

EC Declaration of Conformity IIA
in conformity with EC Machine Directive 2006 / 42 / EC

For unit series: Electrical appliances – Electrical heater
Type: DE 10, DE 20, DE 20S, DE 20 SH

HEYLO GmbH of Im Finigen 9, D-28832 Achim, Germany, declares that, if they are fitted, maintained and used in conformity with the operating instructions and the generally accepted engineering standards, the machines mentioned are in keeping with the fundamental safety and health requirements of the "Machine Ordinance" as well as with the regulations and standards mentioned hereinafter.

Applicable EC directives:

EC Machinery Directive	2006/42/EG
Low Voltage Directive	2014/35/EU
EMC Directive	2014/30/EU

In case of unauthorised changes of the machine, the directives shall forfeit their validity.

Applied standards:

DIN VDE 0700 Part 1 and Part 30
DIN EN 55014-1:2012-05
EN 60 335-1
EN 60 335-2-30



Achim, 18th July 2016

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Dr Thomas Wittleder
- Managing Director -

Table of contents

(1) General aspects	12
(2) Initial operation	12
(3) Application / fields of operation	14
(4) Installation guidelines	15
(5) Technical data	15
(6) Cleaning and maintenance	16
(7) Optional accessories	16
(8) Fault finding and correction	17
(9) List of spare parts	18
(10) Wiring diagram	19

(1) General aspects

CAUTION: Read carefully before starting up !

Please observe the notes in the operating instructions carefully. In case of non-observation, the warranty claims will become void. The manufacturer shall not be liable for any damage and/or consequential damage resulting.

The electrical heaters of the DE series are light-weight warm air heaters easy-to-transport. The electrical heater DE 20 SH is suitable for hose operation with a maximum of 7.5 m of hose (diam. 305 mm). High-temperature hoses may be used only.

The DE 20 SH unit is suitable especially for the generation of high temperatures of up to 120 deg. C. The high temperature is produced by controlling the air volume. The connection of a room thermometer is possible.

(2) Initial operation

3 N ~ 400 V / 50 Hz / 32 A CEE plug

Mains connection

- Connect the CEE plug to a suitable socket.
(The power socket must be earthed and has to be protected by a circuit breaker.)
- Make sure that the safety distances mentioned are observed (cf. chapt. 3.3).
- Do not operate the unit unattended !
- The hoses connected must be laid as straight as possible.
- The incoming air must not be blocked.
- As the unit produces very hot air, no inflammable objects may be located in the vicinity.

Switching the unit on:

Prior to initial operation, please make sure that the heat regulation has been set to 100 per cent. Main switch A starts the unit. The operation is indicated by a green lamp in the switch.

Setup

After an operating time of approx. 5 minutes, the high-temperature control lamps B has to be checked. If the lamp is not lit, the air regulation has to be reduced by 10 percent. This setting is carried out on the power regulator C. Now check the lamp again after five minutes. Please repeat this adjustment process until the yellow lamp lights up.

Now the unit has been adapted to the ambient conditions in an ideal manner and produces a guaranteed process air of approx. 110 to 120 deg. C.

Switching the unit off

After operation switch off the main switch A, the green operating light of the switch goes off, and the unit is switched off.

Operation with room temperature controller

1. For operation with room thermometer, the cap fitted to the socket insert H of the unit must be removed. Now the thermostat plug can be pushed into the unit socket. The cap must be fitted for operation without room thermostat.
2. Set the room thermostat (special accessory) to the requested temperature. Now the unit operates automatically and switches off when the room temperature set has been reached.

Safety in case of excessive temperature

All units have been fitted with a safety temperature switch (E). If the unit should overheat, this safety element will trigger. **Then the fault light D will be lit red.** After a few minutes, you can release the safety element again. By all means check the reason for the shutdown, and remove this before starting up again. As long as you do not hear any slight cracking sounds of the STB during actuation, the device is still too hot.

The DE 20 SH unit has another thermostat which checks the outlet temperature. If the temperature exceeds 150 deg. C, the thermostat will switch off part of the heating automatically. When the temperature returns to normal, the full heating output is switched back on. This protects the hot air hose against damage caused by overheating and increases the service life.

At the point of control, this function causes a slight cracking in the unit.

This function protects the connected hot air hose against overheating.

