

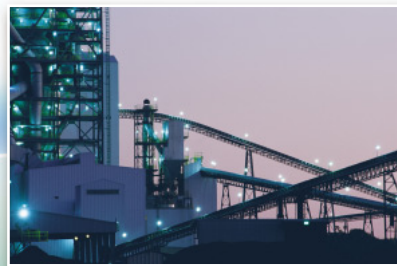
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ELECTRIC**

Changes for the Better

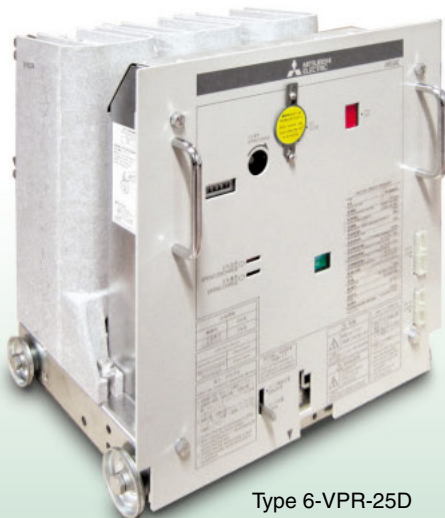
for a greener tomorrow



**TYPE VPR SERIES
VACUUM CIRCUIT BREAKERS(3.6~24kV)**



Safety & Quality



Type 6-VPR-25D

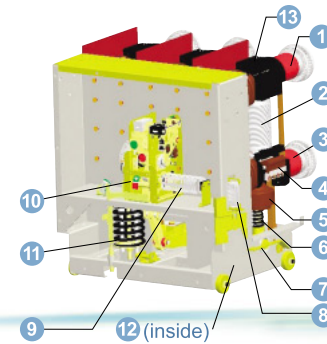
Introducing the VPR Series rated at 3.6/7.2kV 20/25kA(600A~1250A)



Type 3/6-VPR-20D/25D 630A, 1250A VCB

- Above-mentioned VCBs utilizes a new, low-maintenance and more simple and compact operating mechanism (BH-1H operating mechanism).
- VPR-D series conforms to the latest JEC-2300 and IEC 62271-100.
- No use of the six specified hazardous substances restricted by the RoHS Directive(mercury,cadmium,lead, hexavalent chromium,PBB and PBDE).

rated at 12kV 40/50kA 4000A



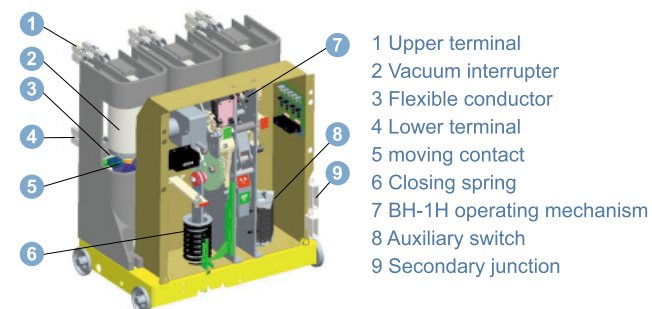
Construction of type 10-VPR-50C(D) 4000A VCB

- 1 Upper terminal
- 2 Vacuum Interrupter
- 3 Lower terminal
- 4 Flexible conductor
- 5 Insulated rod
- 6 Contact pressure spring
- 7 Cross-bar
- 8 Secondary junction
- 9 Auxiliary switch
- 10 BH-2H operating mechanism
- 11 Closing spring
- 12 Opening spring
- 13 Heat sink

- 10-VPR-50C(D) VCB is installed with the BH-2H operating mechanism for a larger capacity breaker.
- 10-VPR-50C(D) VCB designed to the latest JEC-2300, IEC 62271-100, and Chinese standards.
- 4,000 A rated current without cooling fans.

Vacuum Circuit Breaker

The frame is made of an anti-tracking bulk mold compound that has been specially developed for breakers. The moving contacts are mechanically connected to the lower terminal by flexible conductors to prevent rubbing damage. Low surge type can be applied to 7.2kV-25kA 1250A. Advanced VI realizes wide use for rating.

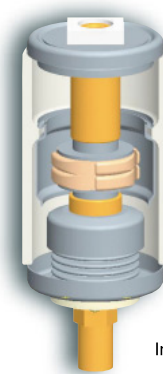


Construction of type 3/6-VPR-20D/25D 630A, 1250A VCB

- 1 Upper terminal
- 2 Vacuum interrupter
- 3 Flexible conductor
- 4 Lower terminal
- 5 moving contact
- 6 Closing spring
- 7 BH-1H operating mechanism
- 8 Auxiliary switch
- 9 Secondary junction

Vacuum Interrupter

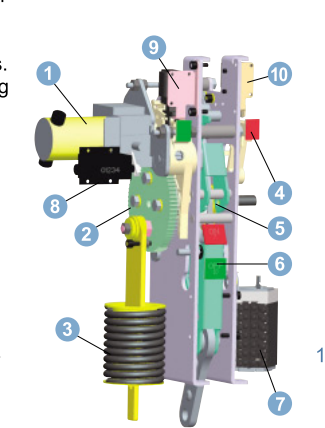
Mitsubishi Electric has more than 40 years of experience manufacturing VIs and is currently producing approximately 140,000 units per year. Mitsubishi's VI design integrates a vast amount of test data based on thousands of studies and electrical field analysis.



Internal structure of Standard VIs

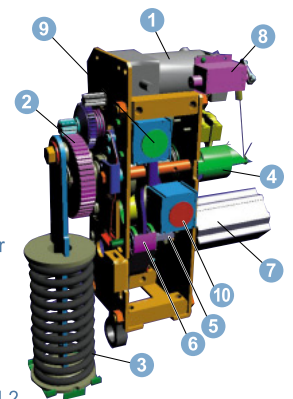
Operating Mechanism

Mitsubishi's BH-1H operating mechanism design is based on simple operating principles with a compact construction and is suitable for a wide range of ratings. The mechanism is used for auto-reclosing and multi-shot applications without any additional parts. The BH-1H uses a universal charging motor (AC / DC). Special surface treatments are used in the moving parts that extend the maintenance interval of the unit. The use of long-life grease extends the mechanism inspection intervals from three to six years and reduces maintenance costs. Mitsubishi's BH-1H unit is engineered for safety. The manual charging device for the closing spring prevents impact to the operator even when the electric motor is energized or if the breaker is operated during manual charging.



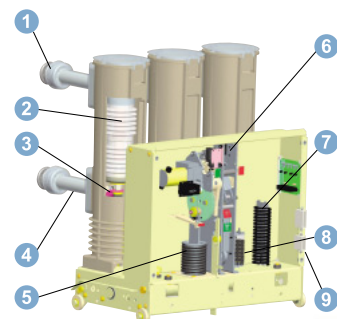
BH-1H operating mechanism (For type 3/6-VPR-20D/25D 630A, 1250A VCB and 20-VPR-16D/25D 630A, 1250A)

- 1 Closing spring charging motor
 - 2 Closing spring charging mechanism
 - 3 Closing spring
 - 4 Closing spring charged indicator
 - 5 Operating mechanism
 - 6 ON-OFF indicator
 - 7 Auxiliary switch
 - 8 Mechanically operation counter
 - 9 Manual closing button (Closing control coil)
 - 10 Manual tripping button (Tripping control coil)
- Opening spring (In case of the BH-1H and BH-2, it's installed in crossbar side.)



BH-2 operating mechanism (Reference: For existing VPR-C series and type 20-VPR-25D 2500A VCB)

rated at 24kV 16/25kA

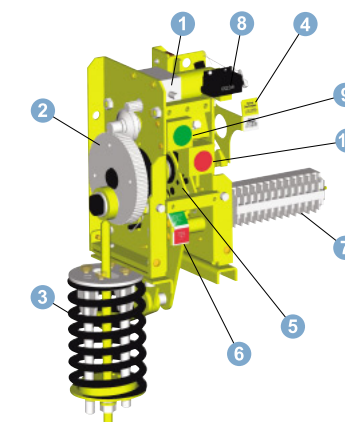


Construction of type 20-VPR-16D/25D 630A, 1250A VCB

- 1 Upper terminal
- 2 Vacuum interrupter
- 3 Flexible conductor
- 4 Lower terminal
- 5 Closing spring
- 6 BH-1H operating mechanism
- 7 Opening spring
- 8 Auxiliary switch
- 9 Secondary junction

- Above-mentioned VCBs utilizes a new, low-maintenance and more simple and compact operating mechanism (BH-1H operating mechanism).
- VPR-D series conforms to the latest JEC-2300 and IEC 62271-100.
- Also now available with a rated current of 2,500A.
- Each Vacuum Interrupter(VI) is insulated by a molded frame That allows minimal separation between pole units.

