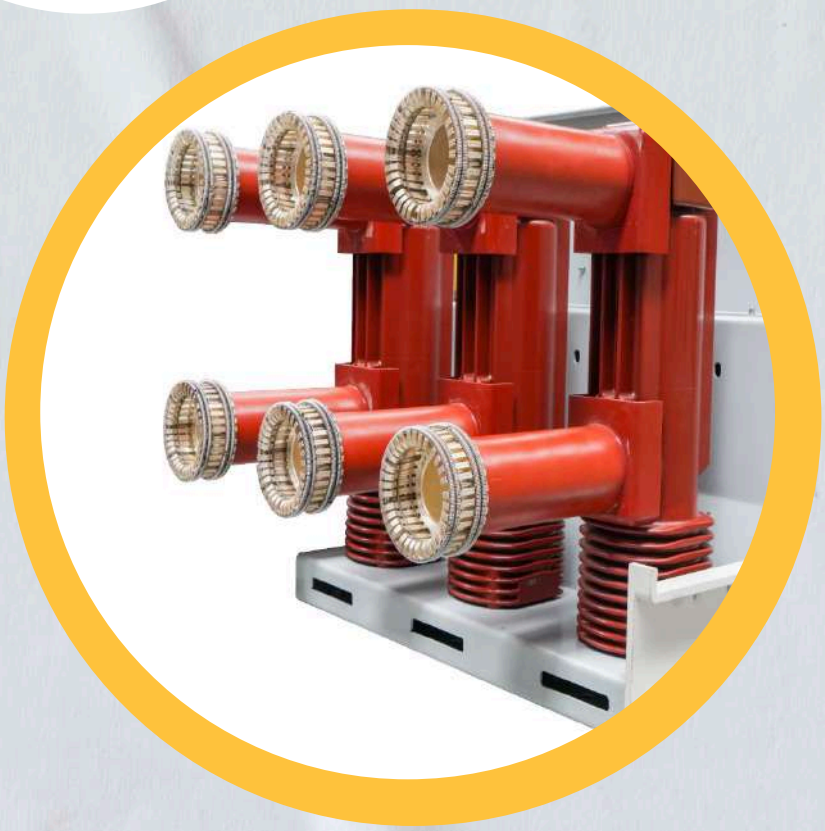
VCB24A TYPE

MEDIUM VOLTAGE VACUUM CIRCUIT BREAKE

CATALOGUE

armtek ELEKTRİK

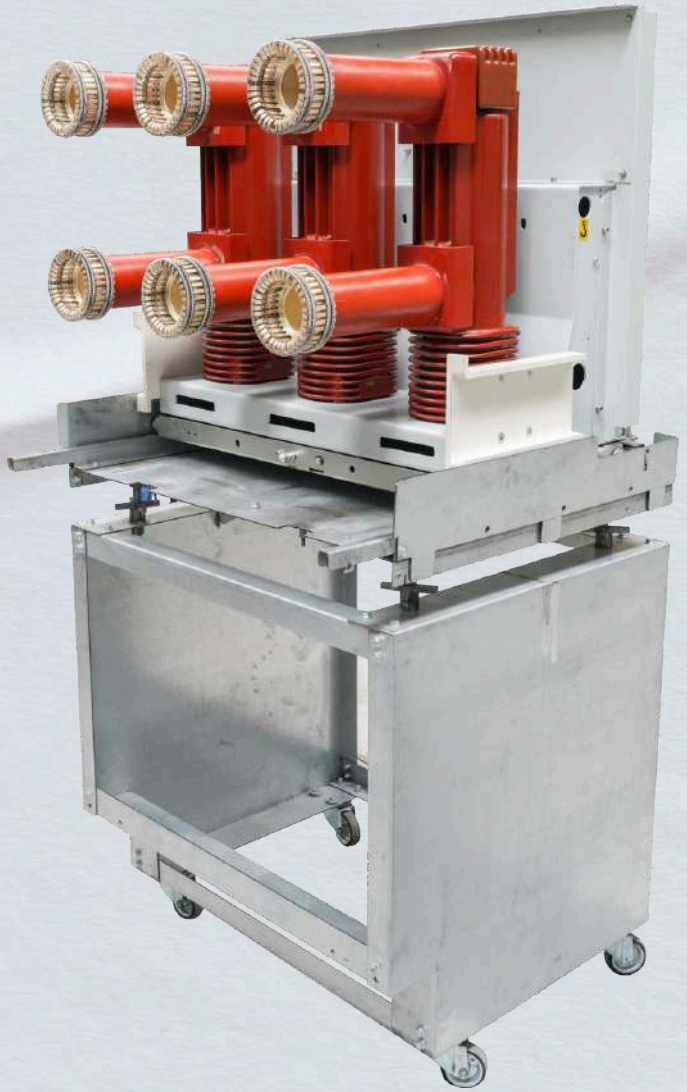


CIRCUIT BREAKER

Armtek brand medium voltage breakers use ABB brand vacuum disconnectors embedded in the poles. Embedding the separator in the pole strengthens the circuit breaker especially and protects the separator itself from impacts, dust accumulation and moisture. The vacuum circuit breaker accommodates the contacts and provides a separation medium. Armtek circuit breaker uses radial magnetic flow for circuit breaker with medium-low breaking capacity and axial magnetic flow vacuum cutting techniques for circuit breaker with high breaking capacity. Both techniques guarantee a balanced distribution of the arc paths over the entire surface of the contacts. Therefore, optimum performance is provided at all current values. The structure of the vacuum circuit breaker is quite simple. Enclosure is made of a ceramic insulator that is sealed at the ends by stainless steel covers. The contacts are made of pure copper and sintered chrome and they are welded to the copper terminals. A metallic bellows ensures that the moving contact-terminal assembly moves and the vacuum in the circuit breaker is maintained.

Circuit breaker components are located inside the breaker in an environment under a very strong vacuum that does not provide less than 10 Pa of vacuum. This means that the circuit breaker does not contain any ionizable material. In any case, if the contacts are separated, an electric arc is produced consisting only of the molten and vaporized material of the contact. A metallic shield is integrated inside the breaker to capture the metallic vapors released during separation and at the same time control the electric field. The specific shape of the contacts creates a magnetic field that causes the arc to rotate and cover a much larger surface than a fixed contact. In addition to limiting thermal stress on the contacts, this feature makes contact wear negligible and allows the separation to be controlled even at very high short-circuit currents.

The electric arc continues to be supported by external energy until the current is reset. The rapid decrease in current density and the rapid condensation of the metallic vapor formed at the moment the current passes through zero allows the maximum dielectric strength between the circuit breaker contacts to be restored within a few milliseconds. There is no need to monitor the vacuum level, because they are pressure systems whose circuit breaker poles are sealed to remain open and require no maintenance.



