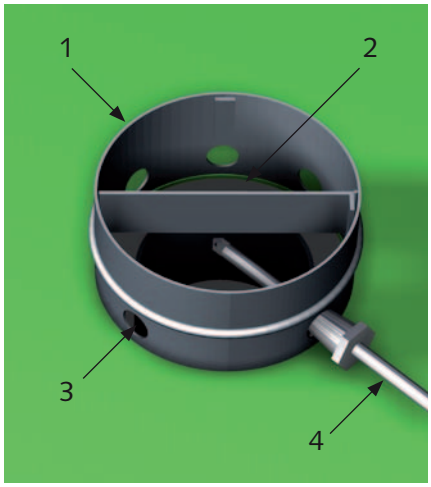
To perform the exhaust gas analysis, the exhaust gas measuring instrument probe must be placed in the centre of the heat exchanger pipe port.

The measuring probe is placed in a corresponding measurement aperture in the combustion chamber pipe connections through a secondary air opening on the side in the exhaust gas connection (see figure below).

Notes for implementing the 1st. BImSchV

Units that are not expected to be operated for longer than 3 months in the same location are not subject to any approvals or monitoring as per the 1st. BImSchV.

Fig. Exhaust gas connection



Legend:
1 = Exhaust gas connection 150 ø
2 = Pipe connections/heat exchanger
3 = Secondary air opening
4 = Measuring probe

Fuel pump

The pump works in the 1-pipe system as standard.
The required fuel is sucked in by suction pipe S.

In the event of initial commissioning and after emptying the fuel tank, the fuel system is bled using the nozzle. In this case, the unit is switched on. After a possible fault shutdown, the unit is restarted after unlocking (observe the waiting time) the automatic burner.

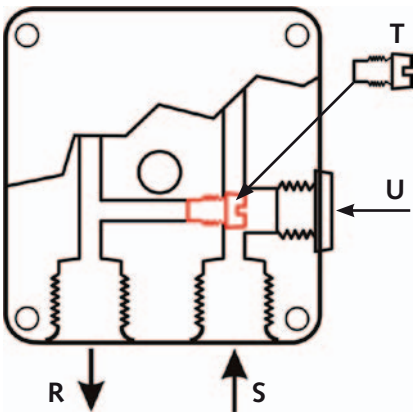
If a fault shutdown occurs after the 3rd unit start, the fuel filter must first be checked for contamination and leak tightness.

NOTE

Please ensure that an adequate fill level is maintained in the fuel tank. Approx. 5 - 10 litres of fuel is required.

Converting to a 2-way pipe system

In this case, an additional stopper [T],EDP No. 1107374 must be installed.
1. Remove stopper [U]
2. Screw in stopper [T]
3. Reinstall stopper [U]
4. Establish return flow [R]



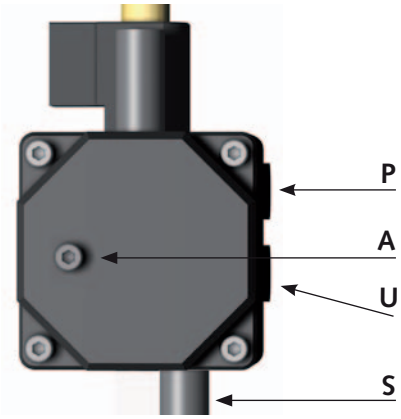
Adjustment of the pump pressure

The pump pressure may only be set and/or modified when a suitable oil pressure gauge is connected to the connection [**P**]. The pump pressure is modified by turning the pressure adjustment screw [**A**]:

Clockwise:
Increase pressure

Anti-clockwise:
Decrease pressure

The pump pressure is determined according to the heating capacity of the unit and the size of the nozzle.



CAUTION

Never let the pump run for extended periods without any fuel. Never leave the units for extended periods with a pump that has run dry.

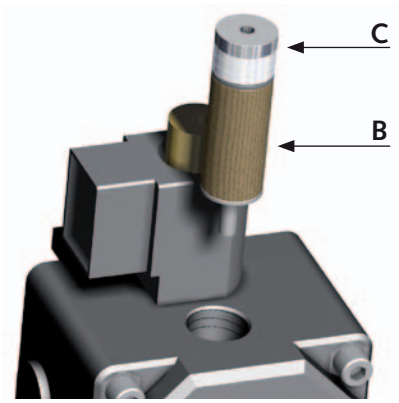
NOTE

Impeccable fuel quality is absolutely necessary for lubricating the pump gearbox. Never use suction to remove residual water or fine dust that has a tendency to set (e.g. cement).

