

# ■ Operating and installation instructions

**REMKO DZH series**

**Oil Heaters**

DZH 20-2, DZH 30-2, DZH 50-2, DZH 90-2





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**Before commissioning/use of the equipment, these operating instructions must be read carefully!**

**These instructions are a part of the device and must thus always be kept in the direct vicinity of the mounting site or on the device itself. This operating manual is a translation of the German original.**

*Subject to change; errors and typographical errors excepted!*

## Safety Notices

**When using the appliance, always observe the respective local construction and fire protection ordinances as well as the regulations of the employers' liability insurance associations.**

The appliances were subjected to extensive material, functional, and quality tests before delivery. Nevertheless, the equipment may present a danger if it is used by untrained personnel, improperly, or not according to regulation! Please observe the following notices:

- Before maintenance or servicing work, the mains plug must be removed from the socket
- The unit may be operated only by personnel who have been trained in its operation
- The unit must be set up and operated in such a way that people are not endangered by exhaust fumes and radiated heat and no fires can break out
- The unit may be set up and operated in rooms only if there is a sufficient amount of air for the combustion
- The unit may be operated without an exhaust duct only in well-ventilated rooms. People may not constantly be in the mounting room  
**Corresponding prohibition signs must be posted at the entryways!**
- The unit may not be operated without supervision
- Mount the unit only on a level, non-flammable base
- The unit may be set up and operated only in an environment not at risk of fire or explosion
- The unit may not be set up in atmospheres containing oil, sulphur, or salt
- A safety zone of 3 m around the exhaust and 1 m around the unit and non-flammable objects must be observed
- The protective air suction grille must always be free of dirt and loose objects
- Never insert foreign matters into the unit
- The unit may not be exposed to direct water jets, such as **high-pressure cleaning unit, and so on**
- All electrical cables of the unit must be protected from damage (e.g. due to animals)
- Safety equipment may neither be bridged nor blocked!
- Due to the design, a permanent, fixed-location installation is not intended for this type of unit

## Device Description

The unit is a mobile heater and is directly fueled with EL heating oil or diesel fuel.

The unit works without an exhaust connection and is solely designed for commercial use.

The unit is equipped with a fuel container underneath, fuel filters, maintenance-free axial fans, high-pressure spraying furnace with optical flame monitor, room thermostat socket, and mains cable with an earthing contact plug.

The unit complies with the basic safety and health requirements of the relevant EU stipulations and is easy to operate.

**Among other things, the devices have the following uses:**

- Spot heating of outdoor workplaces
- Spot heating of workplaces in open, non fire-hazard production rooms and halls
- Temporary heating of rooms with a sufficient fresh-air supply
- De-icing of machines, vehicles, and non-flammable warehouse goods
- Temperature control of parts at risk of frost



### CAUTION

*The units may be set up only in well-aerated rooms and not in living areas or lounges.*

## Mounting Regulations

### Sequence of functions

After the unit has been switched on or in case heating is required (automatic function with room thermostat), the supply air fan also switched on.

After the preliminary ventilation of the burner, the solenoid valve opens the fuel supply for the oil nozzle.

The fuel, sprayed under high pressure, is enriched with an amount of oxygen that has been adapted to the heating capacity and ignited using an electrical, high-voltage ignition spark.

As soon as a flame is burning without a problem, the automatic burner relay assume the optical flame monitoring function.

After a short period of time, hot air is blown out.

The automatic burner relay perform all device functions fully automatically and monitor them securely.

In case of any irregularities or an instable or extinguished flame, the unit is deactivated by the automatic burner relay.

The pilot lamp on the automatic burner relay lights red.

A restart of the unit is only possible after a manual reset of the automatic burner relay.

After the unit has been shut down using the operating switch or by the room thermostat, the supply air fan continues to run for a certain period of time to cool the combustion chamber and then shuts down independently.

Concerning to each room temperature the thermostat operation repeats the described operation automatically.

When the unit is in use, the safety guidelines of the employers' liability insurance associations, the respective country construction ordinances, and the burning appliance regulations basically apply.

For example for Germany:

- Feuerungsanlagenverordnung (FeuVo) (Furnace Installation Ordinances) of the individual states
- Unfallverhütungsvorschrift (UVV) (Accident Prevention Regulation) „Heiz-, Flämm- und Schmelzgeräte für Bau- und Montagearbeiten“ (Heating, Burning, and Melting Equipment for Construction and Mounting Work) (VBG 43)
- Unfallverhütungsvorschrift (UVV) „Verwendung von Flüssiggas“ (Use of Liquefied Gas) (VBG 21)
- Arbeitsstättenrichtlinien ASR 5 (Workstation Guidelines)
- Arbeitsstättenverordnung (Workstation Ordinance) §§ 5 and 14

### Outdoor mounting

- Due to the operation of the unit, no dangers or unreasonable nuisances may arise
- The unit operator must guarantee that unauthorised persons cannot manipulate the unit or the energy supply
- To avoid damage due to inclement weather, the unit must be mounted in a protected manner

### Mounting in closed, well-ventilated rooms

- According to the type, the unit is designed without an exhaust connection and may be used in closed rooms only under certain circumstances
- To exclude an impermissible pollution of the room air, a reliable exhaust of the combustion gases must always be guaranteed
- The supply of the fresh air required for proper combustion must be guaranteed. The fresh air supply should come through windows and doors or through sufficiently sized openings in the outer wall
- The unit may be used for room heating only with a room thermostat (accessory)

### The unit may be operated indoors only if:

- A sufficient air volume for combustion is supplied to the device.
- The unit is well aerated and ventilated
- The amount of pollutants in the breathing air that is hazardous to health may not reach an unreasonable concentration

### CAUTION

*Avoid underpressure or overpressure in mounting rooms since these states always lead to combustion-technical problems.*

## Commissioning

Before commissioning, the unit should be checked for noticeable defects of the operating and safety appliances, as well as for proper mounting and correct electrical connection.

Someone who has been sufficiently trained in the corresponding handling of the unit must be assigned with its operation and monitoring.

### CAUTION

*In case of defects that endanger the operating safety of the unit, the operation of the unit must be shut down immediately and the supervisor must be informed!*

## Connecting the devices to the power supply

1. Switch the operating switch to the „0“ position (off).



2. Connect the mains plug of the device to a properly installed and secured mains socket. **230 V/50 Hz**



### NOTE

*The electrical connection of the unit must be performed at a certain supply point with an earth-leakage circuit breaker according to VDE 0100 § 55.*

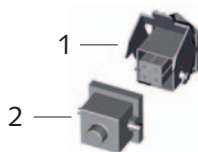
### CAUTION

*All cable extensions may be used only when unrolled.*

## Heating without room thermostat

The unit works in continuous operation.

1. Connect the jumper plug 2 included in deliver with the thermostat socket 1 on the device.



2. Switch the operating switch to the „1“ position (on).



## Safety distances

- To guarantee a safe unit operation, a safety distance of 1 metre around the device must be observed
- To blow out the unit, a distance of at least 3 metres must be observed
- The floor and ceiling must be fire-resistant
- The intake and exhaust cross-sections may not be pinched or blocked by foreign objects

### NOTE

*In case of overheating of the devices is a safety shutdown of the burner relay.*

### CAUTION

*The appliances may not be placed and runed in fire and explasion danger vicinities.*

## Paraffin formation at low outdoor temperatures

Even in case of low temperatures, free-flowing heating oil must be available in sufficient quantities.

