

# DH 160 / DH 310

**EN**

**ORIGINAL INSTRUCTIONS**  
CONDENSER DRYER



**Table of contents**

Notes regarding the instructions ..... 2

Safety ..... 2

Information about the device ..... 4

Transport and storage ..... 5

Assembly and installation ..... 6

Operation ..... 8

Available accessories ..... 9

Errors and faults ..... 10

Maintenance ..... 12


Technical annex ..... 16


Disposal ..... 29


Declaration of conformity ..... 29

**Notes regarding the instructions**


**Symbols**


 **Warning of electrical voltage**  
This symbol indicates dangers to the life and health of persons due to electrical voltage.

 **Warning**  
This signal word indicates a hazard with an average risk level which, if not avoided, can result in serious injury or death.

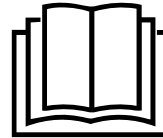
 **Caution**  
This signal word indicates a hazard with a low risk level which, if not avoided, can result in minor or moderate injury.

**Note**  
This signal word indicates important information (e.g. material damage), but does not indicate hazards.

 **Info**  
Information marked with this symbol helps you to carry out your tasks quickly and safely.

 **Follow the manual**  
Information marked with this symbol indicates that the instructions must be observed.

You can download the current version of these instructions via the following link:



DH 160



<https://hub.trotec.com/?id=42376>


DH 310



<https://hub.trotec.com/?id=43849>

**Safety**

**Read this manual carefully before starting or using the device. Always store the manual in the immediate vicinity of the device or its site of use.**

 **Warning**  
**Read all safety warnings and all instructions.**  
Failure to follow the warnings and instructions may result in electric shock, fire and / or serious injury.  
**Save all warnings and instructions for future reference.**

- Do not use the device in potentially explosive rooms or areas and do not install it there.
- Do not use the device in aggressive atmosphere.
- Only put up the device in an upright, stable position on firm ground.
- Let the device dry out after a wet clean. Do not operate it when wet.
- Do not use the device with wet or damp hands.
- Do not expose the device to directly squirting water.
- Never insert any objects or limbs into the device.
- Do not cover the device during operation.
- Do not sit on the device.
- Check accessories and connection parts for possible damage prior to every use of the device. Do not use any defective devices or device parts.
- Ensure that all electric cables outside of the device are protected from damage (e.g. caused by animals). Never use the device if electric cables or the power connection are damaged!

- The mains connection must correspond to the specifications in the Technical annex.
- Insert the mains plug into a properly fused mains socket.
- Observe the device's power input, cable length and intended use when selecting extensions to the power cable. Completely unroll extension cables. Avoid electrical overload.
- Before carrying out maintenance, care or repair work on the device, remove the mains plug from the mains socket. Hold onto the mains plug while doing so.
- Switch the device off and disconnect the power cable from the mains socket when the device is not in use.
- Do not under any circumstances use the device if you detect damages on the mains plug or power cable. If the power cable is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard. Defective power cables pose a serious health risk!
- When positioning the device, observe the minimum distances from walls and other objects as well as the storage and operating conditions specified in the Technical annex.
- Make sure that the air inlet and outlet are not obstructed.
- Make sure that the suction side is kept free of dirt and loose objects.
- Do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in legible condition.
- Only transport the device in an upright position with an emptied condensation tank or drain hose.
- Discharge the collected condensate before transport and storage. Do not drink it. Health hazard!

### Intended use

Only use the device as a stationary industrial dryer for drying and dehumidifying room air whilst adhering to the technical data.

Intended use comprises:

- industrial process and product drying
- drying and dehumidifying:
  - production plants, underground rooms
  - store rooms, archives, laboratories
  - ship engine rooms (for corrosion protection)
  - moisture-sensitive goods during transport of water processing facilities and pump stations (to prevent condensation on pipes and pumps)
- maintaining the dryness of:
  - instruments, devices, files
  - electric control devices, boiler plants, turbines and pipe systems in power plants
  - moisture-sensitive loads etc.

### Foreseeable misuse

- Do not place the device on wet or flooded ground.
- Do not place any objects, e.g. clothing, on the device.
- Do not use the device out of doors.
- Do not make any unauthorised modifications, alterations or structural changes to the device.

### Personnel qualifications

People who use this device must:

- be aware of the dangers that occur when working with electric devices in damp areas.
- have read and understood the instructions, especially the Safety chapter.

Maintenance tasks which require the housing to be opened must only be carried out by specialist companies for cooling and air-conditioning or by Trotec.

### Electrically skilled person

Electrically skilled personnel must be able to read and understand electric circuit diagrams, to put electrical systems into service and to maintain them, to wire control cabinets, to ensure the functionality of electrical components and to identify possible hazards from electrical and electronic systems.

### Personal protective equipment



#### Wear safety glasses

For start-up, maintenance and troubleshooting always wear suitable safety glasses.



#### Wear a protective mask

For cleaning and maintenance tasks wear an appropriate protective mask.



#### Wear protective gloves

For start-up, maintenance and troubleshooting always wear suitable protective gloves.



#### Wear foot protection

For transportation, start-up, maintenance and troubleshooting always wear suitable foot protection.

### Residual risks



#### Warning of electrical voltage

Work on the electrical components must only be carried out by an authorised specialist company!



#### Warning of electrical voltage

Before any work on the device, remove the mains plug from the mains socket!

Do not touch the mains plug with wet or damp hands. Hold onto the mains plug while pulling the power cable out of the mains socket.

**Warning**

Dangers can occur at the device when it is used by untrained people in an unprofessional or improper way! Observe the personnel qualifications!

**Warning**

The device is not a toy and does not belong in the hands of children.

**Warning**

Risk of suffocation!  
Do not leave the packaging lying around. Children may use it as a dangerous toy.

**Note**

Do not operate the device without an air filter inserted into the air inlet!

Without the air filter, the inside of the device will be heavily contaminated. This could reduce the performance and result in damage to the device.

**Behaviour in the event of an emergency**

1. Switch the device off.
2. Disconnect the device from the mains feed-in: Hold onto the mains plug while pulling the power cable out of the mains socket.
3. Do not reconnect a defective device to the mains.

**Information about the device****Device description**

The dehumidifiers of the DH series uses the principle of condensation to automatically dehumidify rooms.

The fan sucks damp room air through the air inlet, the evaporator and the condenser located behind it. The air is cooled at the cold evaporator until it is below the dew point. Water vapour contained in the room air precipitates on the evaporator fins as condensation or rime. The dehumidified, cooled air is rewarmed at the condenser and blown out at a temperature of approx. 5 °C above room temperature.

The drier air, thus conditioned, is mixed with the room air again or guided to other areas via an air duct system. The humidity in the room where the device is positioned – or in the corresponding area – is reduced as air constantly circulates through the device.

The condensate is fed through a pressure-resistant pipe connection and out of the device by means of a condensation drain hose. For the collection you can for instance place a sufficiently dimensioned collection container beside the device.

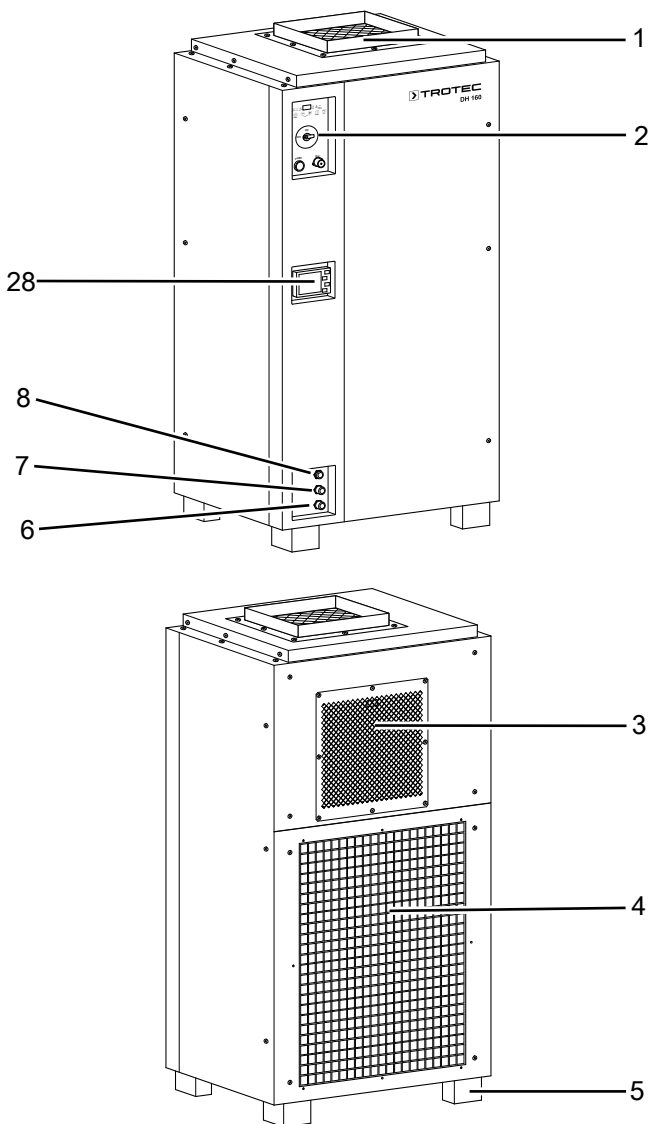
Alternatively, the condensate can be discharged using the installed condensate pump.

The device has a control panel for operating and controlling the functions. Moreover, the device is fitted with an energy meter as standard.

The device can reduce the relative humidity of a room to approx. 30 %.

Because of the heat radiation generated during operation, the room temperature may rise slightly.

## Device depiction



No.	Designation
1	Air outlet (option 1)
2	Control panel
3	Air outlet (option 2)
4	Air inlet / suction side with filter
5	Foot
6	Condensate drain hose connection
7	Pump drain hose connection
8	Mains connection
28	energy meter (MID-compliant)

## Transport and storage

### Note

If you store or transport the device improperly, the device may be damaged.  
Note the information regarding transport and storage of the device.

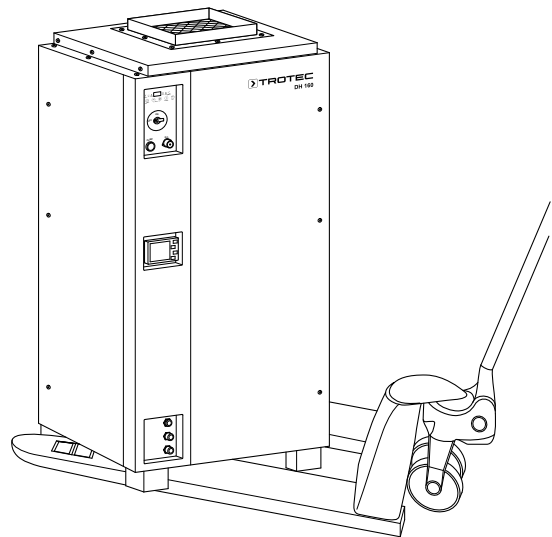
### Transport



#### Wear foot protection

For transportation, start-up, maintenance and troubleshooting always wear suitable foot protection.

Always utilize the help of another person to transport the device. Do not try to transport the device without the help of another person. To lift the device, use a forklift or an elevating truck as appropriate.



**Before** transporting the device, observe the following:

- Switch the device off.
- Hold onto the mains plug while pulling the power cable out of the mains socket.

