

BZO 63kA Uprate

Substation equipment life extension solutions

Aging infrastructure, changing workforce demographics, and an increasing emphasis on reliability present new challenges for the modern utility organization. Based on recent transmission planning studies, many utilities are finding that their future substation fault duty requirements may exceed the maximum fault duty of their current high-voltage breakers.

Siemens Energy has designed an uprate solution for BZO6 115 – 138 kV and BZO 242-3 kV high-voltage oil circuit breakers to increase fault duty rating from 40/50kA to 63kA. To perform the uprate, the existing moving and stationary contact assemblies are removed. The aluminum cylinder is replaced with a manganese bronze cylinder. The 8-finger contact assembly is replaced and upgraded to a 10-finger assembly to provide additional contact surface.

Siemens Energy can perform the uprate on a turnkey basis. We provide a field service project engineer, all labor, tools, and test equipment to perform major maintenance and uprate per original equipment manufacturer (OEM) specifications. Our customers receive a new 63kA nameplate and 12-month limited warranty. See a sample work scope description on reverse side.

Customer benefits include:

- Single source supplier with no third parties to coordinate
- Factory trained and certified field engineers who specialize in high-voltage breakers
- Comprehensive project management with access to OEM engineering departments who understand your circuit breaker design and technology
- Turnkey installations can also include extended warranty upon request.

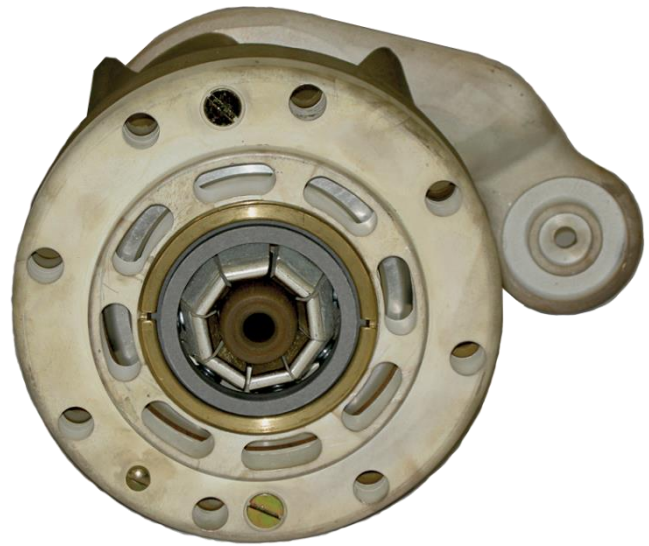


Figure 1 BZO6 40kA Cylinder and Contact Assembly



Figure 2 BZO6 63kA Cylinder and Contact Assembly



Figure 3 Oil circuit breaker

Turnkey maintenance

Siemens Energy will provide a field service project engineer, all labor, all tools, and test equipment to perform major maintenance and uprate per OEM specifications. The work scope includes:

- Placing additional lock and tag on disconnect switch to isolate the circuit breaker
- Performing "as found" tests on the circuit breaker such as timing, conductor, and oil analysis
- Removal and storage of the oil from the circuit breaker onsite
- Removal of the stationary and moving interrupter assemblies for inspection
- Site inspection to ensure the stationary interrupter shells can be reused and moving contact assembly structures are satisfactory for refurbishment and upgrade
- Inspection of the operator assembly and pump/reservoir for leaks
- Changing the oil in reservoir and replacing hydraulic filter as applicable
- Replacing the complete moving and stationary interrupter assemblies excluding resistors

- Checking the auxiliary switch and lightly lubricate bearings and coupling linkage
- Testing the insulating oil before refilling
- Filter press insulating oil before refilling breaker tanks
- Completing the uprate checklist per OEM specifications
- Completing all operational and electrical tests
- Submitting maintenance and uprate reports.

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