Cleaning the cartridge filter

Clean the cartridge filter [**B**] of the fuel pump at regular intervals and/or replace as necessary.

1. Turn the stopper [**C**] upwards out of the pump using a hexagon wrench.
2. Carefully remove the cartridge filter [B] from the stopper.
3. Clean and/or replace the cartridge filter [B].
4. Push the filter back onto the stopper and screw both back into the pump.



NOTE

Adjustment and maintenance work may only be carried out by authorised and qualified technicians.

CAUTION

An electrical safety check must be carried out in accordance with VDE 0701 after any work on the units.

REMKO ATK series

Customer service and guarantee

As a prerequisite for any guarantee claims to be considered, it is essential that the ordering party or their representative complete and return the **"Certificate of guarantee"** to REMKO GmbH & Co. KG at the time when the units are purchased and commissioned.

The units have been tested several times in the factory to verify their correct function.
However, if malfunctions should arise that cannot be remedied by the operator with the assistance of the troubleshooting section, please contact your specialist dealer or contractual partner.

Intended use

The units are designed exclusively for heating purposes in industrial or commercial use (not for heating private living spaces) on the basis of their structural design and equipment.

The units must only be operated by appropriately instructed personnel.

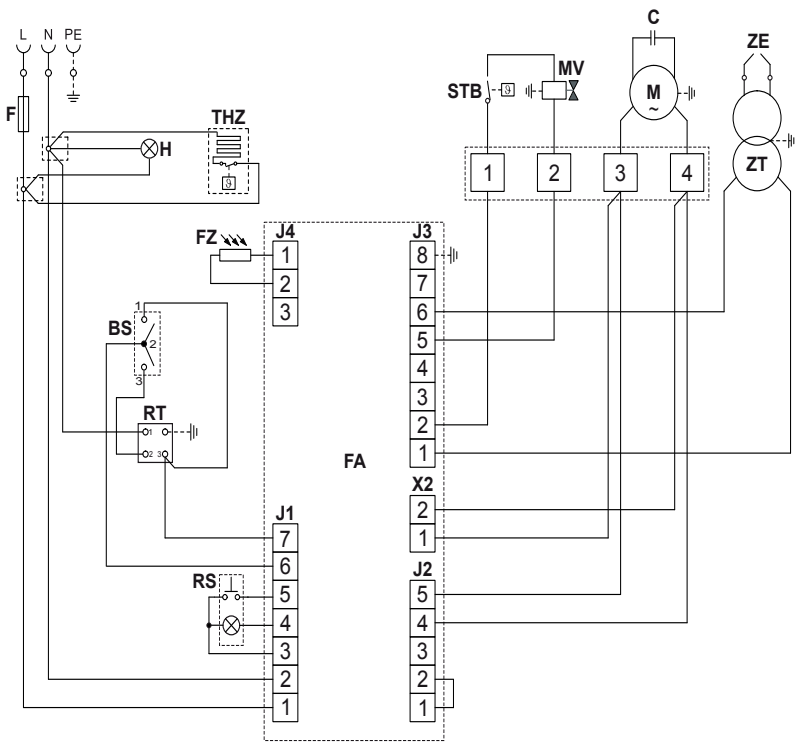
With non-observance of the manufacturer's specifications, the respective local legal requirements or after arbitrary alterations to the units, the manufacturer shall not be liable for resulting damages.

NOTE

Operation other than the types listed in this operating manual is prohibited.
Failing to observe this renders any manufacturer liability or guarantee claims void.

CAUTION

Electrical wiring diagram



Legend:

BS	=	Operating switch
C	=	Start-up capacitor
F	=	Fine wire fuse
FA	=	Automatic firing device
FZ	=	Photocell
H	=	Phase indicator light
M	=	Fan motor
MV	=	Solenoid valve
NK	=	Aftercooler thermostat
RS	=	Reset
RT	=	Thermostat socket
STB	=	Safety temperature limiter
THZ	=	Tank heater with thermostat
ZE	=	Ignition electrode
ZT	=	Ignition transformer