**After** transporting the device, proceed as follows:

- Set up the device in an upright position after transport.

### Storage

- Drain any possibly remaining condensate.

When the device is not being used, observe the following storage conditions:

- Store the device in a dry location and protected from frost and heat.
- Store the device in an upright position where it is protected from dust and direct sunlight.
- If required, use a cover to protect the device from invasive dust.

## Assembly and installation

### Scope of delivery

- 1 x device
- 1 x Condensation drain hose, length: 3 m  
inner diameter: 16 mm
- 1 x manual

### Unpacking the device

1. Open the wooden box and take the device out.
2. Completely remove the packaging.
3. Fully unwind the power cable. Make sure that the power cable is not damaged and that you do not damage it during unwinding.

### Start-up



#### Wear safety glasses

For start-up, maintenance and troubleshooting always wear suitable safety glasses.



#### Wear protective gloves

For start-up, maintenance and troubleshooting always wear suitable protective gloves.



#### Wear foot protection

For transportation, start-up, maintenance and troubleshooting always wear suitable foot protection.

When positioning the device, observe the minimum distance from walls or other objects as described in the chapter Technical annex.

- Before restarting the device, check the condition of the power cable. If there are doubts as to the sound condition, contact the customer service.
- Only put up the device in an upright, stable position on firm ground.
- Do not create tripping hazards when laying the power cable or other electric cables, especially when positioning the device in the middle of the room. Use cable bridges.
- Make sure that extension cables are completely unrolled.
- When positioning the device, keep a sufficient distance to heat sources.
- Make sure that no curtains or other objects interfere with the air flow.
- When positioning the device, secure the device locally with an RCD (Residual Current Device) which complies with the appropriate regulations.

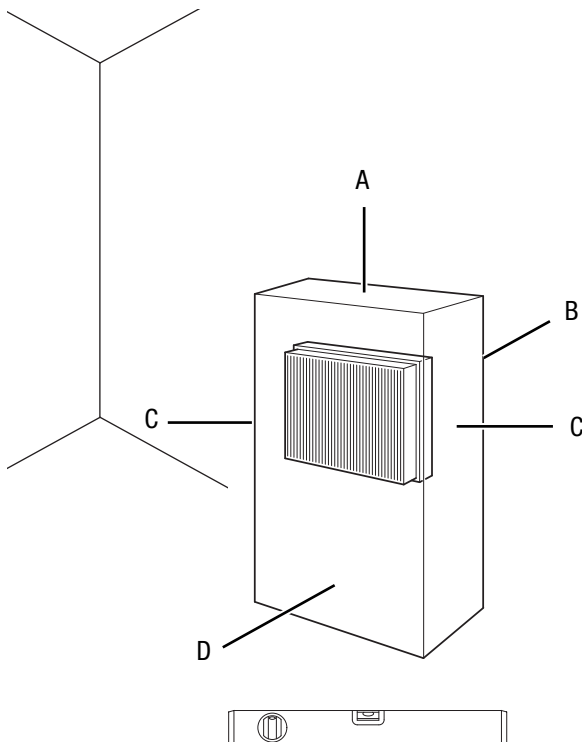
### Notes regarding the dehumidification performance

The dehumidification performance depends on:

- the layout of the room
- the room temperature
- the relative humidity

The higher the room temperature and relative humidity, the greater the dehumidification performance.

For use in living rooms, a relative humidity of approx. 50 to 60 % is sufficient. In storage facilities and archives, the humidity should not exceed approx. 50 %.



## Water discharge

The water condensed on the heat exchanger must be discharged. This can be done in two ways:

Option 1: via the condensate drain hose connection

Option 2: via the pump drain hose connection

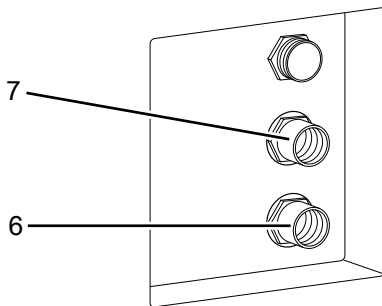
The industrial dryer is equipped with hose connections for hoses with an inner diameter of 16 mm.

1. Connect a suitable hose to the condensate drain hose connection (6) or to the pump drain hose connection (7).

### Note

Please note that one hose connection is fitted with a plug.

If necessary, remove the plug from the hose connection where you want to connect the hose.



2. Use the plug to close the hose connection that is not used.

## Air routing

The dry air can be transported to areas with a high relative humidity level e.g. via air ducts. A correct air distribution is essential here to achieve a controlled humidity value in the respective areas.

### Note

Air ducts and other elements may only be connected by a specialist company for ventilation, cooling and air-conditioning.

### Note

The industrial dryer and the air ducts operate at ordinary temperatures. Should they come into contact with unheated rooms, e.g. because the air ducts are routed through unheated basements or attics, they must be insulated.

## Discharge of dry air

To achieve a more even air distribution, it is often necessary to install appropriate air ducts. Observe the device's technical data (air volumes and pressures) when dimensioning air ducts and, if required, other elements (such as grilles or heaters).

Please note the following when installing an air routing system:

- If an air duct is mounted at the air inlet, the duct must cover the entire cross section.
- All devices are equipped with a connecting flange at the air outlet as standard.
- The connecting flange and/or air filter can be ordered from Trotec.
- Remove any cover plate or grille possibly mounted before connecting the air ducts.
- After having installed the air routing system, including the grille (if any), check the air flow rate. The air flow rate must correspond to the air flow rate ( $\pm 10\%$ ) specified in the device's technical data and should be adjusted correspondingly via the main valve. If the air flow rate deviates too strongly, the dehumidification performance will not be achieved.

## Electrical installation (voltage supply)



### Warning of electrical voltage

Electrical work on the industrial dryer may only be carried out by a qualified electrician.

The electrical installation must meet the requirements of the latest VDE standard (German Association for Electrical, Electronic & Information Technologies) and local provisions.

The voltage supply must be protected by fuses and circuit breakers suitable for the motor. A disconnecter must be installed next to the device.

All devices must be properly grounded. We recommend that you install a residual current device (RCD).

### Note

Only if the following voltage and frequency limits are complied with, can the specified performance values be achieved:

Devices with one phase: Nominal voltage  
230 V  $\pm 10\%$

Devices with three phases: Nominal voltage  
400 V  $\pm 10\%$

Nominal frequency 50 Hz  $\pm 5\%$

These voltages must be applied when the dehumidifier is operated at full power.

### Note

All devices are equipped with a phase failure relay. If one phase is missing or if there is no clockwise rotating field, the indicator light at the relay will be off and the industrial dryer will not start.

**Inserting the air filter**

**Note**

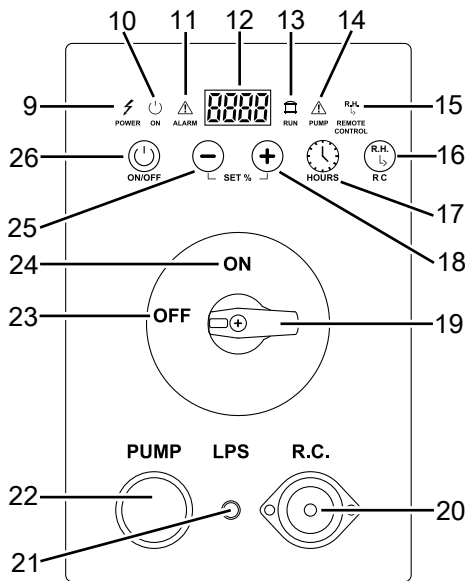
Do not operate the device without an air filter inserted into the air inlet!

Without the air filter, the inside of the device will be heavily contaminated. This could reduce the performance and result in damage to the device.

- Make sure that the air filter is installed before switching the device on.

**Operation**

**Operating elements**



No.	Designation	Meaning
13	<i>RUN</i> LED	Flashes when the compressor switches on
14	<i>PUMP</i> LED	Illuminated in the event of a condenser malfunction
15	<i>REMOTE CONTROL</i> LED	Illuminated during operation with an external hygrostat
16	<i>R.C.</i> button	For establishing a connection to the external hygrostat (option)
17	<i>HOURS</i> button	Number of operating hours is displayed
18	<i>Increase value</i> button	<ul style="list-style-type: none"> <li>• For increasing the desired relative humidity level (30 % to 80 %)</li> <li>• For deactivating continuous operation</li> </ul>
19	On/off switch	For switching the device on and off
20	<i>R.C.</i> connection	Connection to the external hygrostat
21	<i>LPS</i> LED	Illuminated in the event of a fault in the refrigerant circuit
22	<i>PUMP</i> button	For switching the condensate pump on and off
23	<i>OFF</i> position	Device switched off
24	<i>ON</i> position	Device switched on or in standby mode
25	<i>Decrease value</i> button	<ul style="list-style-type: none"> <li>• For reducing the desired relative humidity level (30 % to 80 %)</li> <li>• For activating continuous operation</li> </ul>
26	<i>ON/OFF</i> button	For switching dehumidification mode on and off

No.	Designation	Meaning
9	<i>POWER</i> LED	Illuminated during standby and ongoing operation
10	<i>ON</i> LED	Illuminated during ongoing operation.
11	<i>ALARM</i> LED	Illuminated in the event of an error message In addition, the error code is displayed on the segment display, see chapter Errors and faults
12	Segment display	<ul style="list-style-type: none"> <li>• Indication of the current room humidity level</li> <li>• Indication of the desired room humidity level</li> <li>• Indication of the number of operating hours</li> <li>• Indication of the error code, see chapter Errors and faults</li> </ul>

**Switching the device on**

1. Once you have completely installed the device as described in the Start-up chapter, you can switch it on.
2. Turn the on / off switch (19) to the *ON* position (24).  
⇒ The device will switch to standby mode.
3. Press the *ON/OFF* button (26).  
⇒ The device starts to dehumidify.

**Setting the desired relative room humidity**

The desired relative room humidity can be preselected at any time.

1. Press the *increase value* (18) or *decrease value* button (25) to set the desired relative room humidity. Setting is possible in the range between 30 % and 80 %.  
⇒ The segment display (12) indicates the value for approx. 4 s.

The device keeps running until reaching the desired relative room humidity. Once the desired relative room humidity is exceeded, the compressor and fan switch back on.



## Continuous operation

In continuous operation mode, the device dehumidifies the air constantly, regardless of the humidity.

✓ The desired relative room humidity is set to 30 %.

1. Press the *decrease value* button (25) to activate continuous operation.
  - ⇒ When continuous operation is activated, *Cont.* is shown on the segment display (12).
2. Press the *increase value* button (18) to deactivate continuous operation.
  - ⇒ The desired humidity value is displayed.

## Hygrostat operation mode (optional)

The device can also be operated with an external hygrostat. The hygrostat switches the device on or off depending on the relative humidity.

If you choose to operate the device with an optional external hygrostat, set the desired relative humidity at the hygrostat (see instructions of the optional hygrostat).

Establish a connection between the industrial dryer and the hygrostat as follows:

1. Connect the hygrostat to the *R.C.* connection (20).
2. Press and hold the *R.C.* button (16) for 4 s.
  - ⇒ The *REMOTE ON/OFF* LED (15) is illuminated.

In doing so, observe the switching point. If the external hygrostat activates the device via the set humidity value, then the hygrostat and drying unit operate correctly.

