

TECHNICAL INFORMATION

T107

Cleaning

Powerail U10

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1. Cleaning intervals

A general statement cannot be made since the intervals depend on the local conditions or application conditions and the frequency of use. In general, basic cleaning is recommended once a year.

If contact problems arise, the conductor line has to be cleaned.

Preventive cleaning is only automatically possible for loose dust deposits with the aid of our cleaning device ARG 14 DS. This device should be used in the installation from commissioning onwards.

2. Type of soiling

Different cleaning methods have to be used depending on the type of soiling:

2.1 Loose dust and carbon abrasionManual cleaning

To remove loose dust or carbon abrasion, the **disconnected** conductor line has to be cleaned using the manual cleaning device HRG 10.

Automatic cleaning

To remove loose dust and carbon abrasion, a vehicle is fitted with the cleaning device ARG 14 DS, which, with the aid of a special powerail cleaner, vacuums out the conductor line during normal operation.

2.2 Heavier soiling with tightly adherent dirt

Manual cleaning

For heavier soiling caused by light burn points or tightly adherent dirt, the disconnected conductor line can be brightened with a rubbing block or emery cloth and subsequently cleaned with a vacuum cleaner or the manual cleaning device HRG 10.

Automatic cleaning

For heavier soiling caused by light burn points or tightly adherent dirt, powerail cleaners in the form of current collectors can be installed in the installation.

The powerail cleaners brighten the conductor surfaces of the powerails during operation. Any resulting dust and carbon abrasion is cleaned off during operation using the cleaning device ARG 14 DS.

2.3 Oiled conductor surfaces

The cleaning of oiled conductor surfaces should only be carried out manually with suitable cleaning agents once the surfaces have been **completely disconnected**.

The cleaning process and the applicable cleaning agents are described in the Technical Information TI02 "Wet cleaning of powerails and conductor lines".

Powerail cleaners in the form of current collectors can be installed in installations which, from the outset, are expected to experience light coating of oil. They have to be checked, cleaned or replaced at regular short intervals. Already oiled conductor lines cannot be cleaned by retrofitting powerail cleaners.

3. Cleaning materials

3.1 Powerail cleaners in the form of current collectors

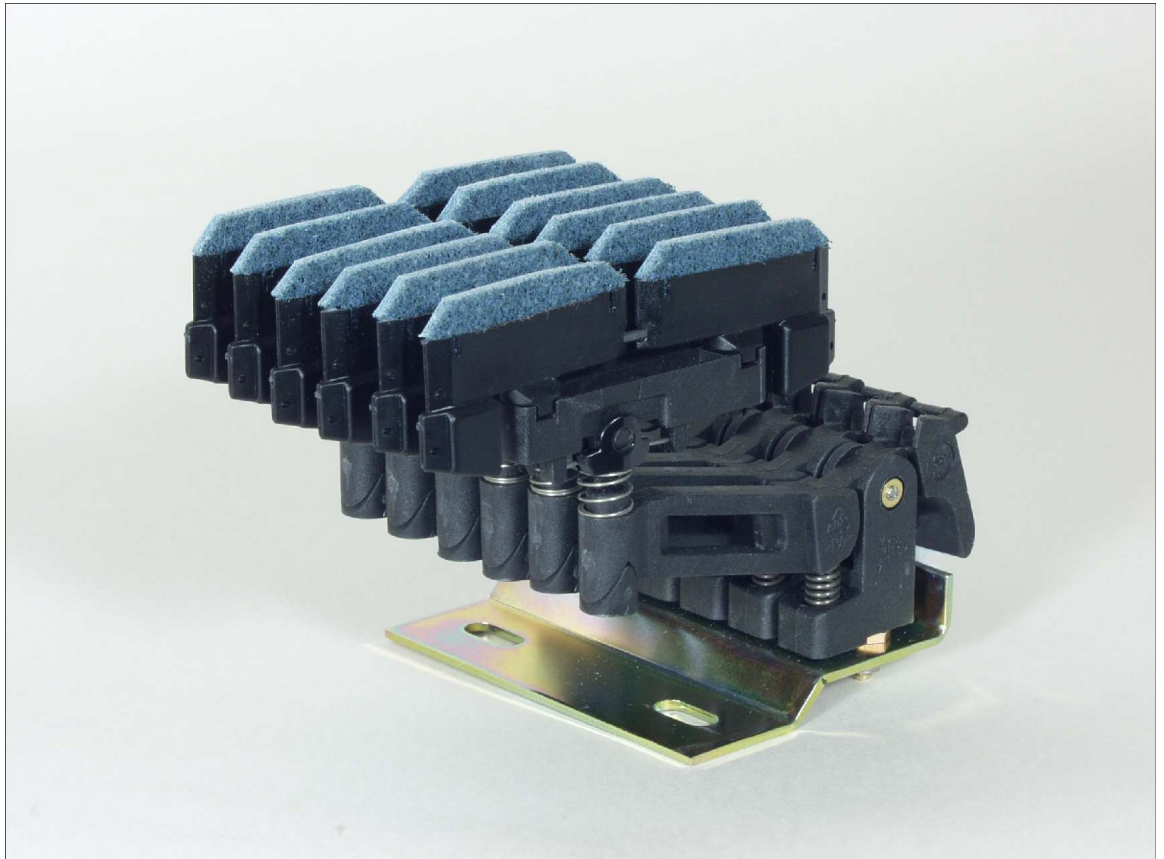
The powerail cleaners can be supplied in the same number of poles as the compact current collectors. They differ from "normal" current collectors with regard to a cleaning element installed instead of carbon brushes.