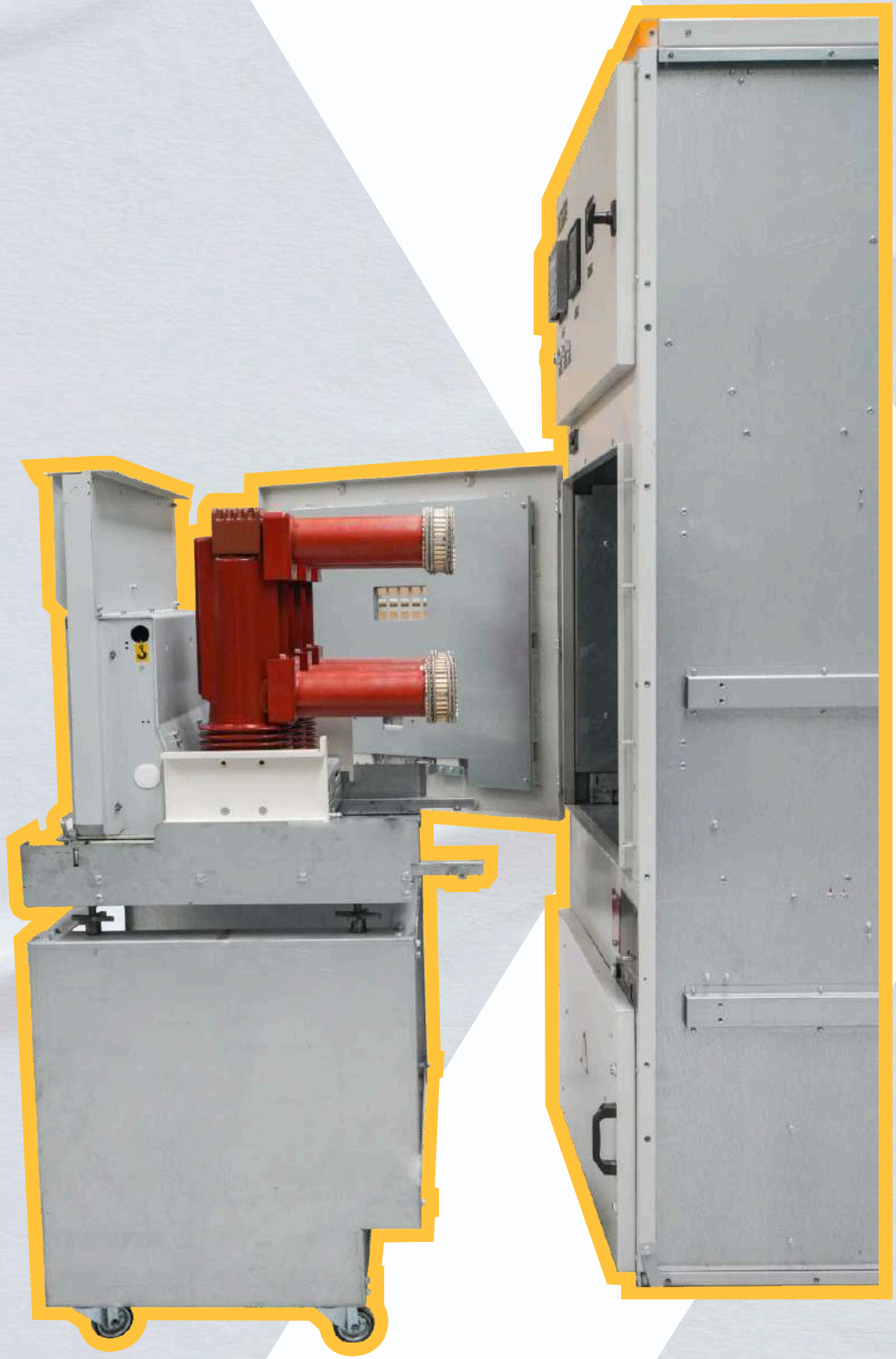

ormtek
EARTHING SWITCH

ELECTRICAL SPECIFICATIONS

Circuit Breaker Type	Vacuum
Rated Voltage	24 kV
Power Frequency Voltage	50 kV
Rated Lightining Impulse Withstand Voltage	125 kV
Rated Normal Current	…2500 A
Rated Frequency	50 Hz
Rated Short Circuit Current	31.5 kA
Rated Short Circuit Current Peak	78.75 kA
Rated Duration of Short Circuit	3 s.
Class	E2, M2, C2
Dimensions (width x depth x high)	881x720x770
Mass (kg)	~150
Environmental Conditions	Indoor (-5 / +40 °C)

VACUUM CIRCUIT BREAKER MECHANISM:

1) Breaker OPENING button
2) Numerator
3) Breaker ON-OFF position indicator
4) Breaker "SPRING SET" - "SPRING OFF" indicator
5) Breaker CLOSING button
6) Mechanism manual installation place

