

**EN**

**OPERATING MANUAL**  
POOL DEHUMIDIFIER



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**Notes regarding the operating manual**


**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 operating manual must be observed.

The current version of the operating manual can be found at:



DS 30



<http://hub.trotec.com/?id=39576>

DS 60



<http://hub.trotec.com/?id=39581>

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## Warranty and liability

The device complies with the fundamental health and safety requirements of the applicable EU regulations and was tested at the factory for perfect functionality multiple times.

However, if faults in the functionality occur and cannot be remedied with the measures in the chapter Errors and faults, please get in touch with your dealer or distributor.

When making a warranty claim, supply the device number (see the rear of the device).

When manufacturer's instructions or legal regulations have not been followed, or after unauthorised changes to the device are made, the manufacturer is not responsible for the resulting damages. Changes to the device or unauthorised replacement of individual parts can drastically impact the electrical safety of this product and will result in the loss of the warranty. Liability does not extend to damages to people or property caused by the device being used other than as described in the instructions in this operating manual. Subject to changes to technical design and model changes as part of constant development and product improvement without prior notice.

No liability is accepted for damages resulting from improper use. In such a case, any warranty claims will be voided also.

## 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!**

- Do not use the device in potentially explosive rooms.
- Do not use the device in aggressive atmosphere.
- 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 sit on the device.
- This appliance is not a toy! Keep away from children and animals. Do not leave the device unattended during operation.
- Do not cover or transport the device during operation.
- 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 electrical connection must correspond to the specifications in chapter Technical data.
- Insert the mains plug into a properly secured mains socket.
- Observe the technical data when selecting extensions to the power cable. Completely unroll the extension cable. 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. Defective power cables pose a serious health risk.
- Observe the storage and operating conditions (see chapter Technical data).
- Ensure that the air inlet and outlet are not obstructed.
- Ensure that the side of the device where the air inlet is found is kept free of dirt and loose objects.
- 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 dehumidifier for drying and dehumidifying room air whilst adhering to the technical data and safety instructions.

Intended use comprises:

- drying and dehumidifying:
  - indoor swimming pools
  - whirlpool rooms
  - wellness areas
  - therapy pools
  - thermal baths

A sufficient fresh air supply must be ensured at the installation site of the device.

## Improper use

Do not place the device on wet or flooded ground.

Do not use the device outdoors.

Do not place any objects, e.g. wet clothing, on the device for drying.

Any unauthorised modifications, such as alterations or structural changes to the device, are forbidden.

## 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 operating manual, 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.

## 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!

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!

A falling device can cause injuries! **Always transport and assemble the device with the help of other persons.** Never stand below the device when it is suspended. Ensure adequate stability of the device's wall fixing.



### Warning!

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

### Note

**If your swimming pool is filled with thermal water, a fresh air supply amounting to 10 % of the fan performance is absolutely imperative in order to avoid damage to the dehumidifier.**

## Behaviour in the event of an emergency

1. In an emergency, disconnect the device from the mains feed-in:  
Pull the mains plug.
2. Do not reconnect a defective device to the mains.

## Information about the device

### Technology of the DS series

The dehumidifiers of the DS series maintain a constant humidity level around the clock.

The humidity is automatically regulated to an ideal level that reliably prevents corrosion, condensation and mould formation.

### Description of the device

The dehumidifiers of the DS series use the principle of condensation to automatically dehumidify rooms.

The fan sucks damp room air through the air inlet (3), 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 mixes with the air in the room via the air outlet (1). The humidity in the room where the device is positioned is reduced as air constantly circulates through the device. Depending on the air temperature and the relative humidity, the condensed water either drops continuously or only during the defrost phase through the pre-assembled condensation drain hose (5) and is discharged from the device.

To set the desired humidity level, a hygrostat with control dial (7) is provided in the device's interior.

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

At a room temperature of 15 °C, the devices emit 1.6 to 3 times of their power consumption to the room air in form of heat (see chapter Technical data, COP). Because of the heat dissipation, which develops during operation, the room temperature can therefore rise by approx. 1 to 3 °C.

We recommend a humidity level of approx. 55 %. At this level most people perceive the climate in pool and wellness areas as agreeable.

In public swimming pools a fresh air supply is officially required, please observe the respective legal standards and regulations.

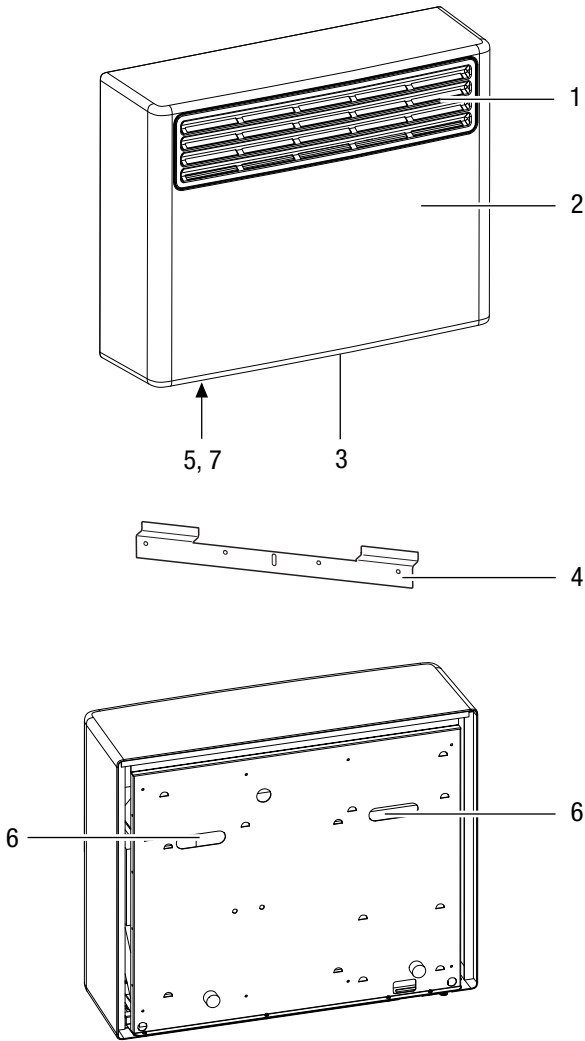
Fresh air may be supplied from outside by discharging the room air to the outside using a fan. This generates a slight negative pressure in the room. The vacuum leads to dry air streaming out of the surrounding areas / fresh air flowing into the room from outside. The dry air reduces the dehumidification demand and the fresh air increases the climate comfort in the room.