Powerail cleaners have no electrical function and brighten the copper runner surface on the powerail.

Below the powerail cleaners which correspond to the compact current collector KDS 2/40. (Other types on request.)

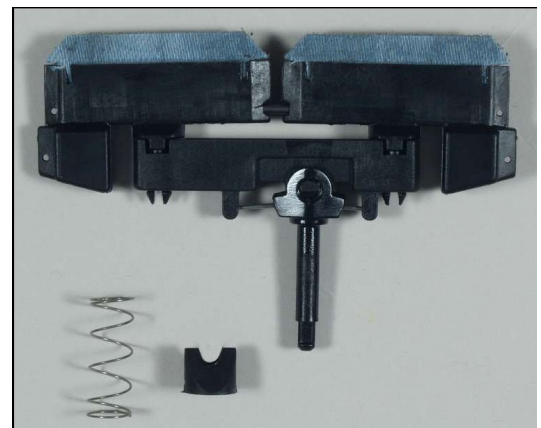
Type	Name	Order no.	Baseplate
RDS 2/40-10-14	Compact powerail cleaner	166 765	10-pole
RDS 2/40-9-14	Compact powerail cleaner	166 764	10-pole / No. 10 free
RDS 2/40-8-14	Compact powerail cleaner	166 763	8-pole
RDS 2/40-7-14	Compact powerail cleaner	166 762	8-pole / No. 8 free
RDS 2/40-6-14	Compact powerail cleaner	166 761	6-pole
RDS 2/40-5-14	Compact powerail cleaner	166 760	6-pole / No. 6 free
RDS 2/40-4-14	Compact powerail cleaner	166 759	4-pole
RDS 2/40-3-14	Compact powerail cleaner	166 758	4-pole / No. 4 free
RDS 2/40-2-14	Compact powerail cleaner	166 757	4-pole / No. 3 + 4 free
RDS 2/40-1-14	Compact powerail cleaner	166 756	4-pole / No. 2 - 4 free
RDS 2 / 40	Powerail cleaner	166 768	-
RDSW 2/40	Cleaning head	166 769	-

Compact powerail cleaner RDS 2/40-6-14



Powerail cleaner RDS 2/40

Cleaning head RDSW 2/40



3.2 Cleaning device with vacuum cleaner

There are two cleaning devices with vacuum cleaner.

The manual cleaning device HRG 10 is used for the regular basic cleaning of EHB installations for disconnected powerails.

The power is supplied via a separate extension cable.
The cleaning success rate is approx. 50% to 60%.

The cleaning device ARG 14 DS is used during operation for preventive cleaning in EHB applications.

The following **SAFETY INSTRUCTIONS** apply to both versions:

- Caution at live parts.
Carbon dust is conductive and can cause shocks!
- When cleaning heavily soiled installations, vacuum cleaner filter bags have to be changed at short intervals.
- Do not inhale carbon brush dust, do not empty filter bags, but dispose of them correctly.

3.2.1 Manual cleaning device HRG 10

This device is designed for the basic cleaning of disconnected components.

The devices are available for the two EHB profile sizes 180 x 60 and 240 x 80.