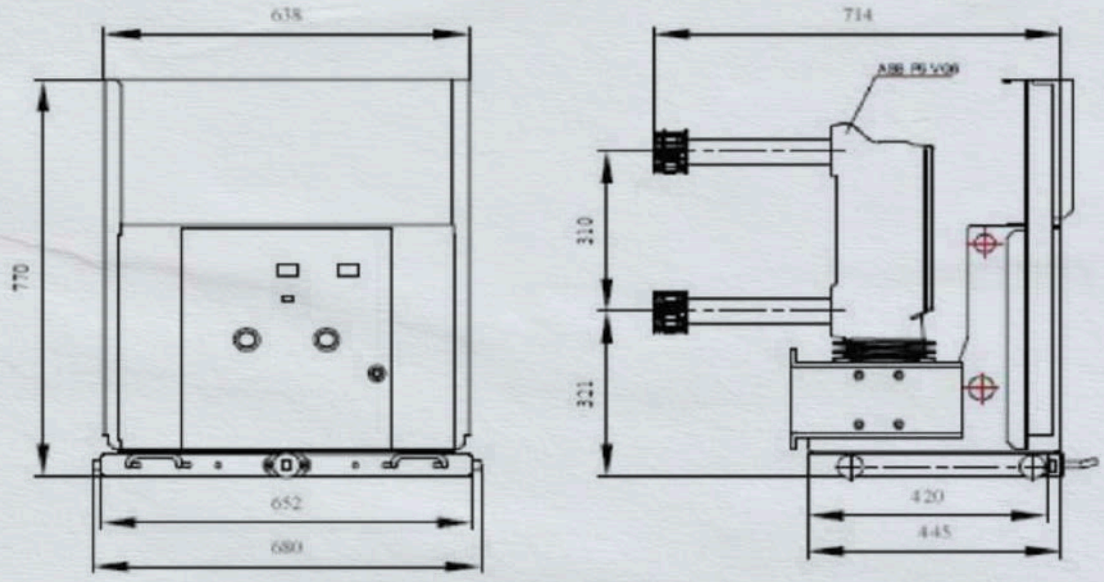


CARE INSTRUCTIONS:

Metal Clad cubicle can be used safely without the need for long years of maintenance. If maintenance is to be carried out, one of the most important components, the vacuum circuit breaker, should be performed in accordance with the maintenance procedure specified below. For the remaining parts of the cubicle, it will be sufficient to dusting the beehives and separators. Vacuum circuit breaker is simple, robust and long-lasting, and its mechanism requires maintenance and inspection at certain periods until the guaranteed working life. Service maintenance should only be carried out by trained personnel who comply with all safety regulations. During maintenance, cut off the power supply and remove the plug connections. Make sure that the breaker is open and in the "spring discharge" position before performing any action.

First of all, it should be visually checked whether there are dust, dirt, corrosion, contamination and electrical discharge traces on the circuit breaker poles and, on the mechanism, depending on the operating conditions. Dirt, dust and waste must be cleaned.

Circuit breaker settings are made at the factory and the connection bolts of critical places that do not require intervention are sealed with red paint. Remove the circuit breaker mechanism maintenance front cover. Visually, the mechanism should look like the picture below.



All loose bolt connections should be tightened by visual and manual control.

- All shaft bearings, bearings, hand winding reducer, opening-closing coil latches, mechanism cam, winding gear and chain, discharge spring arm and connecting pins shown in the pictures below should be regularly checked and lubricated.
- Charging chain, charging gear, hand charging reducer, mechanism charging cam and the lever wheel it presses against must be lubricated with grease.
- Bearings, shaft bearings, pins must be lubricated with thin protective oil.
- The functionality of the On - Off buttons must be checked manually.
- The connection of the cable connection lugs to and from the auxiliary switch should be checked and the loose ones should be tightened.
- Care should be taken not to splash oil on switches and coils during lubrication.

Charging Cam

Closing Spring Arm Bearing

Closing Spring Connecting Pin

Connection Pins

Chain Sprocket and Chain

Main Shaft Drive Lever Wheel

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