

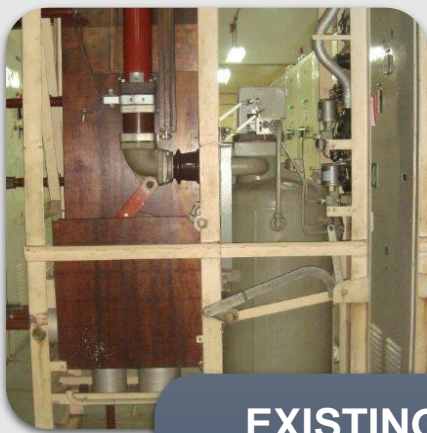


HHV12 PRIME VACUUM CIRCUIT BREAKER (RETROFIT)

RETROFIT VCBs FOR REPLACEMENT
OF EXISTING SF6 BREAKER, OIL
BREAKER & AIR BREAKER

We recommend to replace the existing SF6 breaker, Oil breaker & Air breaker with new Vacuum Circuit Breakers in order to ensure the safe and reliable operation of your switchgear.

OUR SOLUTION FOR AIR BLAST CIRCUIT BREAKER



EXISTING ABCB

Aged circuit breakers may cause unexpected accidents and power outages

TYPE : DB 10M 600
ABCB to be replaced

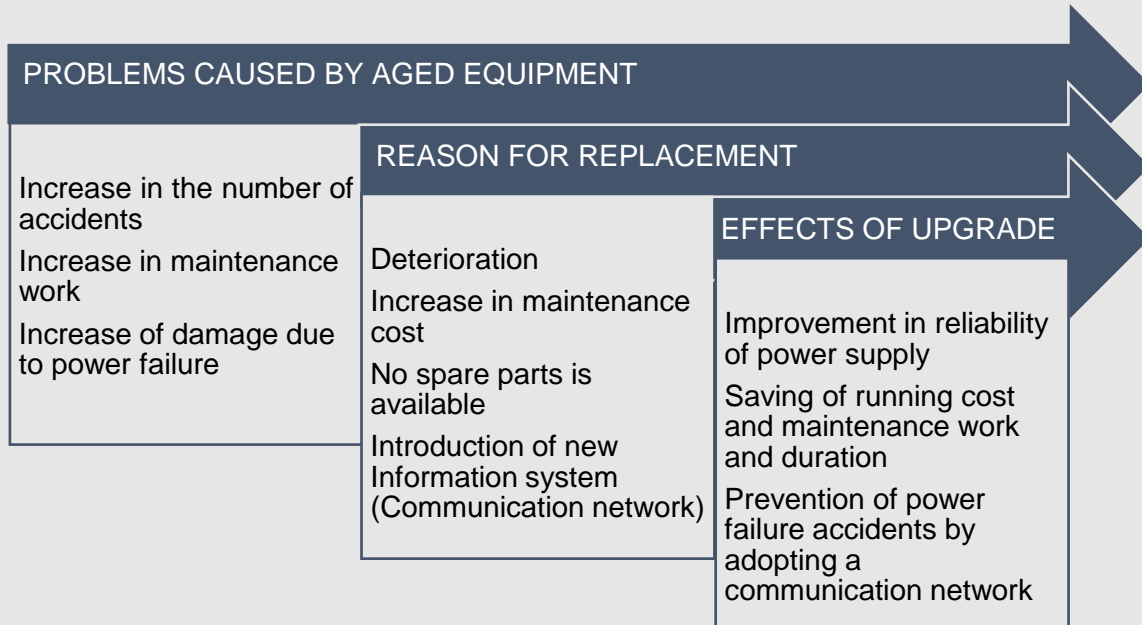
RETROFIT VCB

Retrofit VCBs will improve reliability and increase economical efficiency

TYPE : HHV 12 PRIME
Retrofit VCBs to be used

GENERAL BACKGROUND OF REPLACEMENT

Use of aged equipment can increase the incidence of accidents, and jeopardize the reliable operation failure of the system