### NOTE

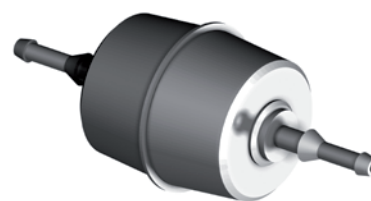
*Paraffin formation can already take place at temperatures below 5°C. Corresponding measures and precautions must be taken to prevent it.*

**An optional tank heater is available as a REMKO accessory.**

- Fill the fuel container with clean heating oil or diesel fuel  
**Do not use biodiesel**

- Use only clean, suitable containers for the filling procedure

Before the start-up of every appliance and every filling of the tank, the fuel filter must be checked for soiling or paraffin formation.



The filter is located directly next to the tank filler neck. The fuel tank may be filled only when the tank filter has been inserted into the filler neck.

### NOTE

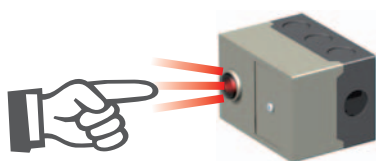
*Only clean fuel through a funnel with a fine filter fill.*

## Notices regarding the safety cut-off of the unit

The unit fuel supply takes place in a single line system. In this regard, the fuel supply to the nozzle can be interrupted by blowing air during the initial start-up or after the fuel tank has been completely emptied.

The automatic burner relay of the appliances shut down due to malfunction in this case. This shutdown due to malfunction is indicated by the red pilot lamp on the control panel.

Reset the automatic burner relay by pushing this red pilot lamp.



### NOTE

*The automatic burner relay can get unlocked after a waiting periode of 60 sec., only.*

If the appliance does not start after several start attempts, read the „**Trouble Shooting**“ section

Refill fuel if necessary

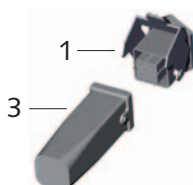
### NOTE

*Never (except in emergency situations) interrupt the mains connection before the entire cool-down phase comes to an end.*

## Heating with room thermostat (accessory)

The appliances operate fully automatically depending on the room temperature.

1. Disconnect the jumper plug 2.
2. Connect the plug 3 of the room thermostat 4 together with the thermostat socket 1 of the device.



3. Place the room thermostat (4) at a suitable position in the room.  
The thermostat sensor may not be in the path of direct hot air flow and should not be placed directly on a cold foundation.
4. Adjust the desired temperature on the room thermostat.



5. Switch the operating switch to the „I“ position (on).



In case heating is needed, the unit now switches on automatically and then off when the desired room temperature is reached.

## Shutdown

1. Switch the operating switch to the „0“ position (off).



### NOTE

*The supply air fan runs to cool off the combustion chamber further and switches off later on its own. The fan may run several times until it switches off permanently!*

2. In case of longer downtimes, disconnect the unit from the power mains.



### CAUTION

*Never interrupt the mains connection before the entire cool-down phase comes to an end.  
No warranty claims exist for damage to the unit due to overheating!*

### NOTE

*In case of longer downtimes or storage of the unit, always fill the fuel tank with heating oil or diesel fuel.*

## Maintenance and Care

The regular care and observance of some basic prerequisites guarantee malfunction-free operation and a long service life of the unit.

After every heating period or independent of the previous operating conditions, the complete unit including the combustion chamber and burner must be cleaned of soot, dust, and dirt.

### CAUTION

*Before all work on the appliance, the mains plug must be removed from the mains socket. Especially when the appliance casing is open, there is an acute danger of injury due to the automatically activating fan.*

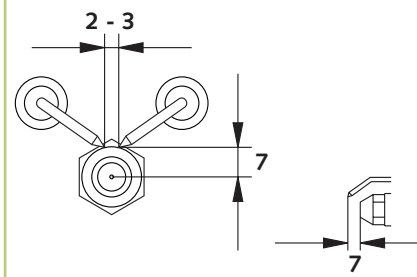
- For cleaning, use a clean, slightly moistened cloth with which you can wipe off the dirt from the surface .  
**Do not use a water jet (high-pressure cleaner)!**
- Do not use strong cleaning agents that contain solvent. Even in case of extreme soiling, only use suitable cleaning agent.
- Clean the fuel tank regularly and then rinse it with clean fuel or another suitable means.  
**Do not use water!**
- Always keep the burner head clean.
- Check parts subject to wear such as the oil nozzle, seals, and so on, and exchange them if necessary.  
**We recommend that the oil nozzle be changed in any case before the beginning of every heating season!**
- Clean the tank filter in the filler neck of the fuel tank regularly.
- Exchange the fuel filter (observing the direction of flow) according to its condition, but before every heating season at the latest. The filter is in the direct vicinity of the tank filler neck. **Note the direction of flow!**
- Use only clean EL heating oil or diesel.  
**Look for paraffin formation!**
- Allow only authorised, expert personnel to clean the gauze filter in the fuel pump (only by DZH 90) and exchange the nozzle.
- Regularly check the safety appliances for correct function.
- In case of a weakening heating capacity, formation of smoke, and/or bad ignition, inspect the unit and adjust the burner.
- Observe the regular maintenance and care intervals.

### CAUTION

*A safety- technical test must be carried out after all work at the appliances.*

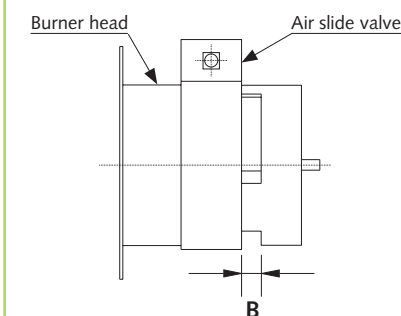
## Parameters of initiating electrodes and air slide valve

### Adjustment of the initiating electrodes



All dimensions are values in mm

### Adjusting the air slide valve



### Dimension B:

DZH 20-2 = ca. 20 mm  
DZH 30-2 = ca. 12 mm  
DZH 50-2 = ca. 20 mm  
DZH 90 = ca. 13 mm

All dimensions are standard values in mm

### CAUTION

*The exhaust values must be checked and set by authorised, expert personnel.  
The flame must burn out within the combustion chamber. The flame may not extend outside of the combustion chamber.*

### NOTE

*Adjustment and maintenance tasks may be performed only by authorised expert personnel!*

## Trouble Shooting

| Faults:                                                                                          | Cause:                                                |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| The supply air fan does not actuate.                                                             | 2 – 3 – 4 – 6 – 7 – 8 – 25                            |
| The fan is running, but the burner does not ignite.                                              | 1 – 5 – 6 – 9 – 10 – 11 – 12 – 13 – 14 – 15 – 16 – 17 |
| Das Gerät geht ohne Flammbildung auf Störung.                                                    | 20 – 21 – 23 – 26                                     |
| Das Gerät schaltet während des Betriebes aus.<br>(The pilot lamp on the automatic burner lights) | 4 – 5 – 6 – 7 – 8 – 9 – 10 – 11 – 13 – 15 – 16 – 17   |
| Formation of smoke during the unit is running                                                    | 19 – 20 – 21 – 22 – 23 – 26                           |
| The appliance does not switch off in „0“ position.                                               | 7 – 10 – 11 – 13 – 15 – 17 – 19 – 21 – 22             |
|                                                                                                  | 18 – 25                                               |



