



MAINTENANCE

In order to properly provide maintenance services to the vacuum circuit breaker, it is essential that the VCB is first switched off. Once it is off, it should be isolated from all sides. You need to open up the electrical isolator to do this. Follow the below steps then for proper maintenance:

Properly clean the vacuum circuit breaker with a CRC - 226 i.e an electrical contact cleaner. This will ensure that the lubrication is proper in the VCB.

- Clear any old grease in the VCB. Grease the VCB again, with new grease, of a similar type
- Check the conditions of the fixed and the floating contacts
- Inspect the positioning of the contacts
- Check the outer layer, and other hardware parts of the VCB, and see that they are fixed properly
- Use the VCB's push button to check the breaker tripping
- Check the electrical current between phase and phase i.e VCB closed state
- Check the electrical current between phase and earth i.e VCB closed state
- Check the electrical current between phase and earth i.e VCB open state

RELAY TESTING & CALIBRATION

Relays ensure the protection & safety of an electrical system and provide users with vital diagnostic information. Relays work by detection of faults and then tripping of Circuit Breakers (CB's) to prevent damage. With usage over time the relay connections gets deteriorated and contaminated with carbon particles, etc. It's in the best interest of the end user to check the behavior of relay after time intervals in a recorded documented pattern.

Also we do inbuilt testing of ACB. Inbuilt Release are installed in ACB's to provide protection against any overload, short-circuit and earth faults that arises, It is therefore very important to get the release diagnosed periodically to make sure it functions smoothly.

BREAKER RETROFITTING

We can retrofit the new breaker with the old one if the user wants to upgrade to a new one. Let's say we take an existing oil circuit breaker and remove the operating mechanism and jaw contacts. On the frame of the existing breaker we mount a new vacuum circuit breaker, bus bar to the bushing and wire to the secondary control disconnect. The retrofit breaker easily gets racked into the existing breaker because the new breaker is mounted on the existing frame.

BREAKER SERVICE SF6, VCB, OCB, ACB, RMU

The most critical & expensive equipment after transformer is the HV/LV Breaker comprising of SF6, VCB, OCB, ACB type. We rely on them to protect our systems from damaging in case of any over currents and short circuit. Therefore Routine service of breakers are very important. We carry out all the Mechanical & Electrical checks to determine the condition & bring it to the users notice. Breaker's main function is to interrupt current flow immediately after a fault is detected, using SF6, Vacuum, Oil, and Or Air as an arc extinguishing medium depending on the type of breaker.

WHAT FAULTS CAN OCCUR WITH AIR CIRCUIT BREAKERS?

Breakers are the cause of almost 35% of power distribution system failures. Due to a lack of service, dust, corrosive, worn parts & non-functional relays prevent the proper operation of the trip linkage of the Circuit Breaker.

WHY DO I NEED TO SERVICE & MAINTAIN MY HV/LV BREAKERS?

For industries that operate at high voltage, it is advisable to protect your equipment & machinery from overflows of current. Any Sudden high voltage surges can cause considerable damage to the overall performance of the machine & disturb the operation of the plant. Routinely servicing extends the life of your Circuit breakers, so they rarely need to be replaced.

BREAKER TESTING

Since we are heavily reliable on breakers to protect our systems from damaging in case of any overcurrent's and short circuit. Testing Breakers annually is recommended.

FOLLOWING TESTS ARE RECOMMENDED:

- Megger Tests. - Hi Pot Test DC. - Control Wiring Check Test.
- Contact Resistance Test. - Vacuum Interrupter Testing.

CT & PT TESTING

The instruments transformers are of two types; CT & PT. CT is used for metering & protection against abnormal current & PT is used for metering & protection against abnormal voltage.

CT & PT TESTING

- Primary injection test.
- Polarity Test.

FOLLOWING TESTS ARE DONE ON PT:

- Polarity Test.
- Turn Ratio Test

Cable Fault Locating & Cable and Termination Service

Major Reasons of faults in cable are regular service ageing, over voltages, thermal overload, corrosion, and poor workmanship during transport and installation, among others. It is very important to locate and resolve faults as soon as possible to keep downtime and subsequent costs to a minimum.

