

New Concept Vacuum Circuit Breaker



SMART VCB

TYPE “VZ”

TOSHIBA

SUMMARY

1. New Vacuum Arc Control
Technology

2. High Reliability Operating
Mechanism

Vacuum Circuit Breaker

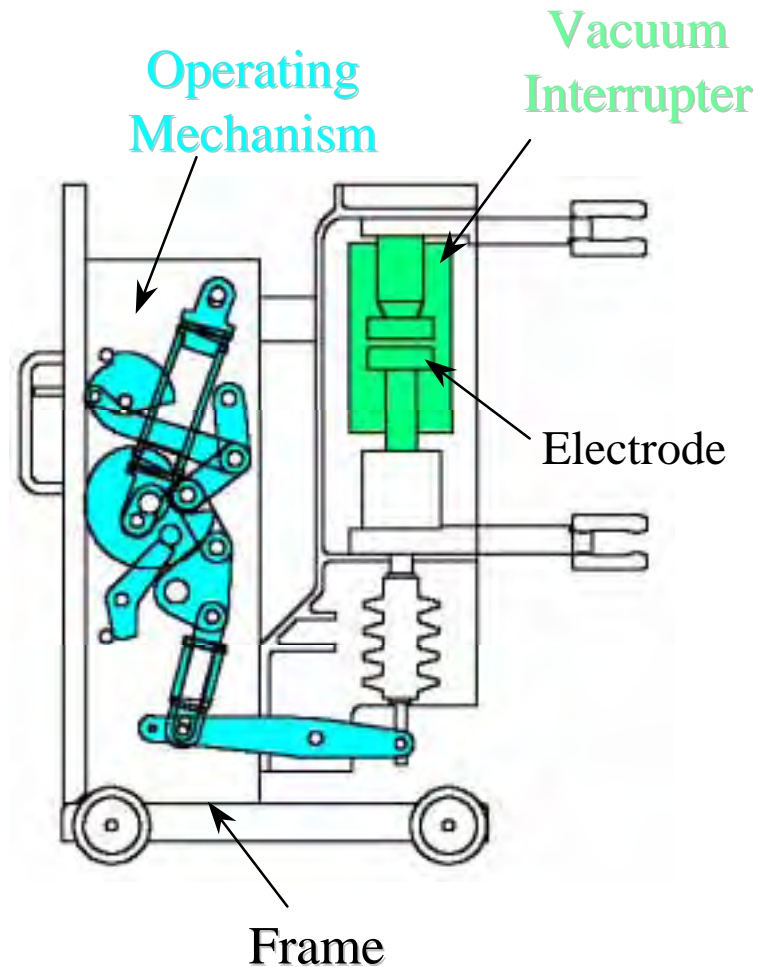


Front View



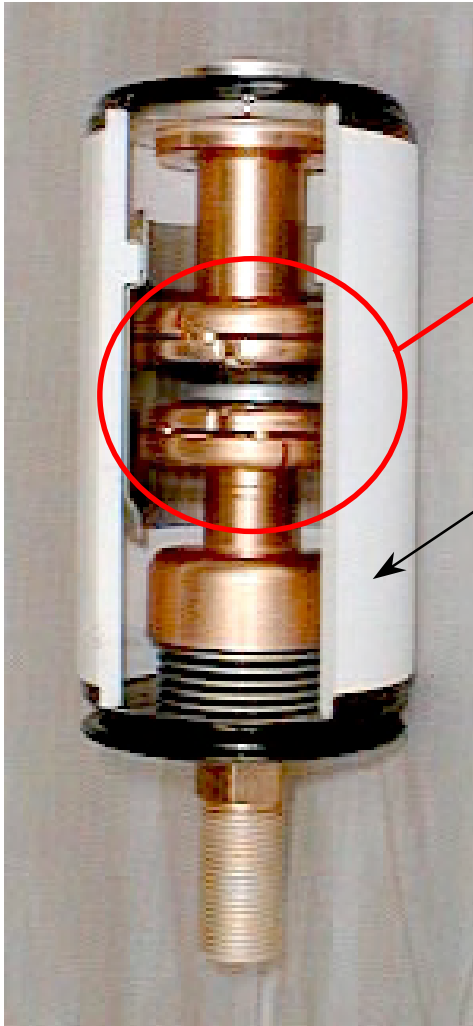
Rear View

12kV-1250A-40kA



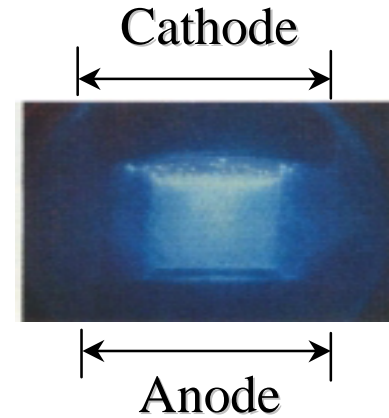
Side Cross Section

Vacuum Interrupter



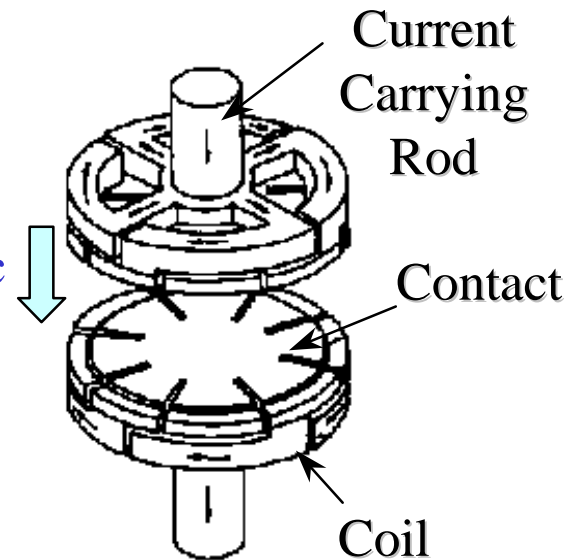
Electrode

Insulation
Enclosure



Vacuum Arc