### Note

**If your swimming pool is filled with thermal water, a fresh air supply amounting to 10 % of the fan performance is absolutely imperative in order to avoid damage to the dehumidifier.**

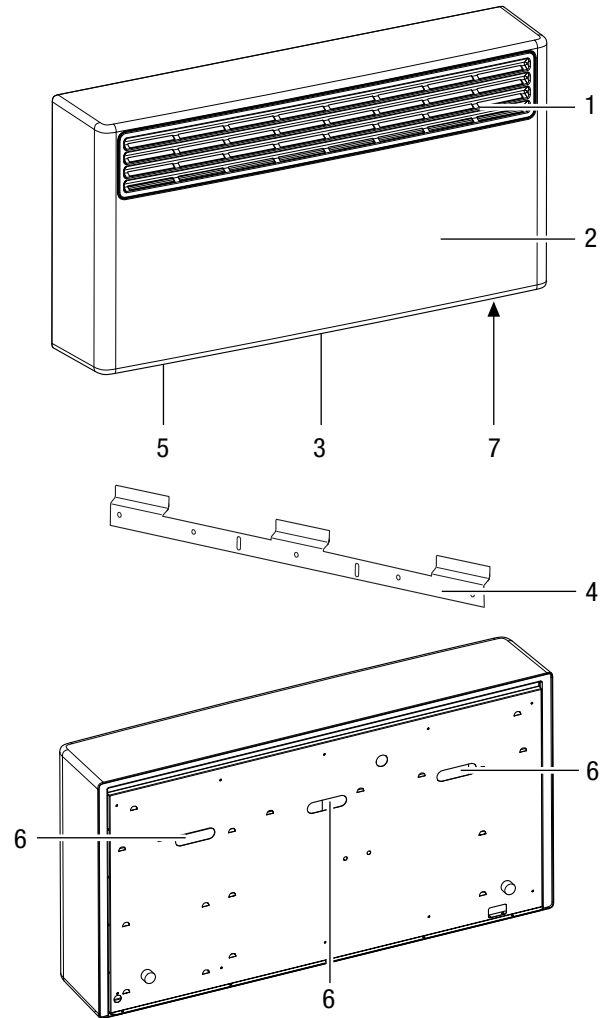
**Device depiction**

**DS 30**



No.	Designation
1	Air outlet
2	Housing
3	Air inlet
4	Wall holder
5	Hose connector for condensation drain hose (inside the device)
6	Suspension
7	Control dial hygrostat (tamper-proof installation inside the device)

**DS 60**



No.	Designation
1	Air outlet
2	Housing
3	Air inlet
4	Wall holder
5	Hose connector for condensation drain hose (inside the device)
6	Suspension
7	Control dial hygrostat (tamper-proof installation inside the device)

**Scope of delivery**

- Dehumidifier
- Wall holder
- Condensation drain hose, Ø 12 mm (inside), l = 40 cm
- Power cable with CEE 7/7 Schuko plug
- Operating manual

## Transport, assembly and preparation for start-up

Always utilize the help of another person to transport and assemble the DS 30. Always utilize the help of two other persons to transport and assemble the DS 60. Do not try to assemble the device without the help of another person. To lift the device, use a forklift or an elevating truck as appropriate.

Observe the following instructions:

- When assembling the device, keep a sufficient distance to heat sources.
- When assembling the device, especially in wet areas, secure the device locally with an RCD (Residual Current protective Device) which complies with the relevant regulations.
- Make sure that extension cables are completely unrolled.
- Insert the mains plug into a properly secured mains socket.
- When assembling the device, observe the minimum distance from adjacent walls or other objects as described in the Technical Data chapter.

### Assembly

Assemble the device as follows:

Select screw and dowel sizes suitable for the weight of the device (see technical data) and the structure of the wall.

The condensation drain hose is already preassembled.

