

DESA MASTER

ENTFEUCHTER

DEHUMIDIFIERS

DESHUMIDIFICATEURS

DH 3818 - 5128 - 7937

Revision 1
Date: 18.04.00
No. 973919

1. Unpacking of the unit

To avoid damage to the packaging, tilt the carton and roll out the unit.

The handle is fitted in accordance with the enclosed description.

2. Method of operation

The dehumidifiers type DH work in accordance with the condensation principle.

Figure 1 shows the principle in the cooling circuit. The humid air is drawn in by a fan (7). The air passes through a filter and is cooled down on the evaporator (2). This will bring the air temperature down below the dew point, which makes the water vapour condense to droplets on the evaporator.

The droplets fall onto a condensate tray and are led to a water container or to a drain.

The cold air is then led through the condenser (3) where it is reheated. This heat comes from the condensation process and from the compressor (1) and fan (7) energy, which is turned into heat. Therefore the air leaves the dehumidifier at a temperature which is higher than at the entrance.

The approx. increase in temperature is 5°C.

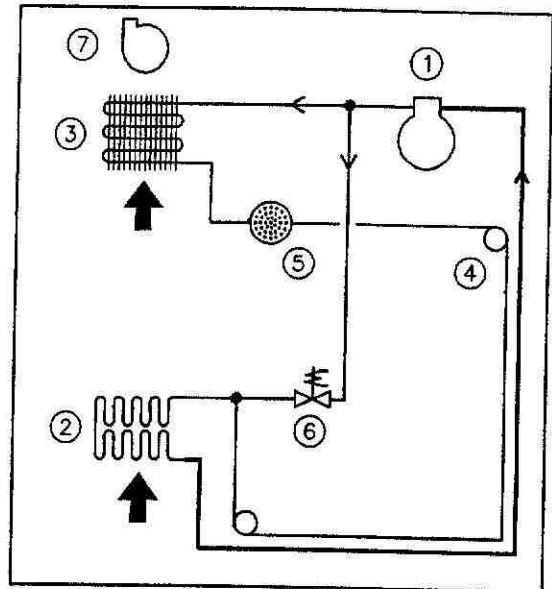


Figure 1 shows the principle of the cooling process.

The continuous air circulation through the unit reduces the relative humidity giving rapid but gentle drying.

3. Transport instructions

The unit can be transported in horizontal or vertical position, as these units are fitted with rotary compressors.

4. Placing of the unit

If possible the dehumidifier should be placed in the middle of a room to ensure a good air circulation.

The air should be sucked in freely at the back of the unit and blown out at the front.

The minimum distance from a wall should be about 60 mm. The minimum distance on the exhaust air side should be 3 metres.

It is important that the dehumidifier is not installed near a source of heat as for example a radiator, and doors and windows must be kept closed.

4.1 Electrical connection

The unit is complete with plug and cable and ready for connection to a 230V/50Hz socket. The socket should be fuse protected with a 10A fuse or a 16A circuit breaker.

NOTE : Observe local power supply company regulations !

4.2 Condensate drain

The condensate may discharge into the water container or be drained off through a hose Ø12 mm (see figure 2). If a water container is used, the dehumidifier switches off automatically when the water container is full. Switch off electricity before emptying the water container. DH 7937 has no water container and therefore a hose must be connected to the drain outlet.

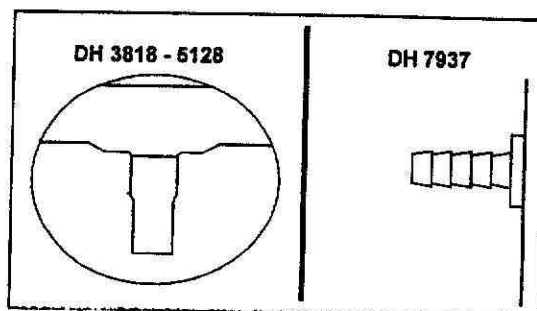


Fig. 2 shows the drain outlet of DH 3818, 5128, and DH 7937

4.3 Connection of hygrostat

The dehumidifier can operate continuously or be controlled by a hygrostat. The hygrostat is supplied as an accessory.

The hygrostat cable is connected to the hygrostat socket (3) and the hygrostat should be placed as far away from the unit as possible to ensure that the dehumidifier does not directly influence the hygrostat with its dry air. The hygrostat is connected to 12V.

