

# Operating and installation instructions

**REMKO ELT series**  
**Electric heater**

ELT 18-S



This product is suitable only for well-insulated rooms or for occasional use.



## Contents

|                                               |       |
|-----------------------------------------------|-------|
| <i>Safety notes</i>                           | 4     |
| <i>Unit description</i>                       | 4     |
| <i>Commissioning</i>                          | 4     |
| <i>Shutdown</i>                               | 5     |
| <i>Care and maintenance</i>                   | 5     |
| <i>Operation with hot air hoses</i>           | 5     |
| <i>Troubleshooting</i>                        | 6     |
| <i>Intended use</i>                           | 7     |
| <i>Customer service and guarantee</i>         | 7     |
| <i>Environmental protection and recycling</i> | 7     |
| <i>Electrical wiring diagram</i>              | 8     |
| <i>Maintenance protocol</i>                   | 9     |
| <i>Exploded view of the unit</i>              | 10    |
| <i>Spare parts list</i>                       | 10-11 |
| <i>Technical data</i>                         | 11    |



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

These instructions are 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!*

# REMKO Serie ELT

## Safety notes

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:

- Only qualified personnel may set up and install the units.
- Repairs and maintenance of the equipment and components may only be used by qualified personnel follow.
- In the event of defects that endanger the operational safety of the unit, operation must be discontinued immediately
- Observe the respective local regulations and the relevant electrical safety measures when using the units
- Maintain safety distances to combustible materials
- An unobstructed air inlet and air outlet must be guaranteed at all times
- Never insert foreign objects into the units
- The units must not be covered during operation
- The units must not be operated in the vicinity of bathtubs, showers, swimming pools etc.
- The units must not be operated directly below a wall socket
- The units may not be exposed to direct jets of water
- The units must not be installed or operated in potentially flammable or explosive environments
- All electrical cables for the units must be protected against damage, including damage caused by animals

## Unit description

The units are portable electric heating units for industrial applications. The units are operated exclusively with electric power and have been designed specially for use with hot air hoses.

The units are equipped with specially enclosed electric heating resistors, low noise and low-maintenance axial fans, safety and aftercooler thermostats, 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 dependable and offer ease of operation.

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

- Drying newly completed buildings
- Spot heating outdoor workspaces or fire-proof manufacturing facilities and halls
- Continuous or temporary room heating
- De-icing machines, vehicles and non-combustible warehoused goods while adhering to the relevant safety distances



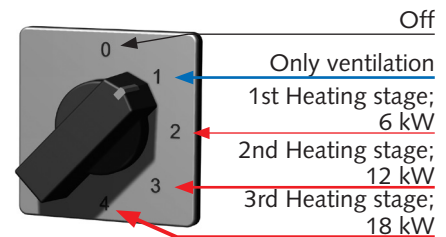
#### NOTE

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

## Commissioning

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

The units are equipped with a 5-stage operating switch.



1. Move the operating switch to the "0" position.

2. Connect the unit's power plug to a properly installed mains socket.



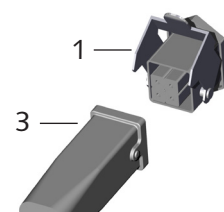
#### NOTE

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 with room thermostat (accessory)

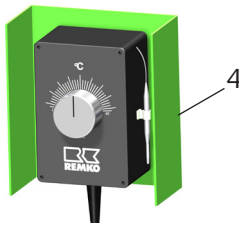
The units operate fully automatically and according to the room temperature.

1. Pull out the strapping plug 2.
2. Connect the plug 3 of the room thermostat 4 with the thermostat socket 1 on the unit.



## Shutdown

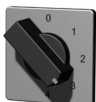
- Place the room thermostat 4 at a suitable location in the room. The thermostat sensor must not be located directly in the warm air flow and must not be placed directly on a cold floor.
- Set the desired temperature on the room thermostat.



- Move the operating switch to the desired power position.



1st level



2nd level



3rd level

### Fan

Only the supply air fan operates in this setting. Thermostatic regulation and heating operation are not possible in this operating mode.

Move the operating switch to position 1.



#### 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.*

- Move the operating switch to the "0" position.



- If the units are inactive for long periods, disconnect them from the mains power supply.

The supply air fan runs on to cool the units and only switches off after the cooling down phase is complete.

