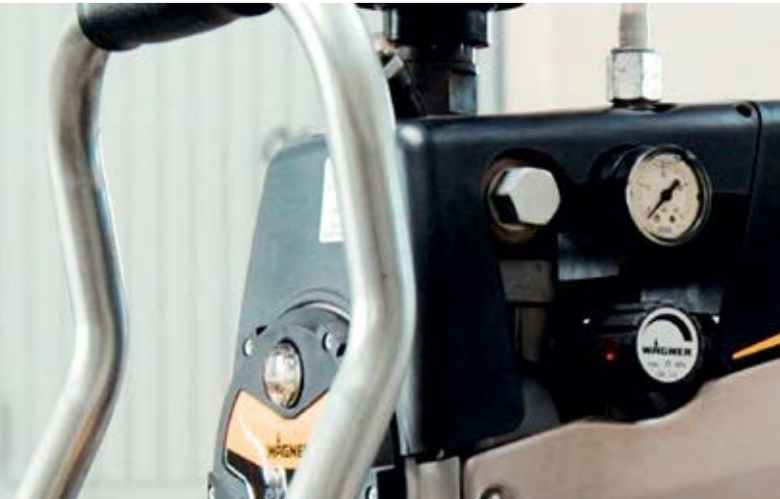


Our Know-how – Your success

Electro wet cleaning



What does electro wet cleaning mean?

The **wet cleaning of electrical installations** is based on a cleaning process with liquid cleaning agents. The cleaning can be carried out at installations disconnected from voltage as well as at electrically live installations.

By the use of liquid cleaning agents materials and components are cleaned in an effective and surface-protecting way. With this special cleaning procedure two essential requirements are fulfilled at once:



1. FUNCTIONALITY OF THE INSTALLATION BY MAINTENANCE

It takes care of an orderly availability of the electrical installation, of the operating reliability and industrial work safety.



2. ORDINANCE ON INDUSTRIAL SAFETY AND HEALTH AND BGV A3* (GERMAN REGULATIONS)

Predetermined by the content of the Ordinance on industrial safety and health §10, paragraph (2) Duty to maintain work equipment (installations) as well as DGUV* Regulation 3 (in terms of content former BGV A3**):

“The employer shall ensure that the proper condition of electrical installations and equipment is tested:

1. prior to commissioning, and prior to restarting following modification or repair, by an electrically skilled person or under the responsibility and supervision of an electrically skilled person; and
2. at specific intervals.

The intervals shall be selected such that defects which are to be anticipated are detected in good time”

It follows from this that often only the cleaning of the installation can restore the proper condition, respectively can maintain the safe state according to the Ordinance on industrial safety and health.

*DGUV = German Social Accident Insurance

**BGV A3 = Regulation for safety and health at work of the employer's liability insurance association, Accident prevention regulation: Electrical installations and equipment

Which installations or components can be cleaned?

We are always open to consult you! Here are some examples of components which can be cleaned by electro wet-cleaning:



SWITCH CABINETS, MOTORS, GENERATORS



ELECTRIC LOCOMOTIVE, TRACTION MOTORS, STARTERS, ELECTRICAL SYSTEMS AND AIR CONDITIONER



LOCAL NETWORK STATIONS



POWER AND ISOLATING SWITCHES



DRY AND OIL TRANSFORMERS



WELDING TRANSFORMERS

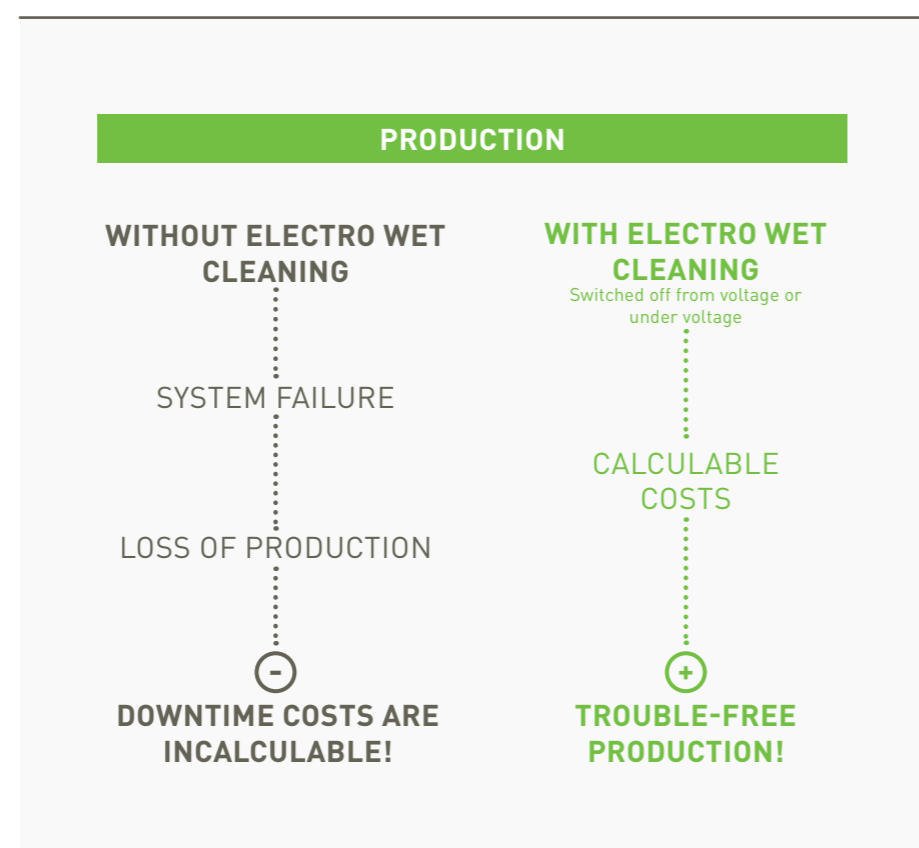


ELECTRICAL FORKLIFT TRUCKS

► The advantages – at a glance

Which advantages does this type of cleaning offer?

Today concepts of maintenance and service primarily have the task to guarantee the highest possible technical availability of the installation.



The method of wet cleaning of your electrical installation thus offers you a safe possibility to avoid disturbances and failures and thus to lower follow-up costs. This means:

- guarantee of high plant availability
- minimisation and elimination of trouble sources
- life-time extension of single components
- the reduction of fire risk
- better identification of disturbances
- cleanliness in the workplace

What has to be considered?

As a general rule the cleaning of disconnected, voltage-free installations has priority over the work under voltage! Only in exceptional cases the cleaning under voltage is allowed. DGUV Regulation 3 (old: BGV A3 § 8).

Examples for work alive, where a switching-off of the electrical installation is not possible without problems:

- Airports: runway lighting
- Hospitals
- Steel industry: melting furnaces
- General production processes, where the electrical machines cannot be switched off
- etc.

APPLICATION CASE ANALYSIS

First an application case analysis has to be carried out at the electrical installations which are to be cleaned. By that the choice of products and their quantity as well as the operational steps which are actually to be carried out, the measures and decisions, such as e.g. for work alive or voltage-free, are to be determined.

SAFETY REGULATIONS

Work on live parts: For the cleaning under voltage all sets of rules and regulations for the work under voltage have to be considered. The cleaning work is exclusively to be performed by especially trained persons.

Voltage-free: The usual safety measures for the work at electrical installations have to be considered, e.g. the work has to be carried out by qualified electricians.

It is recommended to employ only experts also at a disconnected, voltage-free installation for the electro wet cleaning.

WORK CLOTHES & TOOLS

Work on live parts: Special protective clothes and insulating tools which protect against the dangers of an electric shock or the formation of an electric arc.

Voltage-free: Usual protective clothing for the use of liquid cleaning products.

RESPONSIBILITY

A responsible person for the work has to be determined for the cleaning of disconnected, voltage-free installations as well as for the work alive.



Product overview

Know – what is needed. Develop – what offers safety.