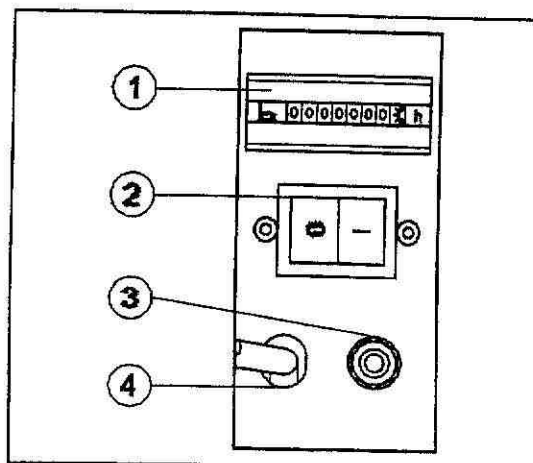


Fig. 3 shows:
the hour meter (1), main switch (2),
hygrostat socket (3) and cable entry (4)

5. Operation

5.1 Operation without hygrostat.

The main switch (2) is set to pos. 1 (see figure 3) and fan and compressor start. The lamp of the main switch lights up. The unit now operates continuously, independently of the relative humidity in the room. The unit is switched off by turning the main switch to pos. 0.

5.2 Operation with hygrostat

The hygrostat plug is connected to the socket, (see section 4.3) and the unit is started as described in section 5.1. If the relative humidity of the room is higher than the hygrostat setting, the unit starts to dehumidify. When the relative humidity of the air is equal to the setting of the hygrostat, the unit switches off automatically. The main switch (2) (see figure 3) is still on. If the humidity of the air increases again, the unit is switched on again by the hygrostat.

If the dehumidifier is to be turned off completely, for example if the water container is to be emptied, the main switch must be set at pos. 0.

5.3 Emptying the water container

Before the water container is taken out, the unit has to be switched off. When taking out the water container, press it slightly *inwards* to disengage the cut of the water container from the edge. When reinserting the water container care must be taken not to place the container in a position which switches off the automatic water stop function (see figure 4). If the water stop function is switched off the water in the container will run over.

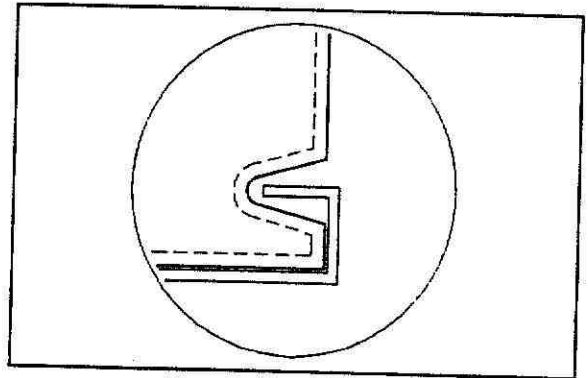


Fig. 4 shows the placing of the water container

NOTE: After each stop of the unit, either on the main switch, by the hygrostat or by the water stop function, the electronic control will delay a new start for 45 seconds. This will protect the compressor against frequent starts and stops.

6. Electronic control

The entire control of the unit, inclusive of safety, control and ON/OFF functions is taken care of by the CDG 2 circuit board. The light diodes on the control panel give the following indications. (see figure 5)

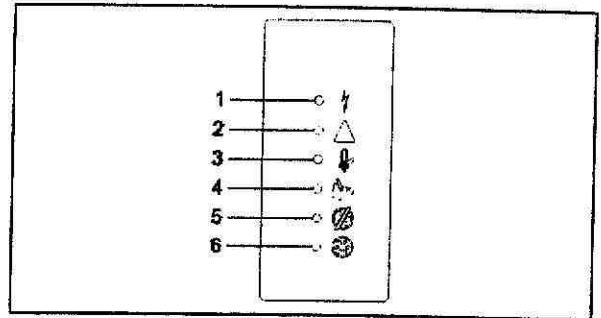


Fig. 5 shows the display with operational signals

1. The unit is on and the compressor is running.
2. The temperature/pressure on the condenser side is too high. The unit is switched off for 44 minutes before automatic restart. The LED is on and indicates a failure.
3. The temperature in the room is too low. At temperatures under 3°C the unit stops. If the ambient temperature increases to more than 3°C, the unit starts again automatically.
4. The unit is switched off because the water container is full.
5. The unit is in defrosting mode. During defrosting the compressor is working and the fan is stopped.
6. The evaporator is icing up.

7. Service and maintenance

NOTE: Unplug the main electricity cable before opening the unit !

7.1 Cleaning the filter

A dirty filter will reduce the efficiency and cause dirt to deposit on the inside. The filter should be cleaned at regular intervals. It can either be rinsed in lukewarm soapy water or, if not very dirty, cleaned with a vacuum cleaner.

7.2 Cleaning the dehumidifier

Once a year the unit should be cleaned internally. The filter and the front cover panels are removed. Then the inside of the unit can be vacuum cleaned. Especially the condenser and the evaporator have to be vacuum cleaned with care. If the evaporator is very dirty it can be washed with tepid soapy water, but take care, the laminated evaporator can easily be broken. The drip tray under the evaporator may also need cleaning, in order not to restrict drainage of the condensate.

8. Fault-finding

NOTE: Wait one minute before starting to locate the fault, as the electronic control may have switched off the unit for safety reasons.

The dehumidifier does not start, green lamp does not light up.

