HV Maintenance Asset Guide
CIRCUIT BREAKERS

Understanding the condition of your Circuit Breakers is essential to maintaining a safe and reliable electrical network. Designed to protect personnel and equipment from electrical faults, Circuit Breakers play a vital role in safeguarding LV and HV systems. This guide outlines maintenance requirements, recommended servicing intervals and the risks associated with deferred maintenance, helping asset owners maintain reliability, safety and operational performance.

RECOMMENDED MAINTENANCE TIMESCALES

Every 12 Months

- Visual inspection and condition assessment
- Leak detection
- Lubrication of external parts
- Manual operation of mechanisms
- Timing tests

Every 1–5 Years

- Inspection of contacts and moving parts
- Tripping and closing coil resistance checks
- Insulation resistance testing
- Timing tests
- Protection testing
- Contact resistance testing
- Oil changes or sampling of oil-filled breakers
- Internal cleaning
- Pressure testing of vacuum/SF_6 circuit breakers
- Mechanical movement checks
- Manual operation of mechanisms
- Pressure testing

As Required

- Retrofit and upgrade works
- Partial discharge testing
- Protection verification
- Component replacement based on condition

WHY DO CIRCUIT BREAKERS REQUIRE MAINTENANCE?

- Maintain circuit breaker performance and reliability throughout its operational life.
- Identify developing faults early and reduce the risk of equipment damage or network disruption.
- Support asset longevity and ensure protection systems continue to operate as designed.
- Support compliance with the Electricity at Work Regulations 1989 and relevant industry standards.

EAWR 1989 | HSG 230 | BS 61439 | BS 6626

WHAT HAPPENS IF MAINTENANCE IS NEGLECTED?

- Increase the risk of minor issues developing into major failures.
- Reduce protection system effectiveness, increasing the likelihood of equipment damage and network disruption.
- Increase the risk of contact deterioration, overheating, arcing and costly repairs.
- Expose organisations to operational, legal and financial risks through inadequate asset performance and protection.

WHAT MAINTENANCE IS REQUIRED?

- Visual and mechanical inspections
- Protection testing and verification
- Insulation resistance testing
- Contact resistance testing
- Over-potential testing (MV & HV)
- Timing tests
- Cleaning and lubrication

HOW QUARTZELEC CAN HELP

- Deliver one-off asset assessments or planned maintenance programmes.
- Provide specialist LV and HV inspection, testing, maintenance, refurbishment and replacement services.
- Help reduce downtime, extend asset life and maintain network reliability.

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