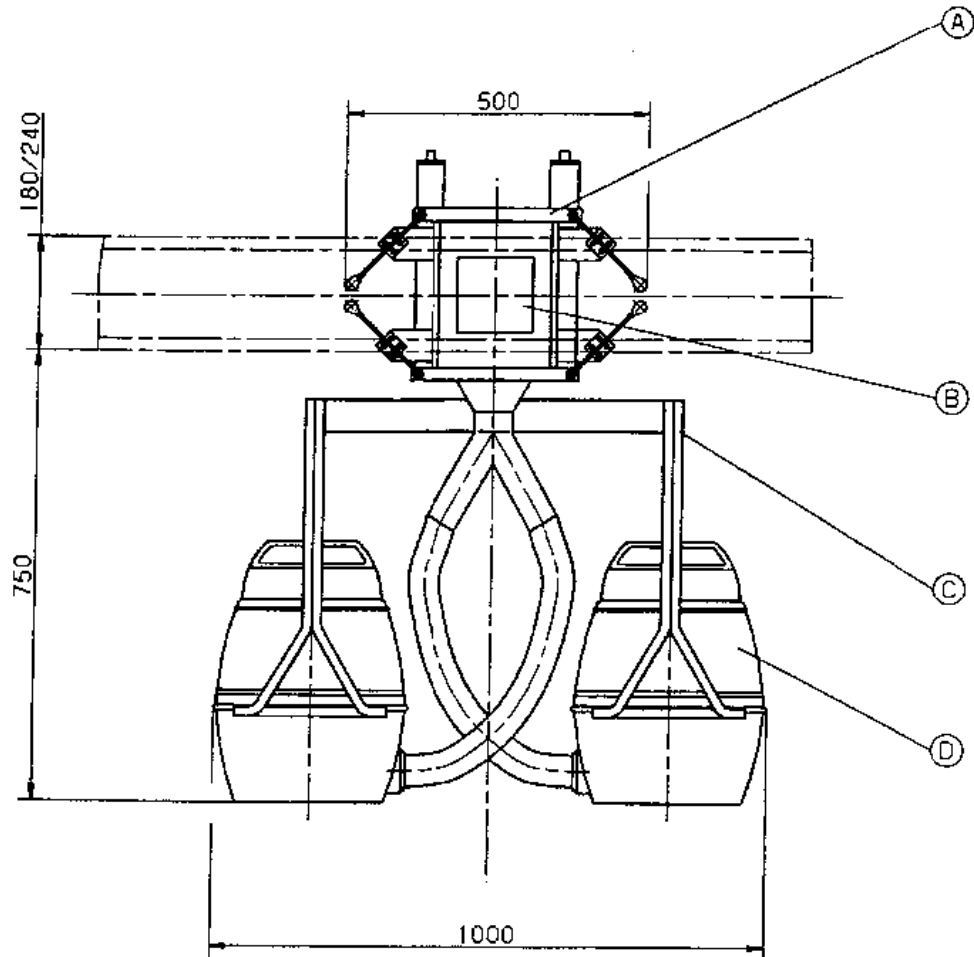
Name	Type	ID no.
Complete device (230 V)	HRG 10 - 180	167 821
Complete device (230 V)	HRG 10 - 240	167 822
Suction head for profile, 180 high	SK 10 / 180 -1 0	167 823
Suction head for profile, 240 high	SK 10 / 240 -1 0	167 824
5 filter bags	---	167 829
Single brush for suction head	---	167 828

The complete device includes accessories; please refer to the separate operating instructions.

3.2.1.1 Safety instructions

- a) Powerail cleaning should only be carried out at completely disconnected powerails. Otherwise the carbon brush dust may cause short circuiting in the powerail system.
- b) The separate power supply cable has to be suitable for 2 x 1.2 kW (approx. 8 A at 230 V).

3.2.1.2 Dimensions



3.2.1.3 Design of the manual cleaning device

The important cleaning device components are:

- Adjustable vehicle for two support sizes
- Suction head with moveable U10 brushes for the 180 profile or suction head with moveable U10 brushes for the 240 profile.
- Supporting frame for carrying the two vacuum cleaners
- Two vacuum cleaners, each 1,200 W, 230 V

3.2.1.4 Function:

- a) The cleaning device HRG 10 is not suitable for automatic cleaning during operation.
Cleaning occurs with the powerail switched off by pushing or pulling the complete device through the installation with the vacuum cleaner switched on.
- b) Cleaning is carried out by the individual brushes which remove carbon brush residue from the U 10 powerail in transport direction.
The falling carbon dust is vacuumed off via a funnel-shaped suction nozzle.
- c) The brushes are arranged flexibly to automatically compensate for any offset between the powerails and EHB runway.
- d) The vacuum cleaner is supplied with power via a separate cable.
- e) The manual cleaning device is not suitable for installations with very tight vertical bends (e.g. installations with mono-vehicles).
- f) The cleaning device can be simply placed onto the EHB profile and locked into position via the quick clamping lever.

