

Dantherm[®]

**Dri - Tec
600 / 2000**

CE

Instruction Manual

JAN.96 973261

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1. WORKING PRINCIPLE

A dehumidifier dries the air by means of a cooling plant. The room air is drawn in at the back of the unit through a filter and over a cooling coil where moisture in the air is condensed into water drops on the evaporator coil. The condensate then runs into a tray and finally is piped into a water container. The dry, cold air is led over the condenser coil and is blown out into the room again at a temperature 2-5°C higher than the room temperature. The heat comes from the energy used to run the fan and the compressor together with the latent heat released when the water vapour is condensed.

By continued circulation of the room air through the dehumidifier, the relative humidity of the room will gradually be lowered.

2. TRANSPORT

Dri-Tec 600

The dehumidifier can be carried with the handle on top of the unit or rolled on the four wheels.

Dri-Tec 2000

The dehumidifier is tilted slightly backwards and is rolled to its appropriate place. Alternatively the unit can be lifted by a crane using the upper pipe strap.

Important!
The unit should be transported in vertical position. The cooling plant may be damaged if it is transported lying down!

If the unit has been transported over a long distance it should stand still for at least 30 minutes before it is put into service.

3. INSTALLATION AND CONNECTIONS

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

If this is not possible the dehumidifier should be placed in such a way that the air can 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 400 mm.

The dehumidifier must be installed on a level surface to ensure free discharge of the condensed water.

Important!

Moisture can easily and freely spread through the air. It is therefore important to "seal" the room as tight as possible, i.e. doors and windows must be kept closed and movement in and out of the room must be minimized. Otherwise the efficiency of the unit will be considerably reduced.

3.1. ELECTRICAL CONNECTION

DRI-TEC 600

The unit can be connected either to 1x110V-50 Hz (**YELLOW PLUG**) or 1x240V-50 Hz (**BLUE PLUG**) by using the supplied connecting cables. These cables are supplied separately with unit.

DRI-TEC 2000

The DRI-TEC 2000 has a ready mounted cable with 1x240V plug (**BLUE PLUG**). If the unit is to operate in 1 x110V mode the supplied **yellow plug** must be mounted in stead of the blue 240V plug. At the same time the operating voltage is switched from 240V to 110V at the back of the unit by means of a square-hole spanner.

3.2. CONDENSATE OUTFLOW

The waste tube is fixed to a ½" copper pipe at the rear of the unit. The waste tube should discharge into a water container, which should be as tight as possible to avoid evaporation.

If a longer waste tube is connected to the unit and led directly to a floor drain, then make sure that the waste tube has a fall towards the drain.

4. START UP

4.1. Dri-Tec 600 1x240V

Take the cable with the **BLUE PLUG** which is supplied separat with the unit and connect the small rectangular plug of the cable into the socket (1) on the right hand side of the unit.

4.2. Dri-Tec 600 1x110V

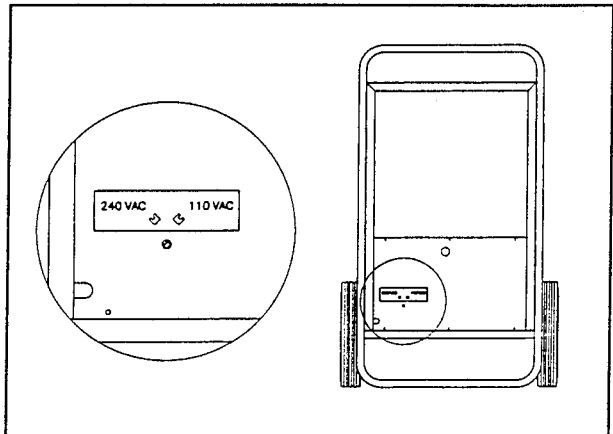
Take the cable with the **YELLOW PLUG** which is supplied separat with the unit and connect the small rectangular plug of the cable into the socket (1) on the right hand side of the unit.

4.3. Dri-Tec 2000 1x240V

If a **BLUE PLUG** is mounted on the mains cable the unit can be connected directly to 1x240V. Please check that the voltage switch at the back of the unit is also on 240V.

4.4. Dri-Tec 2000 1x110V

In order to operate the unit at 1x110V the **YELLOW PLUG** must be mounted on the mains cable and the voltage switch is set to 110V.



Voltage switch

Important for Dri-Tec 2000!

Each time the unit has been stopped, a time delay built into the electronic control will make the unit wait 1 minute, before it starts again. This is a security function which protects the compressor against overloading in case of frequent cutting in and out!

4.5. EXPLANATION OF SYMBOLS ON THE ELECTRONIC CONTROL

This electronic is only mounted in the Dri-Tec 2000!

A. Lights up in red if the sensor in the cooling system detects too high a temperature. The whole unit will then be switched off. This function safeguards the compressor against breakdown. Starts automatically after 45 minutes.