Axial
Magnetic
Field



Axial Magnetic Field Electrode

Features

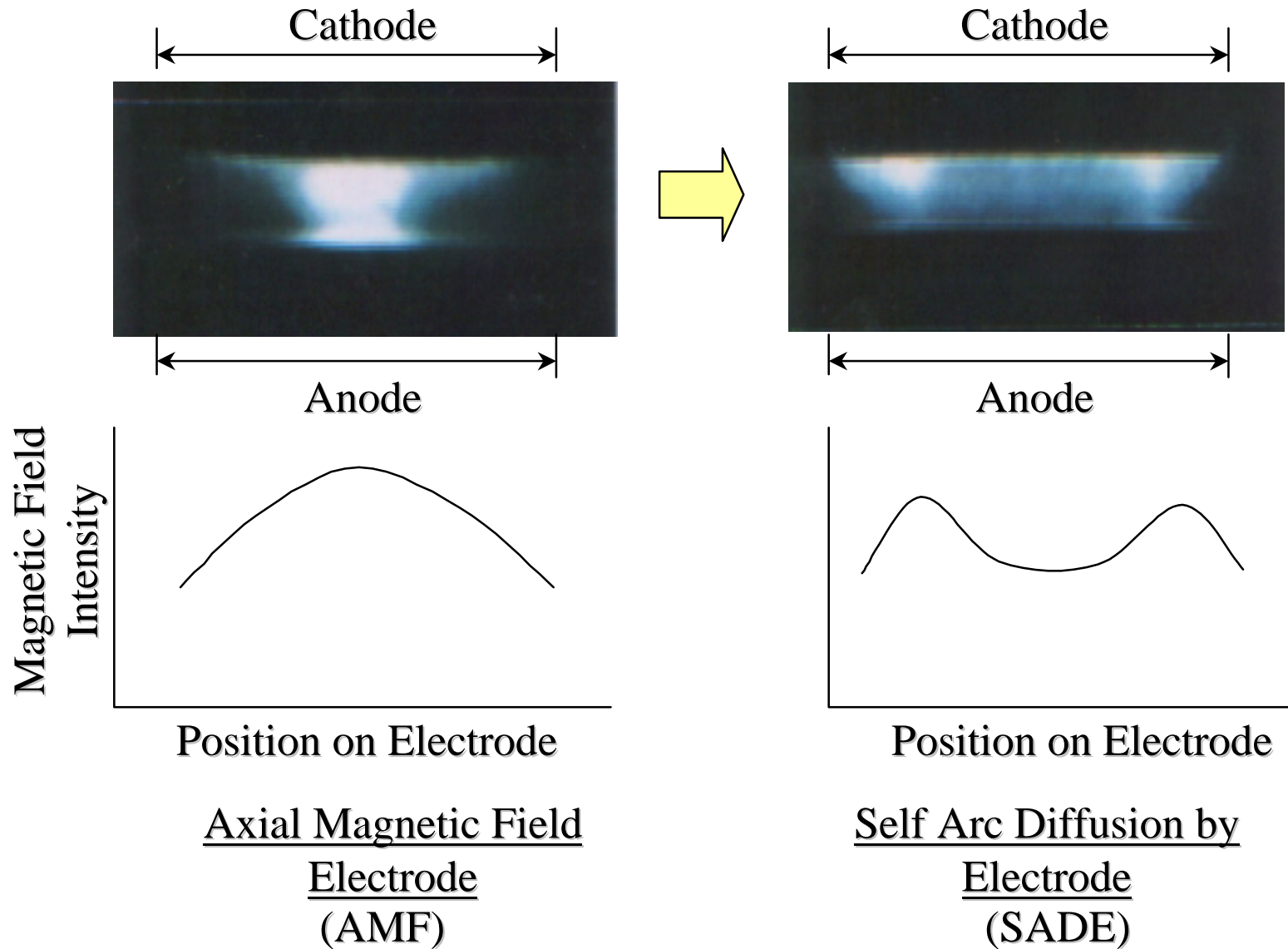
1. High Current Interrupting Capability

- Improvement of Electrode Construction

2. Reduction of Operating Energy

- Development of Contact Material
- Optimizing Closing Cam

New Vacuum Arc Control Technology



Comparison of Electrode Diameter and Vacuum Interrupter

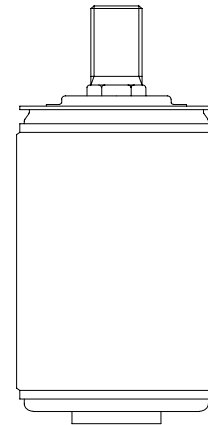
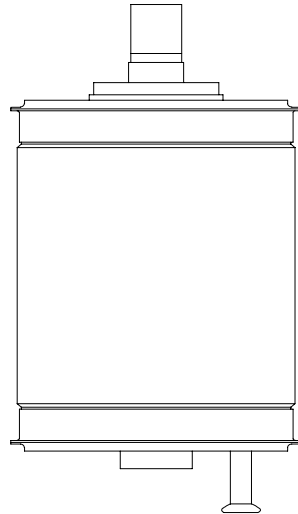
Spiral
1960s