We are equipped with Cable Fault Locating System with surge wave receiver (Dig iPhone) & Time Domain Reflectometer (TDR), Hi Pot Test Sets, Cable route tracing, Power cable fault locator, and pipe & cable detector which enable us to provide the complete solution for maintaining the underground cable system.

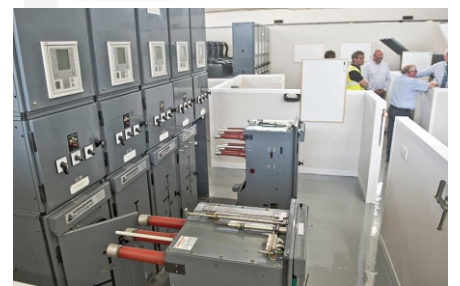
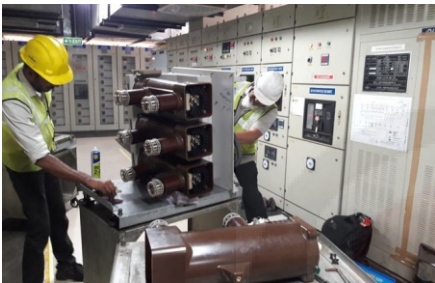
HI POT Testing Service

HV/LV Cable, Safety Mats, Gloves, Shoes HI Pot Testing Services by the Experts

The insulation for cable or any other equipment is defective or not performing as expected, the results can lead to power leakage or short circuits which may cause the motor to fail or damage it. Another major danger of defective insulation is the risk of shock to anyone who comes in contact with that Cable. Thus a HI pot test is conducted to test the stress of the cable for safety and quality purposes. A HI pot test is a non-destructive test which uses a high voltage current to "flow" through the insulation to make sure that it doesn't break down and cause any leakage current. AEI is fully equipped with Calibrated Instruments & Competent Test Engineers. We undertake DC HI pot Tests on HT/LT XLPE Cables, Insulated Rubber Mats, Insulated Safety Shoes, Insulated Rubber Gloves, etc.

Activities We Do

- Installation & Testing of all types of Electromagnetic, Digital & Numerical Relays.
- CT live current measurements, checking of relay wiring & its tightness.
- Relay Testing by Primary & Secondary Injection Tests.
- All Types of Relay Calibration to confirm if the operation of the relay is within the trip time and pick up current tolerances.
- Relay setting, Relay programming and Scheme checking.
- Test-check the functioning of Alarms, which notify of the errors in the internal circuit
- Testing of Inbuilt release of ACB using tests kits.



Ring Main Unit (RMU)

Siemens, ABB

Ring Main Unit (RMU) is a Factory assembled, metal Enclosed set of Switchgear used at the load connection points of a ring- types distribution network. It is complete SF6 gas enclosed and has either LBS or VCB That acts as a Circuit breaker . It is very compact in size as compared to conventional AIS Switchgear. It is available in 11kv 22kv & 33kv We Keep a Stock Of large no. of RMU of above mentioned brand.

Benefits of Ring Main Unit

- Compact dimensions
- A wide range of function units, easy to extend and upgrade.
- Up to Five modules in one common gas tank.
- No live parts exposed.
- Full sealed for lifetime.
- Climatically impendent
- Designed and tested according to IEC.
- High reliability and safety
- Safe and easy for operators in both maintenance and operating conditions.
- All operation carried out from the front of the switchgear.





Vaccum Circuit Breakers (HT PANELS)



A VCB Panel is a types of circuit breaker where the arc quenching occurs is vacuum environment. VCB technology is ideal for medium voltage application .vacuum circuit breaker is renowned technology for medium voltage today and is also know as the most reliable current interruption technology for medium voltage switchgear.

Item Name	Item Description	Brand Available
11KV VCB panel – Indoor & outdoor Types (metal Clad	Rating :800 amp Up to 2500 amp	ABB, Crompton Greaves ,Siemens , Schneider
33KV VCB panel – Indoor & outdoor Types (metal Clad	Rating : 800 amp Up to 2000 amp	ABB, Crompton Greaves ,Siemens , Schneider
Porcelain clad VCB – 11KV & 33KV	Outdoor types, porcelain clad VCB GI Gantry structure	ABB, Crompton Greaves ,Siemens , Schneider

Our VCB Panel are designed based on 25 year old experience in this segment .We keep in mind, its durability operational safety, protection client specific requirement and customization. We have developed a supply chain management in such a way that more than 90% of our client requirements are fulfilled within 72 hours of order placement in case of standard orders.