The BH-2H operating mechanism's design incorporating simple operating principles and is suitable for a wide range of ratings. The mechanism is used for auto-reclosing and multi-shot applications without any additional parts. The BH-2H uses a universal charging motor (AC / DC). Gears are treated with a greaseless, low-friction coating. A special long-life grease is used on the other surfaces to extend the maintenance interval. The Mitsubishi's BH-2H unit is engineered for safety. The manual charging device for the closing spring prevents impact to the operator even when the electric motor is energized or if the breaker is operated during manual charging.



BH-2H operating mechanism (For type 10-VPR-50C(D) 4000A VCB)

- 1 Closing spring charging motor
- 2 Closing spring charging mechanism
- 3 Closing spring
- 4 Closing spring charged indicator
- 5 Operating mechanism
- 6 ON-OFF indicator
- 7 Auxiliary switch
- 8 Mechanically operation counter
- 9 Manual closing button (Closing control coil)
- 10 Manual tripping button (Tripping control coil)

EQUIPMENT

Standard equipment	Additional standard equipment on withdrawable breaker
<ul style="list-style-type: none"> ■ Trip and close control circuit including auxiliary switches, solenoids and anti-pumping relay ■ Electric charging motor and control circuit ■ Manual push buttons for trip and close ■ ON/OFF indicator ■ Indicator for charging condition of closing spring ■ Operation counter ■ Auxiliary contacts for customer----5a5b (10-VPR-40C(D) 4000A, when secondary connector code is B----6a6b) (10-VPR-50C(D) 4000A, when secondary connector code is B----10a10b) 	<ul style="list-style-type: none"> ■ Mechanical and electrical interlock device for withdrawing ■ Shutter control devices ■ Breaker wheels for withdrawing

Options

- Mechanical interlock device for control circuit plugs for withdrawable breakers
- Auxiliary contact for spring charged indication - - 1C (max 2C)

FEATURES

New Technology Improves Maintenance

The design of the BH-1H incorporates low maintenance technology such as a newly developed low friction greaseless surface treatment and long-life lubrication (lubrication cycle of six years).

Safety first

Mitsubishi's design features multiple mechanical and electric interlock systems that ensure safe operation and maintenance.

Our proven supply record proves our top quality

More than 500,000 Mitsubishi Vacuum Circuit Breakers have been produced since 1969.

Design for worldwide applications

The compact design of the VCB and optional mounting frame with shutter makes the unit suitable for a wide range of replacements for existing or obsolete metal-clad and switchboard units.

Increased Dielectric Performance

The 10-VPR-40C(D)/50C(D) 4000A VCB exceeds IEC standard applicable requirements including longer creepage and longer insulation distance that ensures breaker operation even under the most severe environmental conditions.

FRAME SIZE

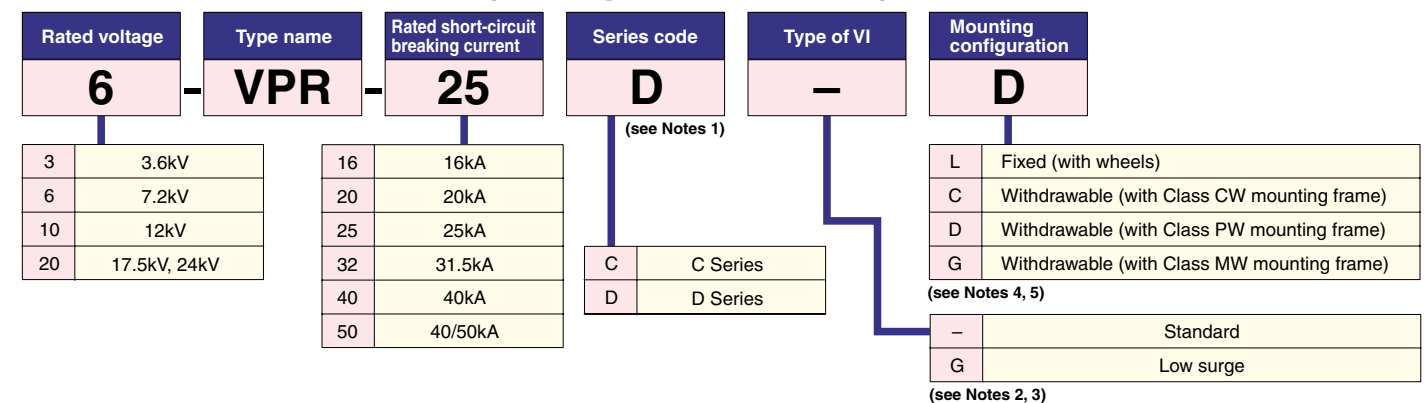
3/6/10/20-VPR series

3.6kV 600/630A to 24kV 2000A circuit breakers are either L, M, H or G size. 12kV 4000A and 24kV 2500A circuit breakers are R size.

Rated voltage / Rated short-circuit breaking current	Rated current	600/630A	1200/1250A	1600A	2000A	2500A	3000/3150A	4000A
		3.6kV	20kA	L size				
	25kA							
	31.5kA							
	40kA							
7.2kV	20kA	L size		M size				
	25kA							
	31.5kA							
	40kA							
12kV	25kA							
	31.5kA							
	40kA, 40/50kA							
24kV	16kA	H size		G size		R size		
	25kA							

SELECTION CRITERIA

BASIC DESIGNATION (Example:6-VPR-25D)



- Notes: 1. For 20-VPR and 3/6-VPR, refer to table 1 for details.
 2. Different VIs are installed on standard type and low surge type VCBs.
 3. Low surge types are only available for 600/630/1200/1250A of 3/6-VPR VCBs.
 4. Mounting configuration "L" is available for 600/630/1200/1250 and 2000A VCBs except 20-VPR.
 5. For 20-VPR, only mounting configurations "C" and "D" are available.

SELECTION CRITERIA

Table 1 IEC, JEC standard (see Note 1)

Rated voltage	Rated short-circuit breaking current	16kA	20kA	25kA	31.5kA	40kA	40/50kA
3.6kV		3-VPR-20D (For 600-1250A) 3-VPR-20C (For 1600, 2000A)		3-VPR-25D (For 600-1250A) 3-VPR-25C (For 1600, 2000A)	3-VPR-32C	3-VPR-40C	
		6-VPR-20D (For 600-1250A) 6-VPR-20C (For 1600, 2000A)		6-VPR-25D (For 600-1250A) 6-VPR-25C (For 1600, 2000A)	6-VPR-32C	6-VPR-40C	
12kV		10-VPR-25C 10-VPR-25C(F) (For 600-1250A)			10-VPR-32C	10-VPR-40C 10-VPR-40C(D) (For 4000A)	10-VPR-50C(D)
17.5kV		20-VPR-16D	20-VPR-25D (For 600-1250A and 2500A) 20-VPR-25C (For 2000A)				
24kV							

Note: 1. IEC : International standards, IEC 60056 (1987, Insulation level series I) and IEC 62271-100 (2003 · 2008, Insulation level series I)
 JEC : Japanese standard, JEC-2300 (1998)

Remarks: 1. Consult your dealer for information on the applicability of other foreign standards, including U.S. standard ANSI and Chinese standards GB, DL.
 2. Refer to the catalog (A-AL1-5-C1283-B) for VCBs of rated voltage 36kV.