Illustration: Control panel (exhaust side)

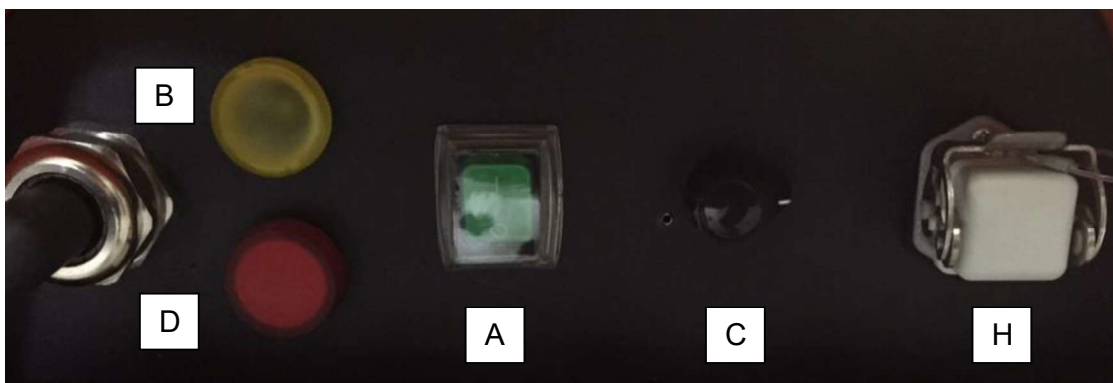


Illustration: Control panel (suction side)



Operating hours

You can read off the running time of the unit at the operating hours counter G. This hour meter cannot be manipulated or reset.

Failure

Failures, such as the safety temperature controller (STB) (E) being triggered or the control fuse F being triggered, are described in chapter **Fehler! Verweisquelle konnte nicht gefunden werden.** described in detail.

(3) Application / fields of operation

The main purpose of the DE 20 SH unit is to heat changing working places. In this respect, the unit is used to heat rooms or materials.

DE 20 SH produces very high air temperatures which are suitable for the following processes:

- For pest control
- For curing synthetic material (tempering)
- Process heat for industrial requirements
- Drying of heat-resistant materials

ATTENTION: The DE heater units must not be used in potentially explosive environments.

Design: In order to determine heat requirement of rooms or buildings, the website www.heylo.de as well as www.waermebedarfsrechner.de provides you with a calculator free of charge. In addition, the heat requirement can be calculated by using the following formula:

thermal insulation	external surface		factor		temperature -	heat output
without thermal insulation	in sqm	x	0.058	x	in Kelvin	in kW
with insulation	in sqm	x	0.04	x	in Kelvin	in kW

Circulating air operation: The electric heaters are not intended for operation with circulating air. Internally the motor has been fitted with an over-temperature protection which switches the motor off in case of ambient temperatures of over 60 deg. C. High intake air temperatures are possible in case of operation with circulating air. This will result in the STB being triggered.

Hose operation:

A high-temperature hot air hose can be connected to the DE 20 SH unit. The maximum hose length is limited to 7.6 m. Please ensure that the hose is laid as straight as possible. Many bends or a jammed hose may also trigger the over-temperature protection in the unit.

Heating operation:

In heating mode, the units have to be set up safely; during the operation the units must not be able to be able to wobble or topple over. The outlet side must have a distance to inflammable materials as rendered in the setup guidelines (chapt. (4)). The ambient temperature must not exceed 60 deg. C.

(4) Installation guidelines

1. Installation site
The units must not be operated at locations, in which combustible gas, air or dust-air mixtures occur (such as petrol stations, paint shops, etcetera), nor where they can draw in inflammable small parts which are ignited by the heating coil and can be blown out glowing (such as straw, paper, sawdust, etcetera).
The electric heater DE 20 SH is suitable for hose operation with a maximum of 7.5 m of hose (diam. 305 mm). Make sure that the hose is laid as straight as possible and without kinks. In case of improper laying of the hose, the unit overheats and the safety temperature limiter switches the unit off.
2. Setting up
Electrical heaters must not be operated in direct vicinity of bathtubs, showers, washbasins or swimming pools.
3. Safety distances to inflammable parts:
At the side: 0.60 m Suction side: 2.00 m
Exhaust side: 0.20 m To the top: 2.00 m
The electrical heaters must not be covered by textiles !
The flooring and the ceilings must be fire-resisting. The suction and exhaust vents must not be constricted.
4. When used on building sites, the safety guidelines of the German Building Trade Association must be observed.
5. When used in agriculture, the regulations of the German Employers' Liability Insurance Association and property insurers must be observed.
6. Legal regulations: The following regulations must be observed when setting up and operating:

German Workplace Ordinance, Sections (5) and (14)
German Workplace Regulations ASR (5)
Accident Prevention Regulations VBG 43
to be obtained from: Deutsches Informationszentrum für technische Regeln (DITR) im DIN,
Burggrafenstrasse 6, D-10787 Berlin, Germany).
7. The unit must not be operated below wall outlets.
8. The unit must not be operated without the supervision by a program timer.