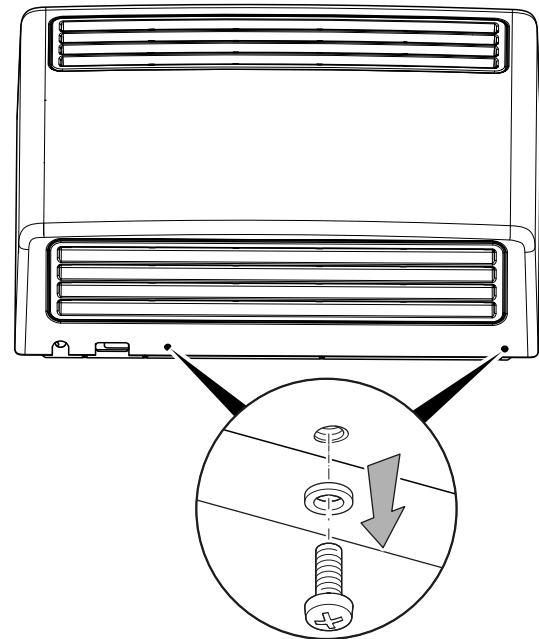


### Warning!

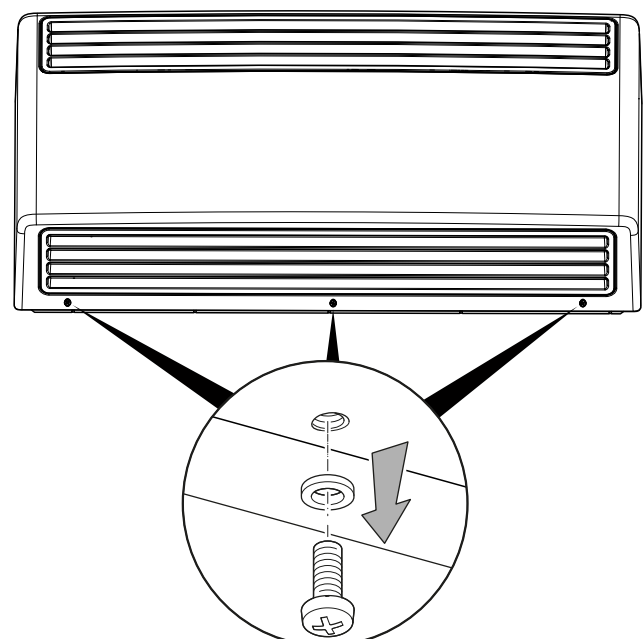
A falling device can cause injuries! **Always transport and assemble the device with the help of other persons.** Never stand below the device when it is suspended. Ensure adequate stability of the device's wall fixing.

1. The table or floor on which you should now unpack the device must be clean.
2. Open the screw connection at the housing.

DS 30



DS 60



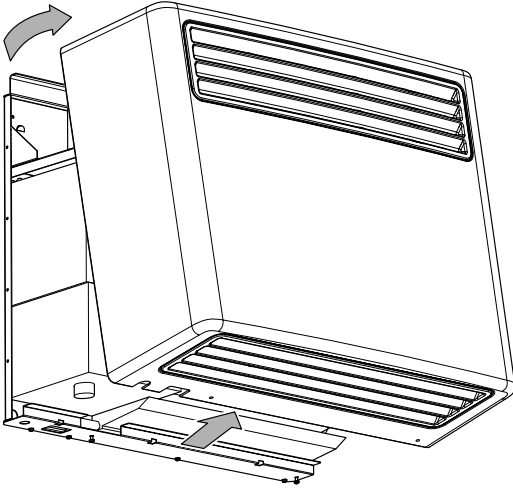


**Info**

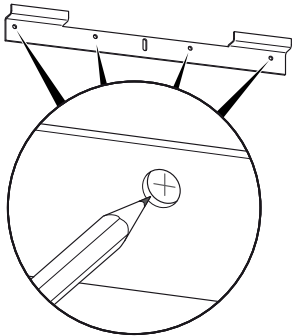
The principle of hanging up the DS 60 is the same as for the DS 30. But the DS 60 comes with a longer suspension rail.

The following steps will be illustrated by using the DS 30 as example.

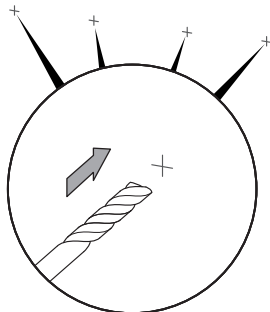
3. Remove the housing.



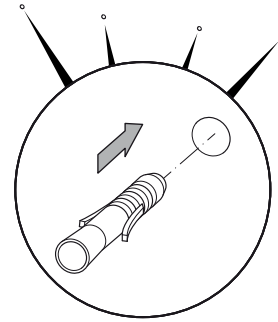
4. Mark the position for the bore holes.



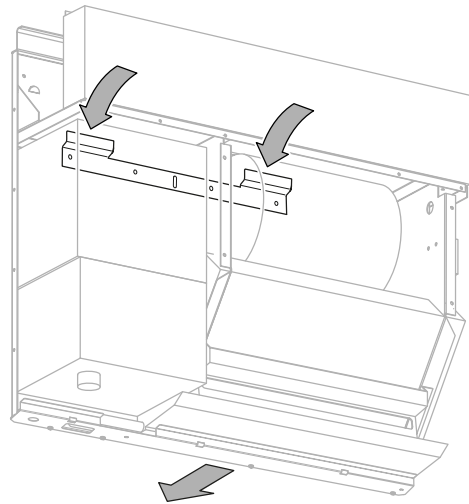
5. Drill the holes into the wall.



6. Insert suitable dowels into the bore holes.

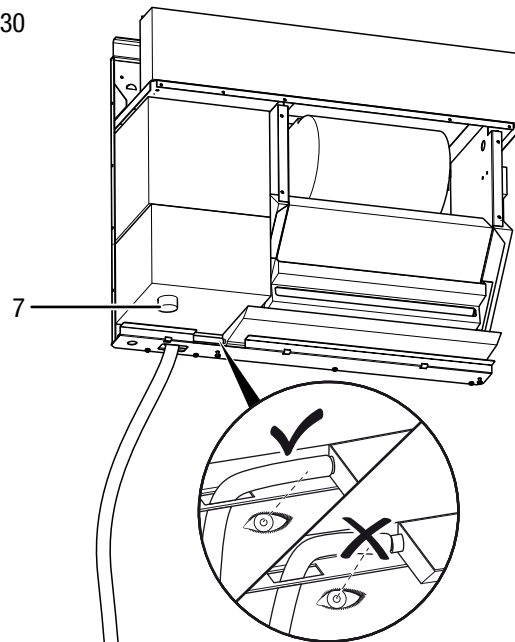


7. Fasten the wall holder in place.
8. Suspend the device from the wall holder by means of the mounting brackets. Utilize the help of one or two other persons as well as suitable lifting gear to do so.