Check the power supply to the unit. Check that the cable is plugged into the socket. If so, check the group fuse.

The dehumidifier does not start, green lamp is on.

The hygrostat is probably set too high. Reduce its setting. If the unit does not start, remove the hygrostat. If the unit starts to work now, the hygrostat is defective.

Signals from the LEDs on the electronic control.

2. Pressure and temperature on the high pressure side of the cooling plant is too high. Check filter and unit for dirt. Check that the fan is working.
3. Room temperature < 3°C. Wait until the temperature is above 3°C.
4. The water container is full. Empty the water container.

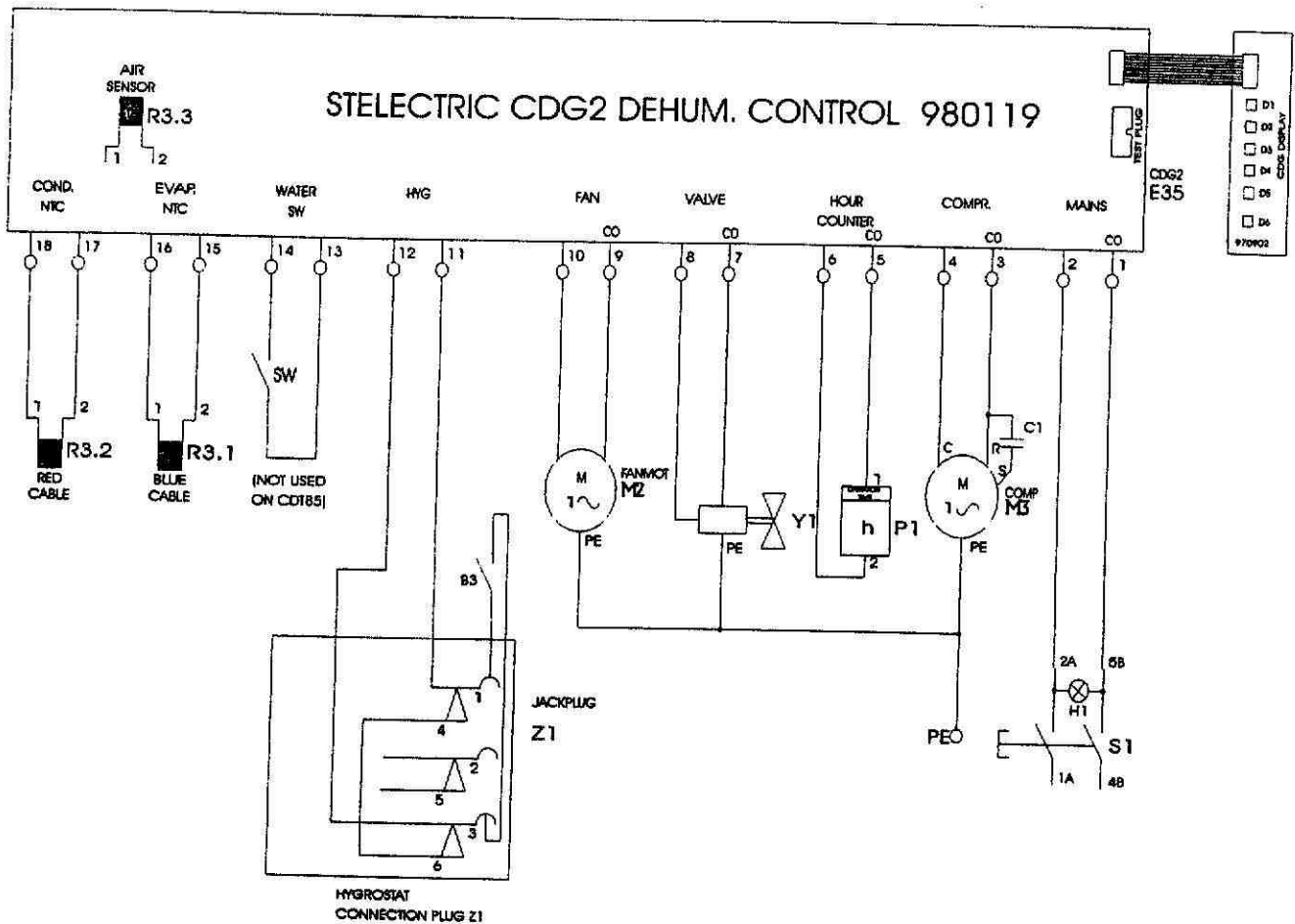
If the unit does not start again, contact a DESA dealer. This also applies if the unit is running but not producing any water. This is probably due to a fault in the cooling circuit, which can only be repaired by a refrigeration engineer.

NOTE: If the unit does not work as it should, switch it off immediately.