If this light is on the air flow through the unit should be checked, including the fan. Clean filter, condenser and evaporator as necessary. (See section 7).

B. Lights up in yellow if a temperature of more than 30°C is detected on the external air sensor - the dehumidifier stops. When the temperature has fallen to a temperature lower than 30°C, the unit starts automatically again.

C. Lights up in yellow, if the external air sensor detects a temperature of less than 3°C. The unit stops. When the temperature has risen to more than 3°C the unit starts again.

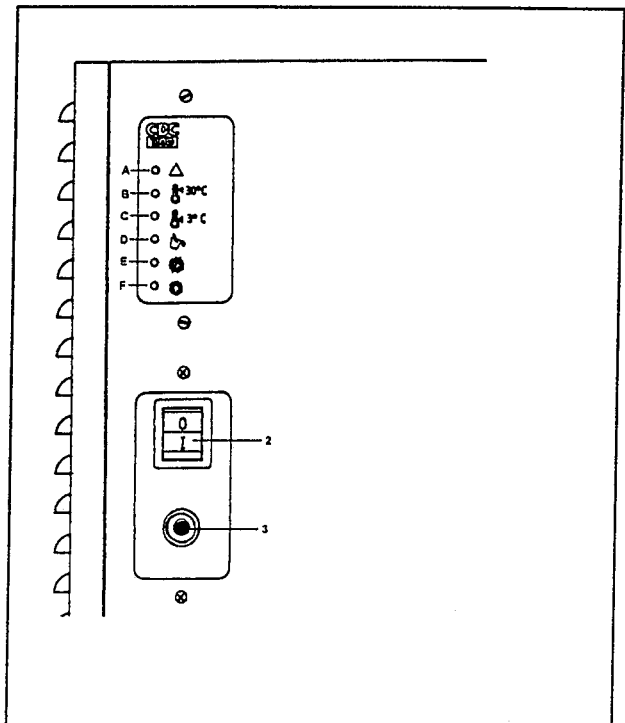
D. This light-emitting diode has no function in connection with a model Dri-Tec 2000.

E. Lights up in green during automatic de-frosting of the evaporator.

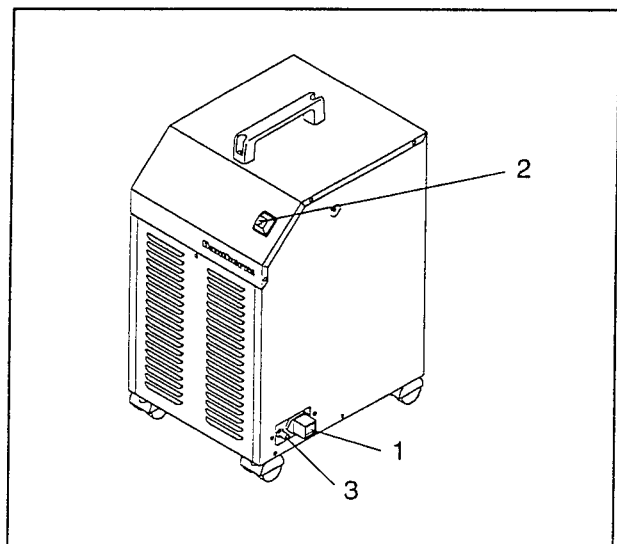
F. Green lamp is on when the first ice forms on the evaporator. The formation of ice continues for 44 minutes after which time the defrosting starts automatically.

4.6. ETA PROTECTION RELAY

In Dri-Tec 600/2000 a so-called ETA-relay (3) is built in to afford protection against wrong electricity supply. Should the unit be connected to a wrong tension, the ETA relay will switch the whole unit off immediately. The unit cannot be re-started before the ETA button has been pushed in manually. On Dri-Tec 600 the ETA relay is located on the bottom right hand side next to the electricity supply. In Dri-Tec 2000 the ETA relay is located under the ON/OFF switch (2).



Dri - Tec 2000



Dri - Tec 600

5. MAINTENANCE

The dehumidifier has been designed to ensure reliable operation and a minimum of inspection. All moving parts are lubricated for life.

It is, however, recommended to check the unit and if necessary clean it at least once a year. During this inspection special attention should be paid to the evaporator and the condenser. The fins can be vacuum-cleaned or brushed with care.

The filter at the back of the unit also has to be cleaned at regular intervals, depending on how dirty it becomes. The filter can be cleaned by washing, vacuum-cleaning or blowing.

