

Operating instructions Charging bars and electrodes



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Charge Line



V02



Types:	Charging bars:	ALS A, ALS R, ALS left, ALS right AS SL
	Charging electrodes:	AE, AE SL, PAE SA

Keep in a safe place for future reference!

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1 Notes on operating instructions

In these operating instructions, charging electrodes and charging bars are also referred to as "units".

1.1 Pictorial markings used

In these operating instructions



Caution!
Important instructions!



Danger!
High voltage!
Danger of fatal accidents!



Only plug in/unplug coaxial connector
when the charging generator is switched off!

In the operating instructions and on the unit



Danger!
High voltage!
Danger of fatal accidents!

2 Safety

The unit is operationally safe, provided that it is operated in accordance with its intended use. In case of misuse, dangers may result:

- For life and limb of the operator,
- For the unit and other assets.

Also note Chapter 3.1 (Important installation notes).

During operation of the units, small quantities of ozone will form.

In order to ensure adherence to maximum permitted ozone concentrations at the workplace, make sure that the workplace is ventilated sufficiently during operation of the units.



The operator of the units must take care to ensure sufficient ventilation during operation!



The units must be protected from humidity and moisture!

2.1 Intended use

The unit carries positive or negative high voltage, depending on the upstream charging generator. It is intended exclusively for the charging of material webs in industrial production processes, e.g. on packaging machines.

HAUG charging generators only must be used for the high-voltage supply of the units.



Do not install or use the units in areas subject to explosion hazards!

For reasons of safety, unauthorized conversions and modifications of the unit are not permitted. The installation and operating conditions indicated in these Operating Instructions must be adhered to.

2.2 Danger sources

Defective high-voltage plugs and cables may lead to danger of electric shocks. Shut down the unit immediately in case of visible damage and suspected electrical defects.

The units connected to the charging generator conduct high voltage during operation. Any contact may lead to injury and consequential accidents.

The operator must provide protective equipment against direct contact when installing the units!



After the charging generator has been switched off, the high voltage on the units will reduce only slowly. Residual voltage may be present for as long as 30 s!



***Danger!
High voltage!
Danger of fatal accidents!***



***Only plug in/unplug coaxial connector
when the charging generator is switched off!***

2.3 Operator qualifications

The unit may be installed and put into operation by trained electricians only or by authorized and persons informed about the potential dangers. The above mentioned persons must have read the operating instructions and must follow the instructions, notes and safety advice.

3 Installation

The unit may be installed by trained electricians only and by authorized persons informed about the potential dangers. The above mentioned persons must have read the operating instructions and must follow the instructions, notes and safety advice.

3.1 Important installation instructions

The operation of the unit is not affected by the position in which it is installed.



**The operator must provide protective equipment against direct contact of the operator with the units.
Do not touch the pins installed in the units!**



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High voltage!
Danger of fatal accidents!***



***Only plug in/unplug coaxial connector
when the charging generator is switched off!***

3.2 Charging bars and charging electrodes

The paragraph numbers refer to the illustrations (serving as examples) included at the end of these operating instructions.

- 1** – **5** Examples of charging bars and charging electrodes.
- 1 Charging bar (ALS)
 - 2 Charging bar S-Line (AS SL)
 - 3 Charging electrode S-Line (AE SL) and standard charging electrode (SA)
 - 4 Charging electrode (AE)
 - 5 Spot charging electrode (PAE)
- 6** The units (ALS A, ALS R, ALS right/left, AS SL, AE SL, SA) are not effective over their full length. The ratio of the effective length (l2) to the total length (l1) is indicated in the sketch.
- | | |
|-----------|----------------------------|
| ALS | $l2 = l1 - 40 \text{ mm.}$ |
| AS SL | $l2 = l1 - 100 \text{ mm}$ |
| SA, AE SL | $l2 = l1 - 30 \text{ mm}$ |
- 7** Do not install the unit directly on a grounded part of the machine.
Install the unit on isolated mountings in the machine / plant.
To install, only use materials made of insulating plastics.
- 8** The pins of the unit must face the material web to be charged.
The optimum distance of the units to the material web is approx. 10 - 20 mm.
The optimum distance of the counter-electrode is determined as follows:
- A:** Metallic grounded counter-electrode = direct contact with material web
 - B:** Active counter-electrode = 20 – 30 mm
 - C:** Bipolar charging = 10 – 20 mm distance to material web per unit.
- 9** Distance B to grounded machine part always greater than distance A.
- 10** Partial cover for smaller web widths.
When changing to smaller web widths, part of the units (ALS, AE SL and SA) may be covered with a bar cover (see Accessories).
The cover may be cut to the required length.
In case of bipolar charging, the counter electrode should be covered at the same time.
- 11** Install high-voltage cables without kinks. Smallest bending radius 50 mm.