9. Technical specifications

Model		DH 3818	DH 5128	DH 7937
Working range - humidity	%RH	40 - 100	40 - 100	40 - 100
Working range - temperature	°C	3 - 30	3 - 30	3 - 30
Power supply	V/Hz	230/50	230/50	230/50
Max. current consumption	A	2,7	4,1	6,9
Max. power consumption	W	700	950	1500
Air volume	m ³ /h	400	800	1000
Refrigerant	-	R 407 C	R 407 C	R 407 C
Refrigerant quantity	g	475	575	1600
Capacity of water container	l	12,5	12,5	-
Weight	kg	52	60	74

Schaltplan / Wiring diagram / Schéma électrique

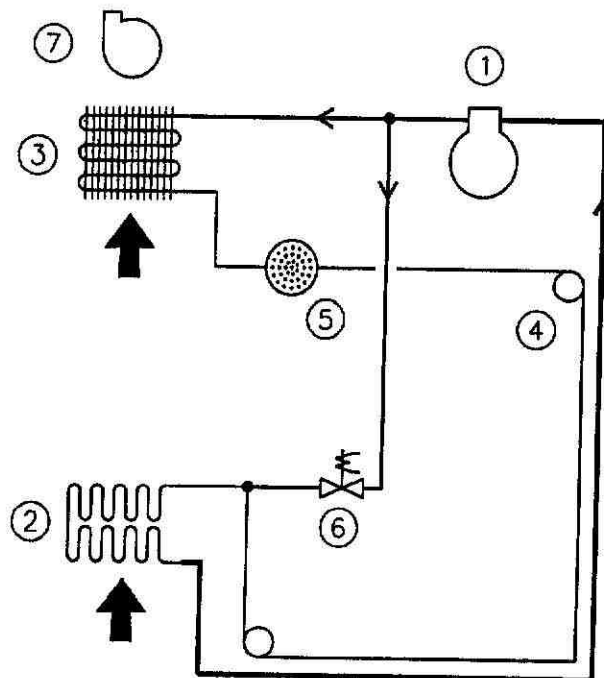


Legende für Schaltplan / Legend for wiring diagram / Légende du Schéma électrique

Position	Beschreibung	Designation	Désignation
B3	Hygrostat	Hygrostat	Hygrostat
C1	Betriebskondensator	Running capacitor	Condenseur de service
E35	CDG2 Elektronik	CDG2 print	CDG2 platine électronique
H1	Kontrolllampe Hauptschalter	Control lamp in main switch	Lampe témoin
M2	Ventilatoromotor	Fan motor	Moteur de ventilateur
M3	Kompressormotor	Kompressor motor	Moteur de compresseur
P1	Betriebstundenzähler	Running hour meter	Compteur horaire
R3.1	Verdampferfühler (blau)	Evaporator sensor (blue)	Sonde d'évaporateur (bleu)
R3.2	Kondensatorfühler (rot)	Condensor sensor (red)	Sonde du condenseur (rouge)
R3.3	Luftfühler	Air sensor	Sonde d'air
S1	Hauptschalter	Main switch	Commutateur principal
SW	Wasserstop (nicht in DH 7937)	Waterstop (not in DH 7937)	Commutateur de trop-plein (sauf le DH 7937)
Y1	Magnetventil	Solenoid valve	Vanne solénoïde
Z1	Hygrostatanschluss	Hygrostat connection	Raccordement de l'hygrostat

Kältekreislauf / Cooling circuit / Circuit de réfrigération

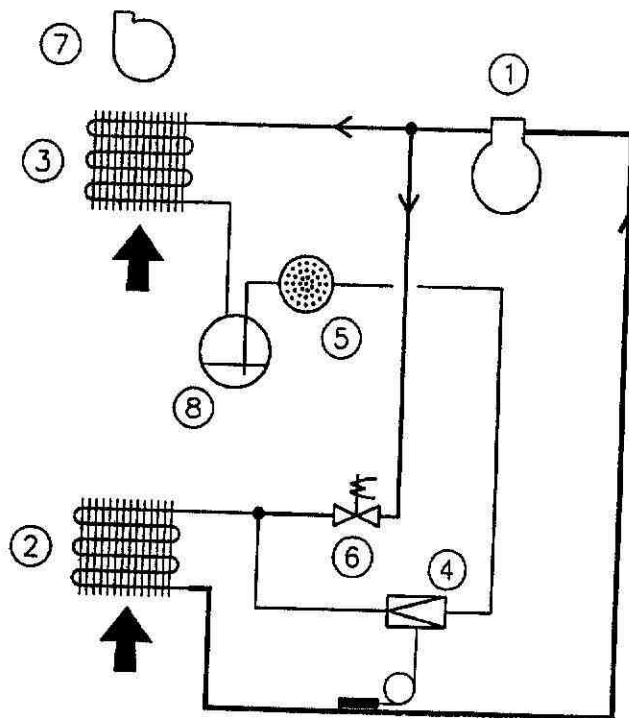
DH 3818 - 5128



Position	Beschreibung	Designation	Désignation
1	Kompressor	Compressor	Compresseur
2	Verdampfer	Evaporator	Évaporateur
3	Kondensator	Condensor	Condenseur
4	Kapillarrohr	Capillary tube	Tubes capillaires
5	Trockenfilter	Liquid line drier	Filtre anti humidité
6	Magnetventil	Solenoid valve	Vanne solénoïde
7	Ventilator	Fan	Ventilateur