6. TECHNICAL SPECIFICATIONS

DRI-TEC 600

| | | |
|-----------------------------|------------|-------------------|
| Working range - humidity | 40 - 100 | %R.F. |
| Working range - temperature | 10 - 30 | °C |
| Power supply | 110/240-50 | V/Hz |
| Max. current consumption | 3.2/1.68 | A |
| Max. power consumption | 320 | W |
| Main fuse | 16/10 | A |
| Air volume | 200 | m ³ /h |
| Refrigerant | R 22 | |
| Refrigerant - quantity | 260 | g |
| Weight | 28 | kg |

DRI-TEC 2000

| | | |
|-----------------------------|------------|-------------------|
| Working range - humidity | 40 - 100 | %R.F. |
| Working range - temperature | 3 - 30 | °C |
| Power supply | 110/240-50 | V/Hz |
| Max. current consumption | 11.6/5.4 | A |
| Max. power consumption | 1200 | W |
| Main fuse | 16/10 | A |
| Air volume | 700 | m ³ /h |
| Refrigerant | R 22 | |
| Refrigerant - quantity | 550 | g |
| Weight | 52 | kg |

7. FAULT-FINDING DRI - TEC 600

| INDICATION | REASON | REMEDY |
|--|---|--|
| Unit is not working. Green lamp (2) is off | Main fuse for the building has tripped. | Replace fuse. |
| | ETA relay of the unit has switched off the electric circuit. | Remove the front cover grille and push in the reset button at the lower left hand side of the unit. |
| | Power supply cable defective. | If the ETA relay cuts out again, check if the unit is connected to the correct voltage. |
| | Timer for deicing control defective. | Repair power supply cable or replace it. |
| Dehumidifier does not run. Green lamp (2) is on. | Internal compressor protection has cut off the compressor because: | Replace timer |
| | - The air volume is too low. | Clean filter, evaporator and condenser of the dehumidifier. The dehumidifier must not be placed too close to a wall. |
| | - Fan has failed. | Replace fan |
| | - Room air temperature is higher than 30°C | Stop the unit and wait until the temperature has fallen to a level under 30°C. |
| The unit dehumidifies, but not sufficiently. | Unit is dirty | Filter, evaporator and condenser must be cleaned. |
| | Relative humidity lower than 40% R.H. | Wait until the relative humidity has risen. |
| | Loss of refrigerant from the cooling plant (the evaporator is not getting cold or only getting partly cold) | Repair the leakage of the cooling plant and charge with refrigerant |

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| | ETA relay of the unit has switched off the electric circuit. | Remove the front cover grille and push in the reset button at the lower left hand side of the unit. |
| | Power supply cable defective | If the ETA relay cuts out again, check if the unit is connected to the correct voltage. |
| Dehumidifier does not run. Green lamp (2) is on. | The time lag has not yet allowed any function. | Repair power supply cable or replace it. |
| | Hygrostat defect. | Wait one minute, then the dehumidifier starts automatically, if no other lamp of the panel is on. |
| Red lamp "Overheating" is on. | The air volume is too low. | Pull out the Jack-plug from the unit. |
| | Fan has failed. | Clean filter, evaporator and condenser of the dehumidifier. The dehumidifier must not be placed too close to a wall. |
| Yellow lamp "Temp. too high" is on. | Room air temperature is higher than 30°C | Replace fan |
| Yellow lamp "Temp. too low" is on. | Room air temperature is lower than 3°C | Wait until the temperature has fallen to a level under 30°C. The unit starts again automatically. |
| The unit dehumidifies, but not sufficiently. | Unit is dirty | Wait until the temperature has risen to more than 3°C. The unit starts again automatically. |
| | Relative humidity lower than 40% R.H. | Filter, evaporator and condenser must be cleaned. |
| | Loss of refrigerant from the cooling plant (the evaporator is not getting cold or only getting partly cold) | Wait until the relative humidity has risen. Repair the leakage of the cooling plant and charge with refrigerant |