You can tell the incorrect operation of the external hygrostat if the industrial dryer operates below the set value and switches off above it. In this case you need to open the hygrostat and reconnect the connections (an explanation is provided inside the cover of the hygrostat).

## Automatic defrost

At low ambient temperatures, ice may form at the evaporator during dehumidification. The device will then carry out an automatic defrost. Dehumidification is briefly interrupted during defrosting. The fan keeps running.

The duration of the defrost process can vary. Do not switch off the device during automatic defrost. Do not remove the mains plug from the mains socket.

## Shutdown



### Warning of electrical voltage

Do not touch the mains plug with wet or damp hands.

- Hold onto the mains plug while pulling the power cable out of the mains socket.
- If necessary, remove the condensation drain hose and any residual fluid from it.
- Empty the condensation tank, if need be.
- Clean the device according to the Maintenance chapter.
- Store the device according to the Transport and storage chapter.

## Available accessories



### Warning

Only use accessories and additional equipment specified in the instructions.

Using insertion tools or accessories other than those specified in the instructions may cause a risk of injury.

Designation	Article number
Room hygrostat HG 120	6.100.002.040
Air inlet filter	7.710.000.398
Hose adapter for outlet duct	7.299.000.021

## Errors and faults

The device has been checked for proper functioning several times during production. If malfunctions occur nonetheless, check the device according to the following list.

### The device does not start:

- Check the power connection.
- Check the power cable and mains plug for damage.
- Check the on-site fusing.
- Check the room temperature. Observe the device's permissible operating range according to the technical data.

### The device is running, but there is no formation of condensate:

- Check whether the condensation drain hose is positioned correctly.
- When using the condensate pump: Check the condensation tank and hoses for dirt.
- Ensure that the relative room humidity complies with the technical data.
- Check the air filter for dirt. If necessary, clean or replace the air filter.
- Visually inspect the heat exchangers for external dirt (see chapter Maintenance). Have dirt removed by a specialist company or by Trotec.
- The device might carry out an automatic defrost. During automatic defrost, the device does not dehumidify.

### The device is loud or vibrates:

- Check whether the device is set up in a stable and upright position.

### Condensate is leaking:

- Check the device for leaks.

### The compressor does not start:

- Check the room temperature. Observe the device's permissible operating range according to the technical data.
- Check whether the overheating protection of the compressor has tripped. Disconnect the device from the mains and let it cool down for approx. 10 minutes before reconnecting it.
- The device might carry out an automatic defrost. During automatic defrost, the device does not dehumidify.

### The device gets very warm, is loud or is losing performance:

- Check the air inlets and air filters for dirt. Remove external dirt.
- From the outside, check the device for dirt (see chapter Maintenance). If the inside of the device is dirty, have it cleaned by a specialist company for cooling and air-conditioning or by Trotec.

### The device still does not operate correctly after these checks:

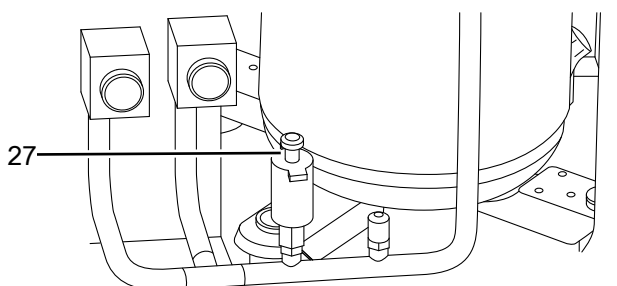
Please contact the customer service. If necessary, bring the device to a specialist company for cooling and air-conditioning or to Trotec for repair.

## Error codes

When the *ALARM* LED (11) lights up, the following error messages might be displayed:

Message	Cause	Troubleshooting
<b>PHAS</b> and LED <i>LPS</i> (21) are illuminated	<ul style="list-style-type: none"> <li>There might be a leak in the internal refrigerant circuit.</li> </ul>	<ul style="list-style-type: none"> <li>Have the device checked by a specialist company for cooling and air-conditioning.</li> </ul>
<b>PHAS</b>	<ul style="list-style-type: none"> <li>The phases of the mains supply are reversed.</li> </ul>	<ul style="list-style-type: none"> <li>Exchange the phases.</li> </ul>
<b>HIPS</b>	<ul style="list-style-type: none"> <li>The high-pressure switch (27) has tripped.</li> <li>The heat exchangers are dirty and/or the filter is dirty.</li> </ul>	<ul style="list-style-type: none"> <li>Open the service panel and reset the high-pressure switch (27).</li> <li>Clean the heat exchangers and/or the filter.</li> </ul>
<b>Pro1</b> <b>Pro2</b> <b>Pro3</b> <b>Prob</b>	<ul style="list-style-type: none"> <li>There is a malfunction at the temperature or humidity probes.</li> </ul>	<ul style="list-style-type: none"> <li>Have the device checked by a specialist company for cooling and air-conditioning, and have the measuring equipment exchanged if necessary.</li> </ul>
<b>LO t</b>	<ul style="list-style-type: none"> <li>There is a malfunction at the automatic defrost system.</li> </ul>	<ul style="list-style-type: none"> <li>Switch the device off at the on/off switch (19) and remove the mains plug from the mains socket.</li> <li>For defrosting, have the thermostat replaced by the customer service.</li> </ul>
<b>LO t</b>	<ul style="list-style-type: none"> <li>The temperature is below 2 °C.</li> </ul>	<ul style="list-style-type: none"> <li>Only restart the condenser dryer at a temperature &gt;10 °C.</li> </ul>
<b>Pr1</b> <b>Pr12</b> <b>LoPt</b> <b>Pr2</b>	<ul style="list-style-type: none"> <li>The device performs a probe test.</li> <li>Probes 1, 1 and 2 or 2 might be defective.</li> </ul>	<ul style="list-style-type: none"> <li>Please contact the customer service if the probes are defective.</li> </ul>
<b>Hi t</b>	<ul style="list-style-type: none"> <li>The device does not operate due to excessive ambient temperatures.</li> </ul>	<ul style="list-style-type: none"> <li>Check the outside temperature (temperatures above 35 °C can be critical).</li> <li>When the temperature drops, the error message will be reset automatically.</li> </ul>
<b>PunP</b>	<ul style="list-style-type: none"> <li>The drainage of the pump is defective.</li> <li>The pump or float switch may be defective.</li> </ul>	<ul style="list-style-type: none"> <li>Clean the pump as described in the Maintenance chapter.</li> <li>Please contact the customer service if the pump or the float switch is defective.</li> </ul>

### High-pressure switch



## Maintenance

## Maintenance intervals

Maintenance and care interval	before every start-up	as needed	at least every 2 weeks	at least every 4 weeks	at least every 6 months	at least annually
Check air inlet and outlet for dirt and foreign objects and clean if necessary	X			X		
Clean the exterior		X				X
Visually check the inside of the device for dirt		X				X
Check the air filter for dirt and foreign objects and clean or replace if necessary	X		X			
Replace the air filter					X	
Check for damage	X					
Check the attachment screws		X				X
Test run						X
Empty and clean the condensation tank and/or drain hose		X				
Check the condensate pump and connections, and clean if necessary		X				X

## Maintenance and care log

Device type: .....

Device number: .....

Maintenance and care interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Check air inlets and outlets for dirt and foreign objects and clean if necessary																
Check the air filter for dirt and foreign objects and clean or replace if necessary																
Clean the exterior																
Visually check the inside of the device for dirt																
Replace the air filter																
Check the attachment screws																
Test run																
Empty and clean the condensation tank and/or drain hose																
Check the condensate pump and connections, and clean if necessary																
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: .....

## Activities required before starting maintenance



### Wear safety glasses

For start-up, maintenance and troubleshooting always wear suitable safety glasses.



### Wear a protective mask

For cleaning and maintenance tasks wear an appropriate protective mask.



### Wear protective gloves

For start-up, maintenance and troubleshooting always wear suitable protective gloves.



### Wear foot protection

For transportation, start-up, maintenance and troubleshooting always wear suitable foot protection.



### Warning of electrical voltage

Do not touch the mains plug with wet or damp hands.

- Switch the device off.
- Hold onto the mains plug while pulling the power cable out of the mains socket.



### Warning of electrical voltage

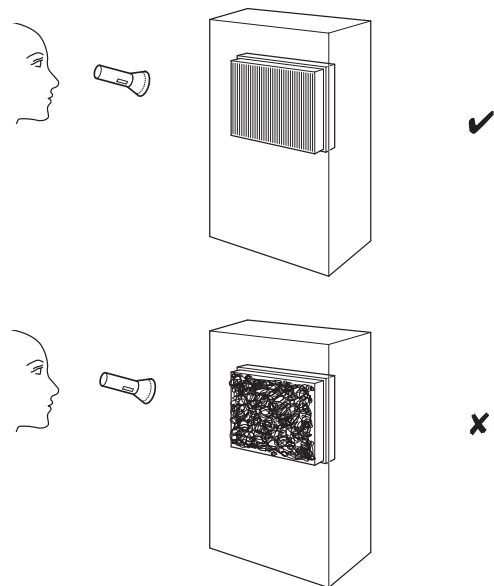
Tasks which require the device to be opened must only be carried out by authorised specialist companies or by Trotec.

## Refrigerant circuit

- The entire refrigerant circuit is a maintenance-free, hermetically sealed system and may only be maintained or repaired by specialist companies for cooling and air-conditioning or by Trotec.

## Visual inspection of the inside of the device for dirt

1. Remove the air filter.
2. Use a torch to illuminate the openings of the device.
3. Check the inside of the device for dirt.
4. If you see a thick layer of dust, have the inside of the device cleaned by a specialist company for cooling and air-conditioning or by Trotec.
5. Put the air filter back in.



### Cleaning the air filter

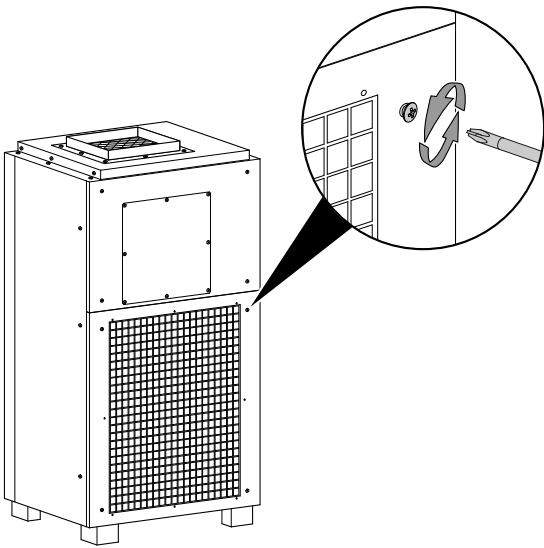
The air filter has to be cleaned as soon as it is dirty. This is brought to light e.g. by a reduced capacity (see chapter Errors and faults).



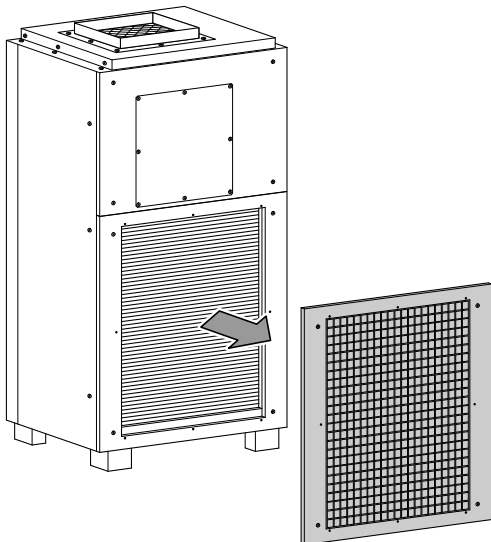
#### Warning

Ensure that the air filter is not worn or damaged. The corners and edges of the air filter must not be deformed or rounded. Before reinserting the air filter, make sure that it is undamaged and dry!