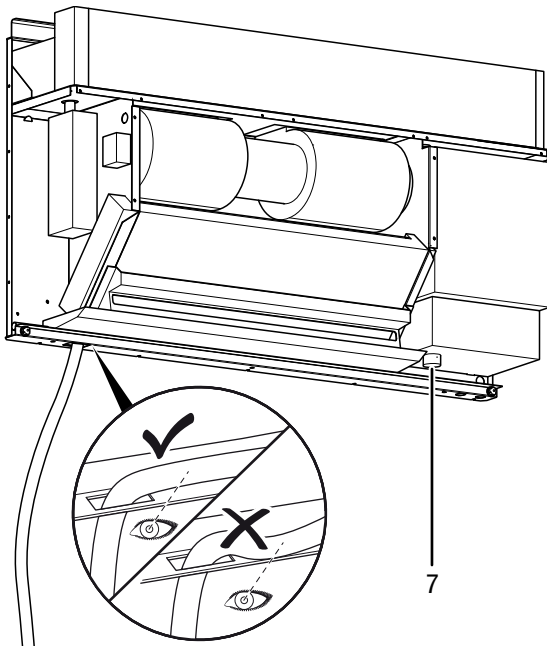
9. Check whether the condensation drain hose is positioned correctly. The condensation drain hose must not be kinked.

DS 30

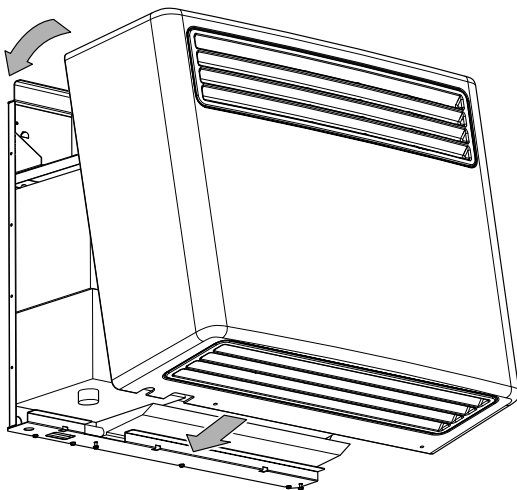




DS 60



10. Set the control dial hygostat (7) to the desired humidity level, see chapter Regulating the room humidity level.
11. Put the housing back on the device.



12. Fasten the housing to the device.

## Storage

Drain any possibly remaining condensate.

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

- in an upright and stable position.
- dry and protected from frost and heat.
- protected from dust and direct sunlight.
- with a cover to protect it from invasive dust, if necessary.

## Operation

- Once the device has been switched on, the drying function works fully automatically.
- To make sure that the built-in sensor can determine the humidity correctly and that the room air is permanently filtered, the fan continues to operate until the device is switched off.
- Avoid open doors and windows.

## 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.

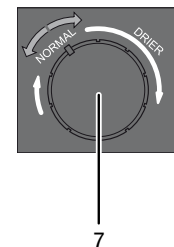
## Operating elements



### Info

You can access the operating elements by removing the housing, see chapter Assembly.

The control panel of the DS 30 is located on the left-hand side, in case of the DS 60 it can be found on the right.

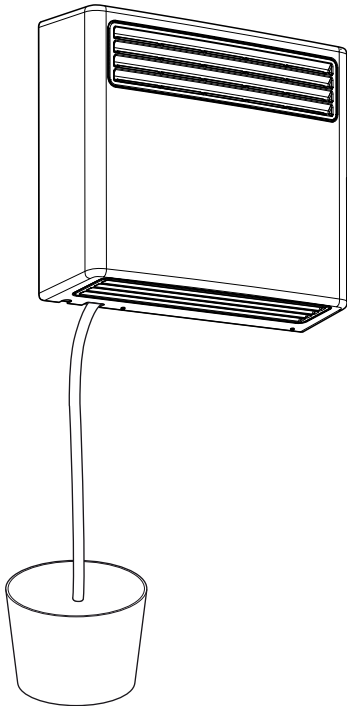


No.	Designation
7	Control dial hygostat

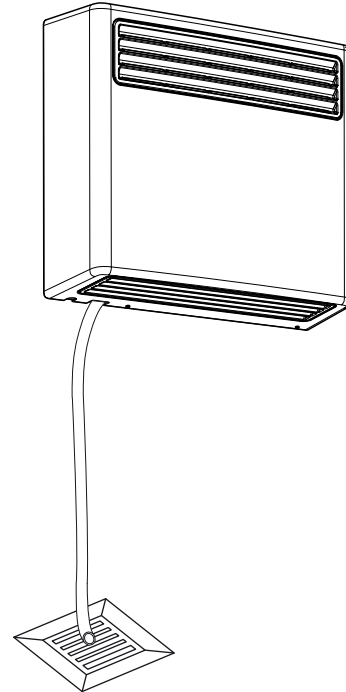
### Positioning the condensation drain hose

The condensation drain hose is already installed when the device is delivered.

1. Ensure that the condensation drain hose is properly connected to the device and is free of damage.
2. Depending on the application, position the end of the condensation drain hose as follows:
  - ⇒ Place a sufficiently dimensioned container (DS 30: at least 50 litres; DS 60: at least 90 litres) beside the device and insert the hose end. Check the filling level of the container regularly.



- ⇒ Position the end of the condensation drain hose near a water drain. For larger distances, a longer hose of the same type can also be used.



3. Regularly check the condensation drain hose for obstructions or kinks.

You can connect an extension as needed.

### Optional condensate pump

At the factory the device may be equipped with a condensate pump. The advantage of a condensate pump is the possibility of pumping the accumulating condensate to a discharge outlet situated at a higher level.

- The maximum pump height amounts to 10 m for the DS 30 and to 15 m for the DS 60.
- The condensation drain hose should be no longer than 25 m.
- The end of the condensation drain hose must always be free and may not protrude into the water.
- While laying the condensation drain hose, make sure that – even at low temperatures – the water inside the hose cannot freeze.

### Switching the device on

1. Ensure that the condensation drain hose has been laid and connected properly. Do not create tripping hazards.
2. Ensure that the condensation drain hose is not bent or jammed and that there are no objects on the condensation drain hose.
3. Ensure that the condensation can run off properly.
4. Insert the mains plug into a properly secured mains socket.