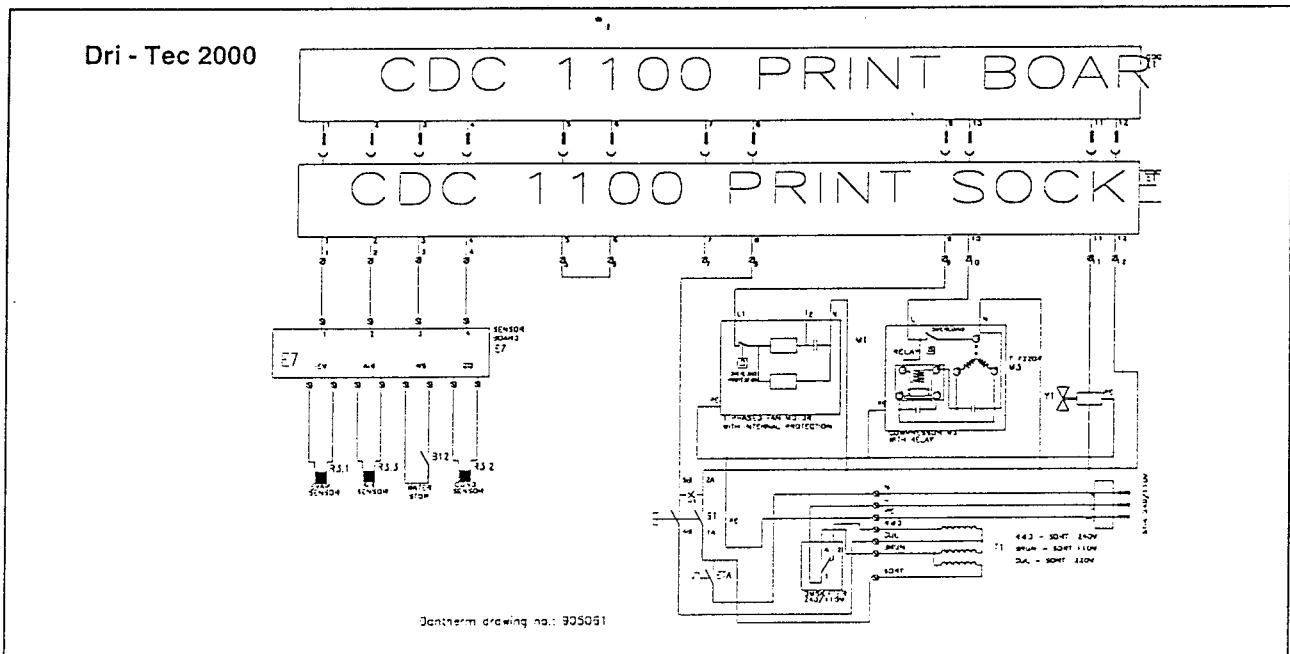
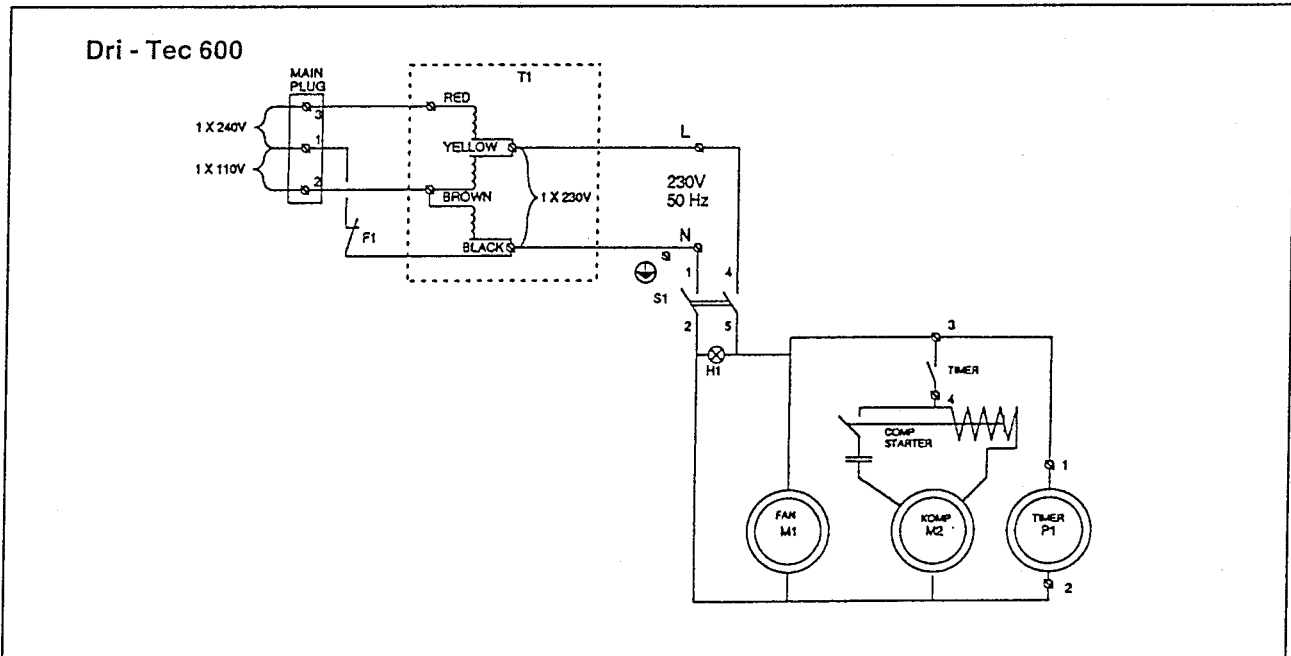
8. WIRING DIAGRAM

Dri - Tec 600

- H1: Green control lamp
- F1: ETA overload relay
- M1: Fan
- M2: Compressor
- P1: Timer
- T1: Transformer