The fan can switch on and run several times before the final shutdown.

## Care and maintenance

Regular care and observation of some basic requirements will ensure trouble-free operation and a long service life of the units.

#### CAUTION

*Before undertaking any work on the units, the power plug must be removed from the mains socket.*

- 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
- Keep the units free of dust and other debris
- 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

- Check the inlet and outlet grille for contamination on a regular basis

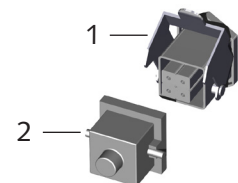
- Check the safety equipment and protective devices on a regular basis

- Be careful not to damage the probe or capillary tube of the temperature limiter when removing or mounting the protective exhaust grid

## Checking

The strapping plug supplied with the device is used for maintenance or testing according to VDE 0701. Follow the steps below to check.

- Connect the supplied strapping plug [2] to the thermostat socket [1] on the unit.



- Check the device.
- Remove the strapping plug

#### CAUTION

*Extensions to the connection cable must only be conducted by authorised specialist electricians, taking into consideration the unit capacity, cable length and local use.*

#### CAUTION

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

# REMKO Serie ELT

## Operation with hot air hoses

The units are equipped with a *special* high performance axial fan. This enables operation with various types of hot air hoses, in order to specifically and effectively transport the heated air to the respective application location. Only use hot air hoses (accessories) approved by us, because these have been specially tailored to the units.

### Note for installing the hot air hoses

- The inner overlapping on the seams must point in the direction of the air flow.
- It is necessary to ensure secure fastening to the unit outlet nozzle or the hose extension.

- There should be no sharp kinks or bends in the hose lines in order to prevent hot-spots forming.
- Always ensure an unobstructed air outlet at the end of the hose.

### Possible variants: (max. length 15 m)

1. Hot air hoses  $\varnothing$  305 maximum 2 x 7.6m **with hose extension**
2. Hot air hoses  $\varnothing$  203 maximum 2 x 7.6m **with adapter**
3. Hot air hoses  $\varnothing$  305 in combination with  $\varnothing$  203 maximum 1 x 7.6m  $\varnothing$  305 plus 2 x 7.6m  $\varnothing$  203 **with adapter 2 outlets**

### REMKO accessories:

Hot air hose  $\varnothing$ 305,  
7.6m with fixing strap  
**EDP no. 1099502**

Hot air hose  $\varnothing$ 203,  
7.6m with fixing strap  
**EDP no. 1099501**

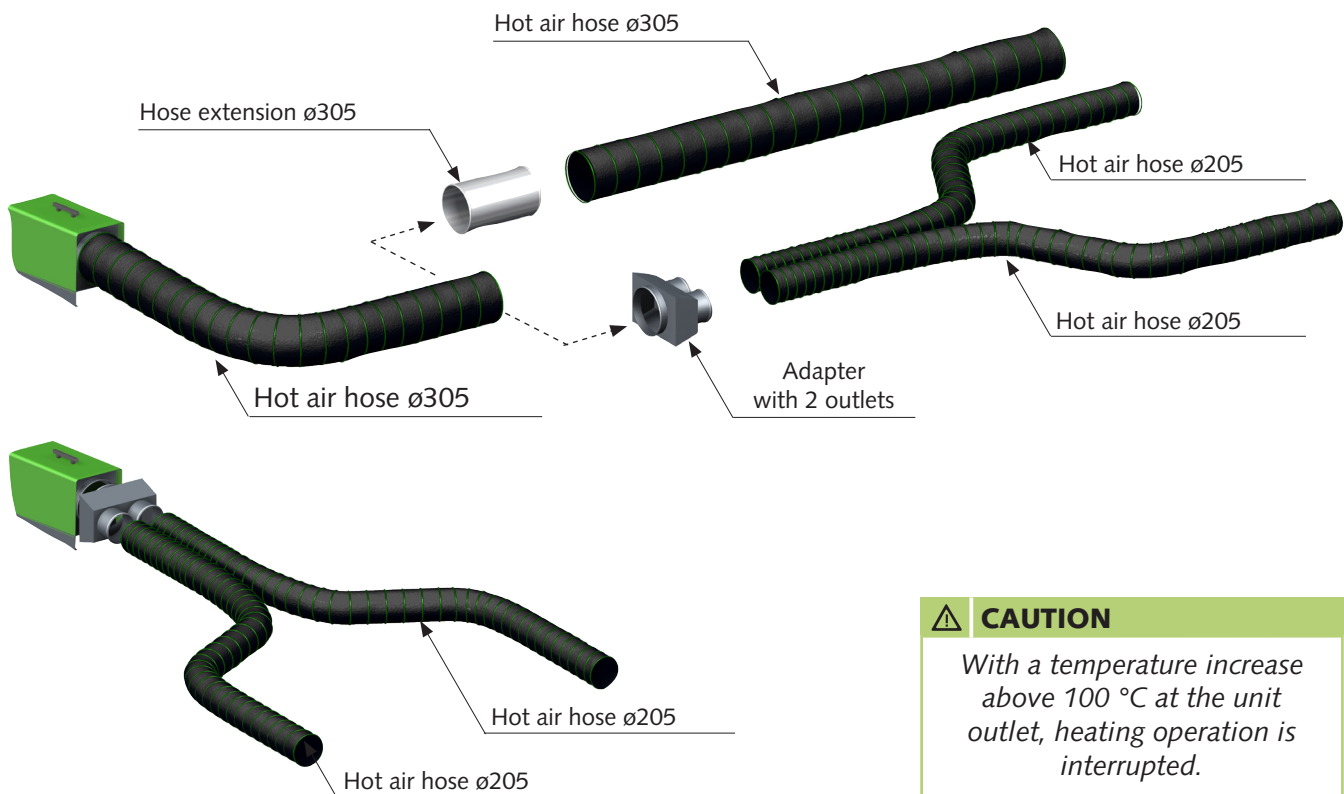
Adapter  
with 2 outlets each  $\varnothing$ 203  
**EDP no. 1099550**