Kältekreislauf / Cooling circuit / Circuit de réfrigération

DH 7937



Position	Beschreibung	Designation	Désignation
1	Kompressor	Compressor	Compresseur
2	Verdampfer	Evaporator	Évaporateur
3	Kondensator	Condensor	Condenseur
4	Thermoventil	Thermostatic valve	Clapet thermostatique
5	Trockenfilter	Liquid line drier	Filtre anti humidité
6	Magnetventil	Solenoid valve	Vanne solénoïde
7	Ventilator	Fan	Ventilateur
8	Saugakkumulator	Receiver	Ventilateur

DH 3818

Pos.	Art.-Nr.	Beschreibung	Designation	Désignation
1	084291	Rahmen für Kühlanlage	Frame for cooling plant	Cadre pour l'installation frigorifique
2	517588	Aufkleber für Betriebsmeldungen	Label for operating signals	Etiquette pour avis de fonctionnement
3	175538	Ventilatorhalterung	Fan bracket	Etrier du ventilateur
4	084072	Beschlag für Ventilatorhalterung	Support for fan bracket	Support pour l'étrier du ventilateur
5	532490	Ventilatormotor	Fan motor	Moteur du ventilateur
5a	791410	Mitnehmerscheibe	Driving plate	Plateau d'entraînement
6	532510	Ventilatorflügel	Fan blade	Ailette du ventilateur
7	084047	Ventilatoreindeckung	Fan housing	Enveloppe du ventilateur
8	600018	Kondensator / Verdampfer	Condensator / evaporator	Condenseur / évaporateur
9	084584	Oberer Griff	Handle, upper part	Poignée supérieure
10	084577	Filterrahmen	Filter frame	Cadre du filtre
11	084585	Filter	Filter	Filtre
12	084578	Gitter für Filterrahmen	Grille for filter frame	Grille pour le cadre du filtre
13	084576	Hinteres Gehäuse	Rear jacket	Capot derrière
14	084579	Profil	Profiled bracket	Rebord profilé
15	605470	Magnetventil	Solenoid valve	Vanne magnétique
16	605440	Spule für Magnetventil	Coil for solenoid valve	Bobine de la vanne magnétique
17	517741	Verdampferfühler, blau	Evaporator sensor, blue	Sonde d'évaporateur, bleu
18	514970	Wasserstop Fühler	Water stop sensor	Sonde de l'arrêt d'eau
19	562361	Bürste	Brush	Balais
20	175533	Wasserbehälter komplett	Water container complete	Réservoir d'eau complet
21	175537	Schwimmer	Float	Flotteur
22	565746	Wasserbehälter	Water container	Water container
23	084575	Vorderes Gehäuse	Front jacket	Capot frontal
24	084580	Vorderes Ausblässgitter	Front output grill	Grille de frontal
24a	084581	Hinteres Ausblässgitter	Back output grill	Grille de derrière
25	084114	Kapillarrohr	Capillary tube	Tube capillaire
26	607410	Trockenfilter	Liquid line dryer	Déshydrateur
27	517742	Kondensatorfühler, rot	Condensator sensor, red	Sonde de condensateur, rouge
28	084046	Trennwand	Partition wall	Cloison de séparation
29	602447	Kompressor komplett	Compressor complete	Compresseur complet
29a	602448	Kompressor	Compressor	Compresseur
29b	602456	Dichtung	Seal	Joint d'étanchéité
29c	602451	Überlastschutz	Overload protection	Protection de surcharge
29d	602455	Deckel	Cap	Couverture
29e	602450	Schwingungsdämpfer	Vibration damper	Amortisseur de vibrations
29f	602444	Betriebskondensator	Running capacitor	Condensateur de service
30	084142	Kompressorkonsole	Compressor bracket	Console du compresseur
31	517582	Diode für Betriebsmeldungen	LEDs for operating signals	Diodes pour avis de fonctionnement
32	517584	Flachkabel für Dioden	Flat cable for LEDs	Cable plat pour diodes
33	517581	Elektronik mit Steuerung	PCB with control	Platine électronique
34	084014	Elektronikschirm	PCB screen	Ecran pour la platine électronique
35	084017	Hinteres Deckplatte	Back plate	Tôle arrière
36	084007	Schaltpaneel	Control panel	Panneau de contrôle
37	084085	Beschlag für Hauptschalter	Bracket for main switch	Garniture pour commutateur principal
38	519301	Betriebsstundenzähler	Running hour meter	Compteur horaire
39	515080	Hauptschalter	Main switch	Commutateur
40	524490	Hygrostatanschluss	Hygrostat connection	Reccordement de l'hygrostat
41	521700	Kabelentlastung	Cable relief	Appui de cable
42	175609	Kondensatschale komplett	Drip tray complete	Bac à eau complet
42a	084015	Kondensatschale	Drip tray	Bac à eau
42b	524138	Entlastungs tülle	Unloading tube	Tube déchargement
42c	084078	Abstandstück	Distance bush	Tube de distance
42d	084092	Isolierung für Kondensatschale	Insulation for drip tray	Isolant du bac à eau
43	084574	Bodenplatte	Bottom plate	Tôle de fond
44	084582	Radkonsole	Wheel bracket	Console de roue
45	562352	Radwelle	Wheel axle	Essieu
46	540730	Rad	Wheel	Roues
47	477060	Arretierscheibe	Lock washer	Rondelle-frein
48	084583	Unterer Griff	Handle, lower part	Poignée inférieure
49	541061	Gleitschuh	Shoes	Pieds
50	551187	Anschlusskabel	Electric cable	Cable électrique