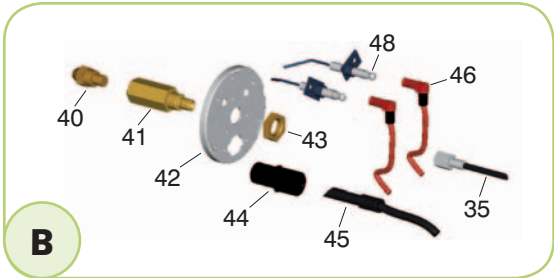
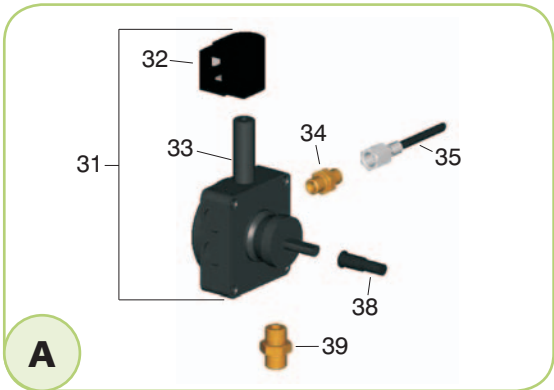
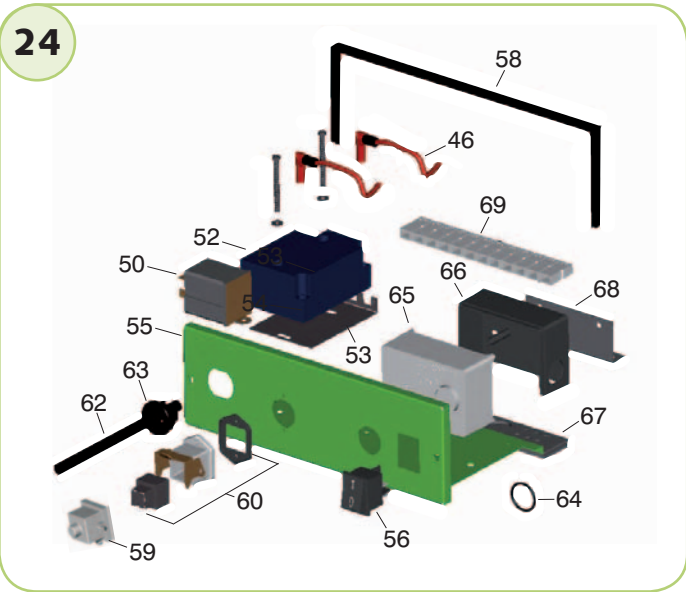
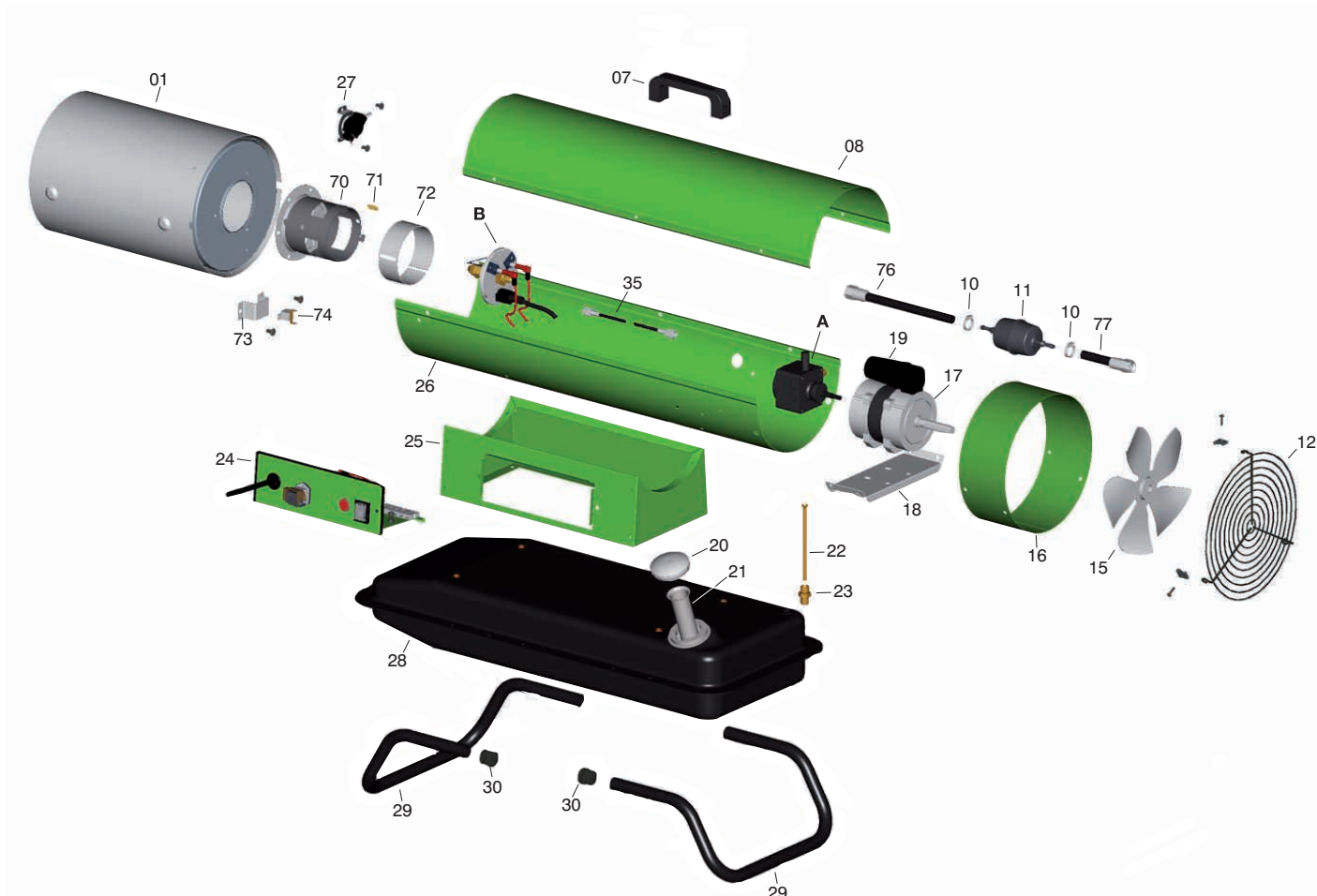
### CAUTION

