

SZM

Schaltanlagen
Zubehör

Bad Muskau
ZUSCHA Boss

Reliable Switching of Higher Voltage Current



Service

24 h Hotline:

Service NORTH +49 172 1558379

Service East +49 160

93439789

www.szm-gmbh.de

Our Services

Bad Muskau has a long tradition in the area of switching device manufacturing. Until now, more than 250.000 devices have been produced for use in medium-voltage switchgears; in previous years (up to 1992) known as "Schaltgerätewerk Bad Muskau", today by the name of "SchaltanlagenZubehör Bad Muskau GmbH", abbreviation **SZM**.

The SZM GmbH offers you the possibility to experience professional maintenance of your switchgear besides circuit breakers, especially of the product series SCI1-SCI4, SCIF, VCI, VAI, NVL and VL1 and if necessary, to be supplied with original spare parts and its installation.

We have two service center locations in Germany

1. **Service Location East,**
Heideweg 2, 02953 Bad Muskau
2. **Service Location NORTH,**
Industriestraße 30 a, 21493 Schwarzenbek

With our high-quality equipped vehicles we can reach you throughout all of Germany!



Our Service-Teams are equipped with:

Portable Measuring Equipment:

High-Voltage test set

-> PGK 150 H

Micro-ohmmeter

-> Mjölner 600

Vacuum Interrupter Tester

-> Vidar

Digital Timer

-> TM200

Power supply for circuit breaker testing

-> B10E

Breaker Analyzer system

-> TM1600

Further Measuring Equipment of SZM factory:

Breaker Analyzer system

-> Megger TM1720

High-Voltage Test System

-> HIGH VOLT WBS 4,4-100



Services at Location East

Inspection

We offer/perform the following inspection for your switching device, either at your site or in our special workshop in Bad Muskau:

- Inspection of the operating mechanism, the tripping device, tight fit of the tripping device, ease of movement and damage, the trip shaft automatic return
- Mechanical testing and adjustment of the closing interlock, trip shaft and position switch, stored energy shunt release and safety of open- and close reliability
- Electrical testing of threaded and clamped connections, rated motor current, charging performance and the operation time
- Optional: High-voltage (AC) test, Voltage drop test



Maintenance

We offer/perform, the following maintenance to your switching device, either at your site or in our special workshop in Bad Muskau:

- Opening of breaker poles, inspection of actuating pins, contact elements, flexible tapes and extinguishing chambers for signs of wear and tear, oil change
- Inspection of the operating shaft, cracks in the insulating rods, fractures, wear, ease of move of the rollers, tripping device, switching mechanism as well as ON and OFF trip shaft
- Mechanical testing and adjustment/alignment of interlocks, jump shaft and position switch, stored energy shunt release and safety of open- and close reliability, inspection of curve disc roller – intermediate shaft as well as Bowden control cable for locking
- Electrical testing by current and voltage measurements on tripping devices, rated motor current as well as charging performance, inspection of operation time and resistance measurement (Voltage drop test)

Refurbishment/Repair

If there is a defect in your switching device, please contact us 24 hours a day via our hotline. We will contact you as soon as possible. The defective product will either be repaired at your facility or, if necessary in our factory in Bad Muskau.



Spare Parts

We provide you with a wide range of original spare parts or the option of refurbishing existing parts. If required please ask for our spare parts price list.

Testing

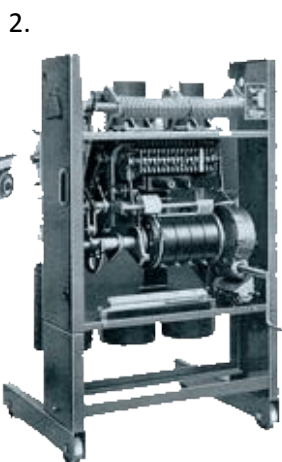
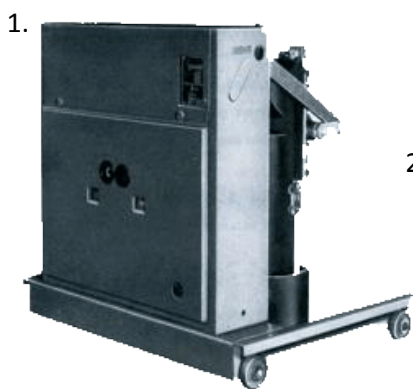
We will perform a condition analysis on your circuit breaker and if required we will measure:

- Operating time
- Resistance measurement (Voltage drop test)
- High-voltage test (AC)
- Trip current
- Motor current

Consultation

In order for us to give you a fair analysis of your switchgear needs, we would like to view/review your installation at your facility. If maintenance or repair is not possible we can offer the options of a plug and play RETROFIT solution or a new switchgear installation. If your existing installation is deemed scrap, we will take care of the disposal, mostly free of charge.