Electro cleaners		
S.L.X. 500 Special safety cleaner		Work on live parts possible. For the cleaning of all electrical installations and devices (e.g. electrical switch cabinets, distributions etc.)
S.L.X. 1000 Special safety cleaner		Work on live parts possible. For electronics and mechanics. For the cleaning of highly sensitive electrical facilities, components and devices
S.L.X. Super Electro safety cleaner		Safety cleaner for all electrical installations, devices, motors, etc.
S.L.X. Top High-performance electro-cleaner		Cleaner for all electrical devices and components (e.g. switchgear assemblies, welding transformers, generators and electro motors)
E.V.R. Electro pre-cleaner		Water based pre-cleaner. Can be used at electrical switch cabinets/ devices, components, housings and surfaces
Complementary products		
B.W.R. 180 Water-based cleaning concentrate		Non-hazardous. Universally applicable cleaning concentrate, to clean e.g. cable ducts and housings of switch cabinets
B.W.K. Water-based power cleaner		Universally applicable cleaning agent, to clean e.g. cable ducts and housings of switch cabinets
M.T.X. 60 forte Intensive cleaner		Intensive cleaner with special cleaning intensifiers and fast evaporation to clean among other things cables, to set cable junction boxes
S.L.X. Rapid Universal rapid cleaner		The universal rapid cleaner for electric and electronic components
O.C.X. Oxide remover		To remove oxide and sulphide layers, oil that became resin and greases as well as metal abrasion on electrical contacts of all kinds
W.S.X. Moisture-protector		Protects electric components against failure caused by moisture
Contact greases		
S.K.D. 3602 High performance grease		Extremely adhesive and weatherproof contact grease for the outdoor area
S.K.D. 4002 High performance grease		Ageing-resistant and fully synthetic contact grease for the indoor area
F.L.G. GT-2 Synthetic multi-temperature grease		NSF H1-listed fully synthetic grease for switches and contacts for the indoor and outdoor area
S.K.D. 5001/5002 Highest temperature greases		Contact greases for extreme media or temperature loads for the indoor and outdoor area
Maintenance products		
S.K.D. 16 N Synthetic inside bearing lubricant		To lubricate mechanical connections, like levers, joints, ropes and chains
T.R.S. Plus creep and fine oil		Multifunctional creep and fine oil to release and get going seized precise mechanical parts. Especially suitable as door lock spray

Many further products and their application possibilities on request. Respectively when an application case analysis is made.

The one-stop solution

How does the system work?

To achieve a perfect cleaning result and to guarantee a trouble-free workflow we recommend a system of 3 components.



1 CONSULTING

On-site support by either an Bremer & Leguil member of staff or by one of our worldwide sales partners.

2 PRODUCTS & EQUIPMENT

Rivolta-Products: Electrical cleaners, contact greases and synthetic oils

Equipment: Airless device and industrial dryer W10. These devices are especially designed for electro wet cleaning and can be purchased from us directly.

3 EXECUTION

Own personnel by customer qualified for working under voltage or we can offer a list of service companies who can execute an electro wet cleaning.



How to clean voltage-free installations?

Example of the cleaning of a switch cabinet:

1. Considering the 5 safety rules* the installation is disconnected from voltage
2. Remove loose contaminations
3. Line the bottom of the switch cabinet with absorbent cloths, foil
4. Eventually dismount or cover components
5. Pre-cleaning with **Rivolta O.C.X.** or **E.V.R.**
6. Main cleaning with **Rivolta S.L.X. series**
7. Eventual subsequent treatment of the components with **Rivolta S.L.X. 500**
8. Remove the laid-out cloths
9. Dry the installation completely and totally
10. Cleaning of the outer surfaces of the switch cabinet with** **Rivolta B.W.R. 180** or **B.W.K.**
11. Switch on the installation again



Watch our Video!

Our introduction video shows the method of how electro wet cleaning works!

www.bremer-leguil.de

* Safety regulations for work with electrical equipment: 1. Disconnect mains! 2. Prevent reconnection! 3. Test for absence of harmful voltages! 4. Ground and short circuit! 5. Cover or close off nearby live parts!
 ** Not on voltage carrying components.

	Cleaners							Equipment		Lubricants		
	E.V.R.	O.C.X.	S.R.K.	S.L.X. Rapid	S.L.X. Top	S.L.X. 500	B.W.R. 180	Airless device	Wet/Dry vacuum cleaner	T.R.S. Plus	S.K.D. 16 N	S.K.D. 4002
Switch cabinet (under voltage: only S.L.X. 500)												
Electric locomotive, starters, traction motors, air conditioners												
Power and isolating switches (under voltage: only S.L.X. 500)												
Motors and Generators												
Wind power												
Dry transformer												
Oil transformer												
Welding transformer												
Electrical forklift truck												
Local network stations (under voltage: only S.L.X. 500)												

Interested?

**Then please feel free to contact us! Our staff is always happy to advise you.
Further information about our products and our certified quality and production
standards are accessible on our website**

www.bremer-leguil.de

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