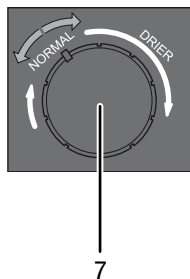
### Regulating the room humidity level



#### Info

You can access the operating elements by removing the housing, see chapter Assembly.  
The control panel of the DS 30 is located on the left-hand side, in case of the DS 60 it can be found on the right.

1. Set the desired humidity level via the control dial (7) of the hygrostat.
2. Turn the control dial to the middle of the word *NORMAL*. After 2 days a humidity level between 50 and 55 % should be reached.
3. Then check the humidity level by means of a thermohygrometer. If the air is too dry (insufficient humidity level), turn the hygrostat control approx. 1 cm to the left, if the air is too humid (excessive humidity), turn it approx. 1 cm to the right (towards the word *DRIER*).



4. Every time you have changed the hygrostat setting wait for 2 days, then repeat the procedure until the desired humidity level is reached.
  - ⇒ Upon reaching the desired humidity value, the compressor switches off automatically.
  - ⇒ The fan keeps running to ensure a permanent air circulation for filtering the air, neutralizing possible odours and monitoring the humidity level.
  - ⇒ If the set humidity level is exceeded, the compressor will automatically be activated to dehumidify the room air once again.

### Automatic defrost

If the room temperature is lower than 15 °C, the heat exchanger will freeze during dehumidification. The device will then carry out an automatic defrost. The duration of the defrost process can vary depending on the room temperature. The lower the temperatures, the longer the defrost period.

### Dehumidification in the swimming pool

Indoor swimming pools and wellness areas offer a marvellous recreational and training environment, but the evaporation at the water surface poses a serious problem for the building structure. A prolonged influence of high humidity levels rapidly leads to the deterioration of both the building and the furniture.

### Condensation in wellness area and indoor swimming pool

If this problem is ignored, condensed water can turn into a nightmare for an indoor swimming pool or wellness area. The evaporation at the water surface distinctly increases the moisture content of the air. Admittedly, the higher the humidity, the lower the evaporation at the water surface. But the high humidity level is also the basis for mould; and it can cause damage to the building stock – right up to its falling into ruins.

Consequences of uncontrolled humidity are:

- corrosion
- damage to the building stock
- a disagreeable room climate
- condensate formation
- steam
- mould and stains
- misting

In the past, the air was discharged by use of a ventilation system spending an unreasonable amount of energy to reduce the condensation in the swimming pool. Modern drying technology sees to new and more energy-efficient options.

### Well-being

The personal well-being is of utmost importance when it comes to wellness. High humidity levels are perceived as unpleasant. Moisture regulation is a mandatory prerequisite for ensuring the well-being in indoor swimming pools or wellness areas. Humidity levels ranging between 55 % and 65 % are perceived as pleasant by bathers. We recommend a humidity level of approx. 55 %.

Ideally, the room temperature is higher than the water temperature. To counteract falling below the dew point, an evenly distributed room temperature is paramount. To make sure that dripping wet pool guests are comfortable rather than shivering, the temperature difference should amount to no more than 4 °C.

**Fresh air supply**

In public swimming pools a fresh air supply is officially required, please observe the respective legal standards and regulations.

Fresh air may be supplied from outside by discharging the room air to the outside using a fan. This generates a slight negative pressure in the room. The vacuum leads to dry air streaming out of the surrounding areas / fresh air flowing into the room from outside. The dry air reduces the dehumidification demand and the fresh air increases the climate comfort in the room.

**Note**

**If your swimming pool is filled with thermal water, a fresh air supply amounting to 10 % of the fan performance is absolutely imperative in order to avoid damage to the dehumidifier.**

**Cost effectiveness**

As standard the dehumidifiers of the DS series come equipped with internal heat recovery, thus automatically utilizing the released process heat for low-cost heating of the room air.

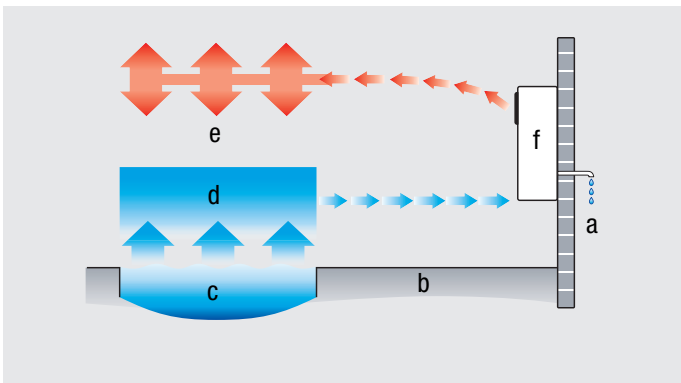


Fig. 1: Schematic diagram pool dehumidification

a	condensate discharge	d	warm, damp air
b	floor level	e	warm, dry air
c	pool water	f	pool dehumidifier DS series

**Shutdown**



**Warning of electrical voltage**

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

1. Hold onto the mains plug while pulling the power cable out of the mains socket.
2. If necessary, remove the condensation drain hose and any residual fluid from it.
3. Clean the device according to the Maintenance chapter.
4. Store the device according to the Storage chapter.

## 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 (230 V/1~/50 Hz).
- Check the power cable for damages.
- Check the on-site fusing.
- Have the electrics checked by a specialist company for cooling and air-conditioning or by Trotec.

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

- Check whether the condensation drain hose is positioned correctly.
- Check the room temperature. Observe the device's permissible operating range according to the technical data.
- Ensure that the relative humidity complies with the technical data.
- Check the preselected humidity level at the hygostat's control dial (7). The humidity in the room must be above the selected range. Reduce the desired humidity level by turning the control dial (7) to the right (towards the word *DRIER*).