Dri - Tec 2000

- E1: Electronic control
- E7: Sensor terminal
- H1: Green control lamp
- F1: ETA overload relay
- M1: Fan
- M3: Compressor
- R3.1: Sensor - evaporator
- R3.2: Sensor - circuit
- R3.3: Sensor - air
- T1: Transformer
- Y1: Solenoid valve



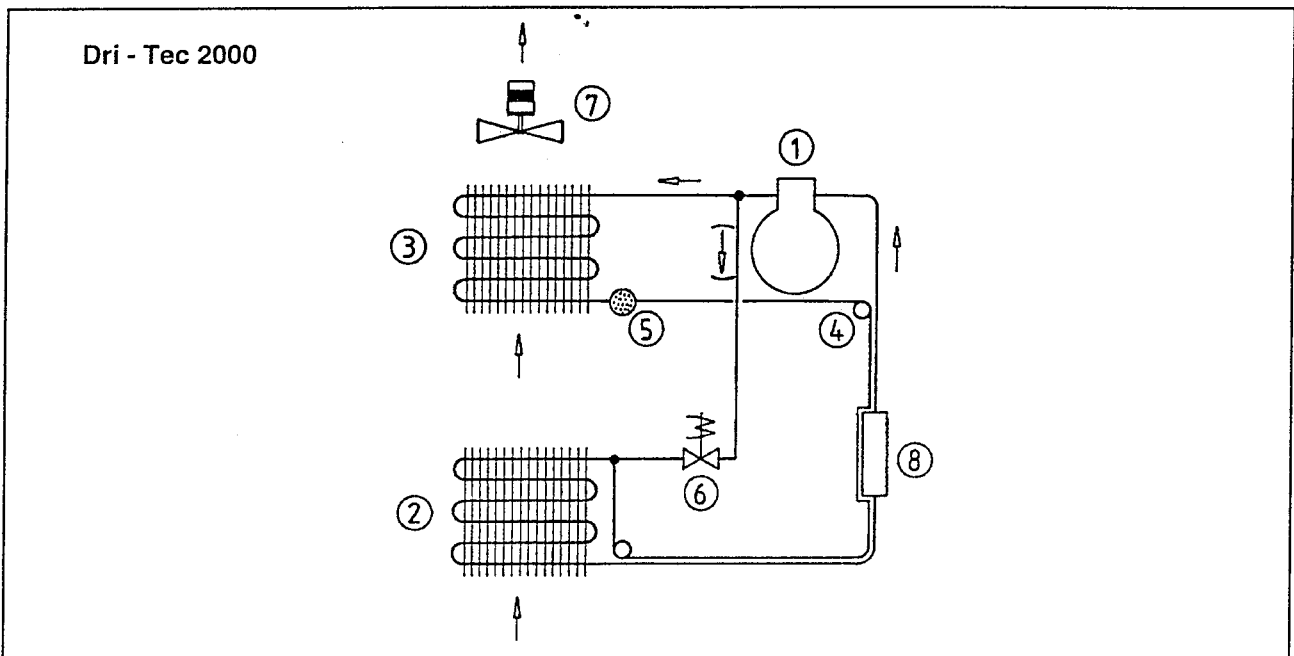
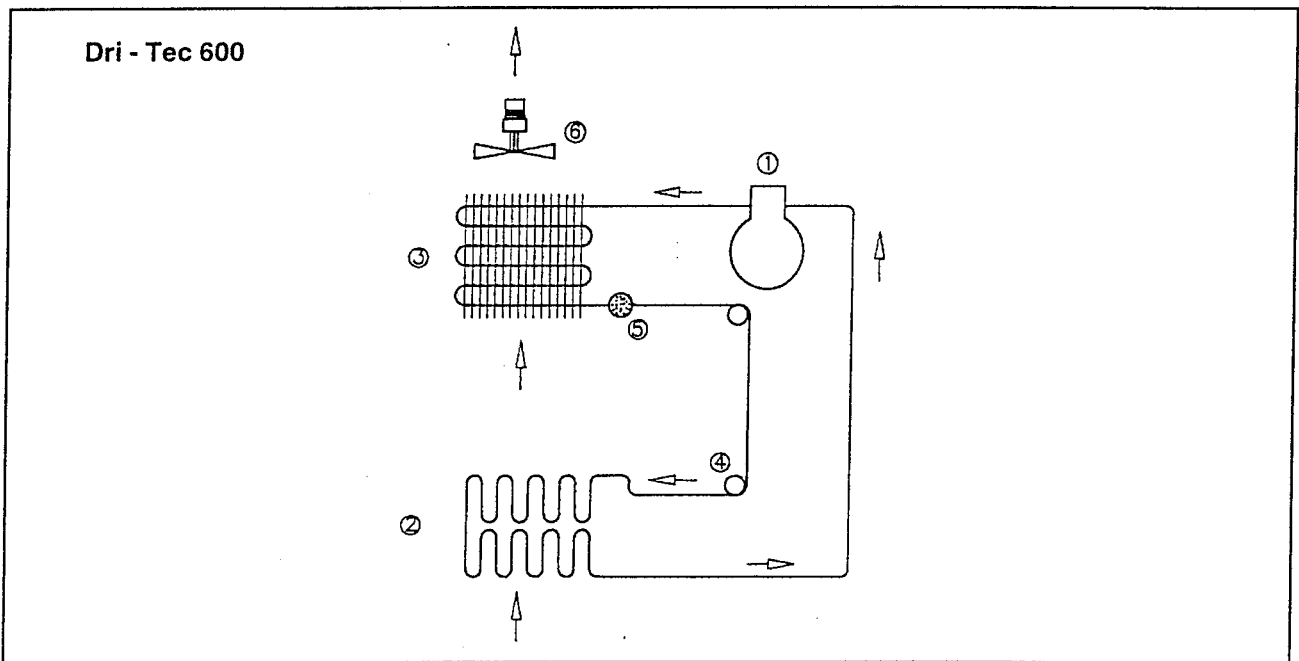
9. COOLING CIRCUIT