AMF
1980s



SADE
Present



12kV-1250A-25kA

Features

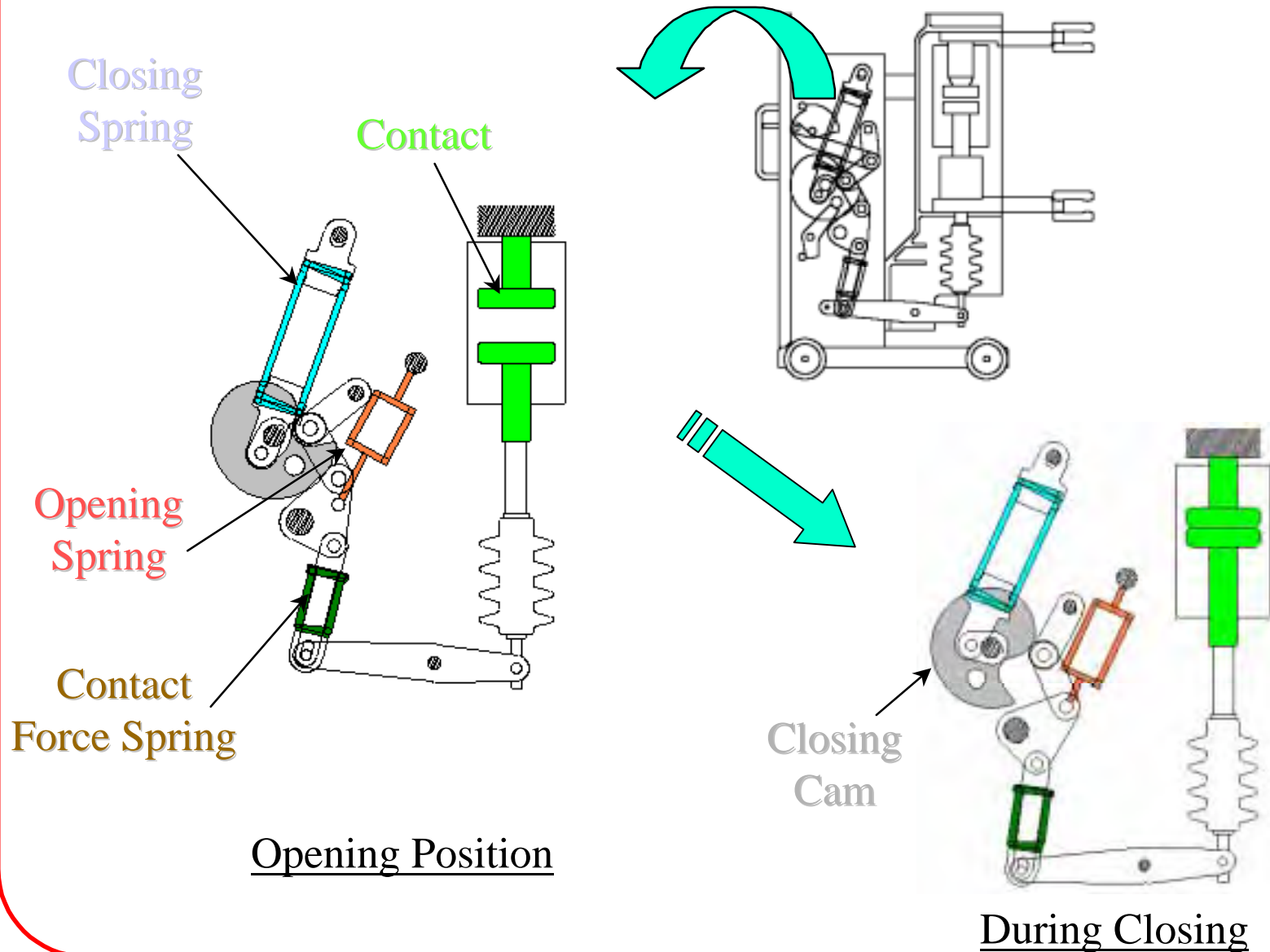
1. High Current Interrupting Capability