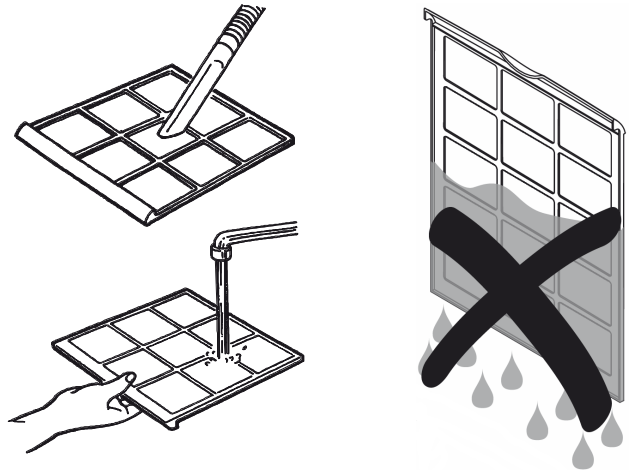
1. Loosen the four attachment screws at the air inlet cover (4) with 1/4 turn.



2. Remove the air inlet cover with filter (4) from the device.



3. Clean the filter using a slightly damp, soft, lint-free cloth. If the filter is heavily contaminated, clean it with warm water mixed with a neutral cleaning agent.

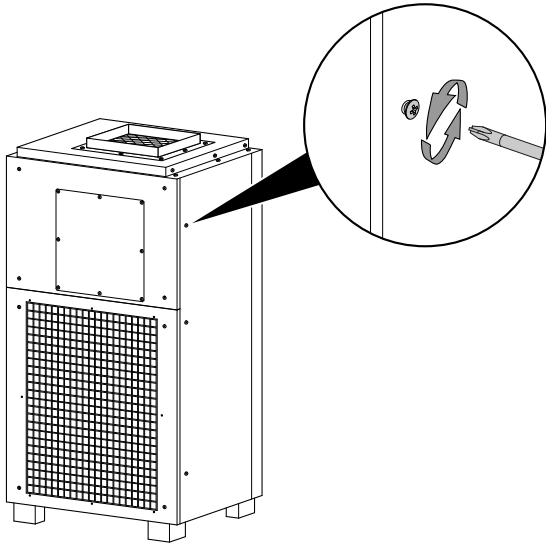


4. Allow the filter to dry completely. Do not insert a wet filter into the device!
5. Reinsert the air filter into the device.
6. Reattach the air inlet cover (4) to the device.

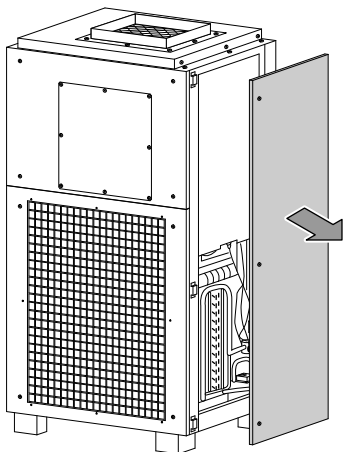
## Cleaning the condensate pump

Perform this activity at least once a year.

1. Loosen the three attachment screws at the service panel with 1/4 turn.

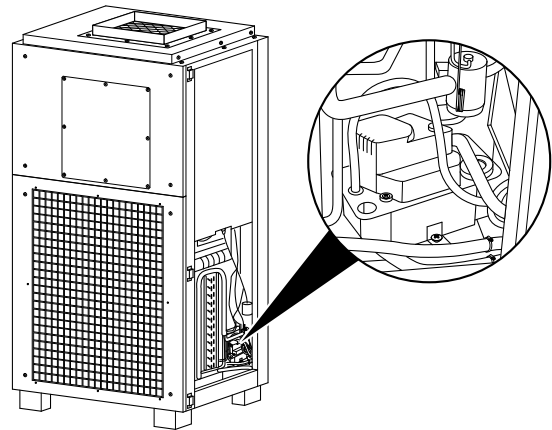


2. Remove the service panel from the device.

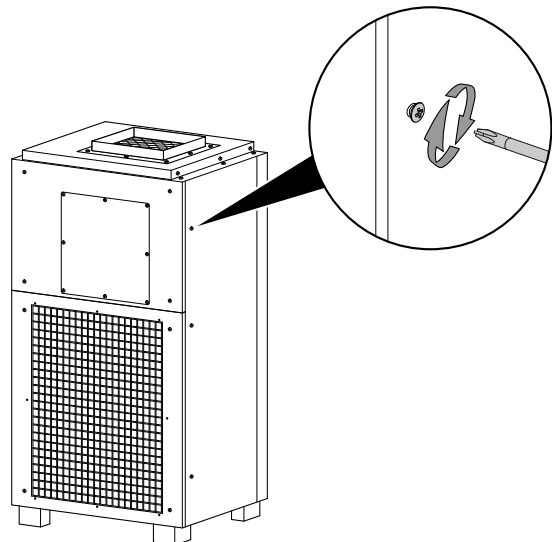


3. Remove the hose lines from the pump connections.

4. Clean the hose lines and connections at the pump and remove any dirt.



5. Reconnect the hose lines and check all hose connections.
6. Reattach the service panel to the device by turning the attachment screws 1/4 turn.

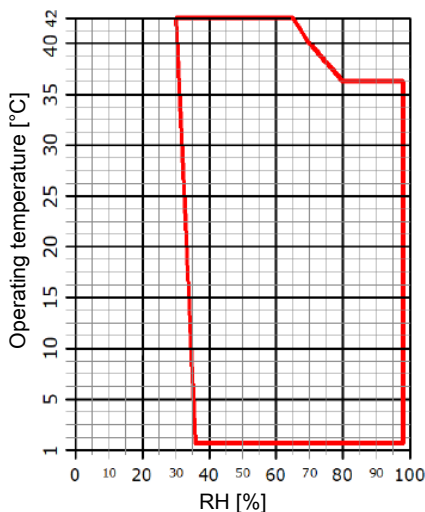


**Technical annex**

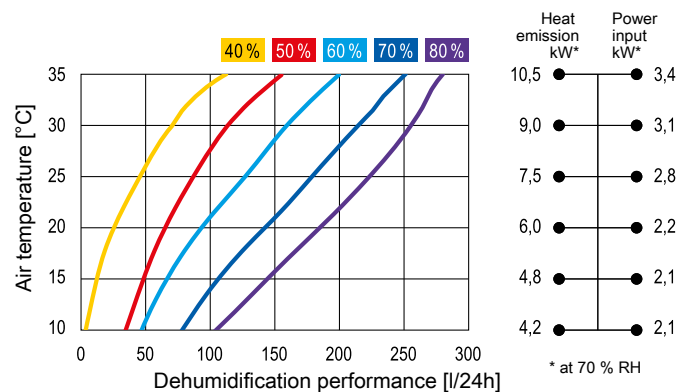
**Technical data**

Parameter	Value	
Model	DH 160	DH 310
Dehumidification performance	see dehumidification chart	see dehumidification chart
Power supply	400 V / 3N~ / 50 Hz	400 V / 3N~ / 50 Hz
Power input dehumidification	3.1 kW	6.9 kW
Nominal/peak current	9.5 A / 50 A	11 A / 75 A
Refrigerant	R-407C	R-407C
Amount of refrigerant	2.1 kg	3.2 kg
GWP factor	1.774	1.774
CO <sub>2</sub> equivalent	3.73 t	5.68 t
Pressure suction side	1.8 MPa	1.8 MPa
Pressure outlet side	2.8 MPa	2.8 MPa
Air volume (freely blowing)	2200 m <sup>3</sup> /h	4,600 m <sup>3</sup> /h
Sound pressure level (3 m distance)	59 dB(A)	60 dB(A)
Operating range temperature	1.5 °C to 42 °C	1.5 °C to 42 °C
Operating range with defrost system (optional)	below 0 °C up to 42 °C	below 0 °C up to 42 °C
Setting range relative humidity	30 % to 95 % RH	30 % to 95 % RH
Max. permissible relative humidity	95 % RH	95 % RH
Max. pump height of the condensate pump	4 m	4 m
Condensation drain hose	ø 16 mm (inside), l = 3 m	ø 16 mm (inside), l = 3 m
Weight	150 kg	230 kg
Dimensions (depth x width x height)	560 x 700 x 1355 mm	690 x 1080 x 1715 mm
Minimum distance to walls or other objects:		
A: top:	80 cm	80 cm
B: rear:	80 cm	80 cm
C: side:	80 cm	80 cm
D: front:	50 cm	50 cm