*Repair work on the electrical installation and on the burner may be carried out only by authorised, expert personnel for safety-technical reasons.*

| Cause:                                                                         | Remedy:                                                                                                         |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| 1. Air bubbles in the fuel system during initial start up.                     | Reset the fuel system by pushing the red pilot lamp.<br>Repeat it 3 times if necessary.                         |
| 2. The appliance does not have a voltage supply.                               | Check the voltage supply and electrical connection.                                                             |
| 3. No plug in the thermostat socket.                                           | Connect the thermostat or shunt plug with the thermostat socket.                                                |
| 4. The thermostat is set too low.                                              | Set the thermostat higher than room temperature.                                                                |
| 5. The red pilot lamp of the burner relay is shining.                          | Reset the burner relay by pushing the red pilot lamp.                                                           |
| 6. Control relay fault.                                                        | Change the control relay.                                                                                       |
| 7. The motor is overloaded.<br>(The fan is running irregularly or is blocked.) | Let the motor cool down.<br>Check the fuel pump.<br>Check the electrical and mechanical functions of the motor. |
| 8. The fuel pump is blocked.                                                   | Check the fuel pump and exchange if necessary.                                                                  |
| 9. The fuel container is empty.                                                | Fill the container with clean fuel.                                                                             |
| 10. The oil filter is stopped up.                                              | Clean or exchange oil filter.                                                                                   |
| 11. The nozzle is stopped up or has the wrong size.                            | Exchange the nozzle (Pay attention to the right type and size).                                                 |
| 12. The electrode is incorrectly adjusted, die isolation is defective.         | Adjust or exchange it.                                                                                          |
| 13. The air inlet plate of the burner head is not correct or dirty.            | Adjust it with the CO <sub>2</sub> -Indicator and pump.<br>(CO <sub>2</sub> : 11 – 12 %, Bacharach: 0 – 1).     |
| 14. The solenoid valve does not open.                                          | Check the solenoid valve and exchange it if necessary.                                                          |
| 15. The pump pressure is not correctly set.                                    | Adjust the pump pressure using a pressure gauge.                                                                |
| 16. The pump coupling is defective.                                            | Exchange the pump coupling.                                                                                     |
| 17. Leakage in the suction or in the fuel filter.                              | Check and exchange if necessary.                                                                                |
| 18. The solenoid valve does not close.                                         | Remove the fuel line on the main filter. The flame extinguishes.                                                |
| 19. The protection grille of the supply air fan is dirty.                      | Clean the protection grille.                                                                                    |
| 20. The safety limiter (STB) switches off.                                     | Check the air inlet grill and clean if necessary<br>and unlock the burner relay (only DZH 90 ).                 |
| 21. Air bubbles in the fuel system.                                            | Start the appliance so that the air escapes through the nozzle.<br>Repeat it 3 times if necessary.              |
| 22. Ventilation does not suffice.                                              | Open the door or windows.                                                                                       |
| 23. The photoelectric cell is dirty or incorrectly adjusted.                   | Clean the photoelectric cell or exchange it if defective.                                                       |
| 25. The operation switch is without function.                                  | Check the operation switch and exchange it if necessary.                                                        |
| 26. Paraffin formation in the fuel.                                            | Clean the fuel system; fill the contain with clean fuel.<br>Have a look at "Maintenance" too.                   |

# REMKO DZH

## Exploded view DZH 20-2



We reserve the right to make changes in dimensions and design in the interest of technical advances.

## Spare parts list

| No. | Designation                     | EDP-No. |
|-----|---------------------------------|---------|
| 01  | Combustion chamber, complete    | 1111660 |
| 07  | Transport grip                  | 1103903 |
| 08  | Inspection cover                | 1111661 |
| 10  | Hose clamp                      | 1103762 |
| 11  | Fuel filter (disposable)        | 1102146 |
| 12  | Intake guard grille             | 1111662 |
| 15  | Fan blade 200/31                | 1111663 |
| 16  | Fan housing                     | 1111664 |
| 17  | Fan motor, complete. 75W        | 1111665 |
| 18  | Motor carrier                   | 1111666 |
| 19  | Capacitor 3,15                  | 1107114 |
| 20  | Tank cap                        | 1102148 |
| 21  | Tank filter                     | 1103776 |
| 22  | Intake tube                     | 1111686 |
| 23  | Connecting nipple ¼"-12x1,75    | 1111667 |
| 24  | Electrical module, complete     | 1107367 |
| 25  | Support housing                 | 1111668 |
| 26  | Bottom of housing               | 1111669 |
| 27  | Cool-down thermostat            | 1107182 |
| 28  | Fuel tank                       | 1111670 |
| 29  | Stand stirrup                   | 1107121 |
| 30  | Protective cap                  | 1107122 |
| 31  | Fuel pump, complete             | 1107123 |
| 32  | Magnet coil                     | 1103766 |
| 33  | Magnet coil core                | 1111671 |
| 34  | Connecting nipple pressure line | 1111672 |
| 35  | Oil pressure line               | 1111673 |
| 38  | GE coupling, complete           | 1107129 |
| 39  | Connecting nipple intake line   | 1111674 |
| 40  | Nozzle                          | 1107131 |
| 41  | Nozzle cradle                   | 1107132 |