Table 2 Ratings and Performance (JEC/IEC standards)

Type name	Standard	3-VPR-20D (Note 2)	3-VPR-25D (Note 2)	3-VPR-32C	3-VPR-40C	6-VPR-20D (Note 2)	6-VPR-25D (Note 2)	6-VPR-32C	6-VPR-40C	10-VPR-25C(F) (Note 4)	10-VPR-32C	10-VPR-40C (Note 5, 11)	10-VPR-50C(D) (Note 11)	20-VPR-16D	20-VPR-25D						
		3-VPR-20C (Note 3)	3-VPR-25C (Note 3)			6-VPR-20C (Note 3)	6-VPR-25C (Note 3)			10-VPR-25C					20-VPR-25C						
	Low surge (Note 1)	3-VPR-20DG	3-VPR-25DG	3-VPR-32CG	3-VPR-40CG	6-VPR-20DG	6-VPR-25DG	6-VPR-32CG	6-VPR-40CG	-	-	-	-	-	-						
Closing operating mechanism		Motor-spring charged mechanism																			
Standards (Note 6)		JEC-2300/IEC 60056 (Note 12)							JEC-2300/IEC 62271-100	JEC-2300/IEC 60056		JEC-2300/IEC 62271-100 (Note 10)									
Rated voltage (kV)		3.6				7.2				12				24							
Rated normal current (A)		600 / 630 1200 / 1250 1600 2000	600 / 630 1200 / 1250 1600 2000	600 / 630 1200 / 1250 1600 2000 2500 3000 / 3150	600 / 630 1200 / 1250 1600 2000 2500 3000 / 3150	600 / 630 1200 / 1250 1600 2000	600 / 630 1200 / 1250 1600 2000	600 / 630 1200 / 1250 1600 2000 2500 3000 / 3150	600 / 630 1200 / 1250 1600 2000 2500 3000 / 3150	600 / 630 1200 / 1250 1600 2000 2500 3000 / 3150	600 / 630 1200 / 1250 1600 2000 2500 3000 / 3150	600 / 630 1200 / 1250 1600 2000 2500 3000 / 3150	600 / 630 1200 / 1250 1600 2000 2500 3000 / 3150	4000	600 / 630 1200 / 1250	600 / 630 1200 / 1250 2500 2000					
Rated frequency (Hz)		50 / 60																			
Rated short-circuit breaking current (kA)		20	25	31.5	40	20	25	31.5	40	25	31.5	40	40	40/50	16	25					
Rated making current (kA)		50	63	80	100	50	63	80	100	63	80	100	100	104/130	40	63					
Rated short-time withstand current (kA, 3s)		20	25	31.5	40	20	25	31.5	40	25	31.5	40	40	40/50	16	25					
Rated opening time (s)		0.03																			
Rated breaking time (cycles)		3											3	3							
Rated withstand voltage (kV)	Power frequency (JEC / IEC)	16 / 10				22 / 20				28 / 28				28 / 28 (42)		50 / 50					
	Lightning impulse (JEC / IEC)	45 / 40				60 / 60				75 / 75				75 / 75		125 / 125					
Rated operating sequence		O-0.3s-CO-1min-CO (R) O-1min-CO-3min-CO (A) CO-15s-CO (B)																			
No-load closing time (s)		0.1																			
Closing operation and control current (A) (Note 7)	Charging motor Current (Time)	0.8 (8s) ... 600~1250A 1.2 (6s) ... 1600, 2000A		1.2 (6s)		0.8 (8s) ... 600~1250A 1.2 (6s) ... 1600, 2000A		1.2 (6s)		1.2 (6s)		6 (6s)		1.5 (10s)	1 (6s)	1 (6s) ... 600~1250A 1.2 (6s) ... 2000A 1 (5s) ... 2500A					
	Control current (Closing coil)	3.5 ... 600~1250A 4 ... 1600, 2000A		4		3.5 ... 600~1250A 4 ... 1600, 2000A		4		4		5		3.2	4	3 ... 600~1250A 3.4 ... 2000A 4.5 ... 2500A					
Tripping device		Shunt tripping coil (STC)																			
Opening control current (A) (STC) (Note 7)		3.5 ... 600~1250A 4 ... 1600, 2000A		4		3.5 ... 600~1250A 4 ... 1600, 2000A		4		4		5		3.2	3.4	3.4 ... 600~1250A 3.4 ... 2000A 4 ... 2500A					
External aux. contacts (Note 8)		5a5b											6a6b	10a10b	5a5b						
Operating counter (Mechanically)		Standard equipment																			
Mounting configuration		Fixed (L) Withdrawable (C, D, G)		Fixed (L) 600~2000A Withdrawable (C, D, G) ... 600~3150A		Fixed (L) Withdrawable (C, D, G)		Fixed (L) 600~2000A Withdrawable (C, D, G) ... 600~3150A		Fixed (L) 600~2000A Withdrawable (C, D, G) ... 600~3150A		Fixed (L) 600~2000A Withdrawable (C, D, G) ... 600~3150A		Withdrawable (C, D, G)		Withdrawable (C, D)					
Mass (kg) (Note 9)		Standard: 51 (600/630A) 55 (1200/1250A) 140 (1600, 2000A) Low surge: 55 (600/630A) 59 (1200/1250A)		120 (600~1250A) 140 (1600, 2000A) 190 (2500~3150A)		Standard: 51 (600/630A) 55 (1200/1250A) 140 (1600, 2000A) Low surge: 55 (600/630A) 59 (1200/1250A)		120 (600~1250A) 140 (1600, 2000A) 190 (2500~3150A)		120 (600~1250A) 140 (1600, 2000A) 190 (2500~3150A)		120 (600~1250A) 140 (1600, 2000A) 190 (2500~3150A)		510		440		94 (600/630A) 107 (1200/1250A)		95 (600/630A) 110 (1200/1250A) 135 (2000A) 330 (2500A)	

Notes: 1. Different VIs are installed on standard type and low surge type VCBs. (Low surge types are only available for 600/630/1200/1250A of 3/6-VPR VCBs.)
2. 3/6-VPR-20D/25D is applied to rated normal current of 600/630A and 1200/1250A.
3. 3/6-VPR-20C/25C is applied to rated normal current of 1600A and 2000A.
4. For 600/630A and 1200/1250A 10-VPR-25C, "(F)" is added to the end of the type name.
5. For 4000A 10-VPR-40C, "(D)" is added to the end of the type name.
6. IEC : International standards, IEC 60056 (1987, Insulation level series I) and IEC 62271-100 (2003, Insulation level series I)
JEC : Japanese standard, JEC-2300 (1998)
7. Closing operation, control and opening control currents indicated are based on DC100V.
8. Additional auxiliary contacts cannot be added.
9. The mass of the circuit breaker only is indicated.
10. The application standard of 20-VPR-25C(2000A) is JEC-2300/IEC 60056.
11. The number of auxiliary contacts shows the maximum when the secondary connector code is B.
12. The application standard of 3/6-VPR-20D/25D and 3/6-VPR-20DG/25DG is IEC62271-100 (2008).

Remarks: 1. Consult your dealer for information on the applicability of other foreign standards, including U.S. standard ANSI and Chinese standards GB, DL.
2. Refer to the brochure (A-AL1-5-C1283-B) for VCBs of the rated short-circuit breaking current 50kA or the rated voltage 36kV.

OUTLINES AND DIMENSIONS (Dimension in mm)

Frame size L

600/630A : 3/6-VPR-20D/25D (Circuit breaker)

3/6-VPR-20D□L, 3/6-VPR-25D□L (Fixed: Type L)