**Operating temperature chart**

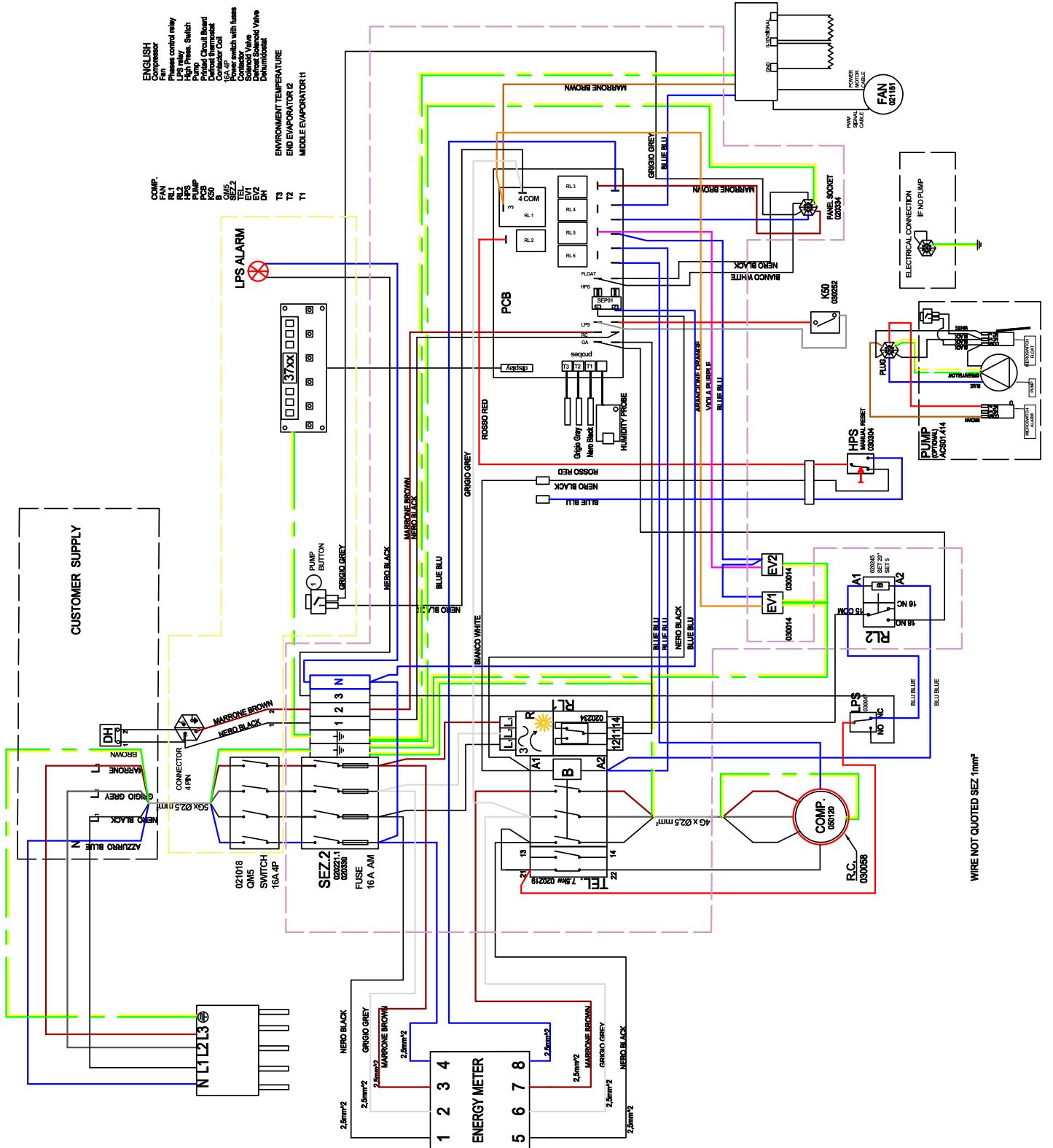


**Dehumidification chart**





Circuit diagram DH 160



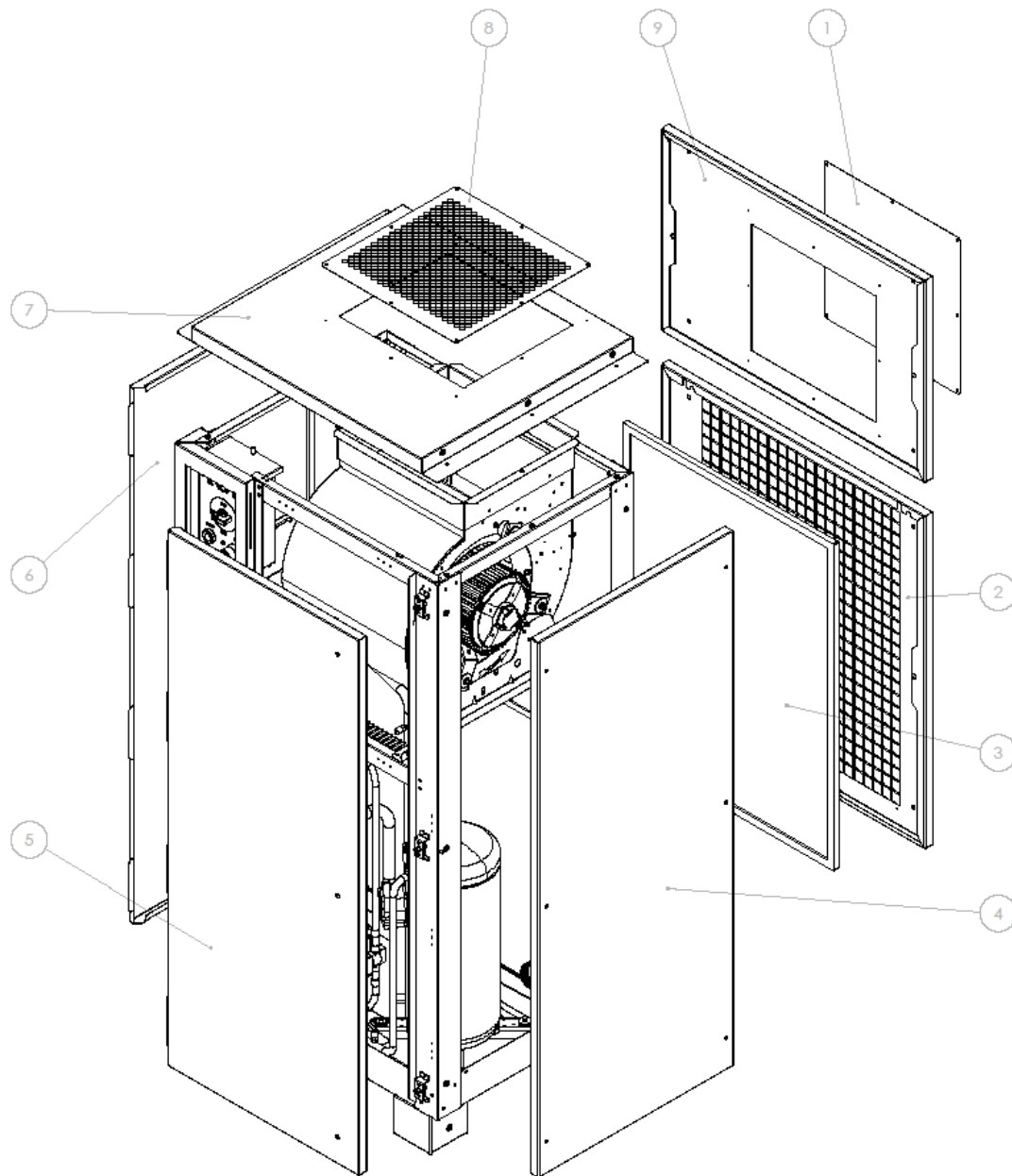
- ENGLISH
- COMP. Compressor
  - FAN Fan
  - FAN 021181 Fan
  - Presses control relay
  - RL1
  - RL2
  - LPS relay
  - Relay Switch
  - PUMP Pump
  - Printed Circuit Board
  - PCB
  - Control Unit
  - Control Coil
  - GA 4P Switch with fuse
  - SEZ2
  - TELE. Valve
  - EV1
  - EV2
  - DH
  - DH1
  - DH2
  - Environment Temperature
  - T3
  - T2
  - T1
  - END EVAPORATOR 12
  - MIDDLE EVAPORATOR 11
- COMP. 080120
- FAN 021181
- PUMP 03001414
- PCB
- SEZ2
- TELE. 020221.1
- EV1 030014
- EV2 030014
- DH
- DH1
- DH2
- ENVIRONMENT TEMPERATURE
- T3
- T2
- T1
- END EVAPORATOR 12
- MIDDLE EVAPORATOR 11

WIRE NOT QUOTED SEZ 1mm²



**Overview of spare parts**  
**Housing DH 160**

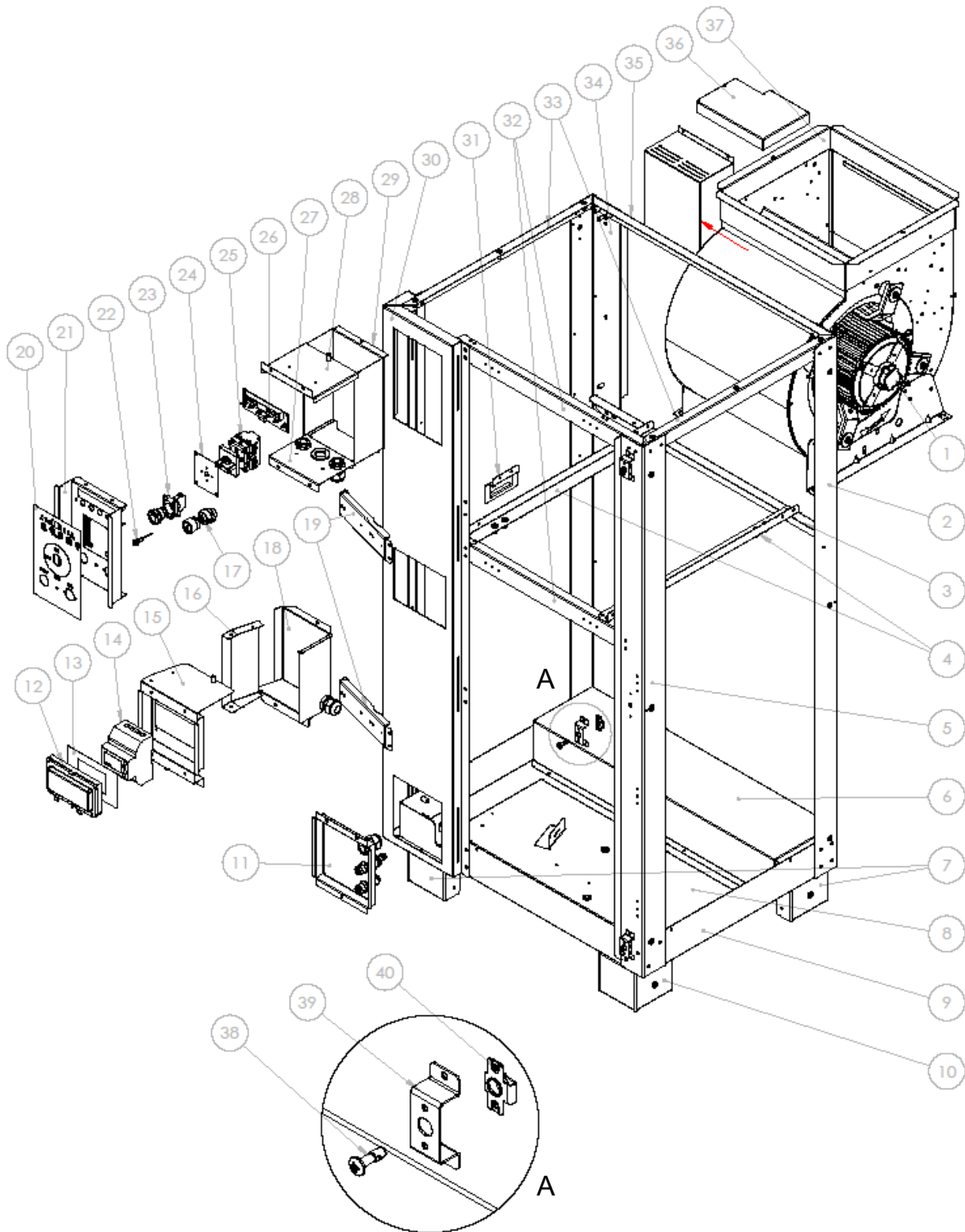
**Note:** The position numbers of the spare parts differ from those describing the positions of the components mentioned in these instructions.



No.	Spare part	No.	Spare part
1	DELIVERY CLOSURE RAL9010 BUCC.	6	PANEL RIGHT SIDE RAL9010 BUCC.
2	REAR PANEL FILTER SUPPORT RAL9010 BUCC.	7	TOP PANEL RAL9010 BUCC.
3	AIR FILTER	8	DELIVERY GRILLE RAL9010 BUCC,
4	PANEL LEFT SIDE RAL9010 BUCC.	9	REAR PANEL UPPER RAL9010 BUCC.
5	FRONT PANEL RAL9010 BUCC.		