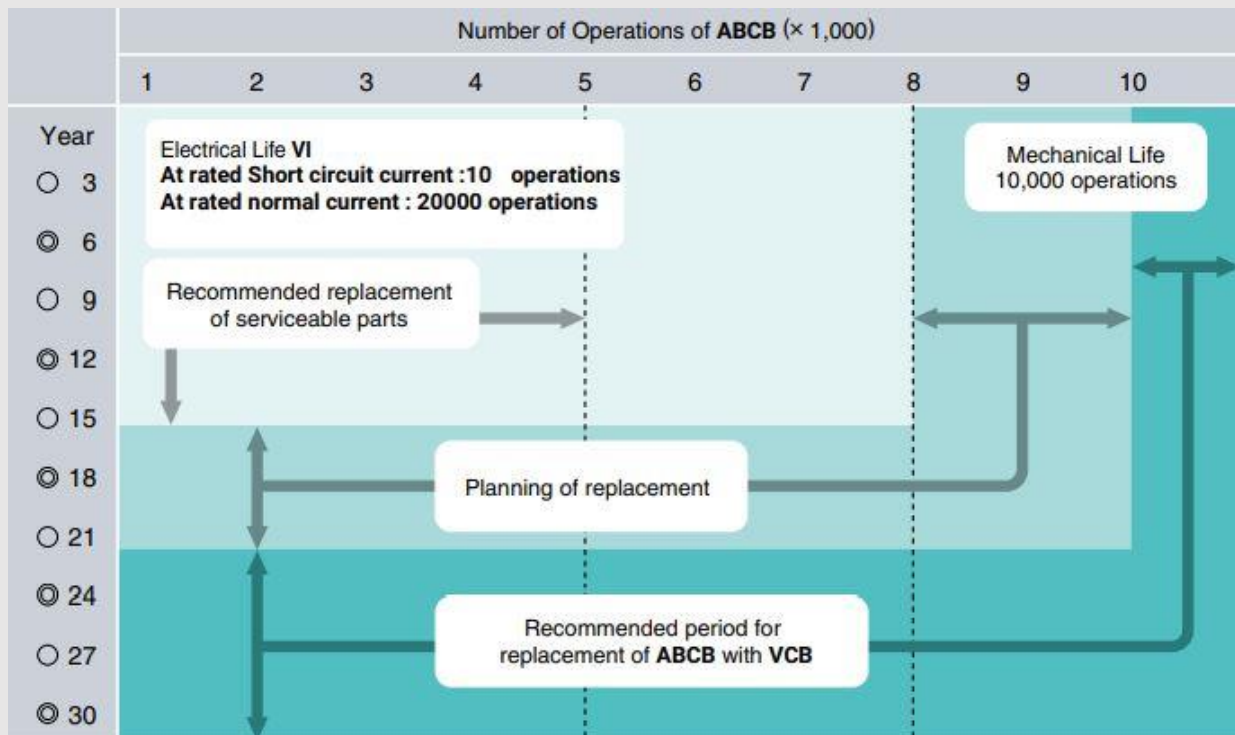
WHY RETROFIT VCB?

↓ BEST SOLUTION

REPLACEMENT OPTION ITEM	RETROFIT VCB	REPLACEMENT OF PANEL
INITIAL COST	☺ ☺ ☺	☺ (Including construction)
OUTAGE TIME	9 Hour / Panel *See note	2 weeks / Arrangement
MAINTENANCE AFTER REPLACEMENT	☺ ☺ ☺	☺ ☺ ☺
RELIABILITY AFTER REPLACEMENT	☺ ☺ ☺	☺ ☺ ☺

MAINTENANCE CHART FOR ABCB

We recommend to replace the aged ABCB with compatible VCBs to extend the switchgear's life and to ensure the safe operation according to the table below