Dri - Tec 600

1. Compressor
2. Evaporator
3. Condenser
4. Capillary tubes
5. Liquid line drier
6. Fan

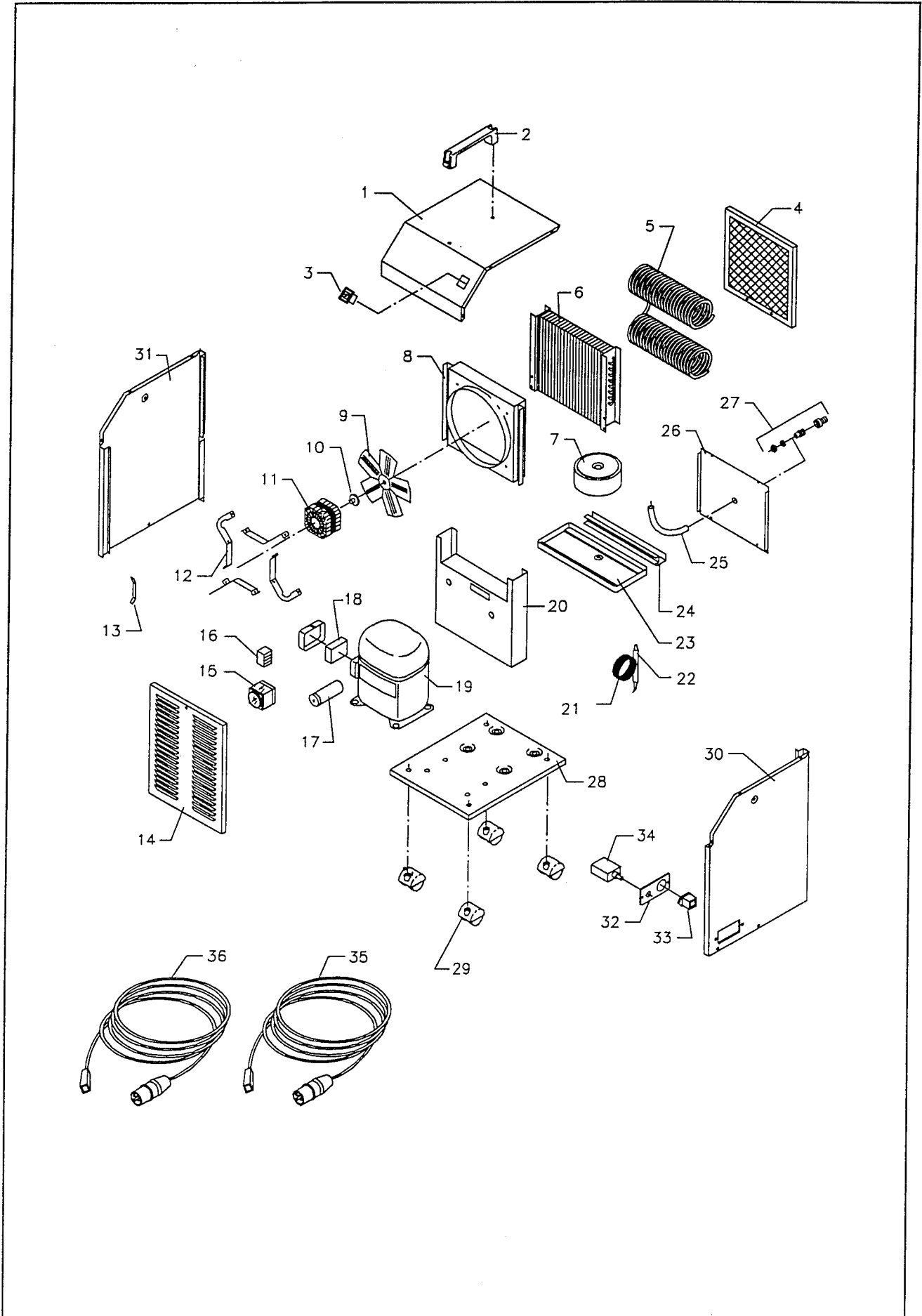
Dri - Tec 2000

1. Compressor
2. Evaporator
3. Condenser
4. Capillary tubes
5. Liquid line drier
6. Solenoid valve
7. Fan
8. Suction accumulator