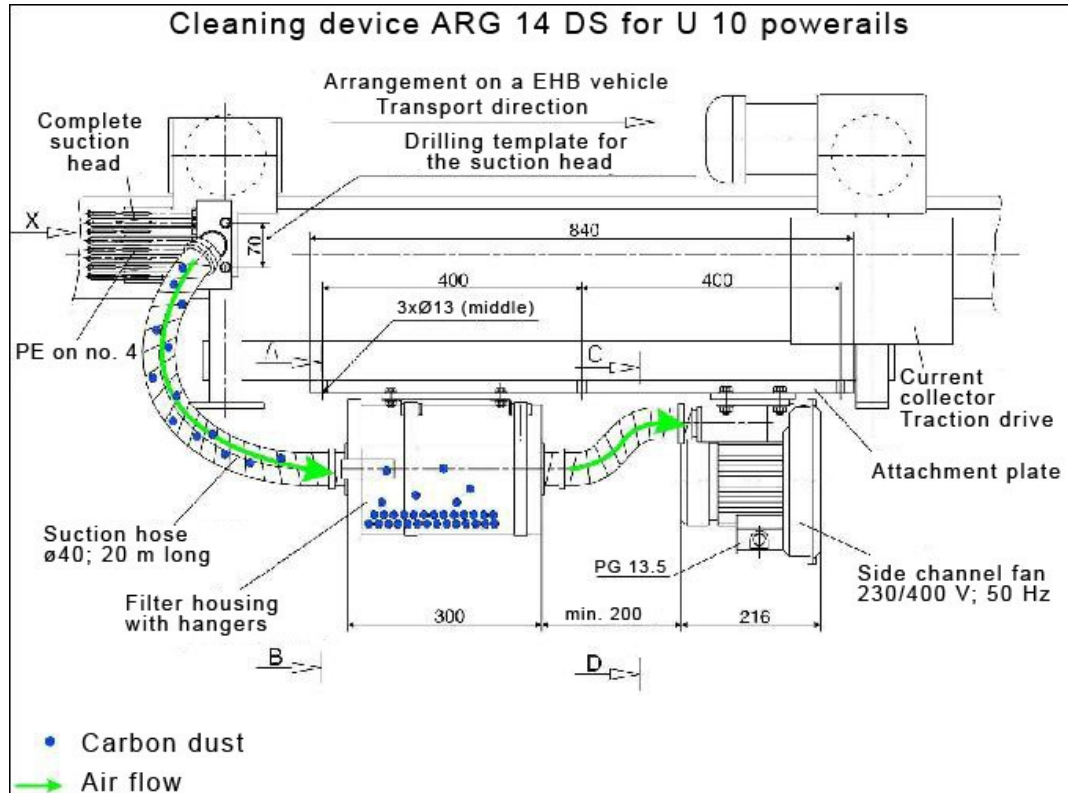
3.2.2 Cleaning device ARG 14 DS

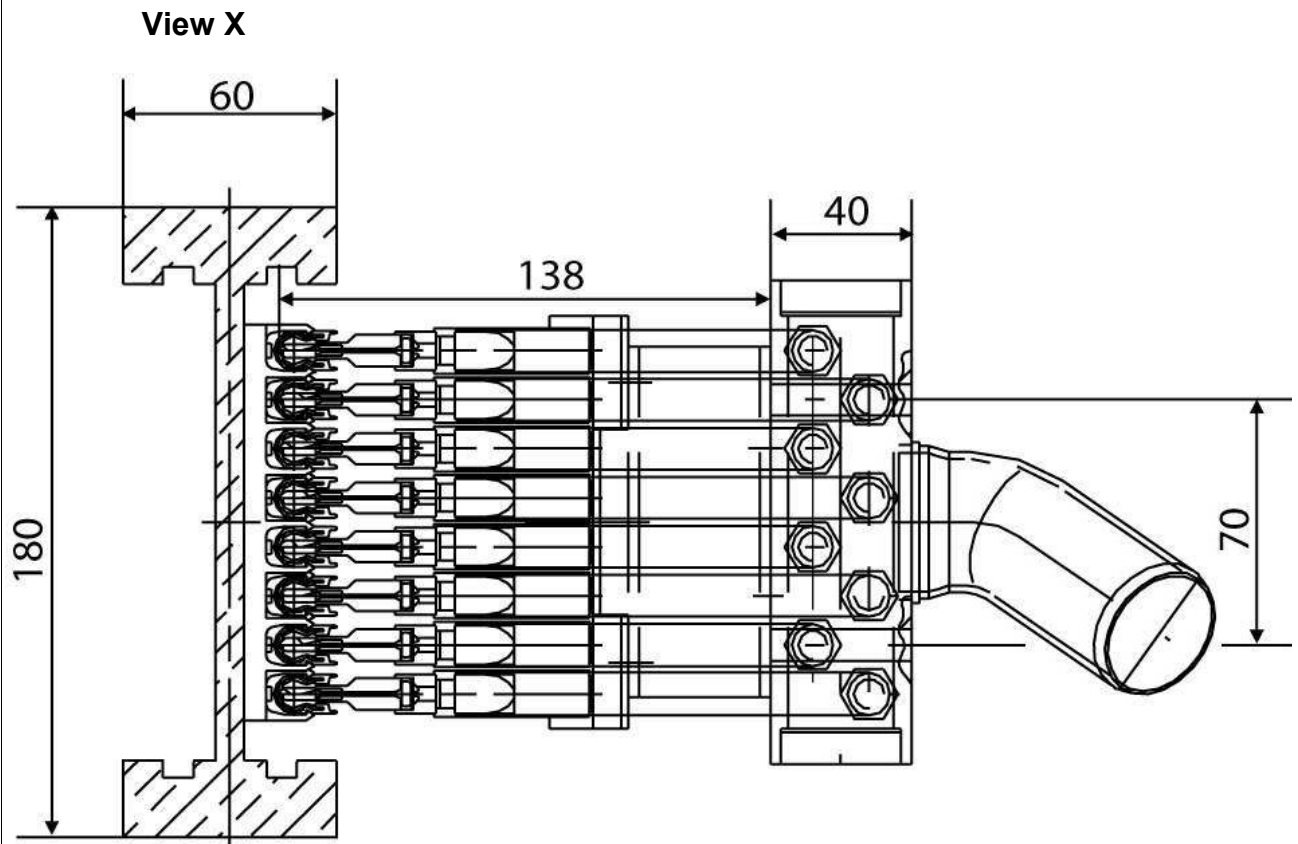
The cleaning device consists of a side channel fan (230 V / 400 V) with dust container and a suction head, which is equipped with the respective number of poles. It is fitted to the EHB vehicle by the customer. Please refer to the attached information sheet "Powerail cleaning device ARG 14 DS" for ordering details.

3.2.2.1 Safety instructions

- a) The cleaning device has to be positioned in a way which ensures clear passage through the EHB installation without damaging other components.
- b) Extended usage may result in the individual components becoming coated in carbon dust and being live!

3.2.2.2 Dimensions:





3.2.2.3 Design and function

The device consists of the following main components:

- Suction head
- Filter
- Side channel fan

These are interconnected in the specified order via flexible suction hoses. The fan sucks in air via the filter and the suction head. The suction head consists of special powerail cleaners that have intake openings at the bottom directly above the channel of the U10 powerail. From this position they are capable of vacuuming off dry dust and abrasion. The powerail cleaners are connected to the collector tube via flexible hoses.

The powerail cleaners have the same degrees of freedom as the corresponding current collectors and thus compensate for any tolerances occurring under normal operating conditions.

Technical dataFilter housing

Coated steel plate cylinder with 2 mounting brackets
replaceable paper filter and 2 spare filters