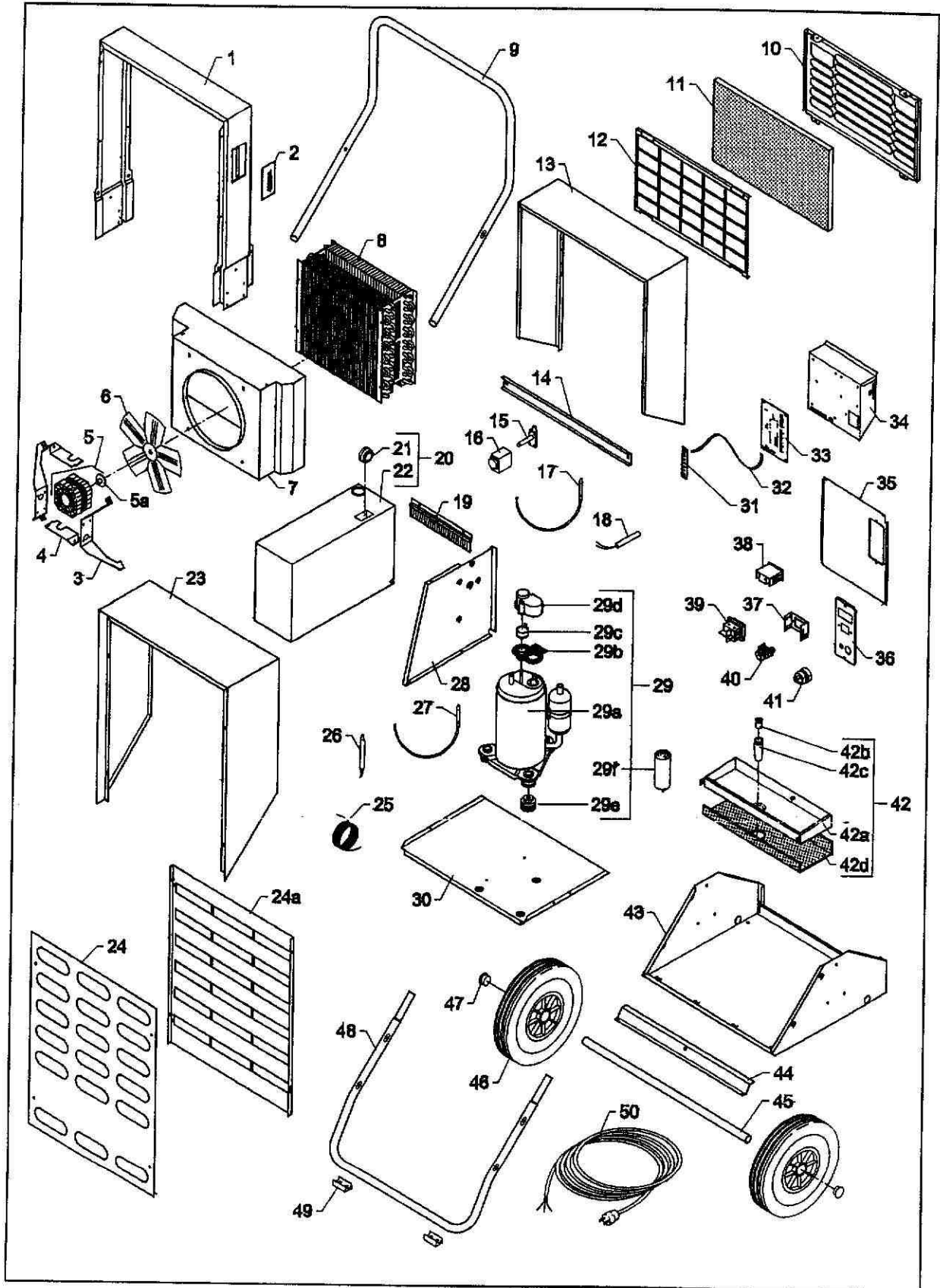
DH 5128

Pos.	Art.-Nr.	Beschreibung	Designation	Désignation
1	084292	Rahmen für Kühlanlage	Frame for cooling plant	Cadre pour l'installation frigorifique
2	517588	Aufkleber für Betriebsmeldungen	Label for operating signals	Etiquette pour avis de fonctionnement
3	175532	Ventilatorhalterung	Fan bracket	Etrier du ventilateur
4	084072	Beschlag für Ventilatorhalterung	Support for fan bracket	Support pour l'étrier du ventilateur
5	532571	Ventilatormotor	Fan motor	Moteur du ventilateur
5a	781421	Mitnehmerscheibe	Driving plate	Plateau d'entraînement
6	532530	Ventilatorflügel	Fan blade	Ailette du ventilateur
7	084011	Ventilatoreindeckung	Fan housing	Enveloppe du ventilateur
8	600019	Kondensator / Verdampfer	Condensator / evaporator	Condenseur / évaporateur
9	084584	Oberer Griff	Handle, upper part	Poignée supérieure
10	084588	Filterrahmen	Filter frame	Cadre du filtre
11	084590	Filter	Filter	Filtre
12	084589	Gitter für Filterrahmen	Grille for filter frame	Grille pour le cadre du filtre
13	084587	Hinteres Gehäuse	Rear jacket	Capot derrière
14	084579	Profil	Profiled bracket	Rebord profilé
15	605470	Magnetventil	Solenoid valve	Vanne magnétique
16	605440	Spule für Magnetventil	Coil for solenoid valve	Bobine de la vanne magnétique
17	517741	Verdampferfühler, blau	Evaporator sensor, blue	Sonde d'évaporateur, bleu
18	514970	Wasserstop Fühler	Water stop sensor	Sonde de l'arrêt d'eau
19	562361	Bürste	Brush	Balais
20	175533	Wasserbehälter komplett	Water container complete	Réservoir d'eau complet
21	175537	Schwimmer	Float	Flotteur
22	565746	Wasserbehälter	Water container	Water container
23	084586	Vordere Gehäuse	Front jacket	Capot frontal
24	084591	Vorderes Ausblasegitter	Front output grill	Grille de frontal
24a	084592	Hinteres Ausblasegitter	Back output grill	Grille de derrière
25	084124	Kapillarrohr	Capillary tube	Tube capillaire
26	607410	Trockenfilter	Liquid line dryer	Déshydrateur
27	517742	Kondensatorfühler, rot	Condensator sensor, red	Sonde de condenseur, rouge