### The device is loud or vibrates:

- Check the air grille at the air inlet for dirt. Remove external dirt.
- Check the inside of the device for dirt. If necessary, clean the interior of the device using compressed air.

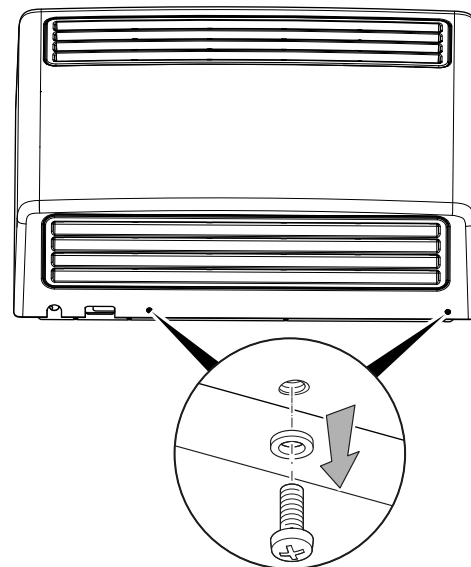
### The device gets very warm, is loud or loses power:

- Check the air grille at the air inlet for dirt. Remove external dirt.
- Check the inside of the device for dirt. If necessary, clean the interior of the device using compressed air.

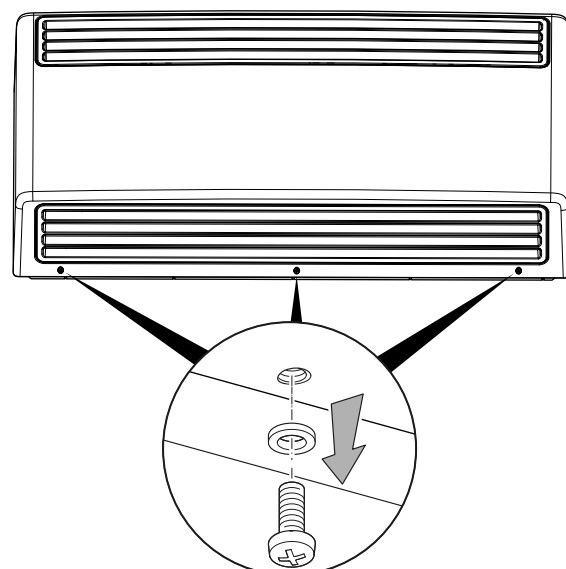
### With integrated condensate pump (optional) an alarm signal is emitted:

- The (optional) condensate pump attempts to pump off a larger quantity of water. The device will be switched off completely. As soon as the water is gone, the device will restart and the alarm dies.
- If the emitted alarm signal is a continuous tone, the condensate pump (optional) inside the device needs to be checked. To do so, please proceed as follows:
  1. Hold onto the mains plug while pulling the power cable out of the mains socket.
  2. Open the screw connection at the housing.

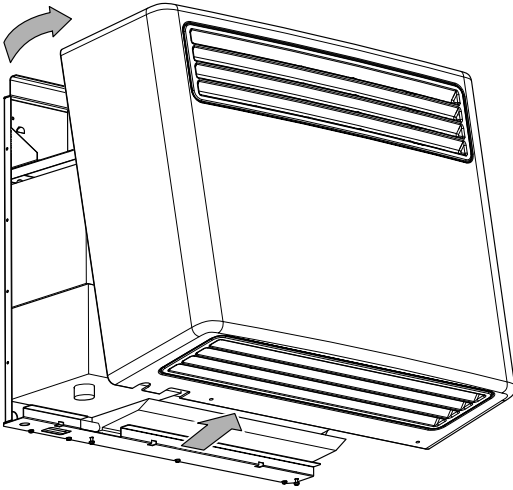
DS 30



DS 60



3. Remove the housing.

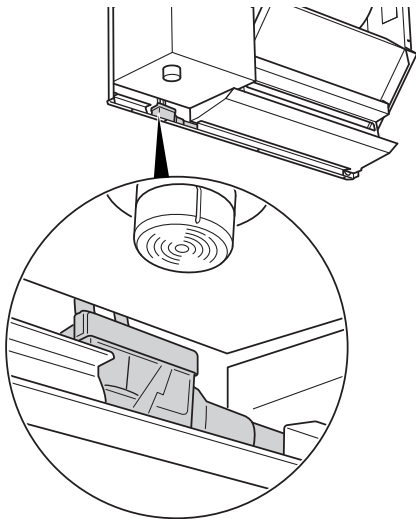


If the alarm signal continues despite these measures, please contact Trotec.

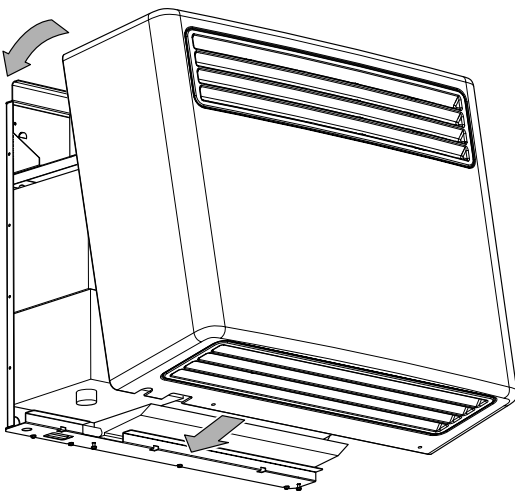
**Your device still does not operate correctly after these checks?**

Have the device repaired by authorised expert staff or by Trotec.

4. Check whether water has accumulated in the condensate collection container or the condensation tray.



5. If so, clean the drain hoses.
6. Put the housing back on the device.



7. Fasten the housing to the device.
8. Plug the power cable back into the mains socket.

## 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 inlets and outlets 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 for damage	X					X
Check the attachment screws		X				X
Test run						X
Empty the optional condensate pump, condensation tray and/or condenser dryer		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																
Clean the exterior																
Visually check the inside of the device for dirt																
Check for damage																
Check the attachment screws																
Check the optional condensate pump and tank, and clean if necessary																
Test run																
Comments																

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

**Activities required before starting maintenance**

- Do not touch the mains plug with wet or damp hands.
- Before any work, remove the mains plug!