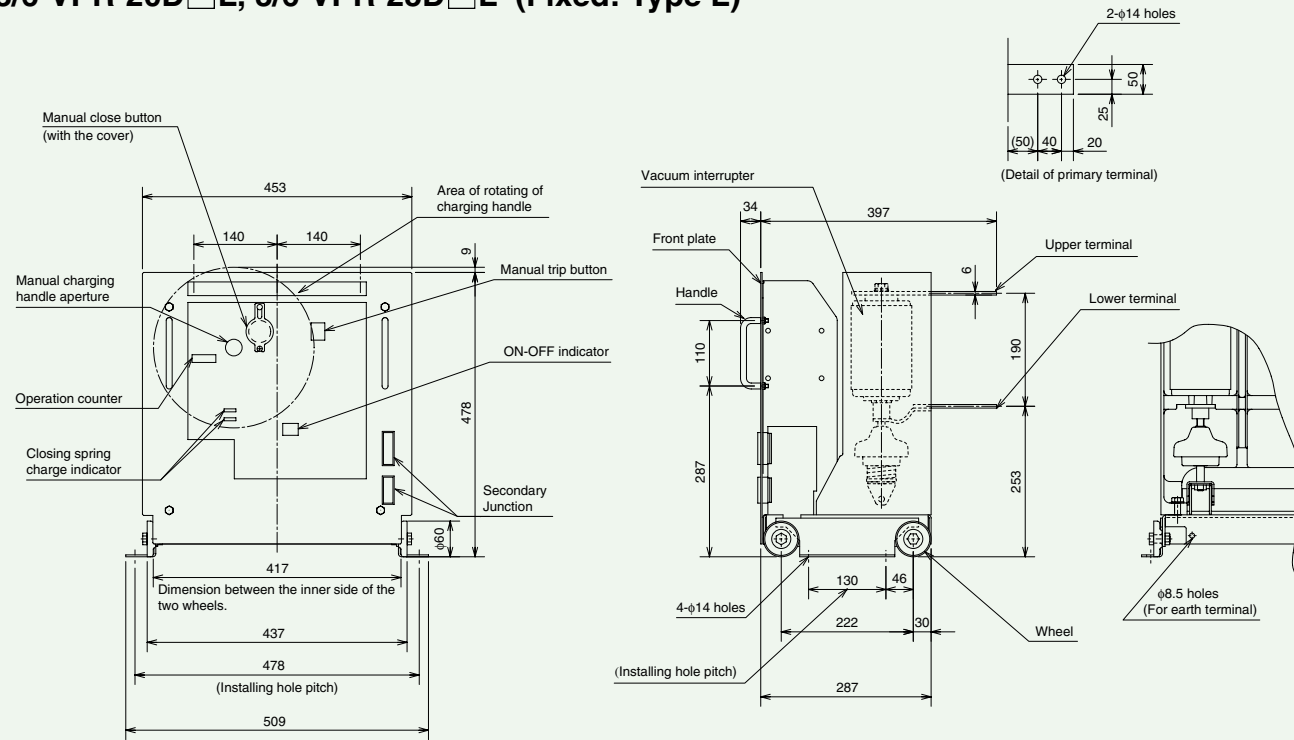


Fig. 1

3/6-VPR-20D□□, 3/6-VPR-25D□□ (Withdrawable: Type C, D, and G)

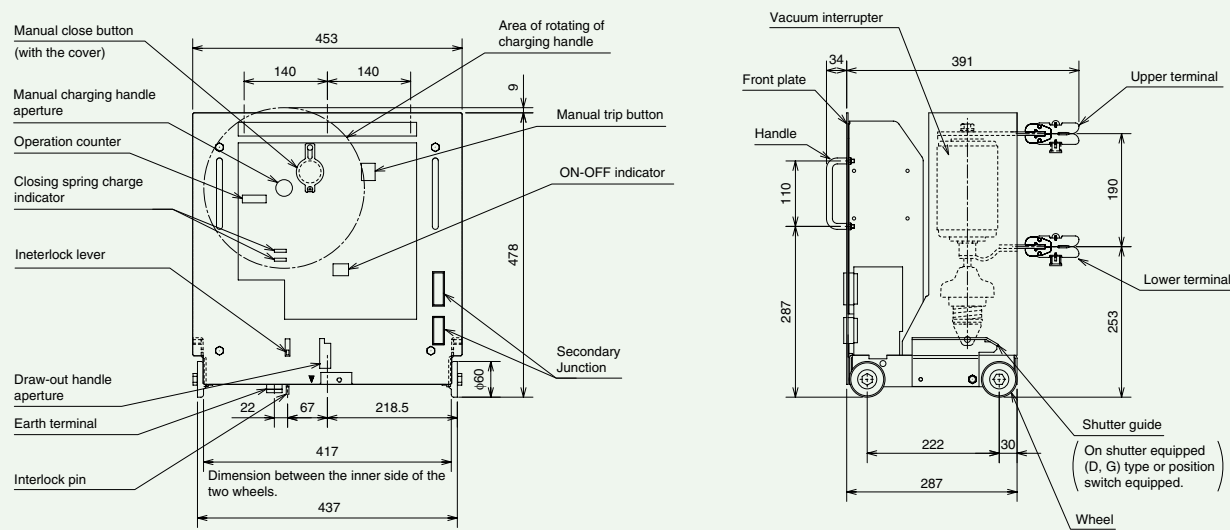


Fig. 2

600/630A : 3/6-VPR-20D/25D (Mounting frame)

(Class CW: Type C)

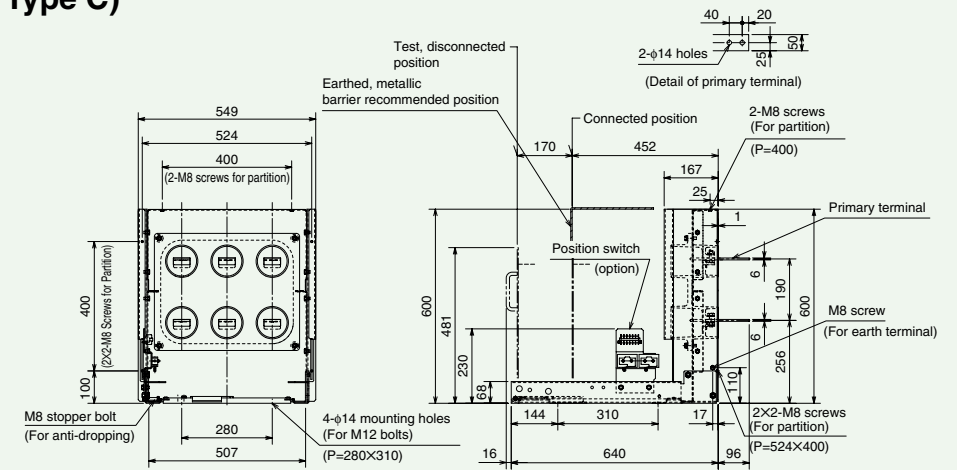
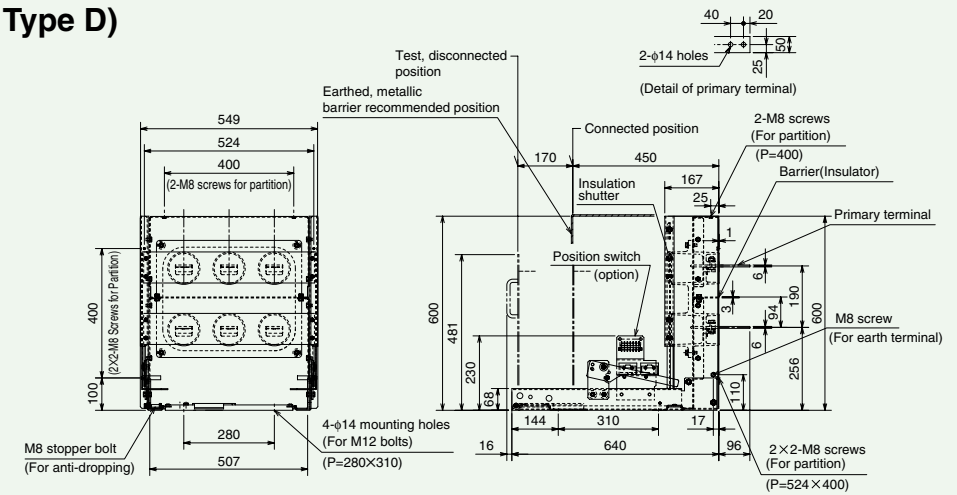


Fig. 3

(Class PW: Type D)



(Class MW: Type G)