Service and Maintenance for various types of circuit breaker, like:



Pic	Switchgear	Manufacturer	Switching capacity	Type of design
1	SCI1-10	SGM Bad Muskau	10 kV/ up to 750 MVA	Minimum oil circuit breaker
2	SCI1-20	SGM Bad Muskau	20 kV/ up to 500 MVA	Minimum oil circuit breaker
3	SCI4	SGM Bad Muskau	12 - 24 kV	Minimum oil circuit breaker
4	SCI3-30	SGM Bad Muskau	30 kV	Minimum oil circuit breaker
5	VD4	ABB	12 – 36 kV	Vacuum circuit breaker
6	3AH	Siemens	12 – 36 kV	Vacuum circuit breaker
7	VL1/NVI	SGM/ Ormazabal	12 – 24 kV	Vacuum circuit breaker
8	VCI1	SGM Bad Muskau	12 – 36 kV	Vacuum circuit breaker



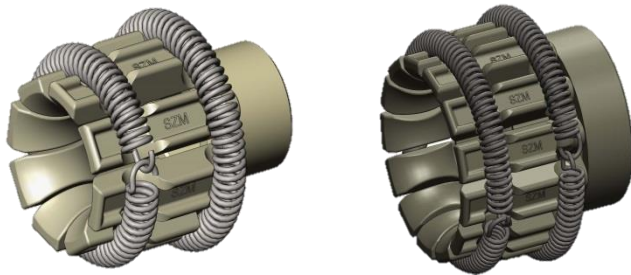
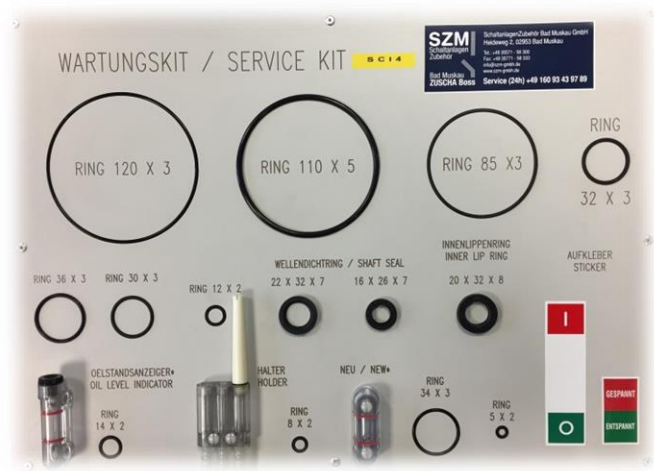
Spare parts for switching devices

We have an extensive stock of spare parts for circuit breakers previously manufactured in Bad Muskau. In addition, we can procure and offer to you original replacement/spare parts for various different types of circuit breaker at competitive terms. In our very modern mechanical production factory we can reproduce many complex like-original replacement parts, including contacts, contact arms, locking devices etc. Of course, the standard portfolio includes our classic maintenance kit (see figure).

Service kit for SCI1 circuit breaker



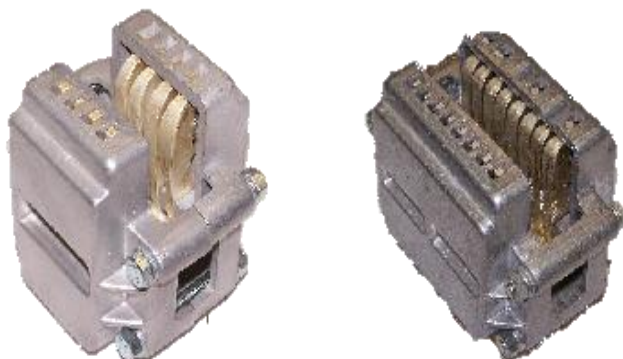
Service kit for SCI4 circuit breaker



Tulip contacts for rated currents up to 1600 A/ 2500 A



Contact system for rated currents up to 1250 A/ 2500 A



Flat contact for rated currents up to 630 A/ 1250 A



Flat contact for rated currents up to 2500A

Services at Location NORTH

Delivery and installation of:

- Compact transformer stations
- Accessible substations
- Medium-voltage switchgears
- Low-voltage switchgears
- Transformers
- PFC systems (compensation)
- Cable trays/ cable installation of:
 - Medium-voltage cable
 - Low-voltage cable
 - Other cable types on request
- Medium-voltage cable assembly
 - Medium-voltage cable sleeves
 - Medium-voltage cable terminations
- Low-voltage cable sleeves
 - Low-voltage sleeves
 - Installation low-voltage cable
- Deep earthing systems



Transformer practice

Our service portfolio:

Oil purification

- Oil flow rate up to 6.000 l/h
- Also on site

Exchange of oil

- Also on site

Oil analysis according to DIN EN 60422

- Color (ISO 2049) dielectric dissipation factor (IEC 60247)
- Dielectric breakdown voltage (IEC 60156)
- Acid number (IEC 62021-1)
- Detamination of water (IEC 60814)
- Mobile oil purification plant



Cable terminations / sleeves/ cable work

Protection and control systems

- Test of various protection relays made by:
 - SEG, Ziehl, Alstom and more protection devices on request
- Exchange and modernization of protection devices



Other parts of our supply and service range:

RETROFIT

SZM GmbH (SchaltanlagenZubehör Bad Muskau GmbH) offers extensive possibilities for RETROFIT solutions in the area of medium - and low voltage thanks to its many years of experience.