**Warning of electrical voltage**

Maintenance tasks at the electrical equipment or the air-conditioning technology must only be carried out by specialist companies for cooling and air-conditioning or by Trotec.

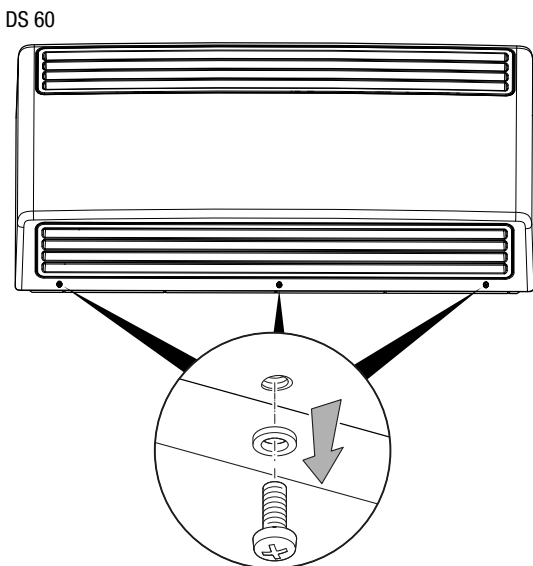
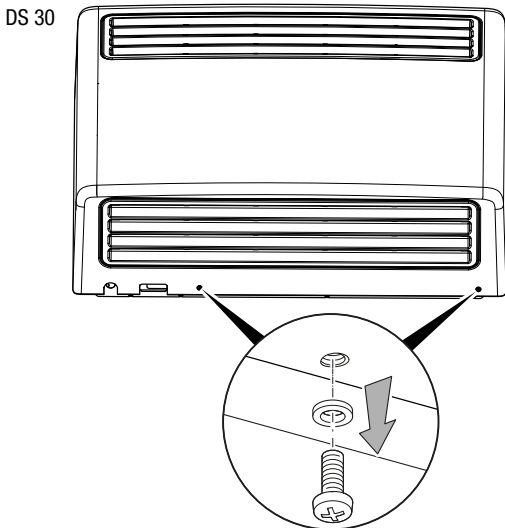
**Cleaning the housing**

Clean the device with a soft, damp and lint-free cloth. Ensure that no moisture enters the housing. Protect electrical components from moisture. Do not use any aggressive cleaning agents such as cleaning sprays, solvents, alcohol-based or abrasive cleaners to dampen the cloth.

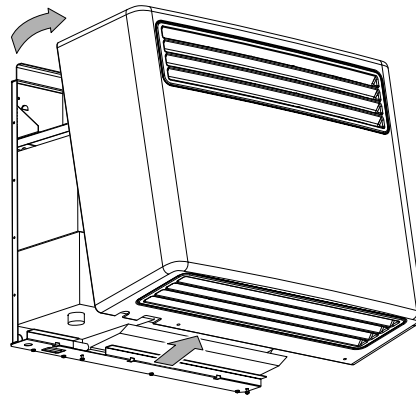
**Cleaning the inside of the device**

Perform this activity once a year.

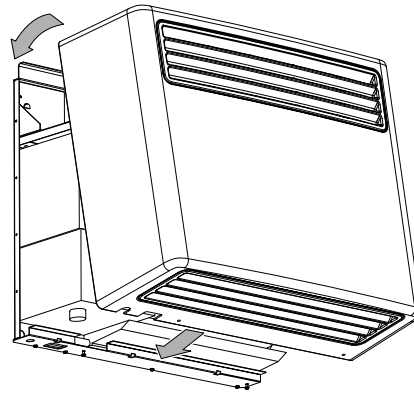
1. Open the screw connection at the housing.



2. Remove the housing.



3. Remove heavy soiling on the inside of the device. If necessary, clean the interior of the device using compressed air.
4. Put the housing back on the device.