(5) Technical data

Type of unit		DE 20 SH
Art. No.		1101928
Heat output	kW	18
Air flow rate max.	cum/h	1,410
Electric Connection	V/Hz	400/50 400/60
Power consumption	A	26
Electrical protection	A	32
Temperature increase	$\Delta t(K)$	Variable
volume	dB(A)	67
Dimensions L / W / H	mm	730 / 414 / 482
Weight	kg	20.5

(6) Cleaning and maintenance

After every use, please check the unit for:

- Damage to housing or supply lines
- Damage to connection plug
- Damage to security gates
- Dirt on ventilation grates

At least once a year, please check the unit for:

- Function of the safety temperature limiter
- Cleanliness of the switch box including electric components
- General visual inspection

ATTENTION:

Please observe the obligation to carry out the German BGVA3 test for commercial users according to the professional associations at least once a year.

Cleaning

- For cleaning dusty electric components we recommend blow out by compressed air.
- Metal components can be cleaned with HEYLO special cleaner Art. No. 1800105.
- Plastic components can be cleaned with HEYLO special cleaner Art. No. 1800104.

ATTENTION:

By no means must the electric components have contact to water or chemical cleaners.

(7) Optional accessories

Description	HEYLO Art. No.
High-temperature hot-air hose - diam. 305 mm (for DE20SH)	1250069
Room thermostat (high temperature) 0 deg. C up to 120 deg. C	1240102
Room thermostat -10 deg. C to +40 deg. C IP 54	1430033
Room thermostat -10 deg. C to +40 deg. C IP 54 with plug and cable	1240100
Thermostat connection plug	1450914
Program control for tempering processes with eight temperature steps	1900010
Time control for tempering processes (after-running timer)	1301560
HEYLO POWER CLEAN plastic cleaner	1800104
HEYLO POWER CLEAN metal cleaner	1800105

(8) Fault finding and correction

FAULT	CAUSE	REMOVAL
Unit does not start up	The main switch has been switched off. Fuses of the building's wiring system are blown. Plug has been pulled out of the main switch board or of the extension cable. Supply line faulty. Disconnection from the mains.	Check up to which point there is power. Remove defect.
	The room thermometer connection is not bridged.	Fit the cap for room thermostat connection or connect room thermostat.
	Control fuse is defective.	Replace fuse (6.3 A time-lag)
	FI switch of the building's wiring system has triggered.	Clean the heating coil (with compressed air potentially), otherwise send in for repair.
Yellow high-temperature light is not lit	Air volume is too high. Heat output is too low.	Reduce air volume by using the controller. Check heating register. Defective hose guide triggers the hose protection thermostat.
Red fault light is lit	STB has been triggered.	The unit has been overheated. Remove the source of fault and release the STB.
Ventilator is operational; unit does not heat with full power / ventilator runs slower	One or two phases without power.	Check supply lines; remove defects or replace one or two fuses on the parts of the building site.
	Air contactor is defective.	Send the device for repair.
	Heating coil is defective.	Send the device for repair.
	Thermostat has acted as the outlet temperature was above 150 deg. C.	Airflow is impaired due to bad hose installation. The ambient temperature is too high.
Unit is heating; ventilator is not operational	Ventilator defective; contactor defective; speed controller.	Send the device for repair.



If the device is supplied with power by power cable, the work on the electric system may be carried out by specialist electricians or electrically trained staff in keeping with VBG 4 only.

Please have repair work on the electric heaters carried out only by HEYLO or its service partners.