28	084006	Trennwand	Partition wall	Cloison de séparation
29	602446	Kompressor komplett	Compressor complete	Compresseur complet
29a	602449	Kompressor	Compressor	Compresseur
29b	602456	Dichtung	Seal	Joint d'étanchéité
29c	602452	Überlastungsschutz	Overload protection	Protection de surcharge
29d	602455	Deckel	Cap	Couverture
29e	602450	Schwingungsdämpfer	Vibration damper	Amortisseur de vibrations
29f	602444	Betriebkondensator	Running capacitor	Condensateur de service
30	084142	Kompressorconsole	Compressor bracket	Console du compresseur
31	517582	Diode für Betriebsmeldungen	LEDs for operating signals	Diodes pour avis de fonctionnement
32	517584	Flachkabel für Dioden	Flat cable for LEDs	Cable plat pour diodes
33	517581	Elektronik mit Steuerung	PCB with control	Platine électronique
34	084014	Elektronikschirm	PCB screen	Ecran pour la platine électronique
35	084017	Hintere Deckplatte	Back plate	Tôle arrière
36	084007	Schaltpaneel	Control panel	Panneau de contrôle
37	084085	Beschlag für Hauptschalter	Bracket for main switch	Garniture pour commutateur principal
38	519301	Betriebsstundenzähler	Running hour meter	Compteur horaire
39	515080	Hauptschalter	Main switch	Commutateur
40	524490	Hygrostatanschluss	Hygrostat connection	Raccordement de l'hygrostat
41	521700	Kabelentlastung	Cable relief	Appui de cable
42	175609	Kondensatschale komplett	Drip tray complete	Bac à eau complet
42a	084015	Kondensatschale	Drip tray	Bac à eau
42b	524138	Entlastungstülle	Unloading tube	Tube déchargement
42c	084078	Abstandstück	Distance bush	Tube de distance
42d	084092	Isolierung für Kondensatschale	Insulation for drip tray	Isolant du bac à eau
43	084574	Bodenplatte	Bottom plate	Tôle de fond
44	084582	Radconsole	Wheel bracket	Console de roue
45	562352	Radwelle	Wheel axle	Essieu
46	540730	Rad	Wheel	Roues
47	477060	Arretierscheibe	Lock washer	Rondelle-frein
48	084583	Unterer Griff	Handle, lower part	Poignée inférieure
49	541061	Gleitschuh	Shoes	Pieds
50	551187	Anschlusskabel	Electric cable	Cable électrique