RATINGS

The MV Retrofit VCB complies with the international standard

IEC 62271-100

RETROFIT VCB TYPE HV12 PRIME	HHV12 PRIME
Closing operation mechanism	Motorised stored energy spring mechanism
Rated voltage (kV)	7.2/12
Rated current (A)	800/2500
Rated frequency (Hz)	50/60
Rated short-circuit breaking current (kA)	40
Breaking capacity (MVA)	250
Rated short-circuit making current (kA)	100
Rated short-time withstand current (kA)	40
Rated opening time (Milli Sec)	Less than 3 cycles
Weight kg	200
Power frequency withstand voltage (kV)	20/28
Lightning impulse withstand voltage (kV)	60/75
Rated operating sequence	0-3 min,-CO-3 min,-CO

FEATURES OF RETROFIT VCB

HIGH RELIABILITY

- The highly reliable M37 mechanism is incorporated in the retrofit VCB. This operating mechanism is used in S&S latest VCBs

SAVING MAINTENANCE TIME

- Short maintenance time: Less moving parts yields a shorter working time
- 10 years maintenance free M37 mechanism

FULL COMPATIBILITY

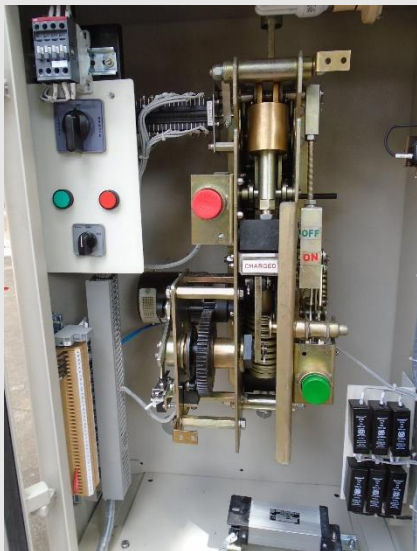
- Small wiring modification must be performed for cases of solenoid-operated ABCB
- In the case of spring-operating ABCB, retrofitting work is performed more readily

HIGH RELIABILITY & SAVING MAINTENANCE TIME



RETROFIT VCB

- Improved Vi assembly with high grade Epoxy housing
- Independent pole assembly
- Superior anti-tracking characteristics & mechanical strength
- Reduction in number of parts (50% of that of previous model)
- Increased life - Electrical life is increased compare with ABCB



M37 OPERATING MECHANISM

- 20% Reduction in control, Power consumption when compared to previous model
- Greaseless - Special low-friction Nip, Surface treatment of gears.
- High performance grease - Special "Long Life" grease for other surfaces maintenance free for 10 years due to high quality parts and grease