4 Application

The unit may be put into operation by trained electricians only or by persons instructed in the potential dangers. The above mentioned persons must have read the operating instructions and must follow the instructions, notes and safety advice.

Conditions:

The charging generator and the units must be connected properly.



The operator of the units must take care to ensure sufficient ventilation during operation!



The units must be protected from humidity and moisture!

Disconnect the units properly from the voltage supply and dry if they have become wet or moist. The units are intended for the electrostatic charging of material webs in connection with a HAUG charging generator, e.g. in the packaging industry.

5 Remedy of defects

Any remedy of defects must be carried out by trained electricians only. The above mentioned persons must have read the operating instructions and must follow the instructions, notes and safety advice.

In case of any malfunction of the charging generator and units, first check the correct installation and commissioning of the charging generator. Otherwise replace the unit. Please return the charging generator and the unit to HAUG for a check-up.



After the charging generator has been switched off, the high voltage on the units will reduce only slowly. Residual voltage may be present for as long as 30 s!



Danger!
High voltage!
Danger of fatal accidents!



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6 Maintenance and repairs



Danger!
High voltage!
Danger of fatal accidents!



Clean at intervals of no more than 14 days using the special cleaning brush RB1 and special cleaning fluid SRM1 or the special cleaning system RS1 (refer to "Accessories").

Before cleaning, disconnect the units properly from their power supply.

This unit does not include any parts which can be repaired by the operator.

Should the unit prove defective or if a defect is suspected, switch off unit immediately and secure against subsequent reuse.

6.1 Replacement of the pin strip

To replace the pin strip, the charging generator must be switched off.

Disconnect the unit from the charging generator.



After the charging generator has been switched off, the high voltage on the units will reduce only slowly. Residual voltage may be present for as long as 30 s!



The pin strip may cause injuries. Wear protective gloves and use suitable tools!

6.1.1 ALS

ALS A, ALS left, ALS right

1. Remove the screw from the pin strip.
2. Pull off the side cover opposite the high-voltage cable.
3. Pull out the pin strip using suitable tools.
4. Clean ALS.
5. Push the new pin strip into the bar with the perforated film and fasten with the screw.
6. Reattach the cover.

ALS R:

1. Pull off a side cover.
2. Pull out the pin strip using suitable tools.
3. Clean ALS.
4. Push the new pin strip into the bar with the perforated film.
5. Reattach cover.

6.1.2 AS SL

1. Turn the screw out of the end piece.
2. Pull off the end piece.
3. Turn the pressing screw out of the bar.
4. Push the pin strip out of the bar using suitable tools.
5. Push new the pin strip into the bar.
6. Apply the pressing screw.
7. Push on the end piece and fasten with the screw.

6.1.3 AE (non-cast version)

1. Unscrew the high-voltage cable from the charging head.
2. Unscrew the screw from the bottom of the charging head.
3. Replace the pin strip.
4. Retighten the screw in the charging head.
5. Reattach the high-voltage cable.

6.1.4 AE SL and SA

1. Pull off a side cover from the charging head.
2. Replace the pin strip with a suitable tool. Push down the contact bolt while pushing in.
3. Reattach the side cover.

6.1.5 PAE

1. Pull out the pin using a suitable tool.
2. Push in the new pin.

6.2 Accessories

Bar cover (ALS, AE SL, SA)	X – 5099
Plastic holder, straight	10.0197.000
Plastic holder, angle	10.0198.000
Plastic screws M 10x40	X - 4357
Plastic nut M 10	X - 4185
Plastic washer \varnothing 10,5 mm	X - 4145
Special cleaning fluid SRM1	10.7220.000
Special cleaning brush RB1	10.7218.000
Special cleaning system RS1	10.7218.001
Circular brush for special cleaning system TBR	X – 6822

7 Technical data

7.1 Supply voltage

The charging units are supplied with high-voltage from HAUG charging generators.

7.2 Ambient conditions

Ambient temperature:

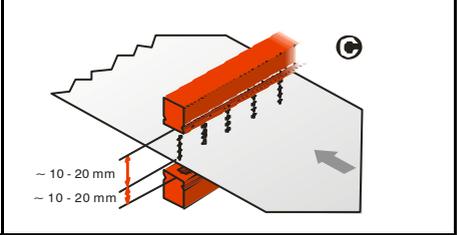
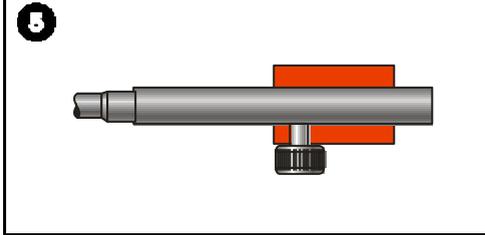
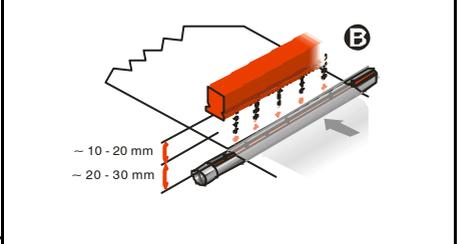
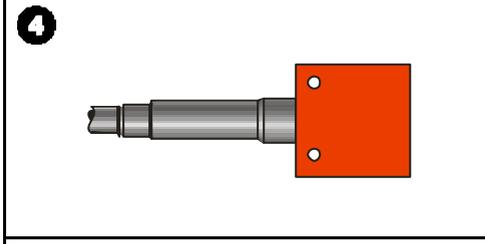
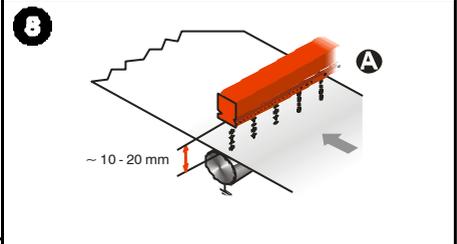
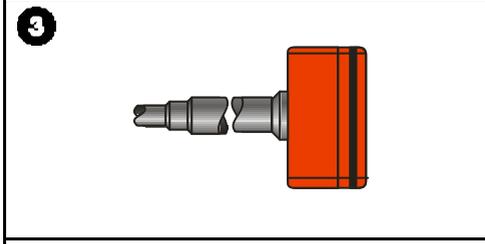
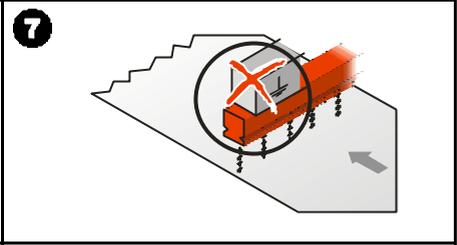
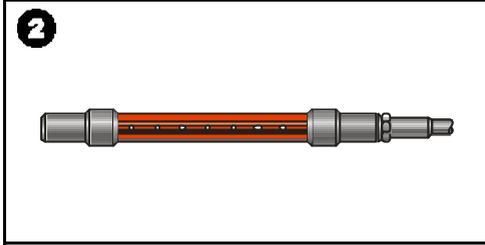
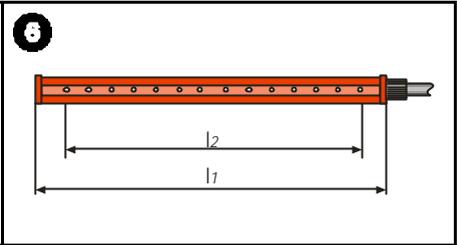
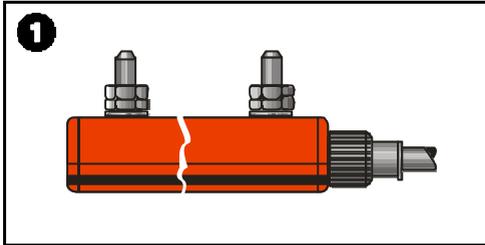
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 Extreme range for storage and transport -15 °C to +60 °C

Humidity:

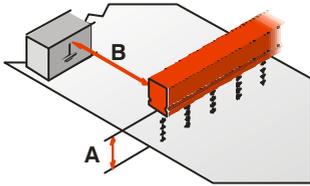
Rated application range 20 % to 65 % RH
 Extreme range for storage and transport 0 % to 85 % RH

7.3 Dimensions

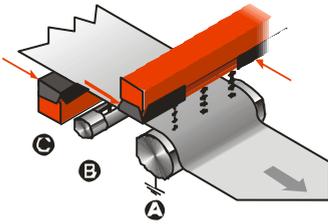
Types	Cross-section	Standard lengths	High tensions lead
ALS	30 x 40 mm	150 – 2000 mm	1 - 3 m
AS SL	Ø 20 mm	300 – 1700 mm	1 - 3 m
AE	Ø 60 mm	60 mm	1 - 3 m
AE SL, SA	30 x 40 mm	50, 80, 110, 140 mm	1 - 3 m
PAE	Ø 20 mm	148 mm	1 - 3 m



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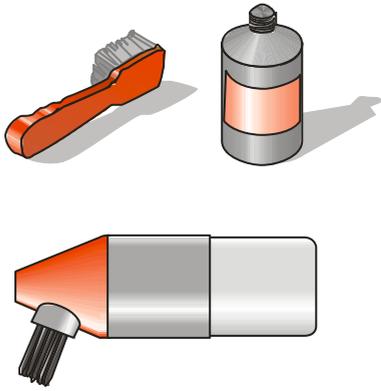
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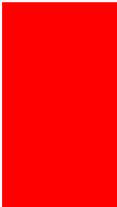


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