Troubleshooting

Malfunctions	Cause:
The supply air fan does not start.	2 – 3 – 4 – 6 – 7 – 8 – 25
The supply air fan runs but the burner does not ignite. The unit malfunctions without generating a flame.	1 – 5 – 6 – 9 – 10 – 11 – 12 – 13 – 14 – 15 – 16 – 17 20 – 21 – 23 – 24 – 26
The unit switches off during operation (The fault lamp in the automatic burner lights up).	4 – 5 – 6 – 7 – 8 – 9 – 10 – 11 – 13 – 15 – 16 – 17 19 – 20 – 21 – 22 – 23 – 24 – 26
Smoke formation during operation.	7 – 10 – 11 – 13 – 15 – 17 – 19 – 21 – 22 – 24
The unit does not switch off in operating switch position "0".	18 – 25

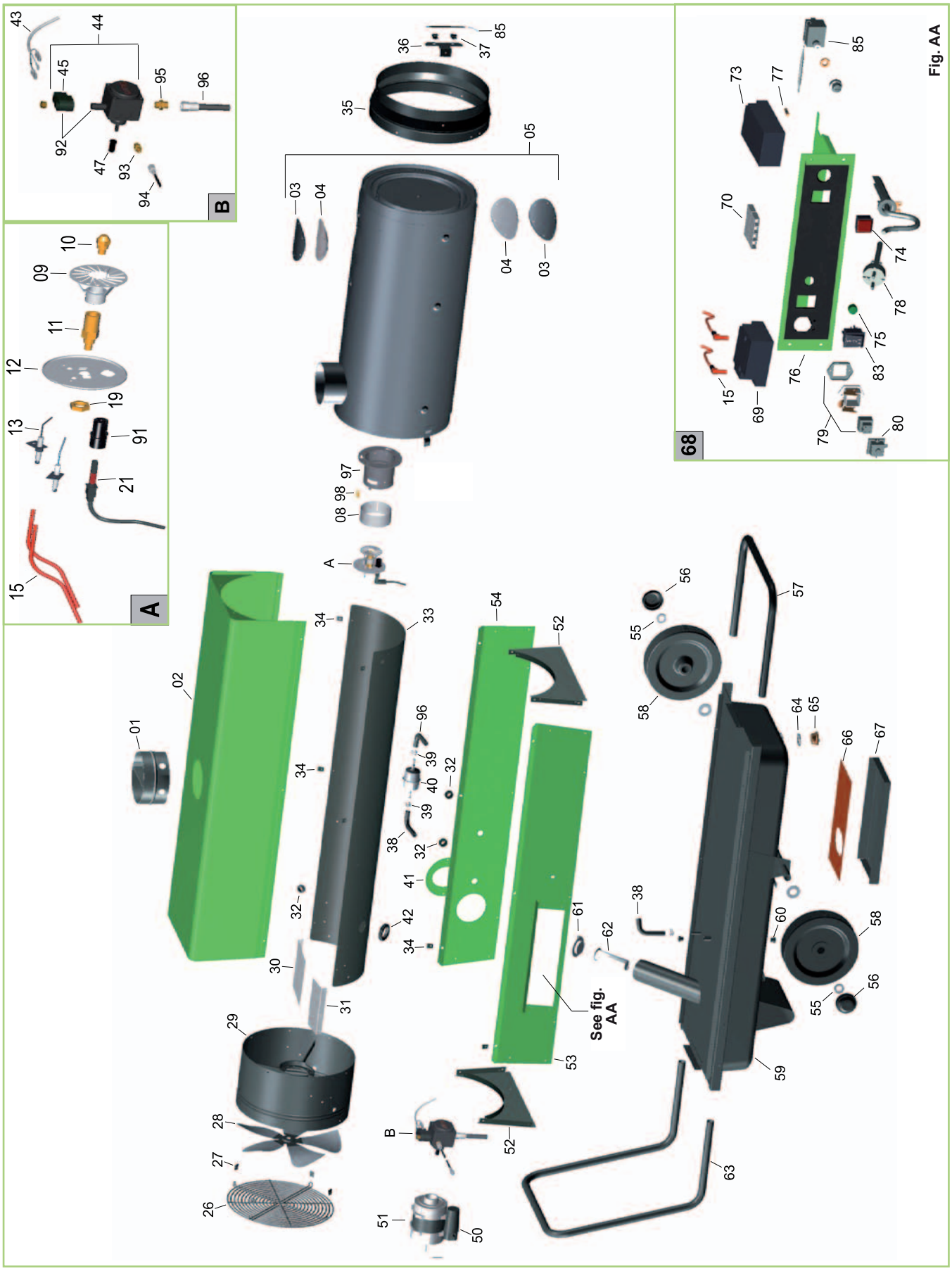
⚠ CAUTION

Repair work on the electrical installation and on the burner must be performed exclusively by authorised specialists for safety reasons.