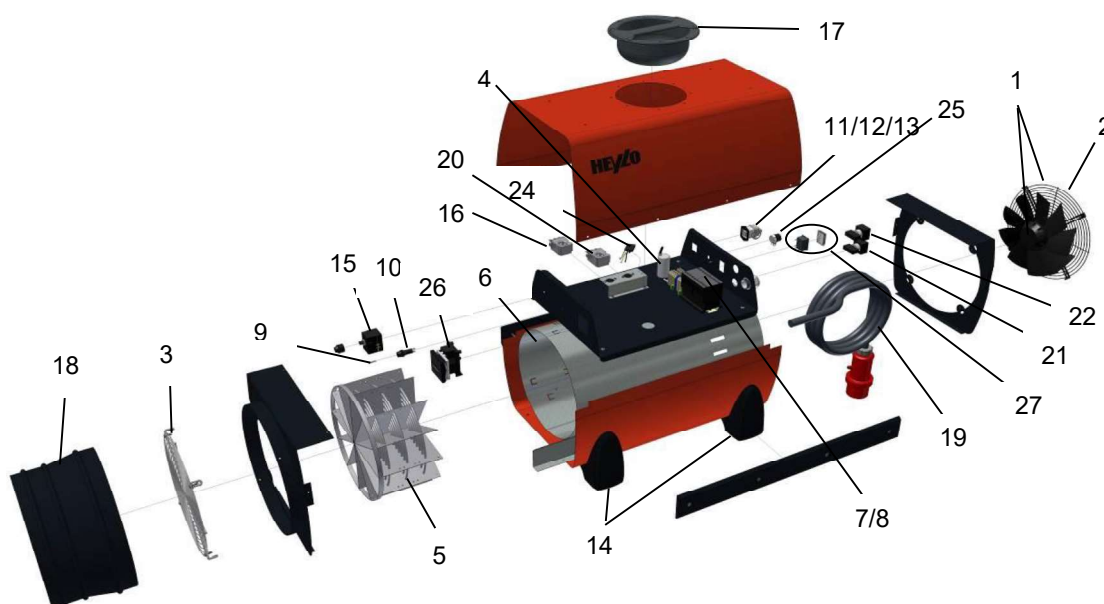
Decommissioning and disposal of the unit

The unit has been designed for many years of operation.

If it has to be disposed of, the competent legal regulations have to be observed in environmentally-gentle manner.

(9) List of spare parts

Item	HEYLO Art. No.	Description
1	1400216	Ventilator complete
2	1262400	Protective grille - ventilator
3	1262403	Protective grille - exhaust side
4	1400310	Condenser 3 μ F, 400 V
5	1400526	Round blower insert 18 kW
6	1300300	Insulation jacket for heating insert
7	1440013	Contactor (18 A)
8	1440014	Mini-contactor (22 A)
9	1440400	Control fuse 6.3 A, 230 V
10	1440408	Miniature unit circuit breaker
11	1450912	Extension housing for RT
12	1450916	Cap for room thermostat connection
13	1451002	Socket insert
14	1660020	Unit base
15	1430017	Safety temperature limiter 100 deg. C
16	1430123	Thermostat for hose protection
17	1660021	Formed handle
18	1309287	Exhaust connector
19	1450282	Power cable with plug 32 A
20	1430124	Thermostat for HT display
21	1440043	Signal lamp red (STB)
22	1440044	Signal lamp yellow (Temp.)
23	1330005	Anti-interference capacitor
24	1330006	Speed controller
25	1330007	Adjustment potentiometer for speed
26	1309290	Operating hours counter
27	1440740	Toggle switch is lit green



[illegible]

SIE HABEN FRAGEN? WIR HELFEN IHNEN GERN!

Do you have any questions? Don't hesitate to contact us!

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HEYLO provides the complete program of mobile air systems for construction, industry and craft.



HEYLO Tipp HEYLO tip

Kennen Sie schon unser Reinigungssortiment „HEYLO POWER CLEAN“? Nutzen Sie den Metallreiniger in Kombination mit dem Klimadesinfektionsspray zur Reinigung von Lamellentauschern.

Do you already know our cleaning range “HEYLO POWER CLEAN”? Use the metal cleaner in combination with the air disinfectant spray for cleaning finned heat exchangers.



Kunststoffreiniger
Plastic Cleaner

Metallreiniger
Metal Cleaner

Klimadesinfektionsspray
Desinfectant Cleaner

Notizen zum Produkt Devices notes

Geräte Nr. Device No.

Lieferdatum Delivery Date

Sonstiges Other



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