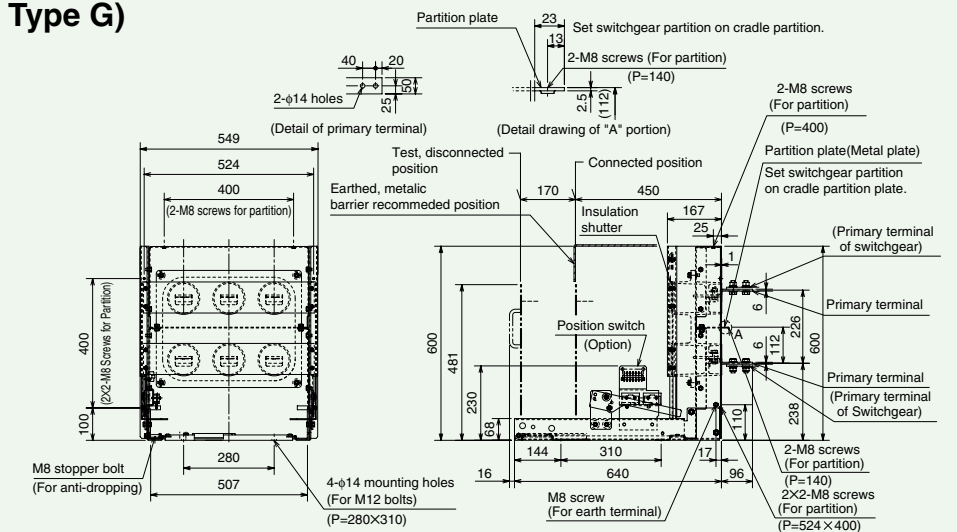


Fig. 4

OUTLINES AND DIMENSIONS (Dimension in mm)

Frame size L

1200/1250A : 3/6-VPR-20D/25D (Circuit breaker)

3/6-VPR-20D□L, 3/6-VPR-25D□L (Fixed: Type L)

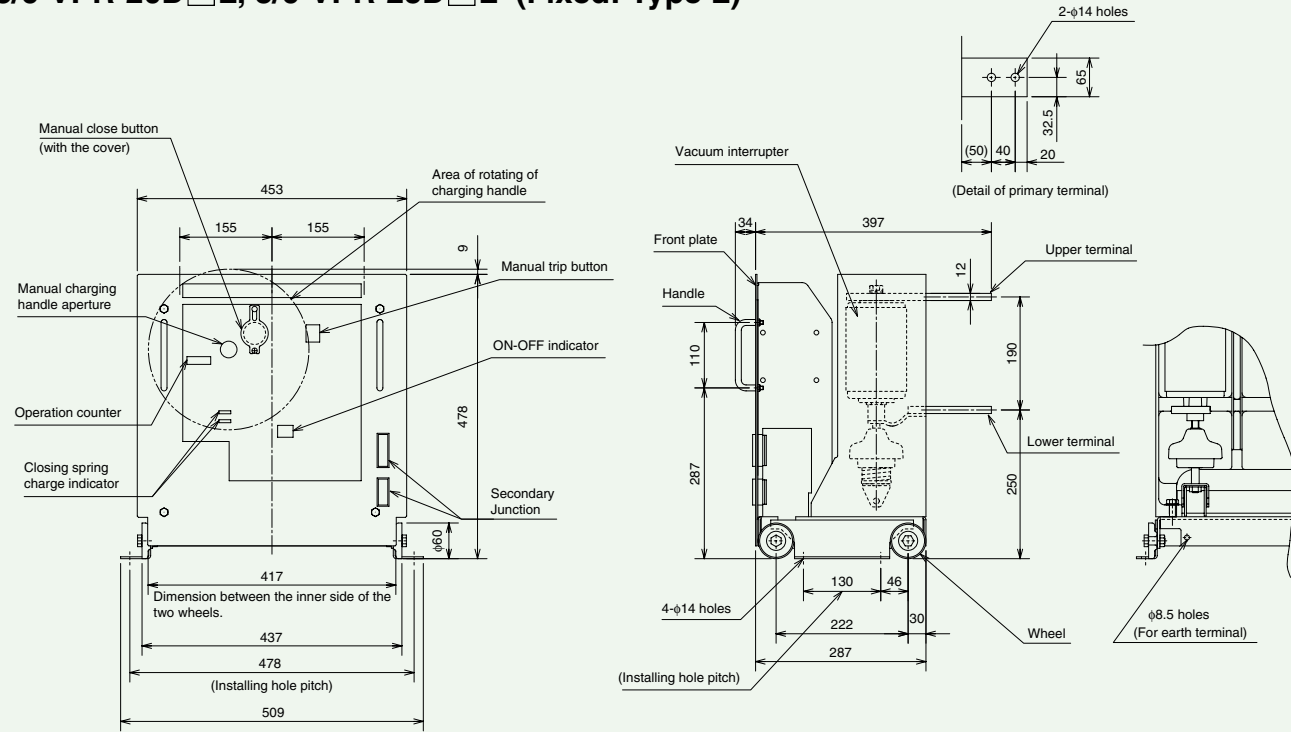


Fig. 5

3/6-VPR-20D□□, 3/6-VPR-25D□□ (Withdrawable: Type C, D, and G)

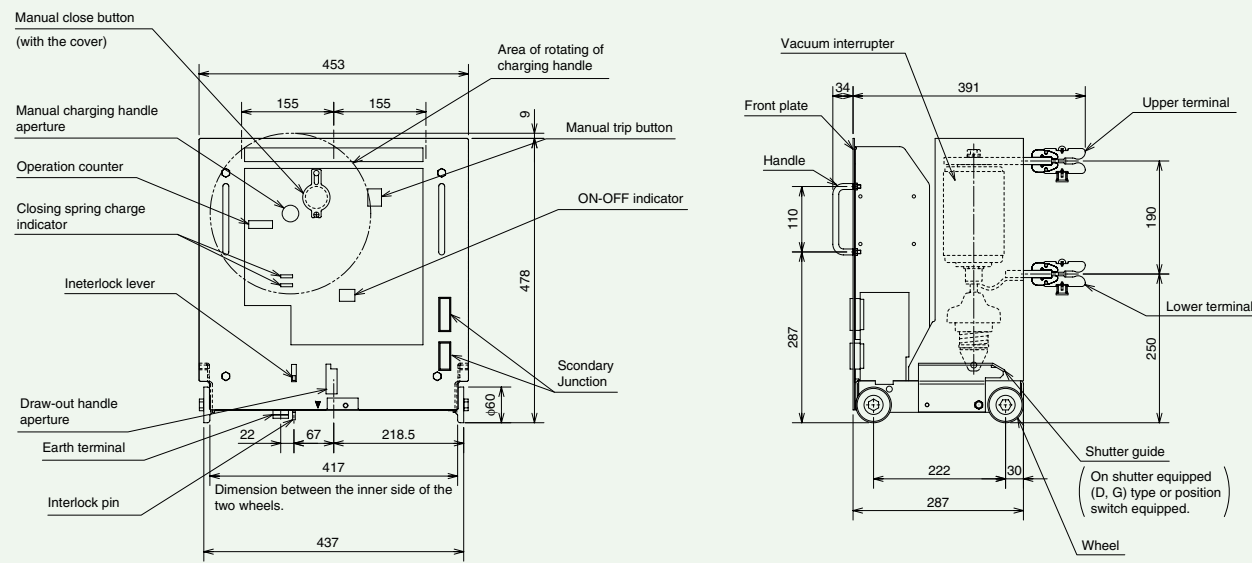


Fig. 6

1200/1250A : 3/6-VPR-20D/25D (Mounting frame)

(Class CW: Type C)