Hose extension  $\varnothing$ 305  
with 2 fixing straps  
**EDP no. 1009760**

### ⚠ CAUTION

*Due to the special high performance axial fan, unit operation without a hose connection (clear blow-out) should be avoided.*

## Sample assemblies



### ⚠ CAUTION

*With a temperature increase above 100 °C at the unit outlet, heating operation is interrupted.*

## Troubleshooting

### The unit (fan) does not start.

1. Check the mains fuses on site.
2. Check the power plug.
3. Check the operating switch.
4. Check that the fan can move freely.

### The unit does not heat up.

1. Check the operating switch.
2. Check that the contactor is functioning correctly.
3. Check that the temperature limiter or capillary tube are functioning correctly and check for damage.
4. Check whether the thermostat or strapping plug are plugged in.
5. In case of unit operation with a room thermostat, set the thermostat to a value that is higher than the room temperature.

If all of the functional checks have been carried out without any findings, please contact an authorised service station.

#### CAUTION

*Before undertaking any work on the unit, the power plug must be unplugged from the mains socket. Adjustment and maintenance work may only be carried out by authorised and qualified electricians.*

## Intended use

The units are designed exclusively for heating and ventilation purposes in industrial or commercial use (not for living space heating in private use) 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. With non-observance, any manufacturer liability or guarantee claims are voided.*



#### NOTE

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



#### CAUTION

*Safety devices must not be bypassed or disabled.*



#### 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.*

## 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 were tested at the factory several times 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.



## Environmental protection and recycling

### Disposing of packaging

When disposing of packaging material, please consider our environment.

Our units are carefully packed and delivered in sturdy transport packaging made from cardboard and polystyrene.

