Grid Solutions
a GE and Alstom joint venture

AIS / GIS PRODUCT SOLUTIONS

FK

Circuit-breaker spring drives

Grid Solutions' spring drives meet the challenges of AIS, GIS and Generator Circuit-Breakers, up to 800 kV.

FK pure-spring drives are the unmatched benchmark of circuit-breaker operating mechanisms

CUSTOMER BENEFITS
- Maximum safety
- Field-proven reliability
- First-class availability
- Low total cost of ownership

For circuit-breakers up to 800 kV and driving energies up to 12 000 J

Grid Solutions, a GE and Alstom joint venture, makes the most of 80 years of experience in design, material selection, development, engineering, manufacturing and servicing of circuit-breaker drives.

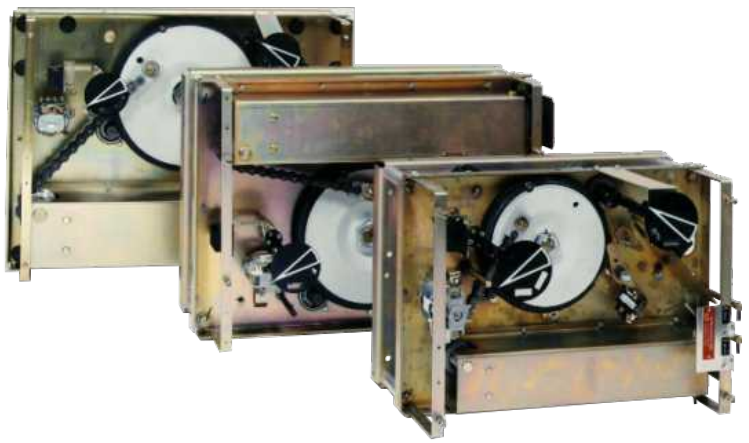
SAFETY FIRST
- Pure-spring design, without pressurized oil

UTMOST EXPERIENCE
- First drives implemented in 1934
- Over 250 000 drives in use

HIGHEST RELIABILITY
- Confirmed by IEC / CIGRE
- Field-proven under all operating conditions

LONGEST LIFE DURATION
- Negligible maintenance costs
- Life-cycle up to 60 years

OUTSTANDING FEATURES
- Energy stability over decades
- Energy independent of temperature, from -50 to +50 °C
- Minimum time scattering



APPLICATIONS

550 kV live-tank CB

Generator CB

170 kV live-tank CB

550 kV dead-tank CB

170 kV live-tank CB with single-pole operation

245 kV GIS CB

420 kV GIS single-break CB

145 kV hybrid switchgear

145 kV GIS CB

550 kV GIS CB

CIGRE PROMOTES SPRING MECHANISMS

CIGRE, general report for high-voltage equipment, table IX, provides reliability data for different types of operating mechanism for SF_6 high-voltage and generator circuit-breakers.
Such data are summarised in the here-below table:

	Major failure rate per 100 CB.years	
Type of operating mechanism	CIGRE	Grid Solutions
Hydraulic / Hydro-mechanical spring	0.19	/
Pneumatic	0.13	/
Spring	0.11	0.04

Grid Solutions' spring mechanisms are approximately **five times more reliable** than hydraulic and hydro-mechanical spring mechanisms and three times more reliable than spring drives from others.

QUALITY

Eight decades of experience are continuously supporting the implementation of total quality throughout the entire spring drive process, from engineering to operation, then after-sales.

Spring mechanism routine test station

1934 spring mechanism

For more information please contact
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