Mechanical production

SZM GmbH operates in a modern work environment, using conventional and primarily CNC-controlled metal processing centres. We manufacture with maximum precision, from individual pieces to medium batch sizes. We process a large variety of metal materials which we can also refine as required (hardening, grinding, galvanising, silver-plating etc.)

Switching devices

Production of load-break switches type C3. Development/production/sale of vacuum CB's.

Switchgear systems

We offer you an extensive range of medium voltage switchgear systems for primary distribution, both standard solutions, but also tailor-made specific customised solutions from development to type testing. Our range includes air and inert gas insulated switchgear panel with a selection of different switching devices such as SIMOPRIME/ PTG01/ PTG02/ SAM and much more.

Drives

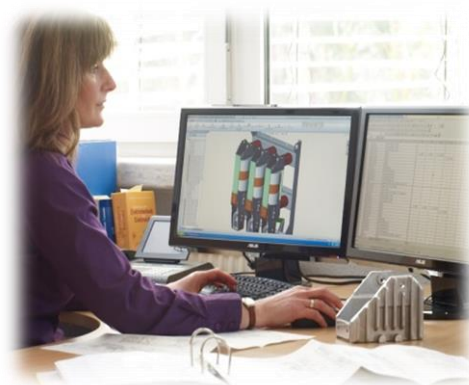
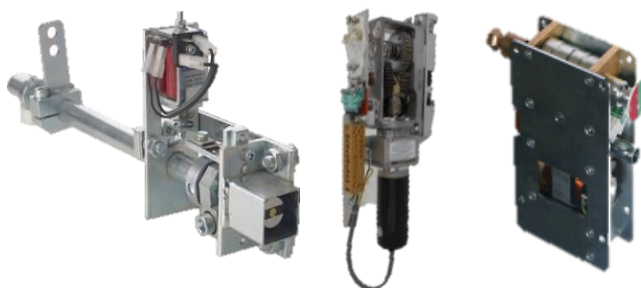
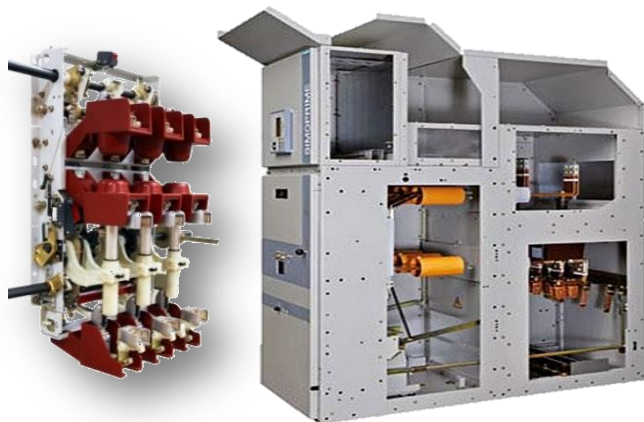
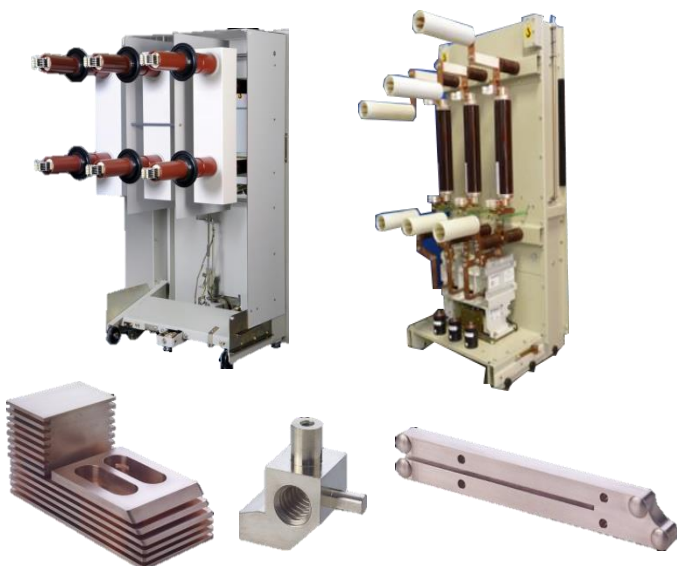
We design and produce manual and motorized drives for medium voltage load-break switches, disconnecting switches and earthing switches of various makes.

Accessories

Various accessories for switchgear construction such as shaft extension, attachment sets for signalling switches, clamps for round bus bars, locks and much more.

Design

SZM GmbH designs modern products for the energy market, especially medium voltage switching devices but also switchgear systems, drives for switching devices and RETROFIT solutions for the exchange of worn out devices. We provide a one stop shop, from giving competent advice to design, prototyping and to full type testing. We are equipped with all required CAD software, modern electrical test lab and advanced measurement technology.





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