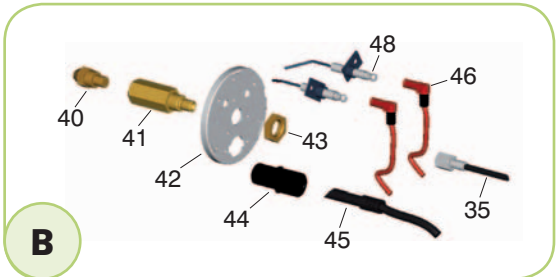
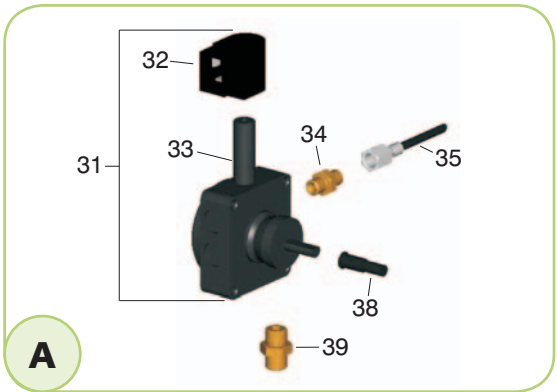
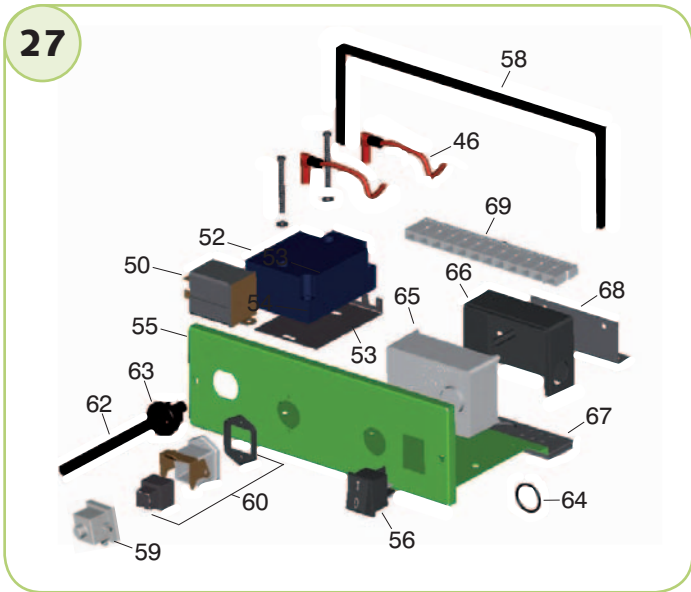
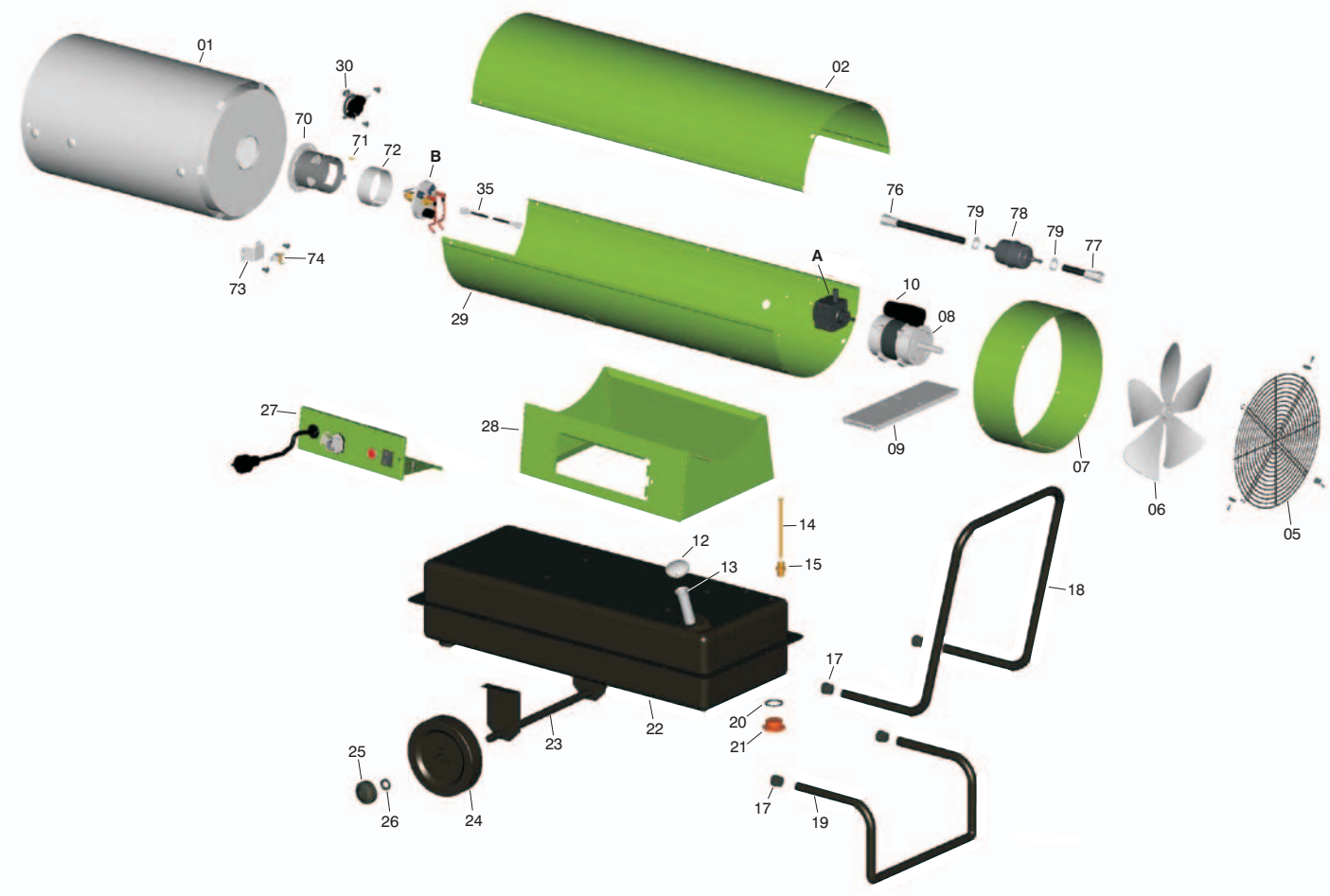
| No. | Designation                 | EDP-No. |
|-----|-----------------------------|---------|
| 42  | Mounting plate              | 1111675 |
| 43  | Nut                         | 1107134 |
| 44  | Photoelectric cell mount    | 1111676 |
| 45  | Photoelectric cell          | 1108209 |
| 46  | Ignition cable with plug    | 1107137 |
| 48  | Ignition electrode          | 1107139 |
| 50  | Auxiliary Relay             | 1107375 |
| 52  | Ignition transformer        | 1107143 |
| 53  | Support plate PE            | 1107188 |
| 55  | Switch cabinet housing      | 1107189 |
| 56  | Operating switch            | 1111677 |
| 58  | Seal housing                | 1107190 |
| 59  | Jumper plug                 | 1101019 |
| 60  | Thermostat socket, complete | 1101018 |
| 62  | Mains cable with plug       | 1107148 |
| 63  | Pull relief                 | 1107149 |
| 64  | Sealing ring OR 22          | 1111678 |
| 65  | Automatic burner relay      | 1102239 |
| 66  | Relay socket                | 1102534 |
| 67  | Plate PG                    | 1102533 |
| 68  | Relay fitting               | 1107191 |
| 69  | Terminal strip              | 1103781 |
| 70  | Burner pipe                 | 1111679 |
| 71  | Protective cap              | 1111680 |
| 72  | Air slide                   | 1111681 |
| 73  | Support plate (STB)         | 1111682 |
| 74  | Temperature limiter (STB)   | 1111683 |
| 76  | Suction pipe PF             | 1111684 |
| 77  | Suction pipe TF             | 1111685 |
| xx  | Undercarriage, optional     | 1011225 |
| xx  | Tank heater, optional       | 1002518 |

xx = not shown

When ordering spare parts, always list the device number and the device type (see the type plate) in addition to the EDP number.