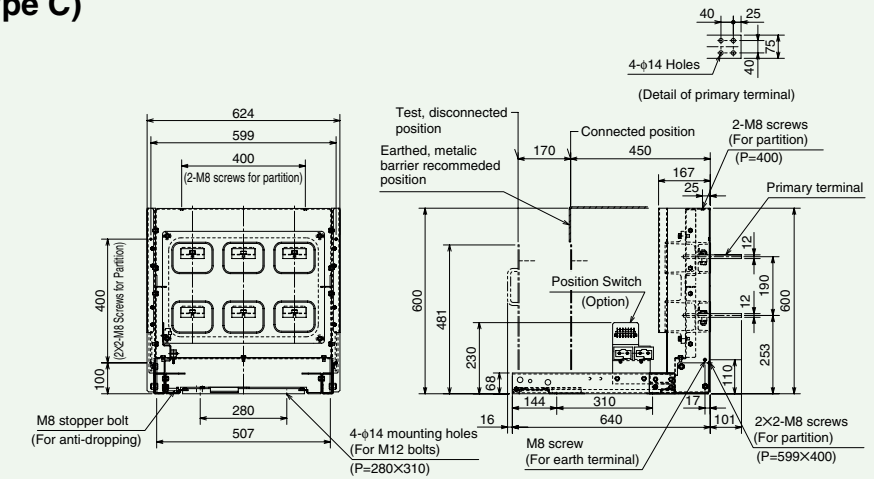
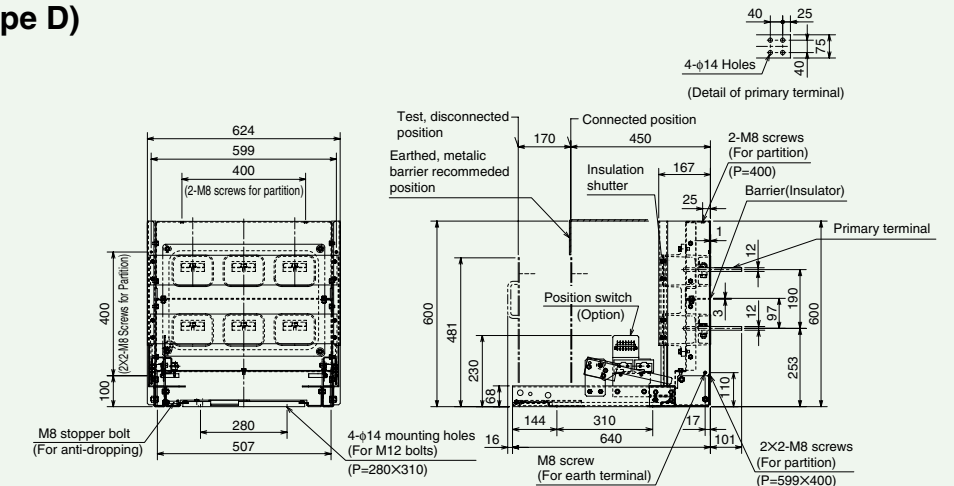


Fig. 7

(Class PW: Type D)



(Class MW: Type G)

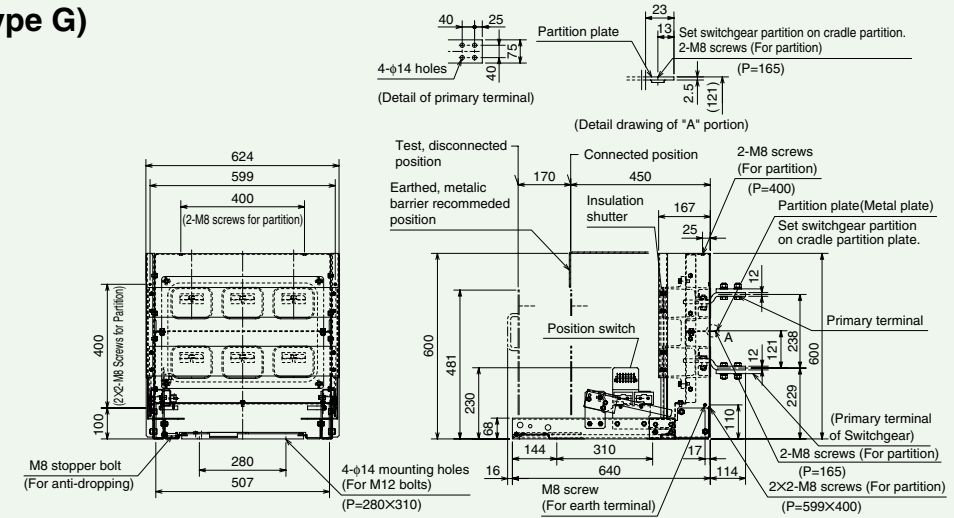


Fig. 8

OUTLINES AND DIMENSIONS (Dimension in mm)

Frame size M

600/630A and 1200/1250A : 10-VPR-25C(F) (Circuit breaker)

10-VPR-25C(F)-L (Fixed: Type L)

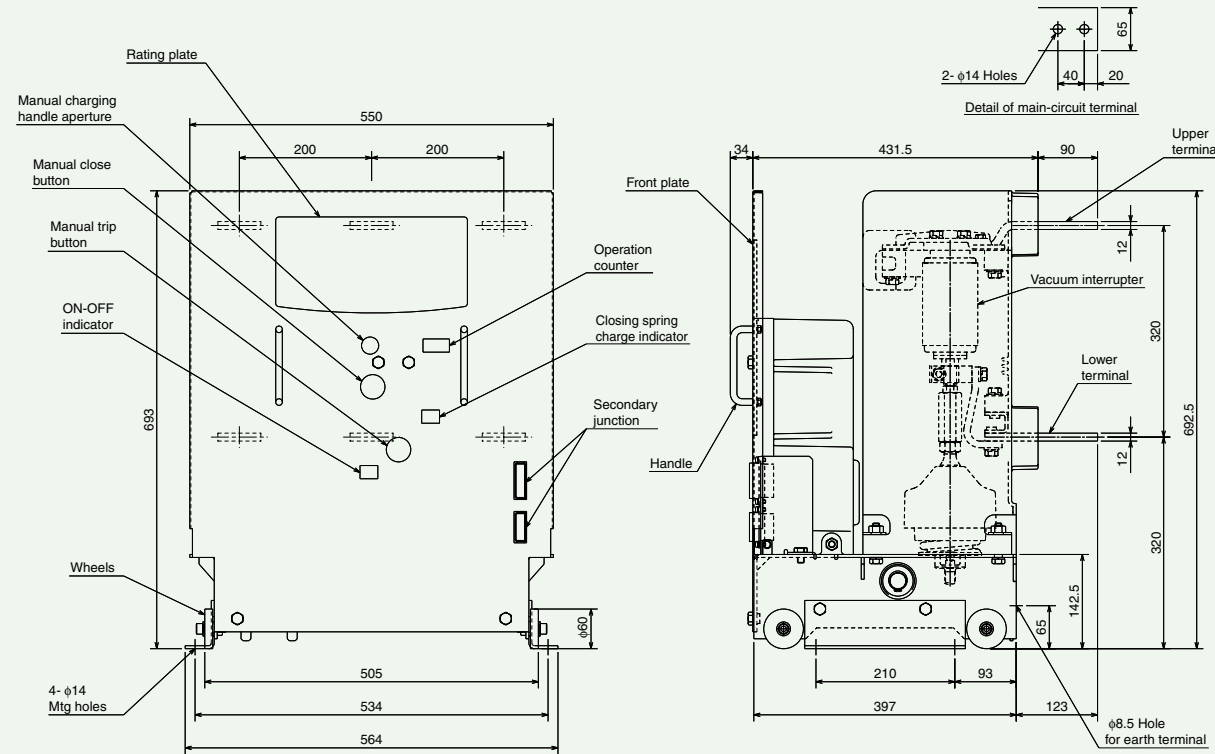


Fig. 9

10-VPR-25C(F)-□ (Withdrawable: Type C, D, and G)