- Improvement of Electrode Construction

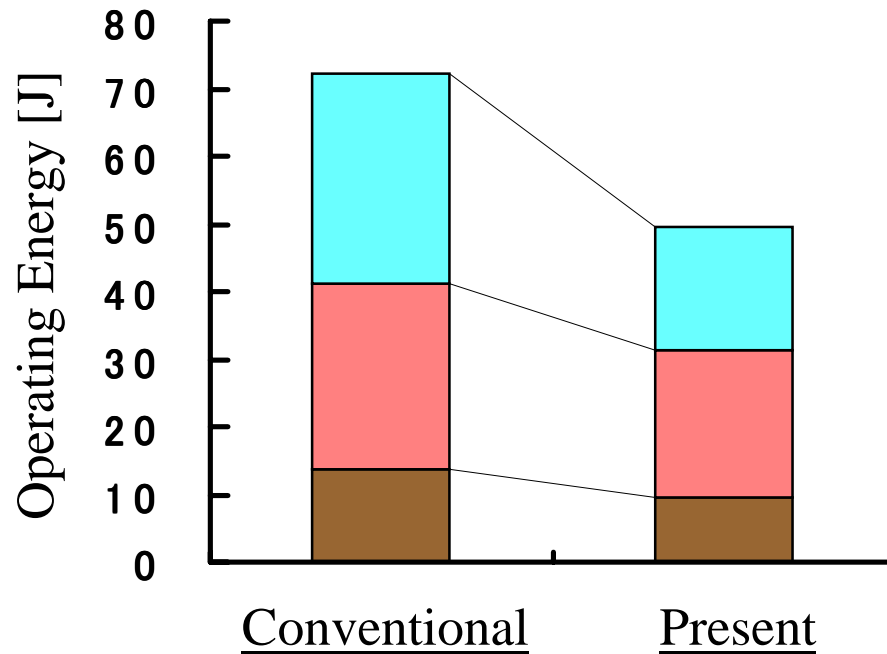
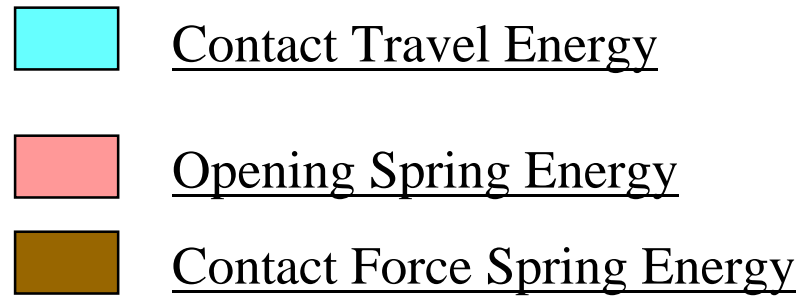
2.Reduction of Operating Energy