# REMKO DZH

## Exploded view DZH 30-2/50-2



## Spare parts list

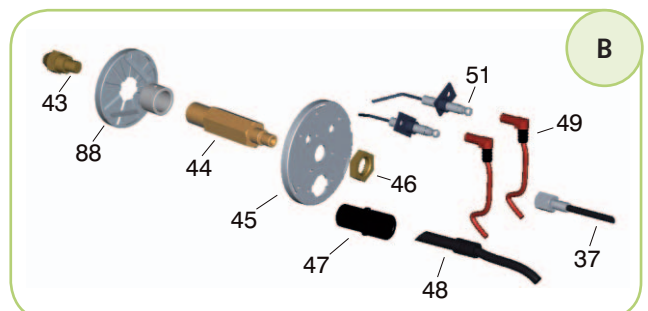
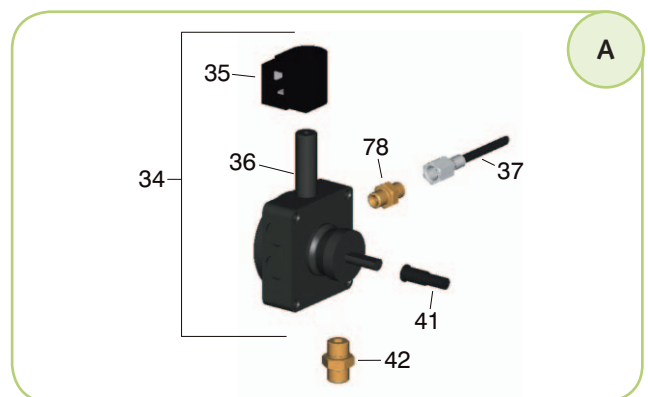
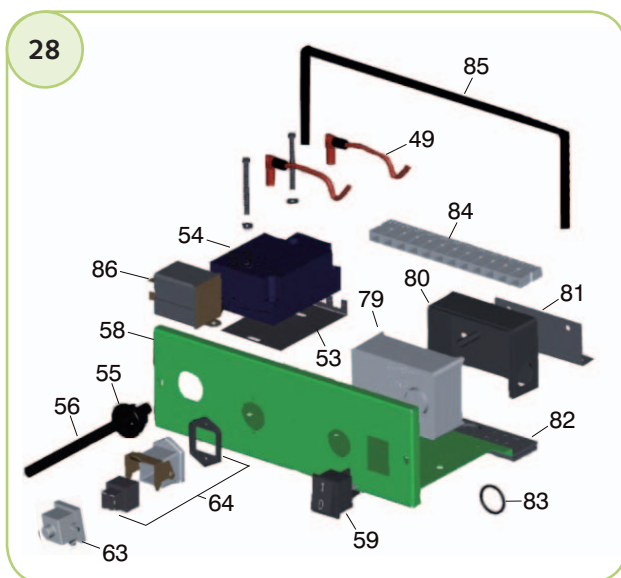
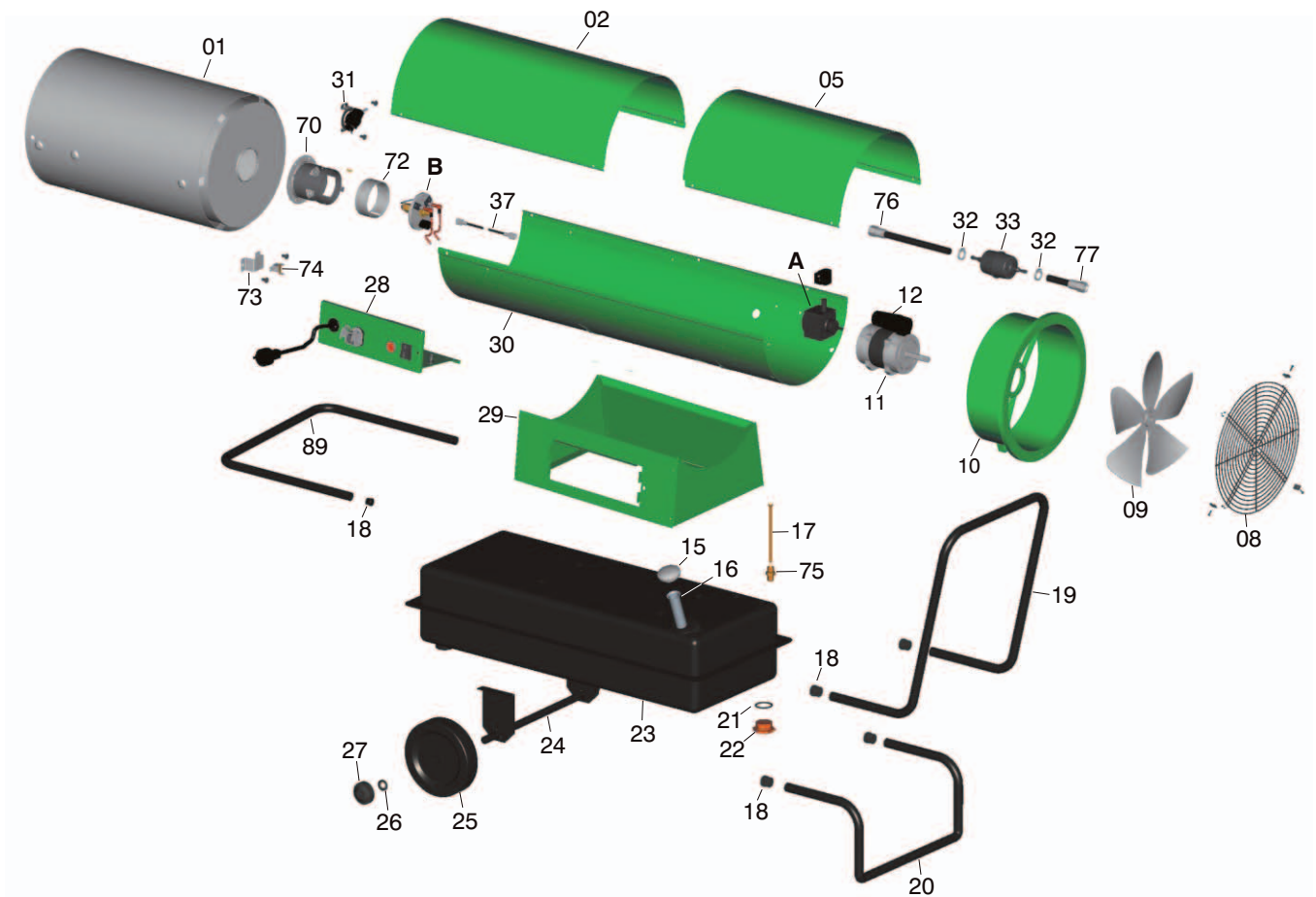
| No. | Designation                        | DZH 30-2<br>EDP-No. | DZH 50-2<br>EDP-No. |
|-----|------------------------------------|---------------------|---------------------|
| 01  | Combustion chamber, cpl.           | 1111690             | 1111705             |
| 02  | Inspection cover                   | 1111691             | 1111706             |
| 05  | Intake guard grille                | 1111692             | 1111707             |
| 06  | Fan blade                          | 1111693             | 1111708             |
| 07  | Fan housing                        | 1111694             | 1111709             |
| 08  | Fan motor, complete                | 1111695             | 1111710             |
| 09  | Motor carrier                      | 1111696             | 1111711             |
| 10  | Capacitor                          | 1107160             | 1107176             |
| 12  | Tank cap                           | 1102148             | 1102148             |
| 13  | Tank filter                        | 1103776             | 1103776             |
| 14  | Suction tube                       | 1111697             | 1111712             |
| 15  | Connecting nipple                  | 1111667             | 1111667             |
| 17  | Protective cap                     | 1107122             | 1107122             |
| 18  | Transport stirrup                  | 1107163             | 1111713             |
| 19  | Stand stirrup                      | 1107164             | 1107164             |
| 20  | Sealing ring/Drain plug            | 1103777             | 1103777             |
| 21  | Drain plug                         | 1103778             | 1103778             |
| 22  | Fuel tank                          | 1111699             | 1111714             |
| 23  | Axle                               | 1107166             | 1107166             |
| 24  | Wheel                              | 1102155             | 1102155             |
| 25  | Hub cap                            | 1101623             | 1101623             |
| 26  | Circlip                            | 1101622             | 1101622             |
| 27  | Electrical module, cpl.            | 1107367             | 1107367             |
| 28  | Support housing                    | 1111700             | 1111715             |
| 29  | Bottom of housing                  | 1111701             | 1111716             |
| 30  | Cool-down thermostat               | 1107182             | 1107182             |
| 31  | Fuel pump, complete                | 1107123             | 1107123             |
| 32  | Magnet coil                        | 1103766             | 1103766             |
| 33  | Magnet coil core                   | 1111671             | 1111671             |
| 34  | Connecting nipple<br>pressure line | 1111672             | 1111672             |
| 35  | Oil pressure line                  | 1111673             | 1111673             |
| 38  | GE coupling, complete              | 1107129             | 1107129             |
| 39  | Connecting nipple intake<br>line   | 1111674             | 1111674             |