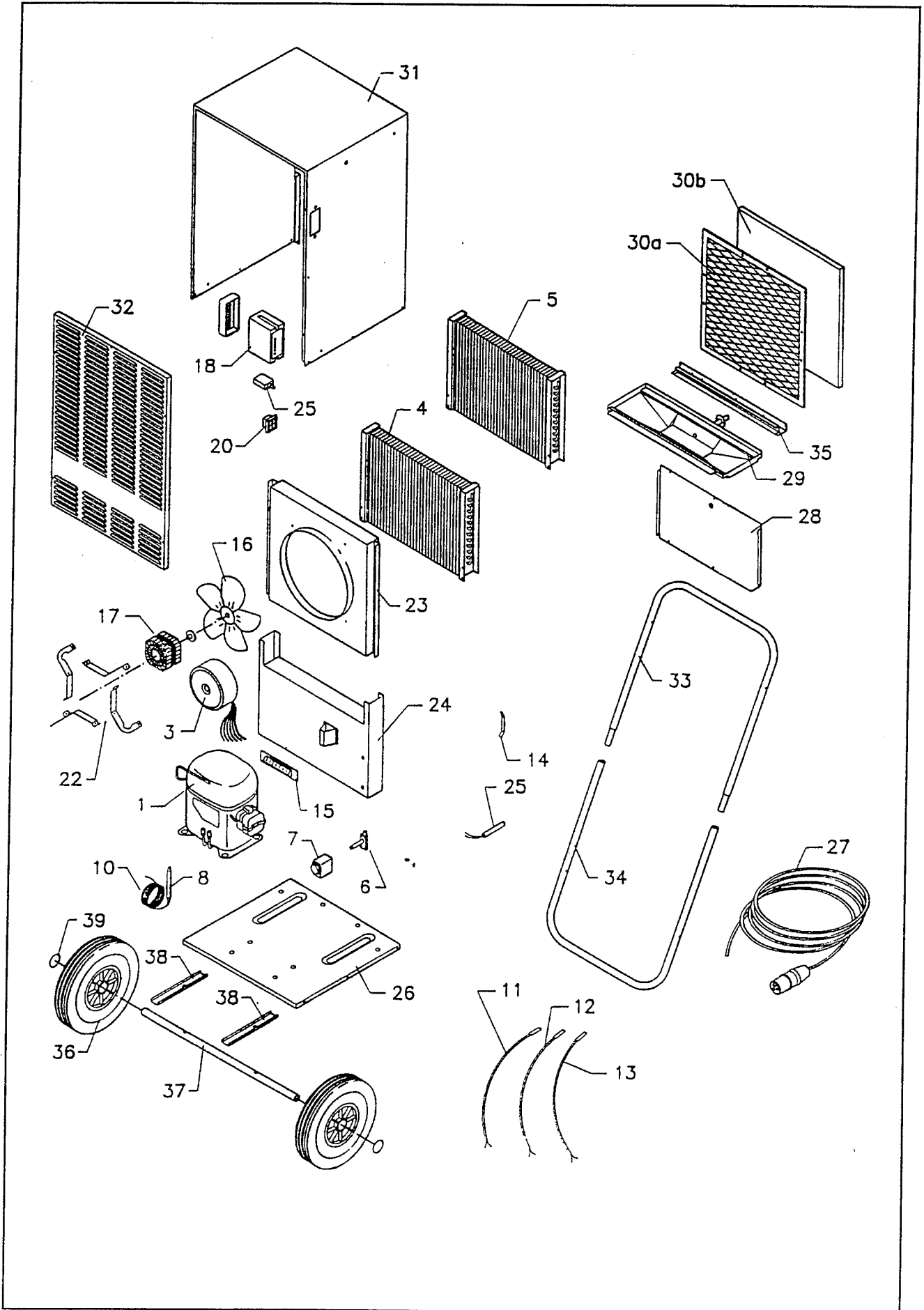
10. SPARE PARTS LIST Dri - Tec 600

| Part No. | Dantherm No. | Description |
|----------|--------------|-----------------------------------|
| 1 | 082320 | Cover plate, top |
| 2 | 540450 | Handle |
| 3 | 515080 | Switch ON/OFF |
| 4 | 204120 | Filter frame with filter |
| 5 | 171230 | Tube evaporator |
| 6 | 600980 | Condenser |
| 7 | 515450 | Transformer 110/240 V |
| 8 | 069560 | Fan housing |
| 9 | 532510 | Fan blade |
| 10 | 791400 | Driving plate |
| 11 | 532480 | Fan motor 5 W |
| 12 | 23300 | Fan bracket |
| 13 | 205510 | Earth connection |
| 14 | 082330 | Air discharge grille |
| 15 | 516760 | Timer clock |
| 16 | 520920 | Terminals |
| 17 | 603130 | Starting capacitor for compressor |
| 18 | 603250 | Starting relay for compressor |
| 19 | 603170 | Compressor |
| 20 | 069520 | Partition wall |
| 21 | 435620 | Capillary tube |
| 22 | 607410 | Liquid line drier |
| 23 | 202890 | Drip tray with drain |
| 24 | 175180 | Profiled bracket for air filter |
| 25 | 428100 | Hose ½" |
| 26 | 069280 | Rear plate |
| 27 | 381280 | Hose union ½" complete |
| 28 | 069500 | Bottom plate |
| 29 | 541320 | Wheel |
| 30 | 082270 | Cover plate, right hand side |
| 31 | 086260 | Cover plate, left hand side |
| 32 | 069260 | Mounting plate for plug |
| 33 | 381290 | Plug for power connection |
| 34 | 511630 | ETA relay |
| 35 | 184220 | Supply cable with plug 110 V |
| 36 | 184230 | Supply cable with plug 240 V |



10. SPARE PARTS LIST Dri - Tec 2000

| Part No. | Dantherm No. | Description |
|----------|--------------|----------------------------------|
| 1 | 602401 | Compressor |
| 2 | 602999 | Starting condensator |
| 2 | 602998 | Running condensator |
| 2 | 602991 | Starting relay |
| 3 | 515450 | Transformer 110/240 V |
| 4 | 601010 | Condenser |
| 5 | 600100 | Evaporator |
| 6 | 605470 | Solenoid valve |
| 7 | 605440 | Coil for solenoid valve |