Cause:	Remedial measures:
1. Air in fuel system during start-up.	Press the reset key. Repeat if necessary (max. 3 times).
2. The unit is not connected to the electricity supply.	Check the power plug, mains socket and mains voltage.
3. No plug in the thermostat socket.	Connect the thermostat/strapping plug to the thermostat socket.
4. The room thermostat is set too low.	Set the room thermostat higher than room temperature.
5. The fault lamp on the reset key lights up.	Unlock the automatic burner by pressing the reset key.
6. Malfunction in the automatic burner.	Replace the automatic burner.
7. The motor is overloaded. (The fan runs irregularly or is blocked)	Allow the motor to cool. Check the smooth running of the fuel pump. Check the electrical and mechanical functioning of the motor.
8. The fuel pump is blocked.	Check the fuel pump and replace if necessary.
9. The fuel tank is empty.	Fill the fuel tank with clean EL heating oil or diesel.
10. The fuel filter is contaminated.	Replace the fuel filter.
11. The nozzle is blocked or of the wrong size.	Replace the nozzle (ensure correct type and size!).
12. The electrodes are incorrectly set, the insulation has cracked.	Adjust and replace if necessary.
13. The air slide of the burner head has moved or is contaminated.	Adjust using CO_2 indicator and soot pump. (CO_2: 11 - 12%, soot level in acc. with Bacharach: 0 - 1).
14. The solenoid valve does not open.	Check the solenoid valve and replace if necessary. The STB has triggered or is faulty.
15. The pump pressure is improperly set.	Replace the pump coupling.
16. The pump coupling is faulty.	Replace the pump coupling.
17. Leak in the intake line or fuel filter.	Check and replace faulty parts if necessary.
18. The solenoid valve does not close.	Disconnect the fuel line at the main filter, the flame extinguishes.
19. The protection grid on the supply air fan is contaminated.	Clean the protection grid.
20. Shutdown by safety temperature limiter (STB).	Check the intake protection grid and clean if necessary. Reset the STB and automatic burner.
21. Air bubbles in fuel system.	Start the unit to discharge the air through the nozzle. Repeat this procedure up to 3 times if necessary.
22. Insufficient ventilation.	Open door or window.
23. The photocell is contaminated or faulty.	Clean the photocell and replace if necessary.
24. Improper exhaust gas routing.	See chapter "Exhaust gas routing".
25. Operating switch malfunction.	Check the operating switch and replace if necessary.
26. Paraffin precipitation in the heating oil.	Clean the entire burner system. See also chapter "Commissioning".

REMKO ATK series

Exploded view of the unit



We reserve the right to modify the dimensions and design as part of the ongoing technical development process.

Spare parts list

No.	Designation	EDP no.
01	Exhaust gas connection	1103702
02	Inspection cover	1103740
03	Cleaning cover	1103703
04	Seal	1103705
05	Combustion chamber compl.	1103728
08	Air slide	1103729
09	Baffle plate	1103730
10	Oil nozzle	1103744
11	Nozzle mounting	1107132
12	Mounting plate	1103731
13	Ignition electrode	1107139
15	Ignition cable	1107137
19	Nut M14	1107134
21	Photocell	1103840
26	Protective intake grille	1103753
27	Fastening bracket	1103733
28	Fan blade	1103754
29	Fan housing	1103734
30	Air baffle, right	1103756
31	Air baffle, left	1103757
32	Grommet	1102131
33	Housing lower section	1103758
34	Fastening bracket	1102906
35	Outlet nozzle	1103759
36	STB probe bracket	1103760
37	Fastening bracket	1103761
38	L240 oil hose	1103835
39	Hose clip	1103762
40	Fuel filter (one-way)	1102146
41	Panel for tank nozzles	1103763
42	Grommet	1103764
43	Connection cable for MV	1102825
44	Fuel pump compl.	1103765
45	Solenoid	1103766
47	Pump coupling	1107129
50	Condenser	1103768
51	Fan motor compl.	1103737
52	Front part, front/rear	1103770