| No. | Designation                    | DZH 30-2<br>EDP-No. | DZH 50-2<br>EDP-No. |
|-----|--------------------------------|---------------------|---------------------|
| 40  | Nozzle                         | 1107126             | 1111717             |
| 41  | Nozzle cradle                  | 1107132             | 1107132             |
| 42  | Mounting plate                 | 1111675             | 1111675             |
| 43  | Nut                            | 1107134             | 1107134             |
| 44  | Photoelectric cell mount       | 1111676             | 1111676             |
| 45  | Photoelectric cell             | 1108209             | 1108209             |
| 46  | Ignition cable with plug       | 1107137             | 1107137             |
| 48  | Ignition electrode             | 1107139             | 1107139             |
| 50  | Auxiliary Relay                | 1107375             | 1107375             |
| 52  | Ignition transformer           | 1107143             | 1107143             |
| 53  | Support plate PE               | 1107188             | 1107188             |
| 55  | Switch cabinet housing         | 1107189             | 1107189             |
| 56  | Operating switch               | 1111677             | 1111677             |
| 58  | Seal housing                   | 1107190             | 1107190             |
| 59  | Jumper plug                    | 1101019             | 1101019             |
| 60  | Thermostat socket,<br>complete | 1101018             | 1101018             |
| 62  | Mains cable with plug          | 1107148             | 1107148             |
| 63  | Pull relief                    | 1107149             | 1107149             |
| 64  | Sealing ring OR 22             | 1111678             | 1111678             |
| 65  | Automatic burner relay         | 1102239             | 1102239             |
| 66  | Relay socket                   | 1102534             | 1102534             |
| 67  | Plate PG                       | 1102533             | 1102533             |
| 68  | Relay fitting                  | 1107191             | 1107191             |
| 69  | Terminal strip                 | 1103781             | 1103781             |
| 70  | Burner pipe                    | 1111702             | 1111702             |
| 71  | Protective cap                 | 1111680             | 1111680             |
| 72  | Air slide                      | 1111681             | 1111681             |
| 73  | Support plate (STB)            | 1111682             | 1111682             |
| 74  | Temperature limiter (STB)      | 1111683             | 1111683             |
| 76  | Suction pipe PF                | 1111703             | 1111703             |
| 77  | Suction pipe TF                | 1111704             | 1111704             |
| 78  | Fuel filter (disposable)       | 1102146             | 1102146             |
| 79  | Hose clamp                     | 1103762             | 1103762             |

When ordering spare parts, always list the device number and the device type (see the type plate) in addition to the EDP number.

# REMKO DZH

## Exploded view DZH 90-2



We reserve the right to make changes in dimensions and design in the interest of technical advances.

## Spare parts list

| No. | Designation                    | EDP-Nr.o |
|-----|--------------------------------|----------|
| 01  | Combustion chamber cpl.        | 1107376  |
| 02  | Cover                          | 1107377  |
| 05  | Inspection cover               | 1107378  |
| 08  | Air inlet grille               | 1107379  |
| 09  | Fan blade                      | 1107380  |
| 10  | Fan housing                    | 1107381  |
| 11  | Fan motor cpl. 450W            | 1107382  |
| 12  | Condenser 16 µF                | 1107383  |
| 15  | Tank lock                      | 1102148  |
| 16  | Fuel filter                    | 1103776  |
| 17  | Suction pipe                   | 1107384  |
| 18  | Protection cap                 | 1107365  |
| 19  | Transport clamp                | 1107363  |
| 20  | Stand clamp                    | 1107364  |
| 21  | Seal for drain screw           | 1103777  |
| 22  | Drain screw                    | 1103778  |
| 23  | Fuel container                 | 1107385  |
| 24  | Axle                           | 1107368  |
| 25  | Wheel                          | 1101621  |
| 26  | Retaining ring                 | 1101622  |
| 27  | Wheel cap                      | 1101623  |
| 28  | Electrical set cpl.            | 1107367  |
| 29  | Carrier housing                | 1107386  |
| 30  | Lower cover                    | 1107387  |
| 31  | Re-cooling thermostat          | 1107182  |
| 32  | Hose clamp                     | 1103762  |
| 33  | Fuel filter (one way)          | 1102146  |
| 34  | Fuel pump cpl.                 | 1103765  |
| 35  | Solenoid coil                  | 1103766  |
| 36  | Solenoid valve core            | 1111671  |
| 37  | Oil pressure pipe              | 1111673  |
| 41  | Pump coupling                  | 1107129  |
| 42  | Connection nipple suction pipe | 1111674  |
| 43  | Nozzle (2,0/80°W)              | 1107388  |

| No. | Designation                     | EDP-No. |
|-----|---------------------------------|---------|
| 44  | Nozzle mounting                 | 1107389 |
| 45  | Assembly plate                  | 1107390 |
| 46  | Nut                             | 1107134 |
| 47  | Photo cell holder               | 1111676 |
| 48  | Photo cell                      | 1108209 |
| 49  | Ignition cable incl. plug       | 1107137 |
| 51  | Ignition electrode              | 1107139 |
| 53  | Carrier plate PE                | 1107188 |
| 54  | Ignition transformer            | 1107143 |
| 55  | Strain relief                   | 1107149 |
| 56  | Electrical cable incl. plug     | 1107148 |
| 58  | Control box housing             | 1107189 |
| 59  | Operation switch                | 1111677 |
| 63  | Jumper plugs                    | 1101019 |
| 64  | Thermostat plug socket cpl.     | 1101018 |
| 70  | Bourner pipe                    | 1107391 |
| 72  | Air slide plate                 | 1107392 |
| 73  | Carrier housing (STB)           | 1111682 |
| 74  | Temperature limiter (STB)       | 1111683 |
| 75  | Connection nipple M12x1,75      | 1111667 |
| 76  | Suction pipe PF                 | 1107393 |
| 77  | Suction pipe TF                 | 1107394 |
| 78  | Conn. nipple pressure pipe 1/8" | 1111672 |
| 79  | Automatic burner                | 1102239 |
| 80  | Relay socket                    | 1102534 |
| 81  | Relay fitting                   | 1107191 |
| 82  | PG-plate                        | 1102533 |
| 83  | Seal OR 22                      | 1111678 |
| 84  | Terminal block                  | 1103781 |
| 85  | Seal housing                    | 1107190 |
| 86  | Auxiliary relay                 | 1107375 |
| 88  | Catchment disk                  | 1107395 |
| 89  | Shock bracket                   | 1107369 |

## Proper Use

Due to their conception and equipping, the devices are designed solely for heating and ventilation purposes in industrial or commercial use (no private living area heating).

The unit may be operated only by accordingly trained personnel.

The manufacturer is not liable for damage that occurs due to nonobservance of manufacturer instructions or the legal requirements or due to unauthorised changes to the device.



### NOTE

*Another operation other than that described in these operating instructions is not permitted.*

*Nonobservance leads to the extinguishment of any liability and warranty claims.*

## Customer Service and Guarantee

The prerequisite for any warranty claims is that the customer or its recipient has returned the completed „**Warranty Document**“ included in delivery to REMKO GmbH & Co. KG at the time of the sale and commissioning of the unit.

The unit was tested several times at the factory for perfect function. If any malfunctions should occur, however, which cannot be eliminated by trouble shooting measures performed by the operator, please consult your dealer or contract partner.



### NOTE

*Adjustment and maintenance tasks may be performed only by authorised expert personnel.*

## Environmental Protection and Recycling

### Disposal of packaging

When disposing of the packaging material, think of the environment. Our equipment is carefully packed for transport and delivered in a stable cardboard transport package on a wooden pallet, if necessary.

The packaging materials are environmentally friendly and can be reused.

With the reuse of packaging material, you make a valuable contribution to the reduction of waste and the preservation of raw materials.