Safety filter made of polyester needle felt
Volume: 9.4 l
Weight: 4.8 kg

Side channel fan

Maintenance free
0.37 kW, 230 / 400 V three-phase current 50 Hz (other drives possible)
Power consumption 1 A / 1.6 A
Start-up current max. 6 A
Flow rate 1,300 l/min.
Vacuum 850 mm / Ws
Noise level: 67 dB (A)
Weight: 9.4 kg

Suction hose

Plastic with wire coil
diameter 40 mm, length 2 m (other lengths on request)

3.2.2.4 Assembly and maintenance

Depending on the installation situation, cleaning device attachment has to be carried out by the customer. Generally speaking, the suction head should be arranged in the centre of motion of a travelling mechanism.

The electrical connection must be carried out by the customer.

A motor protection switch with indicator lamp can be supplied, but must be ordered separately.

A movement-dependent control of the cleaning device is also possible, i.e. the vacuum cleaner is only switched on when the vehicle is moving.

The control must be ordered separately.

Depending on the degree of soiling, make sure the powerail cleaners and the suction hoses of the suction head are not blocked and, if necessary, replace or clean them to safeguard optimum vacuuming.

Always replace worn out powerail cleaners.

These aspects also apply to replacing the paper filter bag.

Snap-on fixtures facilitate this task.

The fan is maintenance free and designed for 100% on-time.

3.2.2.5 Information about use

Depending on the degree of soiling, the cleaning device is switched on at intervals specified by the installation operator. It is recommended to use the cleaning device in the installation from commissioning onwards.