| 8 | 607410 | Liquid line drier |
| 9 | 042930 | Suction accumulator |
| 10 | 042920 | Capillary tubes |
| 11 | 551430 | Air sensor |
| 12 | 551420 | Evaporator sensor |
| 13 | 551410 | Condenser sensor |
| 14 | 205510 | Earth connection |
| 15 | 517770 | Sensor terminal |
| 16 | 082830 | Fan blade |
| 17 | 532500 | Fan motor |
| 18 | 517580 | Electronic control |
| 19 | - | Socket for electronic control |
| 20 | 515010 | Toggle switch |
| 22 | 023600 | Fan bracket |
| 23 | 082080 | Fan housing |
| 24 | 082170 | Partition wall |
| 25 | 511630 | ETA relay |
| 26 | 175280 | Bottom plate |
| 27 | 184221 | Supply cable with plug for 240 V |
| 28 | | Cover panel |
| 29 | 202750 | Drip tray |
| 30a | 082762 | Filter grille |
| 30b | 082420 | Filter |
| 31 | 082822 | Cover |
| 32 | 082821 | Front cover panel |
| 33 | 562240 | Carrying handle - upper |
| 34 | 562300 | Carrying handle - lower |
| 35 | 173271 | Profiled bracket for drip tray |
| 36 | 540730 | Wheels |
| 37 | 562230 | Wheel axle |
| 38 | 082290 | Bracket for wheel axle |
| 39 | 477060 | Wheel cap |
| 40 | 514891 | Voltage switch |



EC – Declaration of Conformity**Dantherm®**

**A/S Dantherm
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DK-7800 Skive
Tel. +45 97 52 41 44**

hereby declare that the machines,

**DEHUMIDIFIER TYPE DRI-TEC 600
DEHUMIDIFIER TYPE DRI-TEC 2000**

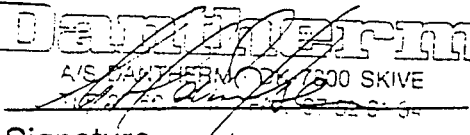
are in conformity with the following directives:

89/392/EEC: Directive on the safety of machines
73/23/EEC: Low Voltage Directive
89/336/EEC: EMC Directive

– and were manufactured in conformity with the following standards:

EN 60335-2-40: Standard for electric dehumidifiers
EN 50081-1-EMC: Generic Standard for Emission
EN 50082-1 EMC: Generic Standard for Immunity
EN 292: Machine Safety

SKIVE D. 10/1.96
Place and date

Dantherm®
A/S DAN THERM, 4780 SKIVE

Signature