***You should thus dispose of the packaging material at the corresponding disposal sites.***

### Disposal of the old device

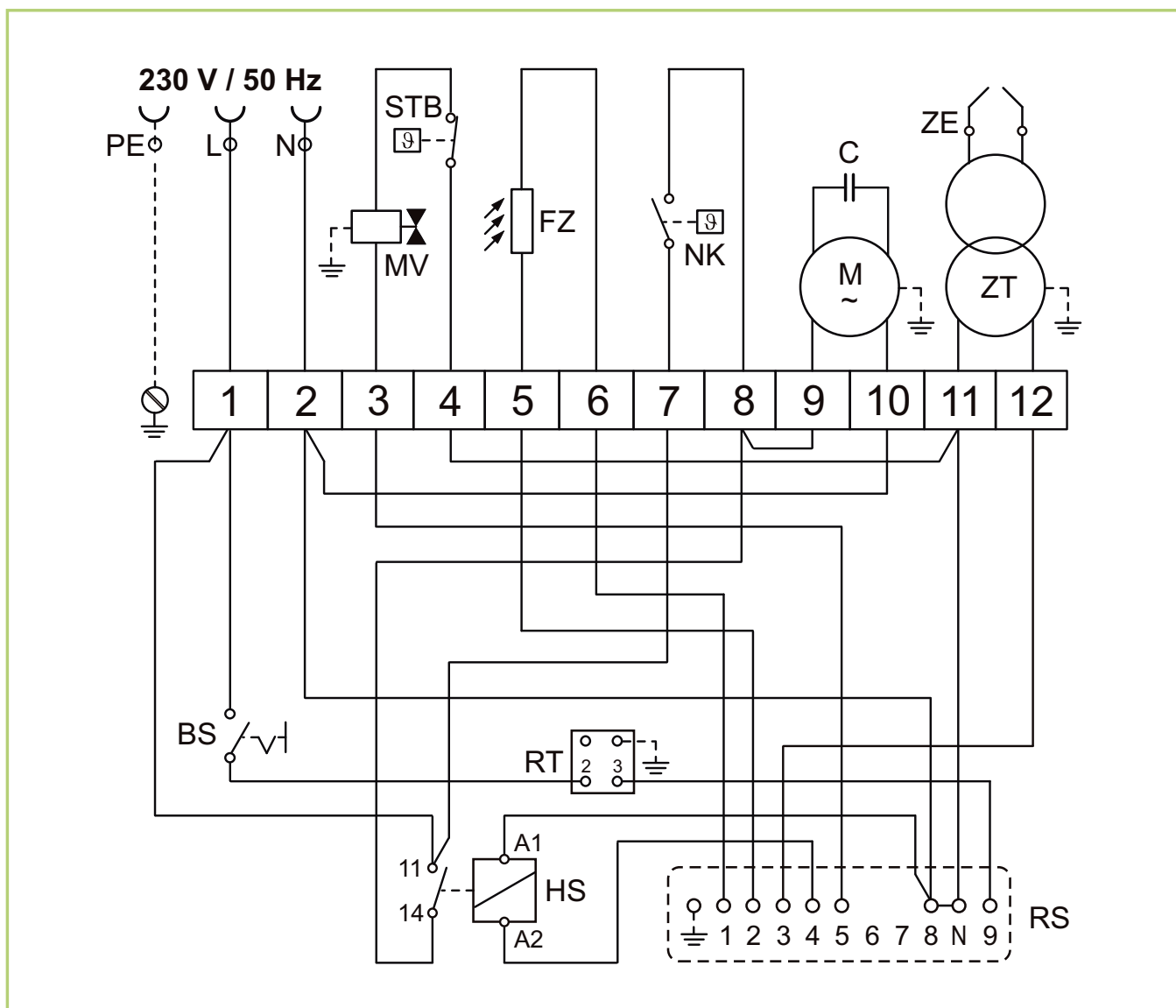
The equipment manufacturing process is subject to constant quality control.

Only high-quality materials that are recyclable to a great extent are used.

You also contribute to environmental protection by guaranteeing that your old unit is disposed of in an environmentally friendly manner.

***For this reason, bring the old unit only to an authorised recycling company or to a corresponding disposal site.***

## Electrical wiring diagram



### Legend:

**BS** = Operating switch  
**C** = Condenser  
**FZ** = Photoelectric cell  
**HS** = Auxiliary relay  
**M** = Motor  
**MV** = Solenoid valve

**NK** = Re-cooling thermostat  
**RS** = Relay socket  
**RT** = Thermostat plug socket  
**STB** = Safety limiter  
**ZE** = Ignition electrode  
**ZT** = Ignition transformer



## Maintenance log

| Model .....                       | Model No. .... |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
|-----------------------------------|----------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
|                                   |                | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Clean unit – surface –            |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Clean unit – interior –           |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Clean fan blade                   |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Clean fan housing                 |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Clean condenser                   |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Clean evaporator                  |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Fan function checked              |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Intake grille with filter cleaned |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Check unit for damage             |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Protective devices checked        |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| All fixing screws checked         |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Electrical safety test            |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Test run                          |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |

Remarks: .....

.....

.....

|                                      |                                      |                                      |                                      |                                      |
|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| 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 |

## Technical Data

| Device type                                           |                                                      | DZH 20-2  | DZH 30-2  | DZH 50-2  | DZH 90-2 |
|-------------------------------------------------------|------------------------------------------------------|-----------|-----------|-----------|----------|
| Nominal heating capacity                              | kW                                                   | 20        | 36        | 46        | 95       |
| Air capacity                                          | m <sup>3</sup> /h                                    | 350       | 605       | 1400      | 2500     |
| Fuel                                                  | EL heating oil according to DIN 51603 or diesel fuel |           |           |           |          |
| Max. fuel consumption                                 | l/h                                                  | 2,01      | 3,62      | 4,62      | 9,52     |
| Nozzle (Danfoss) <sup>1)</sup>                        | USG                                                  | 0,40/80°S | 0,60/80°S | 0,85/80°S | 2,0/80°S |
| Pump pressure, approx. <sup>1)</sup>                  | bar                                                  | 11-12     | 13-14     | 13-14     | 10-11    |
| Tank volume                                           | Ltr.                                                 | 17        | 40        | 62        | 105      |
| Voltage supply                                        | V/Ph                                                 | 230/1~    | 230/1~    | 230/1~    | 230/1~   |
| Frequency                                             | Hz                                                   | 50        | 50        | 50        | 50       |
| Max. nominal current                                  | A                                                    | 1,0       | 1,3       | 1,8       | 2,5      |
| Max. power consumption                                | W                                                    | 200       | 290       | 430       | 520      |
| Fuse protection (on site)                             | A                                                    | 10        | 10        | 10        | 10       |
| Noise pressure level L <sub>pA</sub> 1m <sup>2)</sup> | dB(A)                                                | 74        | 77        | 78        | 79       |
| Total length                                          | mm                                                   | 800       | 1050      | 1090      | 1400     |
| Total width                                           | mm                                                   | 300       | 500       | 500       | 655      |
| Total height                                          | mm                                                   | 520       | 615       | 740       | 890      |
| Weight                                                | kg                                                   | 21        | 37        | 43        | 84       |
| EDP no:                                               |                                                      | 116202    | 116302    | 116502    | 116902   |

<sup>1)</sup> The said pump nozzle sizes and pressures resulting from adjust tests to the test stand.  
The oil flow was calibrated.

Due to product-specific nozzle / pressure and tolerances as well as the oil temperature, the detail to be regarded as guidelines only.

<sup>2)</sup> Noise measurement according to DIN 45635 - 01 - Cl. 3

# REMKO QUALITY WITH SYSTEMS

Air-Conditioning | Heating | New Energies

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