**Frame DH 160**

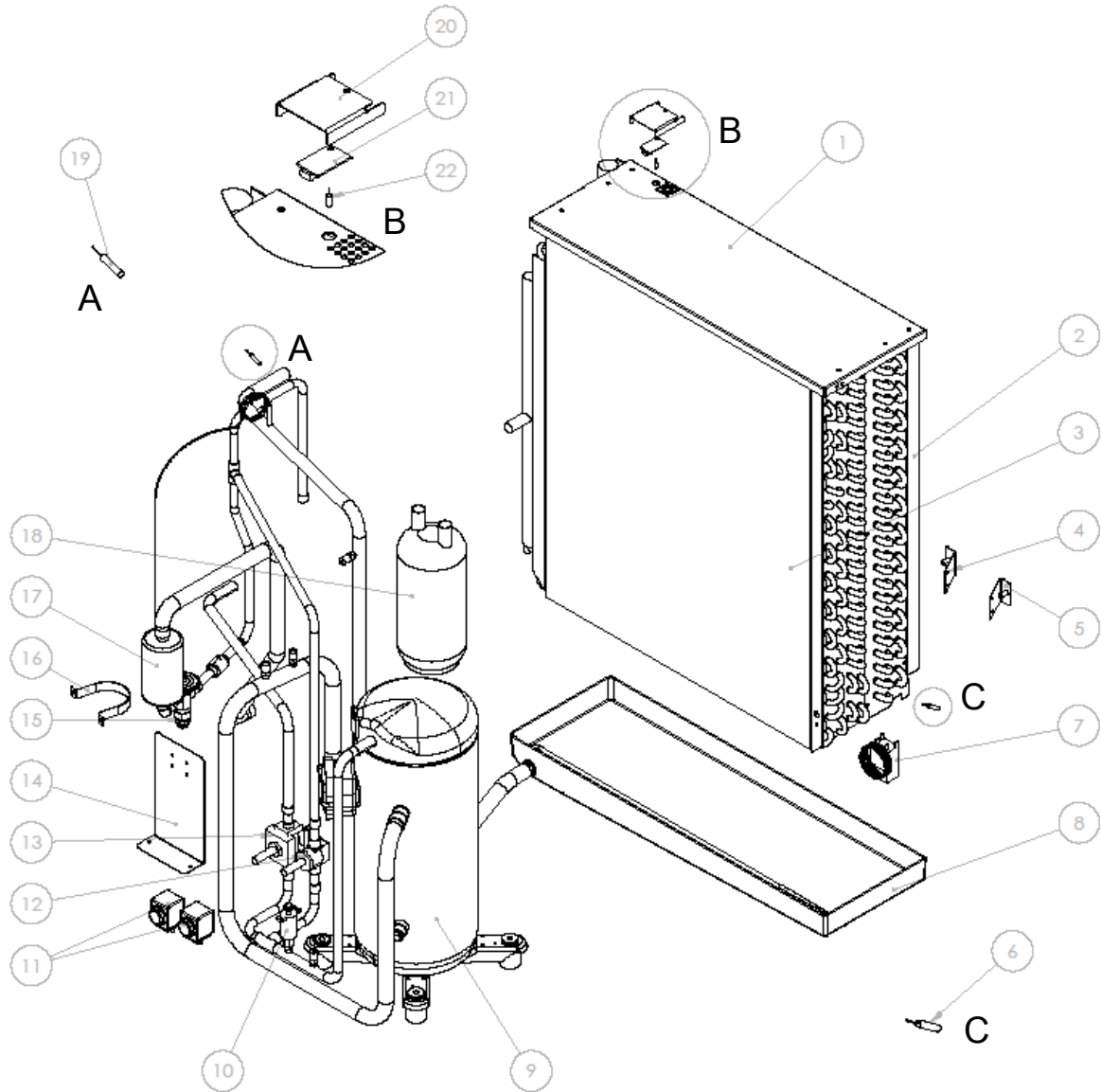
**Note:** The position numbers of the spare parts differ from those describing the positions of the components mentioned in these instructions.



No.	Spare part	No.	Spare part	No.	Spare part
1	CENTRIFUGAL FAN WITH BOX	15	ENERGY METER PANEL RAL9005 BUCC.	29	CENTRAL CLOSURE COMMAND PANEL RAL9005 BUCC
2	REAR LEFT RISER RAL9010 BUCC	16	RIGHT SIDE E.M. CABINET RAL9005 BUCC.	30	COMMANDS RISER RAL9005 BUCC
3	REAR TRANSVERSE FAN SUPPORT RAL9010 BUCC.	17	CONNECTOR 4 POLE REMOTE CONTROL	31	WIRING SUPPORT RAL9010 BUCC.
4	FAN SUPPORT RAL9010 BUCC.	18	ENERGY METER. CABINET RAL9005 BUCC.	32	FRONT TRANSVERSE FAN SUPPORT RAL9010 BUCC.
5	FRONT LEFT RISER RAL9010 BUCC.	19	REINFORCEMENT COMMANDS RISER RAL9010 BUCC.	33	UPPER TRANSVERSE RAL9010 BUCC.
6	SUPPORT TRAY RAL9010 BUCC.	20	LABEL COMMAND PANEL	34	REAR RIGHT RISER RAL9010 BUCC.
7	RIGHT FOOT RAL9010 BUCC.	21	COMMAND PANEL RAL9005 BUCC.	35	REAR TRANSVERSE MACHINE RAL9010 BUCC.
8	OMEGA COMPRESSOR RAL9010 BUCC.	22	RED LED ALARM	36	FAN BOX PROTECTION RAL9010 BUCC.
9	BOTTOM RAL9010 BUCC.	23	SWITCH COMPLETE	37	DELIVERY DUCT RAL9010 BUCC.
10	LEFT FOOT RAL9010 BUCC.	24	MAIN SWITCH SUPPORT RAL9005 BUCC.	38	PANEL FIXING SCREW COMPLETE
11	POWER SUPPLIED PANEL RAL9005 BUCC.	25	MAIN SWITCH COMPLETE	39	RECEPTACLE SUPPORT RAL9010 BUCC.
12	PROTECTION DOOR	26	DISPLAY	40	RECEPTACLE
13	PROTECTION ENERGY METER	27	LOWER CLOSURE COMMAND PANEL RAL9005 BUCC		
14	ENERGY METER	28	UPPER CLOSURE COMMAND PANEL RAL9005 BUCC		

**Cooling system DH 160**

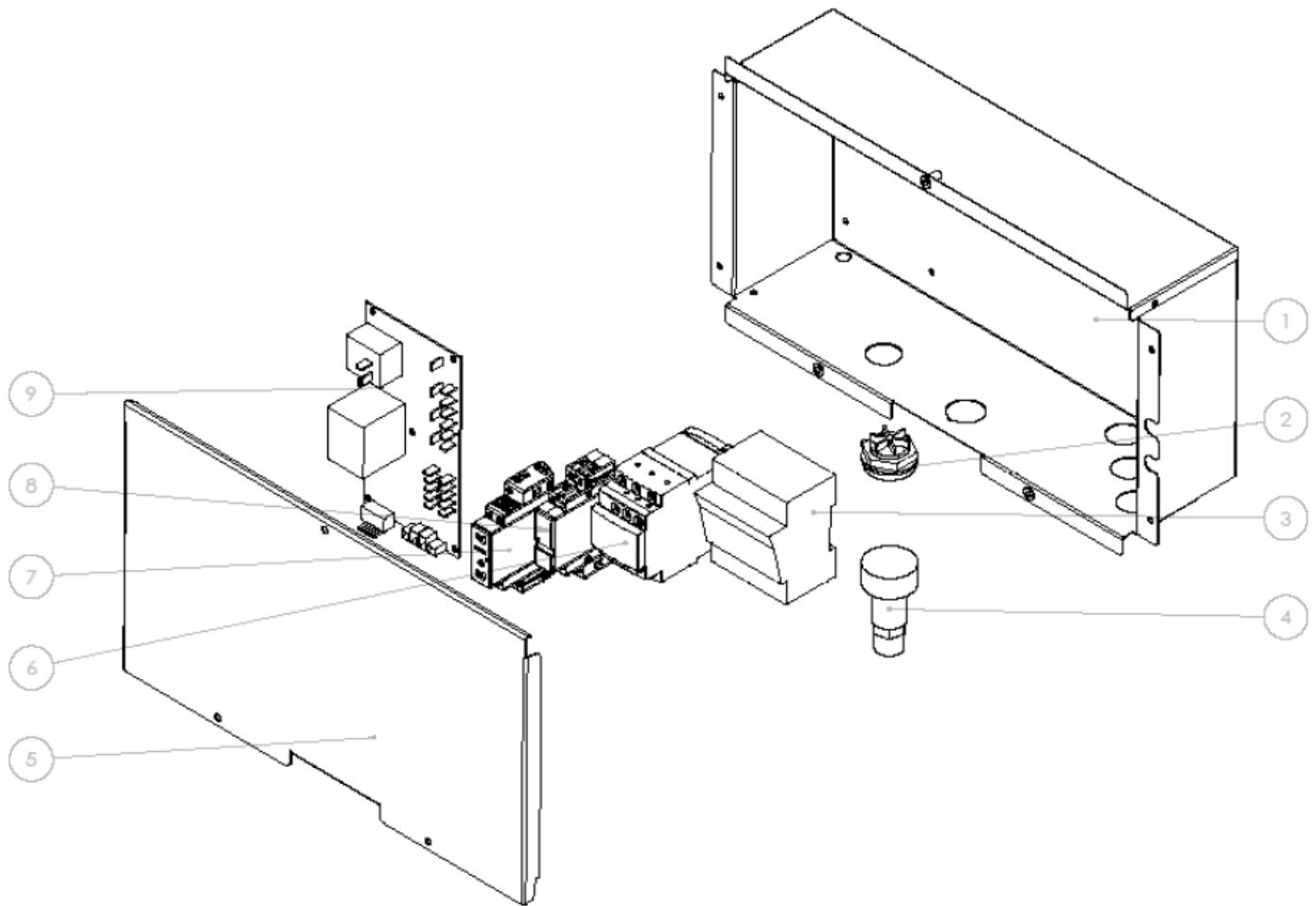
**Note:** The position numbers of the spare parts differ from those describing the positions of the components mentioned in these instructions.



No.	Spare part	No.	Spare part	No.	Spare part
1	TOP COIL	9	COMPRESSOR	17	REFRIGERANT FILTER
2	EVAPORATOR COIL	10	HIGHT PRESSURE CONTROL	18	LIQUID SEPARATOR
3	CONDENSER COIL	11	ELECTRIC VALVE COIL	19	TEMPERATURE PROBE
4	BRACKETS FIXING EVAPORATOR	12	ELECTRIC VALVE (EV2)	20	PROTECTION HUMIDITY SENSOR RAL9010 BUCC.
5	BRACKETS FIXING EVAPORATOR	13	ELECTRIC VALVE (EV1)	21	HUMIDITY SENSOR
6	TEMPERATURE PROBE	14	SUPPORT ELECTRIC VALVE RAL9010 BUCC.	22	TEMPERATURE PROBE
7	DEFROST THERMOSTAT	15	THERMOSTATIC VALVE		
8	TRAY	16	FILTER BELT RAL9010 BUCC.		