No.	Designation	EDP no.
53	Side section, right	1103771
54	Side section, left	1103772
55	Locking ring	1101622
56	Hubcap	1101623
57	Protective bracket, front	1102932
58	Wheel	1102155
59	Fuel tank	1103727
60	Rubber grommet	1103775
61	Container seal	1103841
62	Tank filter	1103776
63	Transportation bracket	1102931
64	Sealing ring	1103777
65	Drain screw	1103778
66	Tank heating	1102256
67	Cover for tank heating	1103779
68	Electrical assembly compl.	1103842
69	Ignition transformer	1107143
70	Terminal strip cpl.	1103843
73	Automatic burner	1103844
74	Reset key	1103845
75	Phase indicator light	1103848
76	Panel with mounting plate	1103846
77	Fuse	1103785
78	Mains cable with plug	1101320
79	Thermostat socket	1101018
80	Strapping plug	1101019
83	Operating switch	1103847
85	Safety temperature limiter	1103711
91	Photocell mounting	1111676
92	Solenoid valve, cpl. (Danfoss)	1103863
93	Connection nipple 1/8"	1111672
94	Oil pressure line (flex)	1111673
95	Connection nipple 1/4"	1111674
96	L300 oil hose	1103836
97	Burner head	1103793
98	Earth conductor connector	1103837
Not shown: Thermostat plug		1101020
Not shown: Cartridge filter for oil pump		1102088

When ordering spare parts, please state the EDP no., unit number and type (see name plate)!

REMKO ATK series

Maintenance log

Unit type: ..... **Unit number: .....**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Unit cleaned - outside -																				
Unit cleaned - inside -																				
Fan blade cleaned																				
Combustion chamber cleaned																				
Burner head cleaned																				
Ignition electrodes adjusted																				
Oil nozzle replaced																				
Burner set and calibrated																				
Safety equipment checked																				
Safety devices checked																				
Unit checked for damage																				
All fastening screws checked																				
Electrical safety check																				
Test run																				

Comments: .....

.....

.....

1. Date: .... Signature	2. Date: .... Signature	3. Date: .... Signature	4. Date: .... Signature	5. Date: .... Signature
6. Date: .... Signature	7. Date: .... Signature	8. Date: .... Signature	9. Date: .... Signature	10. Date: .... Signature
11. Date: .... Signature	12. Date: .... Signature	13. Date: .... Signature	14. Date: .... Signature	15. Date: .... Signature
16. Date: .... Signature	17. Date: .... Signature	18. Date: .... Signature	19. Date: .... Signature	20. Date: .... Signature

Unit to be maintained only by authorised specialists in accordance with the statutory regulations.

Technical data

Series			ATK 25
Nominal heat load max.		kW	25.00
Nominal heat capacity	P_{nom}	kW	22.50
Minimum heat capacity	P_{min}	kW	22.50
Room heating emissions		mg/kWh	N/A
Air flow volume		m^3/h	1080
Temperature increase ΔT		K	70
Fuel			Heating oil EL acc. to DIN 51603 or diesel fuel
Max. fuel consumption		l/h	2.51
Nozzle (Danfoss) 80° H		USG	0.50
Pump pressure, approx.		bar	11 to 12
Tank capacity		ltr.	40
Energy efficiency ratio			D
Auxiliary power consumption			
at nominal heating capacity	el_{max}	kW	0.430
at minimum heating capacity	el_{min}	kW	0.430
in Stand-By mode	el_{SB}	kW	0.000
Pilot flame power requirement	P_{pilot}	kW	N.A.
thermal efficiency at nominal heating capacity	$\eta_{th,nom}$	%	90.0
thermal efficiency at minimum heating capacity	$\eta_{th,min}$	%	N/A
Type of room temperature control			Room temperature control with external thermostat
Power supply		V/Ph/Hz	230/1~/50
Elec. Max. rated current consumption		A	2.3
Elec. Power consumption max.[1)]		kW	0.43
Electrical protection (provided by the customer)		A	10
Sound pressure level L_{pA} 1m [2)]		dB(A)	74
Exhaust gas connection ø		mm	150
Dimensions: Length		mm	1265
Width		mm	470
Height		mm	685
Weight		kg	68

[1)] Unit incl. tank heater
[2)] Noise measurement in acc. with DIN 43635 - 01 KL 3

We reserve the right to modify the dimensions and design as part of the ongoing technical development process.

REMKO QUALITY WITH SYSTEMS

Air-Conditioning | Heating | New Energies

REMKO GmbH & Co. KG
Klima- und Wärmetechnik

Im Seelenkamp 12
32791 Lage

Telephone +49 (0) 5232 606-0
Telefax +49 (0) 5232 606-260

E-mail info@remko.de
URL www.remko.de

Hotline within Germany
+49 (0) 5232 606-0

Hotline International
+49 (0) 5232 606-130