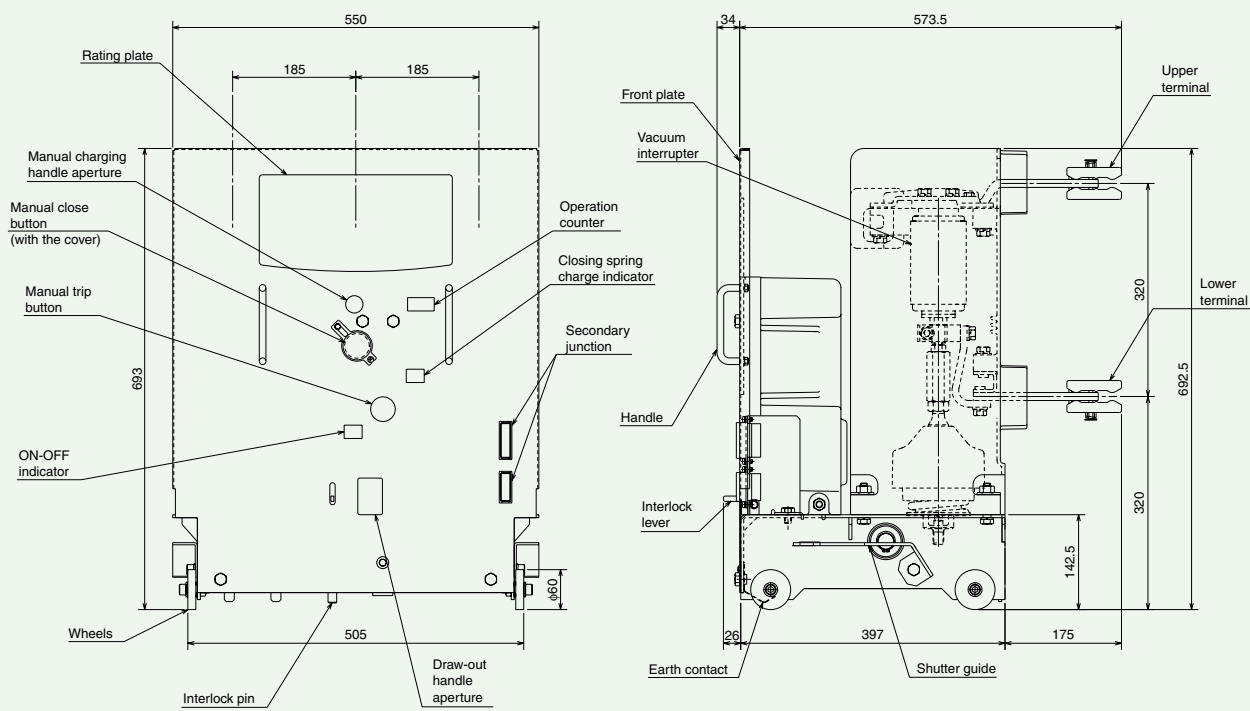


Fig. 10

600/630A and 1200/1250A : 10-VPR-25C(F) (Mounting frame)

(Class CW: Type C)

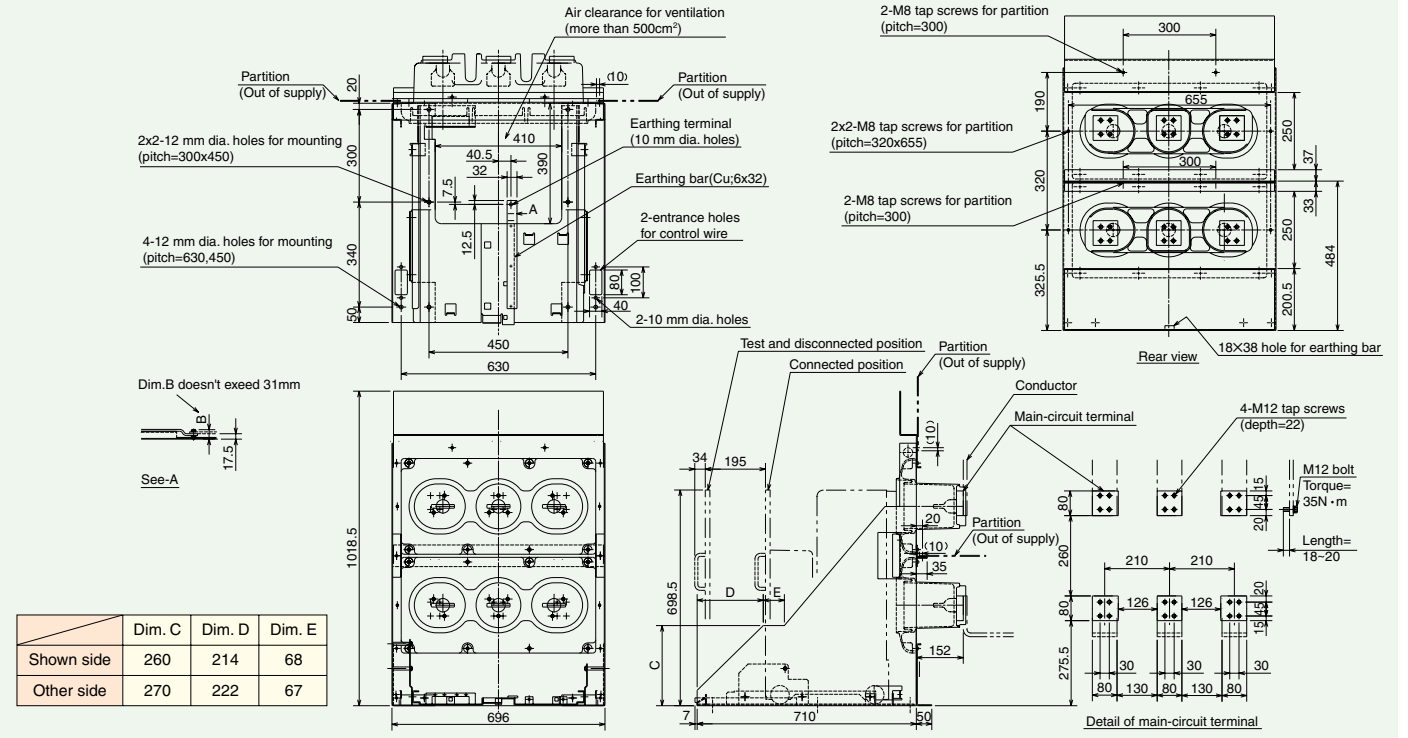


Fig. 11

(Class PW and MW: Type D and G)