## Control cabinet DH 160

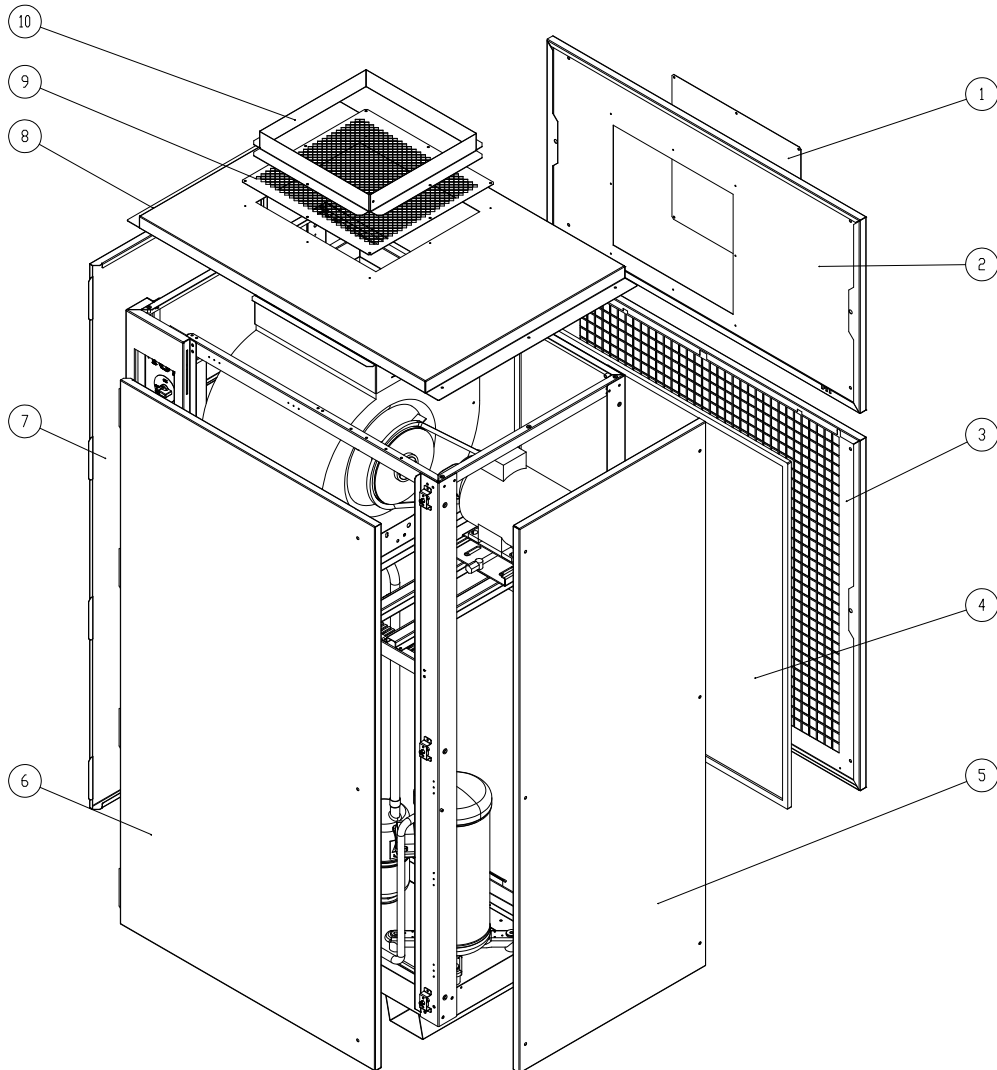
**Note:** The position numbers of the spare parts differ from those describing the positions of the components mentioned in these instructions.



No.	Spare part	No.	Spare part
1	MAIN ELECTRICAL CABINET RAL90110 BUCC.	6	CONTACTOR 7,5 KW
2	FEMALE CONNECTOR 6 PIN	7	MODULAR TIMER
3	GENERAL SWITCH	8	RELE' PHASE CONTROL
4	MALE CONNECTOR 6 PIN WITH BRIDGE	9	PCB DIGIT SOFTWARE 01XX
5	CLOSING ELECTRICAL CABINET RAL9010 BUCC.		

**Housing DH 310**

**Note:** The position numbers of the spare parts differ from those describing the positions of the components mentioned in these instructions.

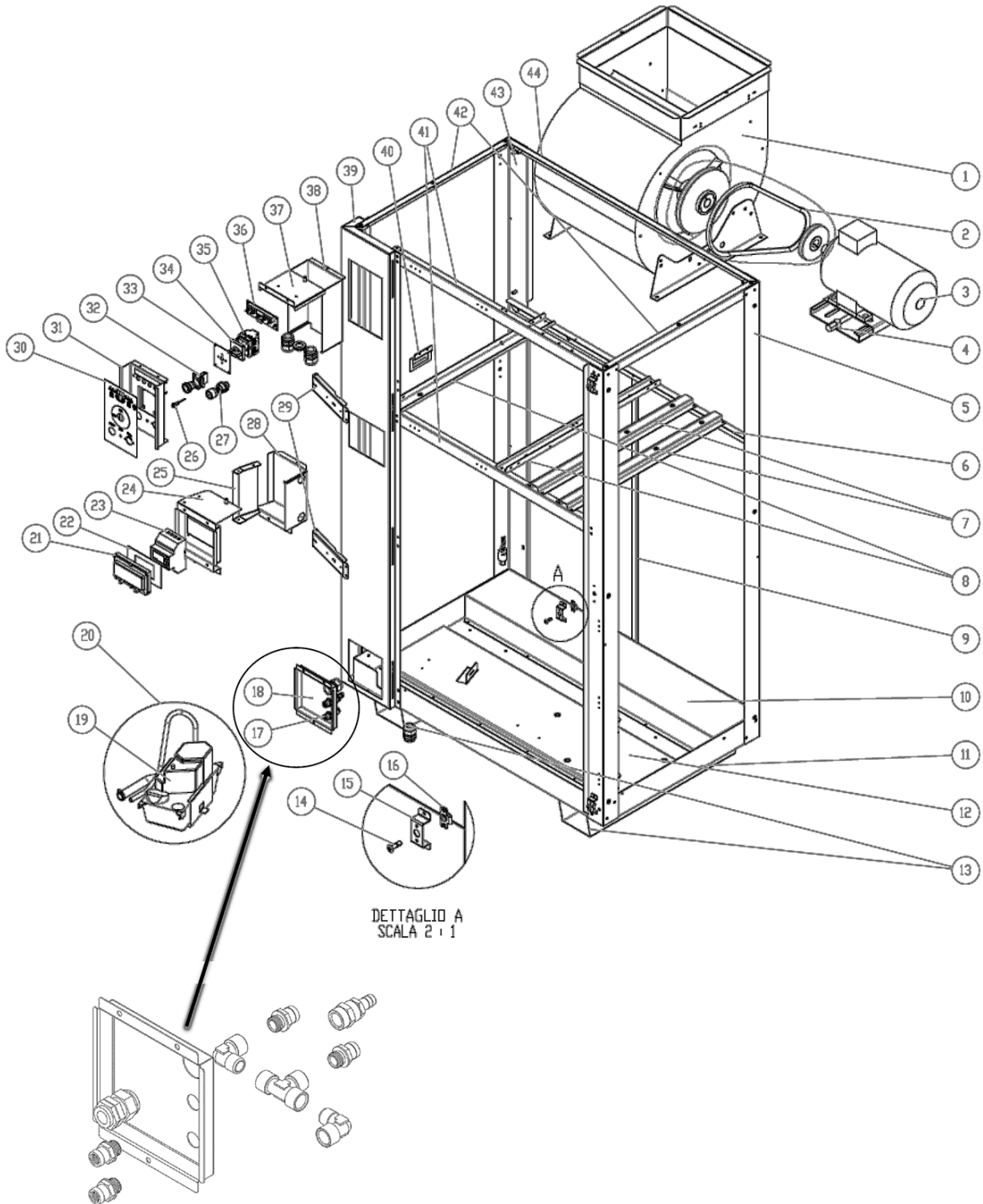


No.	Spare part	No.	Spare part
1	DELIVERY CLOSURE RAL9010 BUCC.	6	FRONT PANEL RAL9010 BUCC.
2	BACK SUPERIOR PANEL RAL9010 BUCC.	7	PANEL RIGHT SIDE RAL9010 BUCC.
3	BACK PANEL FILTER SUPPORT RAL9010 BUCC.	8	TOP PANEL RAL9010 BUCC.
4	AIR FILTER	9	DELIVERY GRILLE RAL9010 BUCC.
5	PANEL LEFT SIDE RAL9010 BUCC.	10	DELIVERY SQUARE CANAL RAL9010 BUCC.



**Frame DH 310**

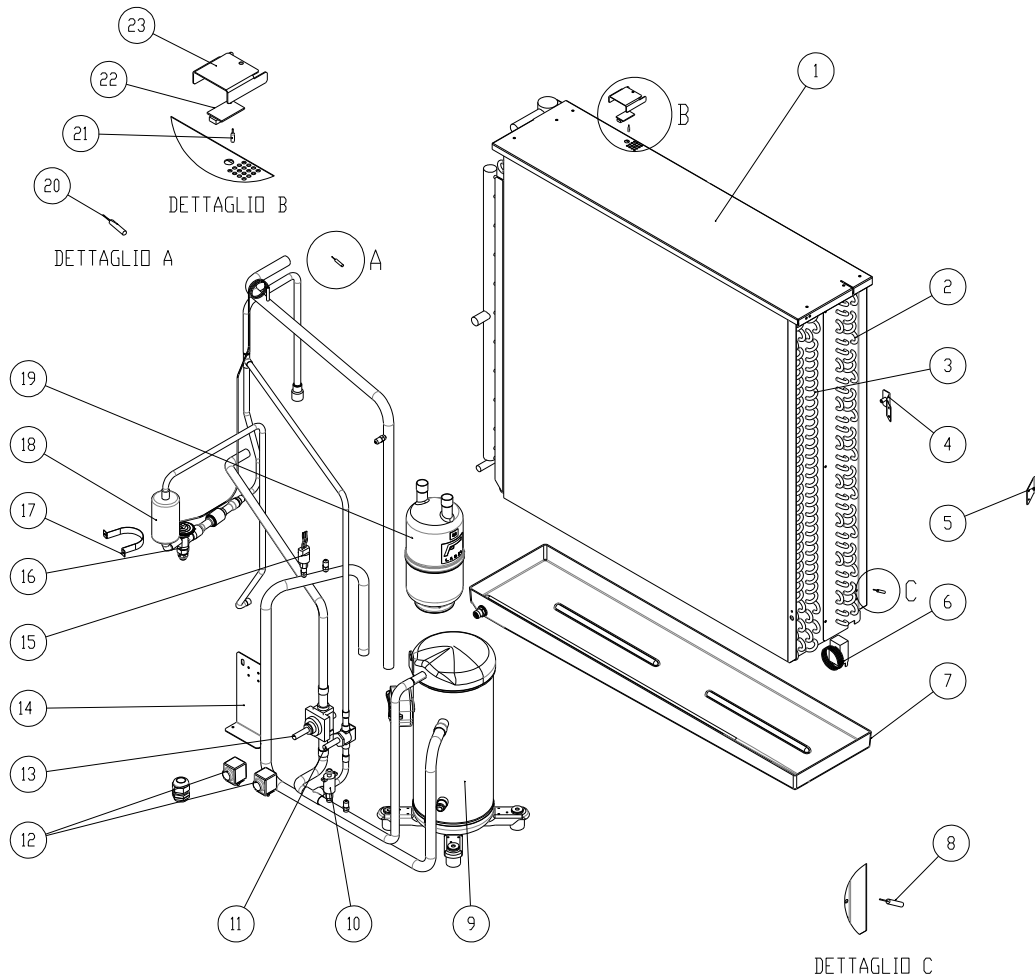
**Note:** The position numbers of the spare parts differ from those describing the positions of the components mentioned in these instructions.