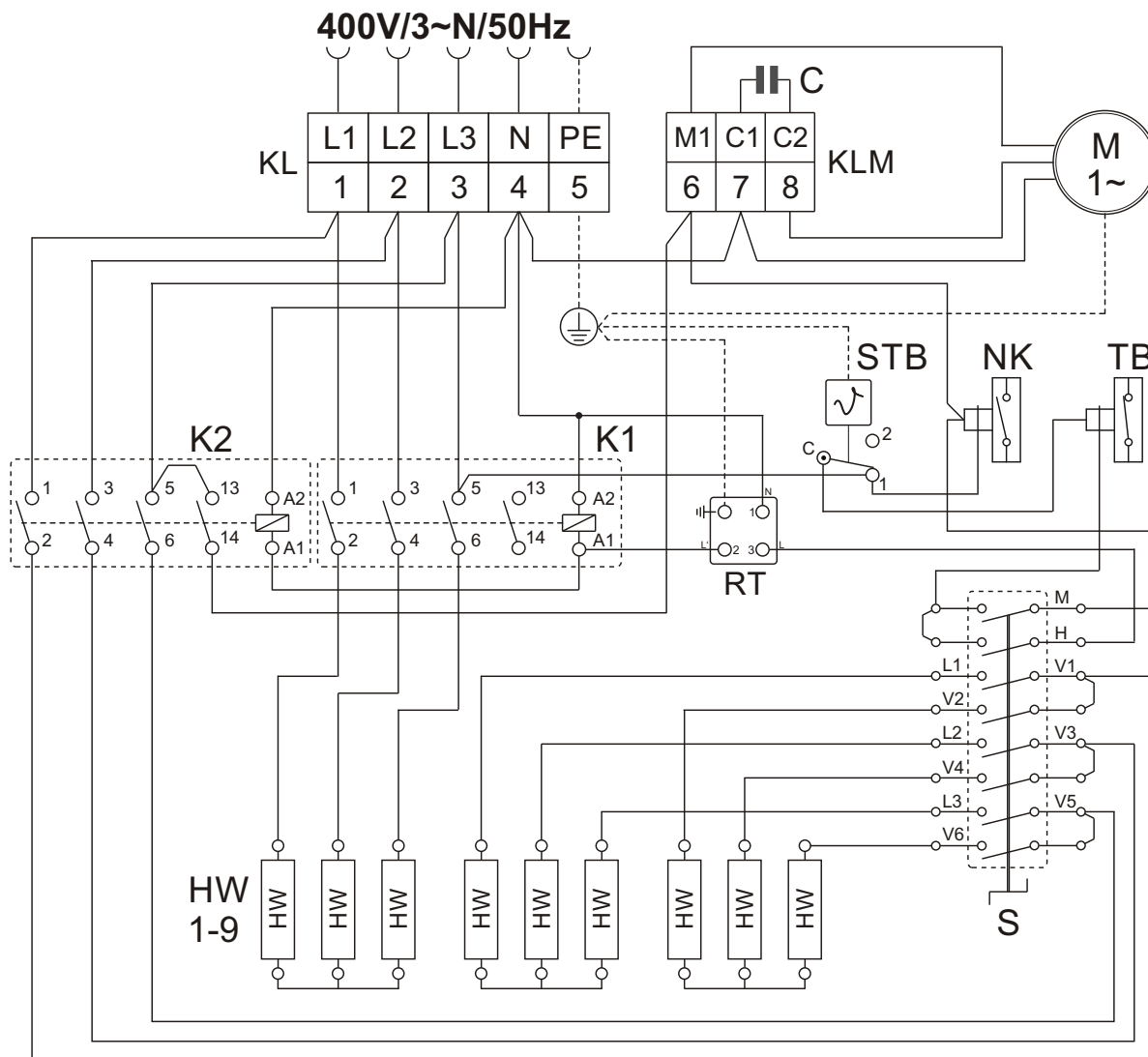
The packaging materials are environmentally-friendly and can be recycled.

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.**

# REMKO Serie ELT

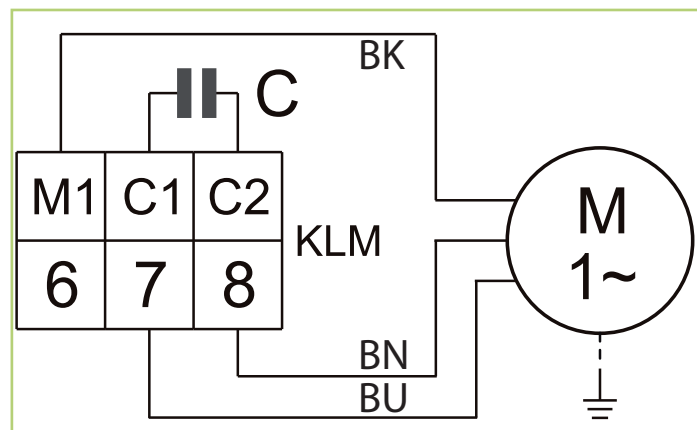
## Electrical wiring diagram



### Legend:

- C = Capacitor
- HW = Heating resistor
- KL = Connection terminal strip
- KLM = Motor terminal strip
- K1 = Contactor 1
- K2 = Contactor 2
- M = Fan motor
- NK = Aftercooler thermostat
- RT = Thermostat socket
- S = Operating switch
- STB = Temperature limiter
- TB = Temperature limiter

### Motor connection diagram:





## Maintenance protocol

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            |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Protection grid cleaned      |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Safety equipment checked     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Safety devices checked       |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Unit checked for damage      |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| All fastening screws checked |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Electrical safety check      |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Test run                     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |

Comments:.....