DH 7937

Pos.	Art.-Nr.	Beschreibung	Designation	Désignation
1	084293	Rahmen für Kühlanlage	Frame for cooling plant	Cadre pour l'installation frigorifique
2	517589	Aufkleber für Betriebsmeldungen	Label for operating signals	Étiquette pour avis de fonctionnement
3	175532	Ventilatorhalterung	Fan bracket	Etrier du ventilateur
4	084072	Beschlag für Ventilatorhalterung	Support for fan bracket	Support pour l'étrier du ventilateur
5	532571	Ventilatormotor	Fan motor	Moteur du ventilateur
5a	791421	Mitnehmerscheibe	Driving plate	Plateau d'entraînement
6	084175	Ventilatorflügel	Fan blade	Ailette du ventilateur
7	084059	Ventilatoreindeckung	Fan housing	Enveloppe du ventilateur
8	600016	Kondensator	Condensor	Condenseur
9	600017	Verdampfer	Evaporator	Évaporateur
10	084602	Oberer Griff	Handle, upper part	Poignée supérieure
11	084596	Filterrahmen	Filter frame	Cadre du filtre
12	084597	Filter	Filter	Filtre
13	084598	Gitter für Filterrahmen	Grille for filter frame	Grille pour le cadre du filtre
14	084595	Hinteres Gehäuse	Rear jacket	Capot derrière
15	084604	Profil	Profiled bracket	Rabord profilé
16	605570	Magnetventil	Solenoid valve	Vanne magnétique
17	605510	Spule für Magnetventil	Coil for solenoid valve	Bobine de la vanne magnétique
18	517801	Verdampferfühler, blau	Evaporator sensor, blue	Sonde d'évaporateur, bleu
19	084064	Trennwand	Partition wall	Cloison de séparation
20	084594	Vorderes Gehäuse	Front jacket	Capot frontal
21	084599	Vorderes Ausblaskgitter	Front output grill	Grille de frontal
22	084600	Hintere Ausblaskgitter	Back output grill	Grille de derrière
23	084065	Kompressorconsole	Compressor bracket	Console du compresseur
24	602441	Kompressor komplett	Compressor complete	Compresseur complet
24a	606228	Kompressor	Compressor	Compresseur
24b	602456	Dichtung	Seal	Joint d'étanchéité
24c	602453	Überlastungsschutz	Overload protection	Protection de surcharge
24d	602455	Deckel	Cap	Couverture
24e	602450	Schwingungsdämpfer	Vibration damper	Amortisseur de vibrations
24f	602444	Betriebskondensator	Running capacitor	Condensateur de service
25	517742	Kondensatorfühler, rot	Condensor sensor, red	Sonde de condenseur, rouge
26	602740	Kühlmittelempfänger	Receiver for refrigerant	Bouteille liquide
27	607230	Trockenfilter	Liquid line dryer	Déshydrateur
28	603968	Thermostventil	Thermostatic valve	Clapet thermostatique
29	517582	Diode für Betriebsmeldungen	LEDs for operating signals	Diodes pour avis de fonctionnement
30	517584	Flachkabel für Dioden	Flat cable for LEDs	Cable plat pour diodes
31	517581	Elektronik mit Steuerung	PCB with control	Platine électronique
32	084014	Elektronikschirm	PCB screen	Ecran pour la platine électronique
33	519301	Betriebsstundenzähler	Running hour meter	Compteur horaire
34	084085	Beschlag für Hauptschalter	Bracket for main switch	Garniture pour commutateur principal
35	515080	Hauptschalter	Main switch	Commutateur
36	524480	Hygrostatanschluss	Hygrostat connection	Raccordement de l'hygrostat
37	521700	Kabelentlastung	Cable relief	Appui de câble
38	084007	Schaltpaneel	Control panel	Panneau de contrôle
39	175936	Hintere Deckplatte, rechts	Back plate, right hand side	Tôle arrière, droite
40	175637	Hintere Deckplatte, links	Back plate, left hand side	Tôle arrière, gauche
41	544451	Plast Schlauch	Plastic hose	Plastique tuyau
42	175638	Kondensatschale komplett	Drip tray complete	Bac à eau complet
42a	084159	Isolierung für Kondensatschale	Insulation for drip tray	Isolant du bac à eau
43	084593	Bodenplatte	Bottom plate	Tôle de fond
44	084803	Radconsole	Wheel bracket	Console de roue
45	582353	Radwelle	Wheel axle	Essieu
46	540730	Rad	Wheel	Roues
47	477060	Arretierscheibe	Lock washer	Rondelle-frein
48	084601	Unterer Griff	Handle, lower part	Poignée inférieure
49	541061	Gleitschuh	Shoes	Pieds
50	551187	Anschlusskabel	Electric cable	Cable électrique

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DH 7937