No.	Spare part	No.	Spare part	No.	Spare part
1	CENTRIFUGAL FAN WITH COLLAR	16	RECEPTACLE	31	COMMAND PANEL RAL9005 BUCC.
2	PULLEY KIT + FAN BELT	17	HOSE HOLDER	32	SWITCH COMPLETE
3	MOTOR FAN 1,1 Kw	18	POWER SUPPLIED PANEL RAL9005 BUCC.	33	MAIN SWITCH SUPPORT RAL9005 BUCC.
4	MOTOR SLED	19	PUMP	34	DISPOSITIVO STANDARD
5	POSTERIOR LEFT RISER RAL9010 BUCC	20	KIT PUMP	35	MAIN SWITCH COMPLETE
6	REAR TRANSVERSE FAN SUPPORT RAL9010 BUCC.	21	PROTECTION DOOR	36	DISPLAY
7	SUPPORT MOTOR SLED RAL9010 BUCC.	22	PROTECTION ENERGY METER	37	LOWER CLOSURE COMMAND PANEL RAL9005 BUCC
8	FAN SUPPORT RAL9010 BUCC.	23	ENERGY METER	38	UPPER CLOSURE COMMAND PANEL RAL9005 BUCC
9	FILTER SUPPORT RAL9010 BUCC.	24	ENERGY METER PANEL RAL9005 BUCC.	39	CENTRAL CLOSURE COMMAND PANEL RAL9005 BUCC
10	SUPPORT TRAY RAL9010 BUCC.	25	RIGHT SIDE E.M. CABINET RAL9005 BUCC.	40	COMMANDS RISER RAL9005 BUCC
11	BOTTOM RAL9010 BUCC.	26	RED LED ALARM	41	WIRING SUPPORT RAL9010 BUCC.
12	OMEGA COMPRESSOR RAL9010 BUCC.	27	CONNECTOR 4 POLE REMOTE CONTROL	42	FRONT TRANSVERSE FAN SUPPORT RAL9010 BUCC.
13	FOOT RAL9010 BUCC.	28	ENERGY METER. CABINET RAL9005 BUCC.	43	UPPER TRANSVERSE RAL9010 BUCC.
14	PANEL FIXING SCREW COMPLETE	29	REINFORCEMENT COMMANDS RISER RAL9010 BUCC.	44	REAR RIGHT RISER RAL9010 BUCC.
15	RECEPTACLE SUPPORT RAL9010 BUCC.	30	LABEL COMMAND PANEL	45	REAR TRANSVERSE MACHINE RAL9010 BUCC.

## Cooling system DH 310

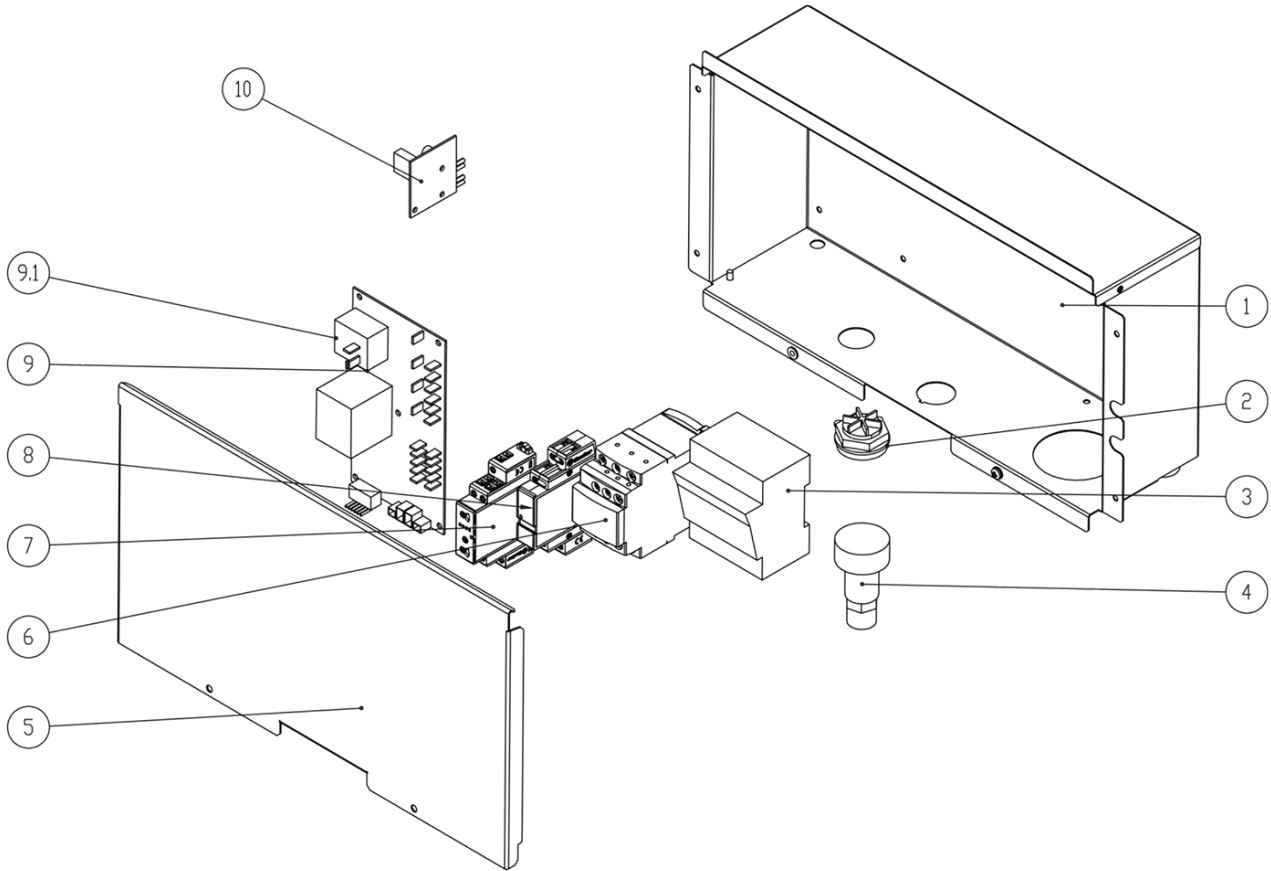
**Note:** The position numbers of the spare parts differ from those describing the positions of the components mentioned in these instructions.



No.	Spare part	No.	Spare part	No.	Spare part
1	TOP COIL	9	COMPRESSOR	17	FILTER BELT RAL9010 BUCC.
2	EVAPORATOR COIL	10	HIGHT PRESSURE CONTROL	18	REFRIGERANT FILTER
3	CONDENSER COIL	11	ELECTRIC VALVE (EV2)	19	LIQUID SEPARATOR
4	BRACKETS FIXING EVAPORATOR	12	ELECTRIC VALVE COIL	20	TEMPERATURE PROBE
5	BRACKETS FIXING EVAPORATOR	13	ELECTRIC VALVE (EV1)	21	TEMPERATURE PROBE
6	DEFROST THERMOSTAT	14	SUPPORT ELECTRIC VALVE RAL9010 BUCC.	22	HUMIDITY SENSOR
7	TRAY	15	LOW PRESSURE CONTROL	23	PROTECTION HUMIDITY SENSOR RAL9010 BUCC.
8	TEMPERATURE PROBE	16	THERMOSTATIC VALVE		

**Control cabinet DH 310**

**Note:** The position numbers of the spare parts differ from those describing the positions of the components mentioned in these instructions.



No.	Spare part	No.	Spare part
1	MAIN ELECTRICAL CABINET RAL90110 BUCC.	7	MODULAR TIMER
2	FEMALE CONNECTOR 6 PIN	8	RELE' PHASE CONTROL
3	GENERAL SWITCH	9	CONTROL PCB (up to S.N. 1130017669)
4	MALE CONNECTOR 6 PIN WITH BRIDGE	9.1	CONTROL PCB (from S.N. 1130017670)
5	CLOSING ELECTRICAL CABINET RAL9010 BUCC.	10	PCB FOR NEW HPS LOGIC (from S.N. 1130017670)
6	CONTACTOR 7,5 KW		

## Disposal

Always dispose of packing materials in an environmentally friendly manner and in accordance with the applicable local disposal regulations.



The icon with the crossed-out waste bin on waste electrical or electronic equipment is taken from Directive 2012/19/EU. It states that this device must not be disposed of with the household waste at the end of its life. You will find collection points for free return of waste electrical and electronic equipment in your vicinity. The addresses can be obtained from your municipality or local administration. You can also find out about other return options that apply for many EU countries on the website <https://hub.trotec.com/?id=45090>. Otherwise, please contact an official recycling centre for electronic and electrical equipment authorised for your country.

The separate collection of waste electrical and electronic equipment aims to enable the re-use, recycling and other forms of recovery of waste equipment as well as to prevent negative effects for the environment and human health caused by the disposal of hazardous substances potentially contained in the equipment.

The device is operated with fluorinated greenhouse gas, which can be dangerous for the environment and contribute to global warming when emitted to the atmosphere.

Further information is provided on the nameplate.

Dispose of the refrigerant appropriately and according to the national regulations.

### Only for United Kingdom

According to Waste Electrical and Electronic Equipment Regulations 2013 (SI 2013/3113) (as amended) devices that are no longer usable must be collected separately and disposed of in an environmentally friendly manner.

## Declaration of conformity

Declaration of conformity in accordance with the EC Machinery Directive 2006/42/EC, Annex II, Part 1, Section A

We – Trotec GmbH – declare in sole responsibility that the product designated below was developed, constructed and produced in compliance with the requirements of the EC Machinery Directive in the version 2006/42/EC.

**Product model / Product:** DH 160  
DH 310

**Product type:** condenser dryer

**Year of manufacture as of:** 2022

### Relevant EU directives:

- 2011/65/EU
- 2014/30/EU

### Applied harmonised standards:

- EN IEC 63000:2018
- EN 378-2:2016
- EN 55014-1:2017
- EN 55014-1:2017/A11:2020
- EN 55014-2:1997/AC:1997
- EN 55014-2:1997/A1:2001
- EN 55014-2:1997/A2:2008
- EN 60335-1:2012/A11:2014
- EN 60335-1:2012/A13:2017
- EN 60335-1:2012/AC:2014
- EN 60335-1:2012/A15:2021
- EN 60335-2-40:2003/A1:2006
- EN 60335-2-40:2003/A2:2009
- EN 60335-2-40:2003/A11:2004
- EN 60335-2-40:2003/A12:2005
- EN 60335-2-40:2003/A13:2012
- EN 60335-2-40:2003+A11:2012+AC:2013
- EN 60335-2-40:2003/AC:2006
- EN 60335-2-40:2003/AC:2010

### Applied national standards and technical specifications:

- None

### Manufacturer and name of the authorised representative of the technical documentation:

Trotec GmbH  
Grebener Straße 7, D-52525 Heinsberg  
Phone: +49 2452 962-400  
E-mail: [info@trotec.de](mailto:info@trotec.de)

Place and date of issue:  
Heinsberg, 28.11.2022



Joachim Ludwig, Managing Director

Trotec GmbH

Grebbener Str. 7  
D-52525 Heinsberg

☎ +49 2452 962-400

☎ +49 2452 962-200

✉ [info@trotec.com](mailto:info@trotec.com)

[www.trotec.com](http://www.trotec.com)