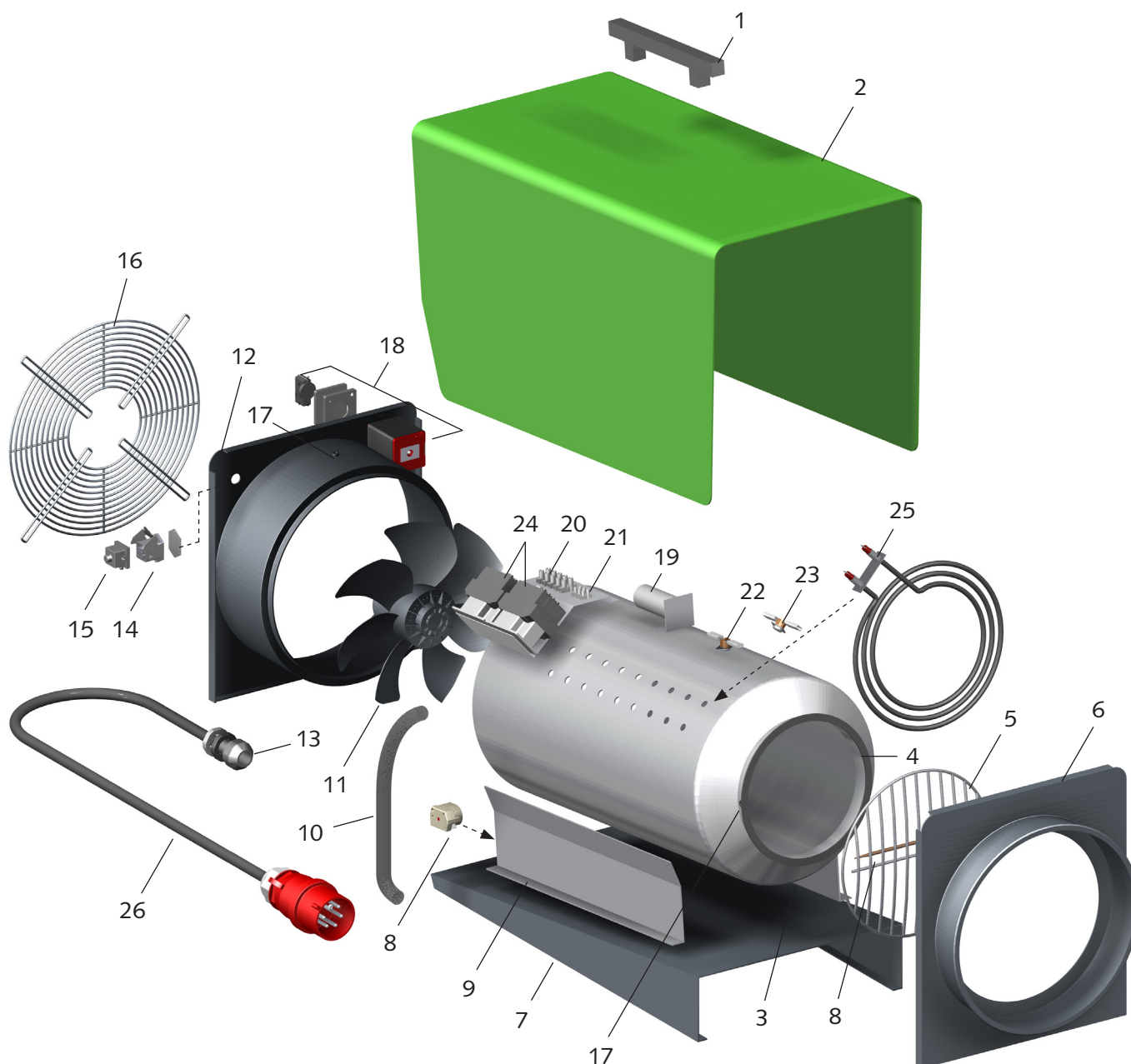
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|                                       |                                       |                                       |                                       |                                       |
|---------------------------------------|---------------------------------------|----------------------------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