12 KV Indoor types VCB Panels



36 KV Indoor types VCB Panels



Control And Relay Panel

A Control & Relay Panel is designed to provide control to the associated line or Transformer through outdoor Switchgear at various 11KV and 33KV zonal substation. These panel are used for the control & monitoring of electrical equipment and circuit breaker. Indoor control panel for Outdoor VCB includes IDMT Numerical relay ,Master Trip relay Circuit supervision relay Indication & meter etc . These control & relay panel are available in various combination as single circuit or multi circuit depending upon the customer requirement.





Out Door Sub Station



A Substation or Switchyard is a part of an Electrical Protection & Distribution System . Substation Transform voltage from high to low or the reverse, or perform any of several other important function.

We Supply & Keep in Stock Outdoor substation items from 11kv upto 66KV having a whole range of items.

- Outdoor SF6 Breaker / VCB – ABB, Siemens, CGL, Schneider.
- Current Transformer
- Voltage Transformer
- Isolators –Manual * Motorised
- Lightning Arrester
- CRP & Transformer
- Battery Bank & Battery Charger
- GI Gantry Structure

Relay

Master Trip Relay, Transformer Protection Relay, TCS Relay, Feeder Protection Relay, Motor Protection Relay, Protection and Control Relay, Transformer Differential Protection Relay, Over Current Earth Fault Relay.



Vacuum Interrupters :- The vacuum interrupters can be used on VCB, mine, high Speed Rail Indoor and Outdoor Pole-Mounted Switch etc.

Rated voltage: 12 KV Up To 66 KV

Rated Current : 630A~5000A

Rated Short Circuit Withstand Current : 20kA~50kA



All kinds of VCB, ACB & RMU :- Closing Coil, Tripping Coil & Under Voltage Coil Mechanism
 Sticking the closing operation of Circuit Breaker. When Charged, it can retract to operate closing. When uncharged, it can pop Up to prevent the closing operation.

Rated Voltage : 12KV Up To 132KV

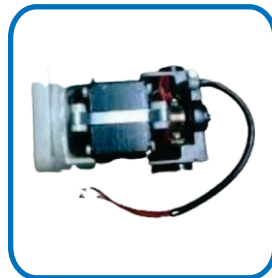
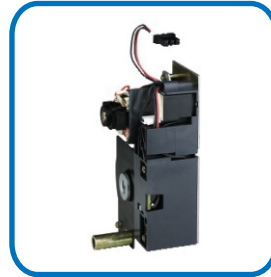
Rated Current : 24V Up To 230V



All Kinds of VCB, ACB & RMU Spring Charging Motor : A spring charging unit which can be charged manually or electrically by a geared motor. Mechanical indicator showing spring charged/discharged condition.

Rated voltage : 12Kv Up To 66KV

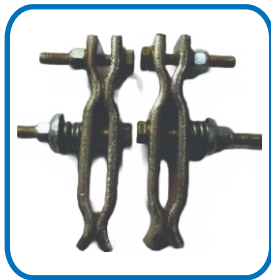
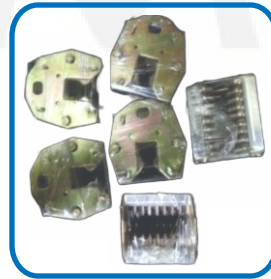
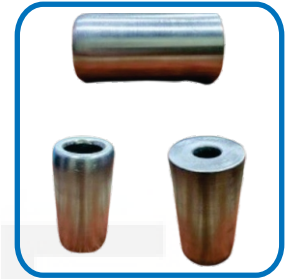
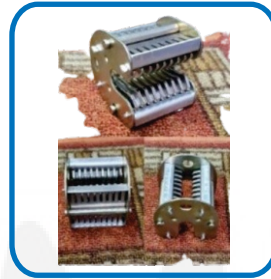
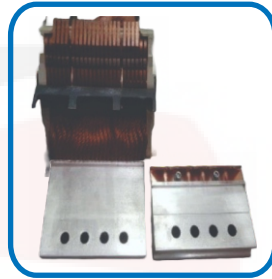
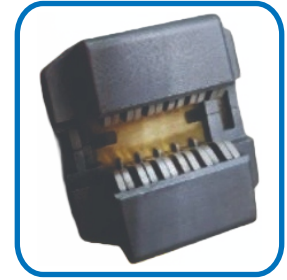
Rated current : 24V Up To 230V



All kinds of VCB & ACB Tulip Contact, Jow Contact, Cradle Contact : Nonmagnetic stainless steel adopter to avoid eddy current loss. Finger made with self-lock arrangement for easy fitting & better contact.