- Development of Contact Material
- Optimizing Closing Cam

Operating Mechanism



Comparison of Operating Energy(25kA)



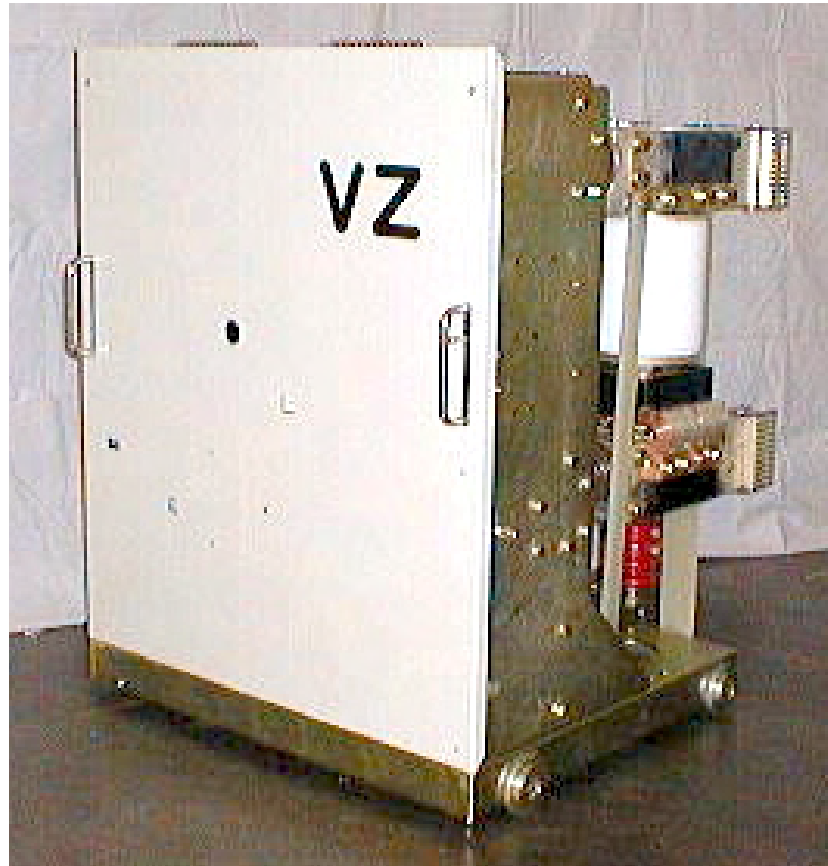
Type Test

- Short-Circuit Current Test
- Mechanical Life Test
- Temperature Rise Test
- Short Time Withstand test
- Out-of-Phase Making and Breaking Test
- Capacitive Current Switching test
- Mechanical Operating Test
- Measurement of The Resistance of Main Circuit Test

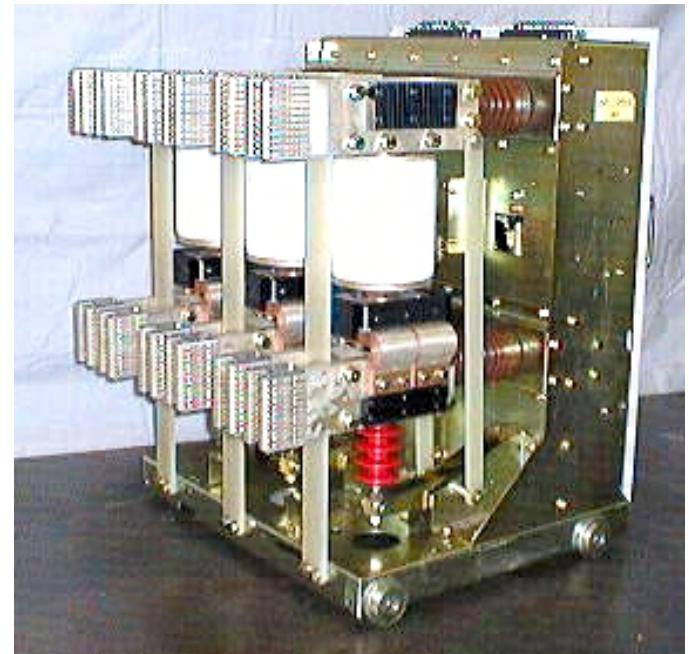
Short-Circuit Test Result
(12kV-40kA)

TOSHIBA

VZ-10R40 (12kV-4000A-40kA)



Front View



Rear View