READY INTERCHANGEABILITY WITH THE ABCB



EXISTING ABCB

TYPE – DBH 10M 600

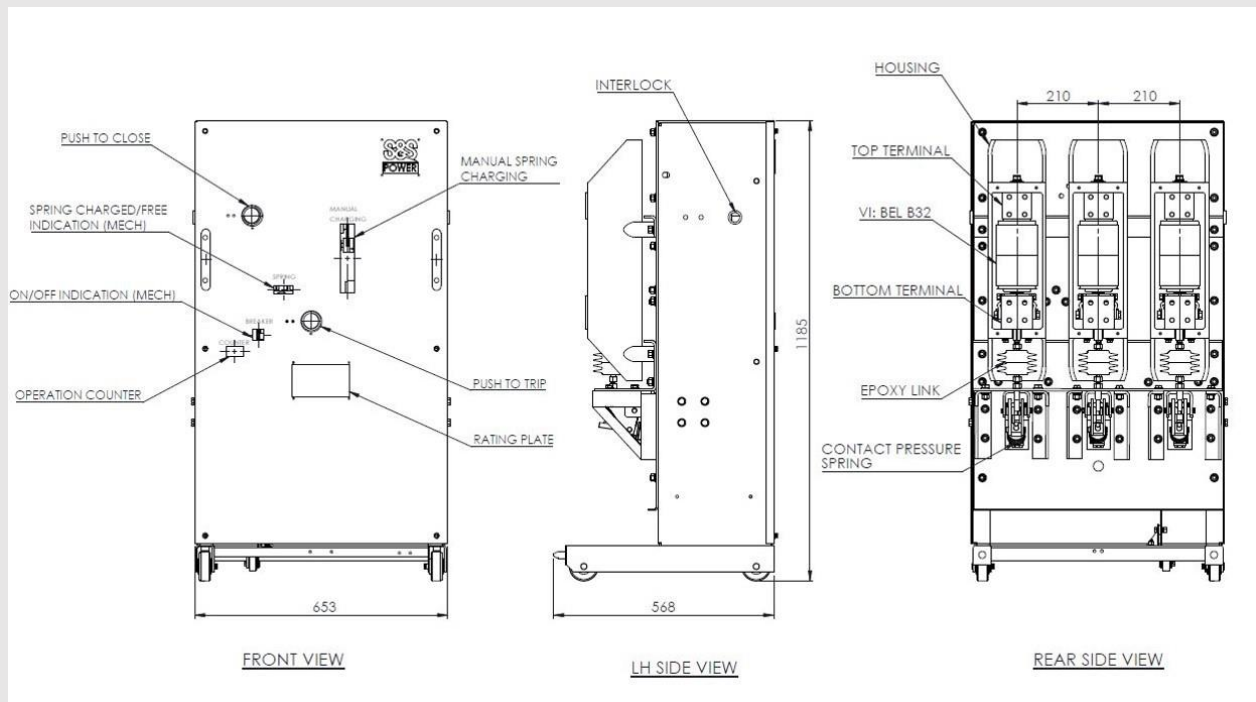
RETROFIT VCB

TYPE – HHV12 PRIME

OPERATING & CONTROL CURRENT OF CB

Operating & Control Current / Closing & tripping time		Retrofit VCB
Motor charging	Current I ₂ (A)	1.4
	Time (s)	12
Closing	Current (A)	2.2
	Time (m/s)	1.4
Tripping	Current (A)	2
	Time (m/s)	0.9

OUTLINE & DIMENSIONS



APPLICABLE STANDARDS

Special Environment and Application

❖ Operation environment

MV type vacuum circuit breaker conforms to IEC 62271-100 (high voltage alternating current circuit breaker) and designed/manufactured as an indoor unit. Therefore, this circuit breaker should be operated under normal environments specified in right table. Daily and periodical check and maintenance should be carried out enough according to VCB's instruction manuals. If it is necessary to operate this circuit breaker under special condition not listed in right table, consult the manufacture

Instruction for installation

If it is necessary to operate this circuit breaker in a dusty place, a place with corrosive gas, at a location exposed to abnormal vibration or impact, or in an outdoor panel environment, etc., special care must be paid to deal with items such as dust, corrosion, vibration, impact, water drops, condensation, and etc.

Normal operation condition

Altitude: 1,000m or less Ambient temp: -5°C ~ 40°C (The average temperature for 24 hours must not exceed 35°C .)
Relative humidity: 45%~85% (Relative humidity; there must be no dew

condensation.) Degree of pollution:
There must be no pollution.

As a guideline, the equivalent salt deposit density should be less than 0.01 mg/cm²) Poisonous gas etc.:
There must be no corrosive gas.
Powder dust: There must be no excessive powder dust. As a guideline, the powder dust should be less than 2 mg/m³.

Application of surge protection device

For the actual applications of vacuum circuit breaker, the surge protection standards for the load circuit so used, and actual application will be shown as below table. Use the as below table of standard bellows as reference when selecting models

Note

To directly switch the semiconductor rectifier unit (for example, electric power thyristor rectifier unit) in the secondary side of a transformer, use the transformer with contact-protective plate. Provide a general-purpose arrester in the primary side and the surge protective device such as a filter capacitor in the secondary side. 2. Avoid interrupting the no-load excitation inrush current of moulded transformer.

To use any moulded transformer made by other manufactures, consult the manufacturer. However, low-surge VCBs require no general-purpose arrester. 3. For motors in applications where inching is the predominant switching duty (cranes, conveyor, etc.), use CR suppressor. 4. S&S moulded transformer and oil transformer are for 6kV with the impulse withstand voltage 60kV and for 3kV with the impulse withstand voltage 45kV. 5. in case of

Kondorfer starting system, carry out the switching operation of the neutral point of the auto-transformer after the starting current become the stationary.

ADDRESSES



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