5. Fasten the housing to the device.
6. Plug the power cable back into the mains socket.

**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.



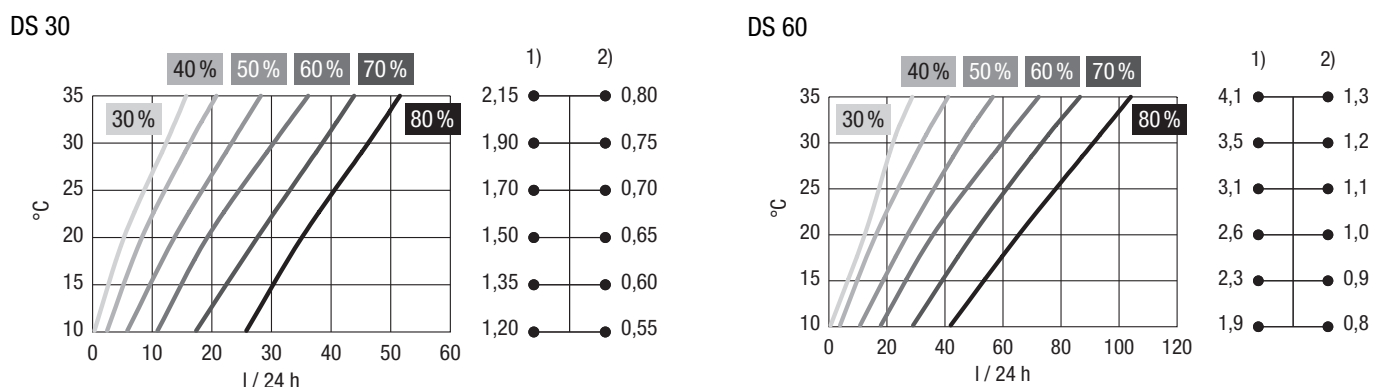
## Technical annex

## Technical data

Parameter	Value	
Model	<b>DS 30</b>	<b>DS 60</b>
Dehumidification performance	see dehumidification diagrams	
Mains connection	1/N/PE~ 230 V / 50 Hz	
Power cable	CEE 7/7 / l = 3.5 m	
Power input dehumidification	0.75 kW	1.2 kW
Power input ventilation	88 W	85 W
Nominal/peak current	4.4 A / 15.8 A	7.5 A / 30 A
Heat emission at 15 °C	1.35 kW	2.3 kW
Coefficient of performance (COP *)	2.5	2.9
Refrigerant	R407C	R407C
Amount of refrigerant	0.5 kg	0.8 kg
Air volume (freely blowing)	700 m <sup>3</sup> /h	1,280 m <sup>3</sup> /h
Sound pressure level @ 3 m	52 dB(A)	54 dB(A)
Operating range temperature	0 to 40 °C	0 to 40 °C
Setting range relative humidity	30 % to 60 % RH	
Max. permissible relative humidity	90 % RH	
Condensation drain hose	ø 12 mm (inside), l = 40 cm	
Weight	39 kg	60 kg
Dimensions (width x depth x height) incl. wall holder	787 x 280 x 690 (mm)	1,255 x 280 x 690 (mm)
Standard faceplate	Plastic	
Minimum distance to walls or other objects:	A: top: 12.5 cm B: bottom: 12.5 cm C: side: 12.5 cm D: front: 12.5 cm	

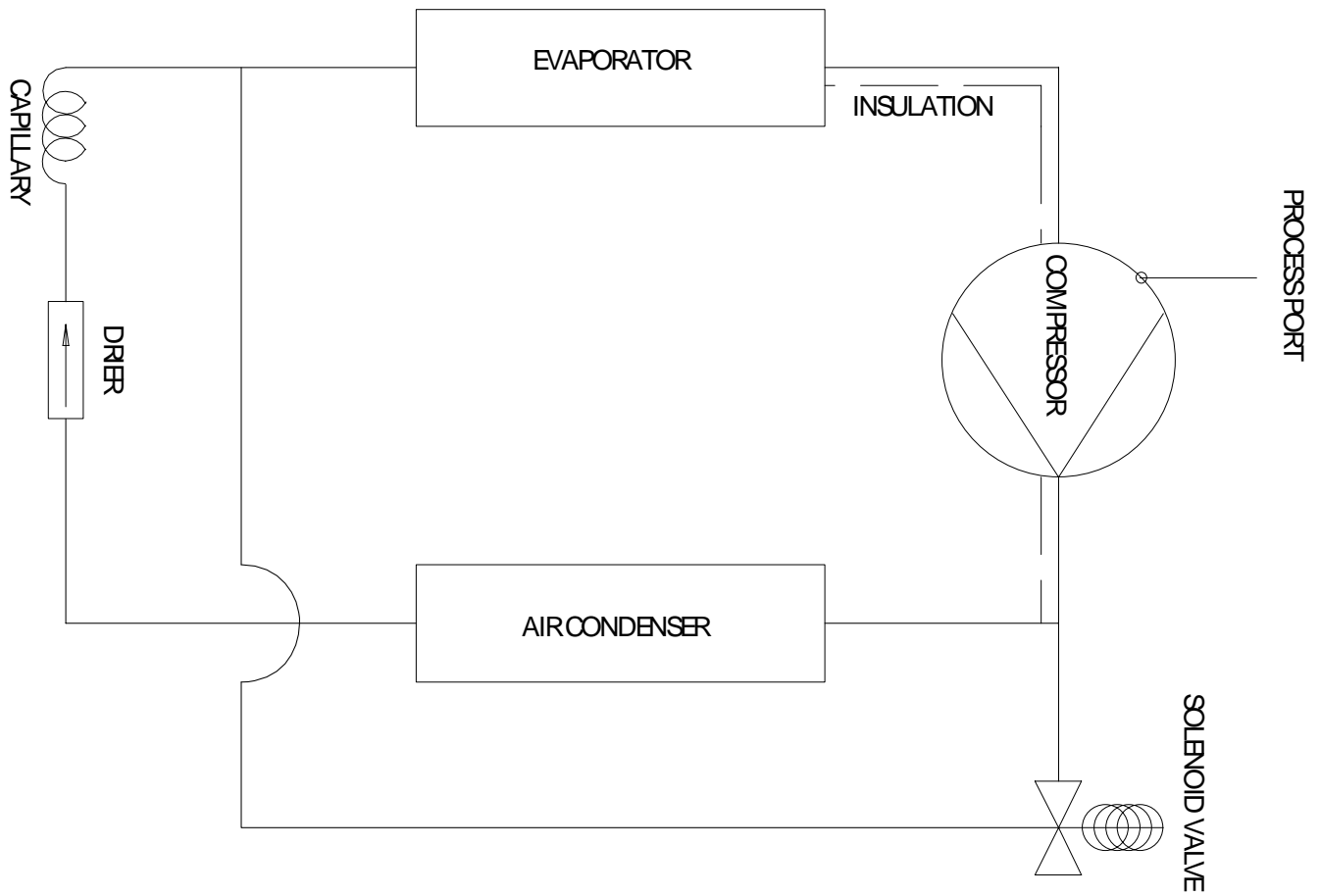
\* The COP is the ratio of the generated cooling capacity or heat output to the electrical power input.

## Dehumidification chart



No.	Designation
1)	Heat emission in kW at 60 % RH
2)	Power input in kW at 60 % RH

**Refrigerant circuit diagram**



**Disposal**



In the European Union, electronic equipment must not be treated as domestic waste, but must be disposed of professionally in accordance with Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE). At the end of its life, please dispose of this device according to the valid legal requirements.

The device uses an environmentally and ozone-neutral cooling agent (see Technical Data).

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



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