# REMKO Serie ELT

## Exploded view of the unit



## Spare parts list

| No. | Designation                          | EDP no. |
|-----|--------------------------------------|---------|
| 1   | Transport handle                     | 1101142 |
| 2   | Exterior cladding ELT 18-S           | 1107920 |
| 2a  | Exterior cladding ELT 18-S E         | 1107919 |
| 3   | Interior cladding with blow-out cone | 1107953 |
| 4   | Seal for blow-out cone               | 1107954 |
| 5   | Protective exhaust grid              | 1101353 |
| 6   | Front wall with outlet nozzle        | 1107930 |

| No. | Designation                    | EDP no. |
|-----|--------------------------------|---------|
| 7   | Floor panel                    | 1107950 |
| 8   | Temperature limiter with probe | 1107960 |
| 9   | Support                        | 1107922 |
| 10  | Protective hose                | 1107915 |
| 11  | Fan motor with blade           | 1107992 |
| 12  | Back wall                      | 1107931 |
| 13  | Strain relief                  | 1107961 |

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

| No. | Designation             | EDP no. |
|-----|-------------------------|---------|
| 14  | Thermostat socket, cpl. | 1101018 |
| 15  | Strapping plug          | 1101019 |
| 16  | Air-inlet grille        | 1107994 |
| 17  | Grommet                 | 1101304 |
| 18  | Operating switch, cpl.  | 1107993 |
| 19  | Condenser               | 1102716 |
| 20  | Terminal block 5er      | 1107952 |

| No. | Designation            | EDP no. |
|-----|------------------------|---------|
| 21  | Terminal block 3er     | 1101373 |
| 22  | Temperature limiter    | 1101161 |
| 23  | Aftercooler thermostat | 1104065 |
| 24  | Contacteur             | 1101021 |
| 25  | Heating resistor       | 1107998 |
| 26  | Mains cable with plug  | 1107962 |
| xx  | Thermostat plug        | 1101020 |

xx = not illustrated

When ordering spare parts, in addition to the EDP no. please always also quote the unit number and unit type (see name plate)!

## Technical data

| Baureihe                                                | Symbol        | Unit              | ELT 18-S                                            |
|---------------------------------------------------------|---------------|-------------------|-----------------------------------------------------|
| Nominal heating capacity                                | $P_{nom}$     | kW                | 18,0                                                |
| Minimum heating power                                   | $P_{min}$     | kW                | 6,0                                                 |
| Maximum continuous heating power                        | $P_{max,c}$   | kW                | 18,0                                                |
| Switchable heating capacity                             |               | kW                | 3 x 6,0                                             |
| Air volume                                              |               | m <sup>3</sup> /h | 1600                                                |
| Temperature increase ( $\Delta t$ ) max.                |               | K                 | 60                                                  |
| Power supply                                            |               | V/Hz              | 400/3~N/50                                          |
| Max. rated current                                      |               | A                 | 27,8                                                |
| Max. power consumption                                  |               | kW                | 18,5                                                |
| Auxiliary current consumption at nominal heating power  | $e_{l_{max}}$ | kW                | 0,230                                               |
| Auxiliary current consumption at minimum heating power  | $e_{l_{min}}$ | kW                | 0,230                                               |
| Auxiliary current consumption in standby condition      | $e_{l_{sb}}$  | kW                | 0,000                                               |
| Electrical protection (provided by the customer - slow) |               | A                 | 32                                                  |
| Sound pressure level $L_{pA}$ 1m <sup>1)</sup>          |               | dB (A)            | 72 (68)                                             |
| Dimensions: L/W/H                                       |               | mm                | 750/335/500                                         |
| Type of room temperature control                        |               |                   | with electrical room temperature control (external) |
| Weight                                                  |               | kg                | 28,7                                                |
| EDP no.:                                                |               |                   | 114400 (114410)                                     |

<sup>1)</sup> Noise level measurement DIN 45635 - 01 - KL 3

( ) Noise measurement in hose operation DIN 45635 - 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

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