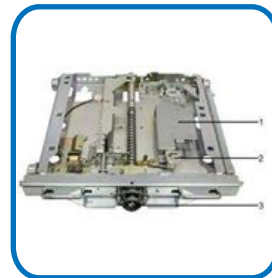
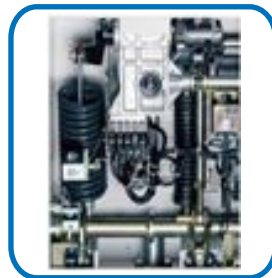
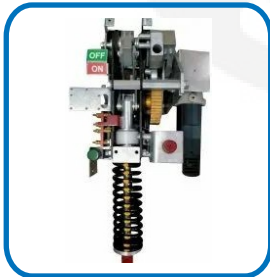
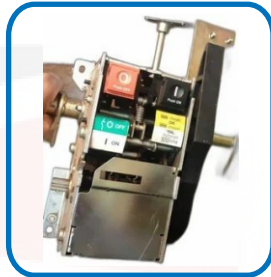
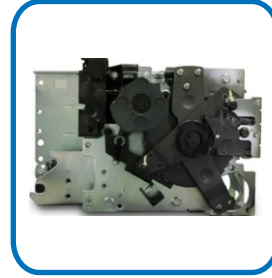
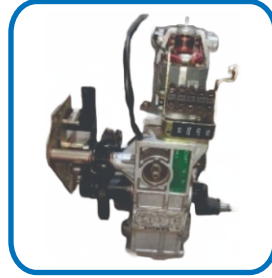
Rated Voltage : 12KV Up To 66KV

Rated Current : 630A Up To 6300Amp.



All kinds of VCB, ACB & RMU Mechanism : In addition, Compared with the Electromagnetic operating mechanism, the spring operating mechanism is low in cost and cheap, and is the most commonly used operating mechanism in VCB & ACB.

Rated Voltage : 12 KV Up To 66 KV



All Kinds of VCB, RMU & Resin Cast Product :- Known for supplying an extensive array of premium quality of Resin Cast Product we offer a wide range of Epoxy Resin Cast products in various sizes, designs and thicknesses, which suit the requirements of our valuable customers in the most efficient manner. With the help of good business ethics and international quality products like Epoxy Molded components such as Instrument Transformers, Epoxy Molded Bushings & Insulators, Distribution Transformer(Dry-type/ Cast resin), High Current Bushing, OIP Condenser Bushings, CT/PT Metering Cubicles/units, Encapsulated & Impregnated Coil, Customized Solenoids, like we have earned a respectful name in the domestic as well as in the global market.



All kinds of MCCB / ACB / Power Contractor :- Short Circuit and Overload Protection Device, commonly used in the Protection in Low Voltage Power Distribution and Industrial Applications. It is used as the Master of a Factory and Building, and as a Main Circuit Breaker of a ship, and it is possible to attach various accessories according to the purpose.

Rated Current: 63A UP To 6300 Amp.



All Kinds of VCB & ACB Current Transformer / Voltage Transformer : CT-PT Combined Metering Units, CT PT Unit Outdoor Oil Cooled, 11 KV, Draw out Type PT, CT. The Class of accuracy for metering CTs are 0.1, 0.2, 0.5, 0.5s and 1.0 and in case of protection of CTs, it is 5P10, 5P20 and 10P10. Other than class of accuracy, other factors need to be considered for a CT are ratio, rates burden, accuracy limit factor and knee point voltage. PT-CT Combined Metering Units are used for both indoor/outdoor applications. These units are of dry types or oil immersed. **Rated voltage: 12 KV Up To 66 KV.**



CT