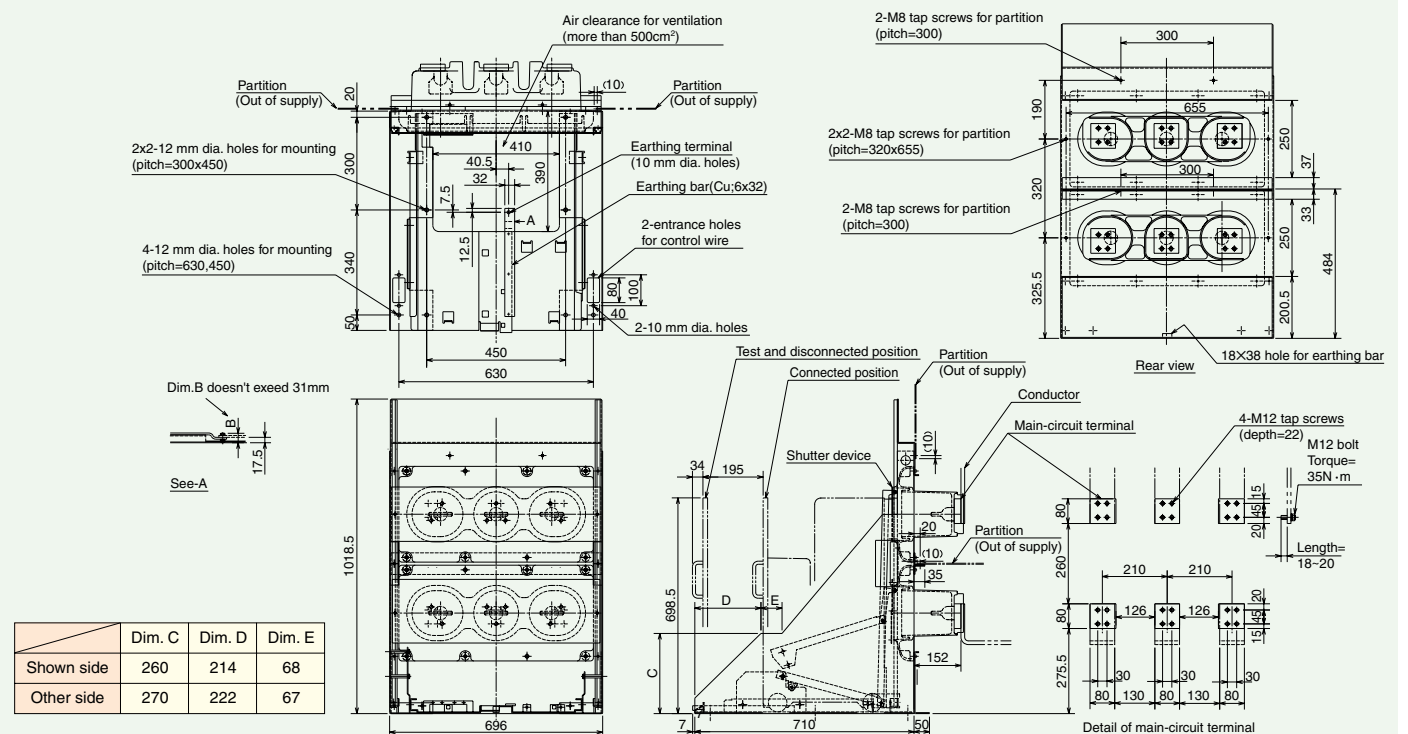


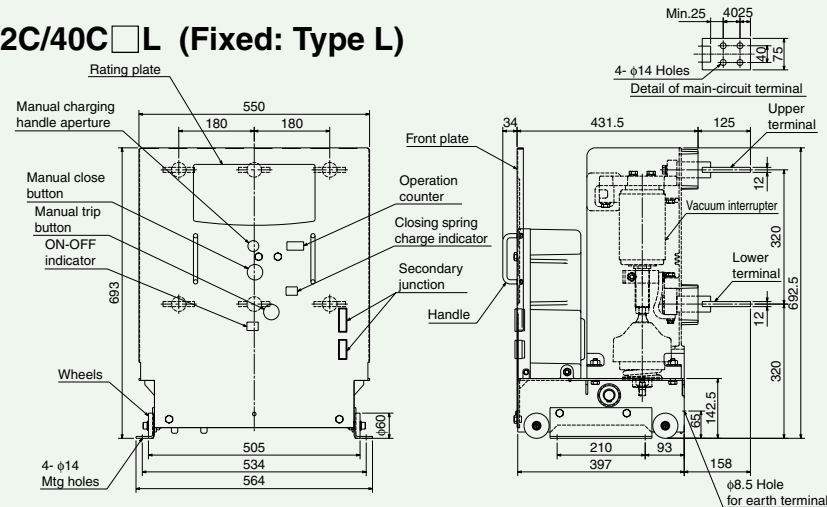
Fig. 12

OUTLINES AND DIMENSIONS (Dimension in mm)

Frame size M

600/630A, 1200/1250A : 3/6/10-VPR-32C/40C (Circuit breaker)

3/6/10-VPR-32C/40C □ L (Fixed: Type L)



Type of 3/6-VPR-32C/40C

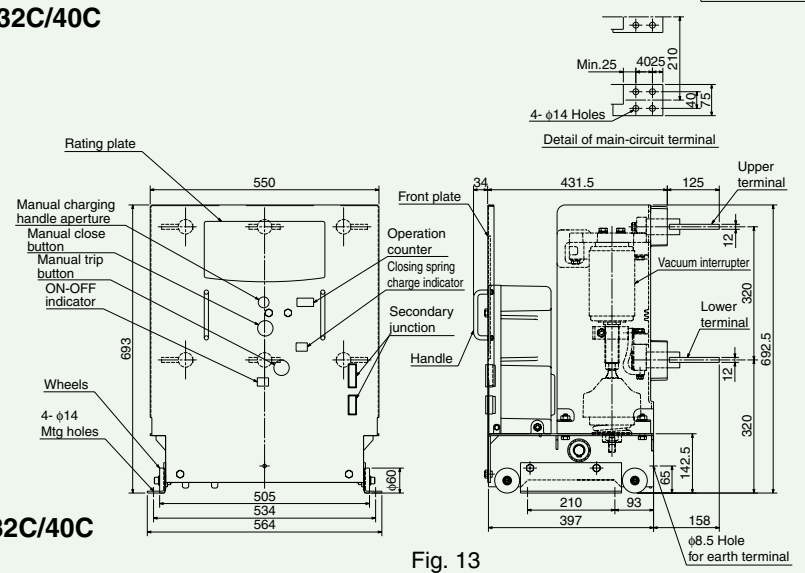


Fig. 13

3/6/10-VPR-32C/40C □ □ (Withdrawable: Type C, D, and G)

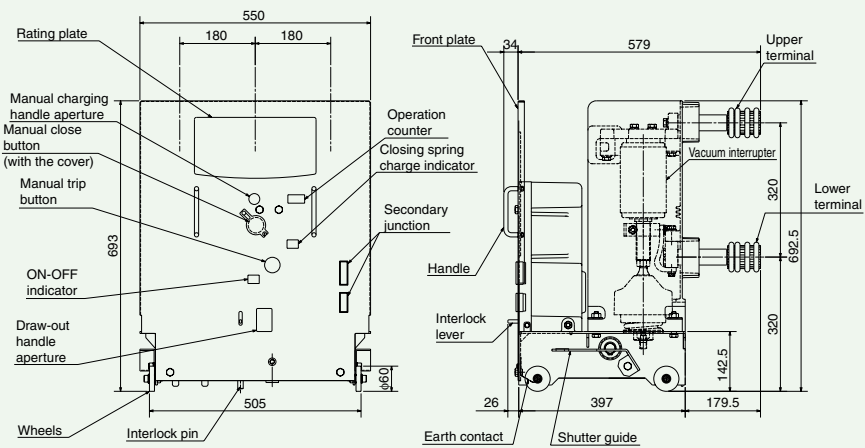


Fig. 14

600/630A, 1200/1250A : 3/6/10-VPR-32C/40C (Mounting frame)

(Class CW: Type C)

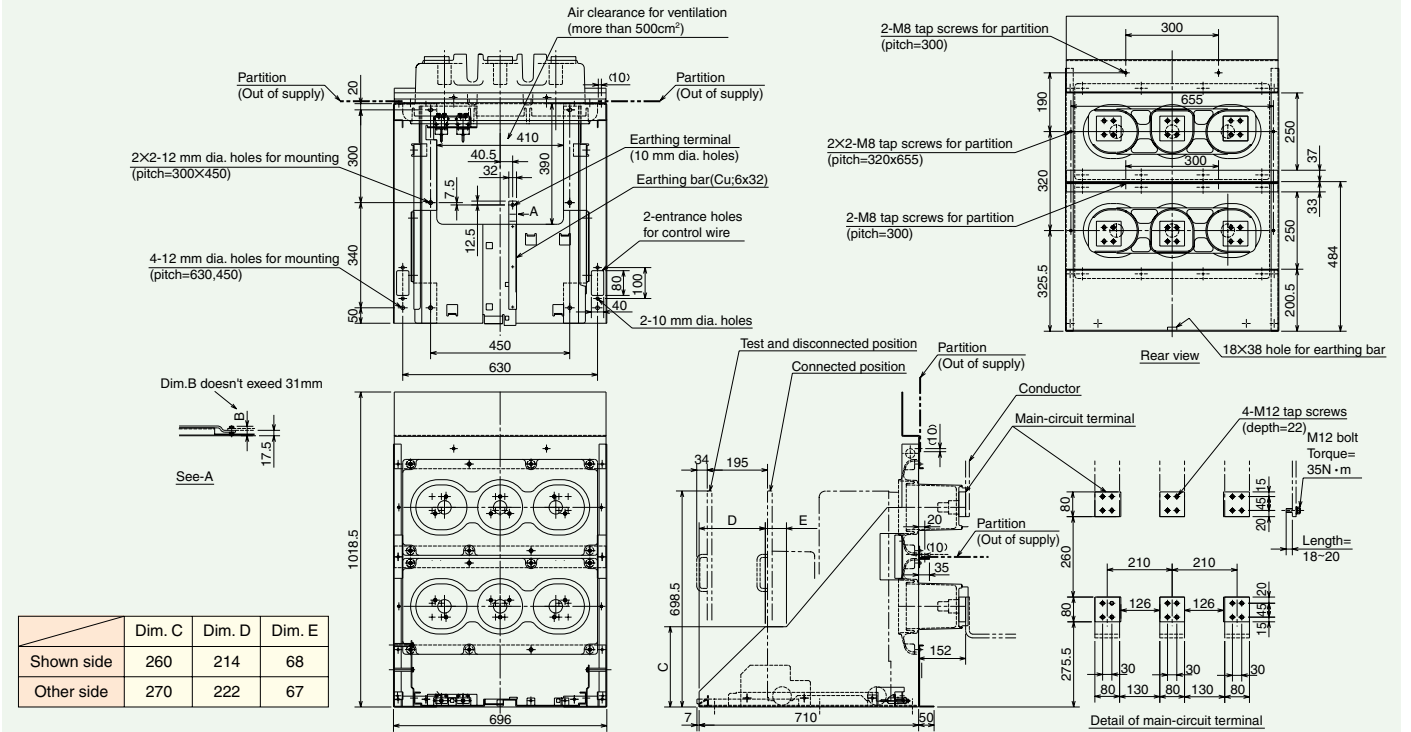


Fig. 15

(Class PW and MW: Type D and G)

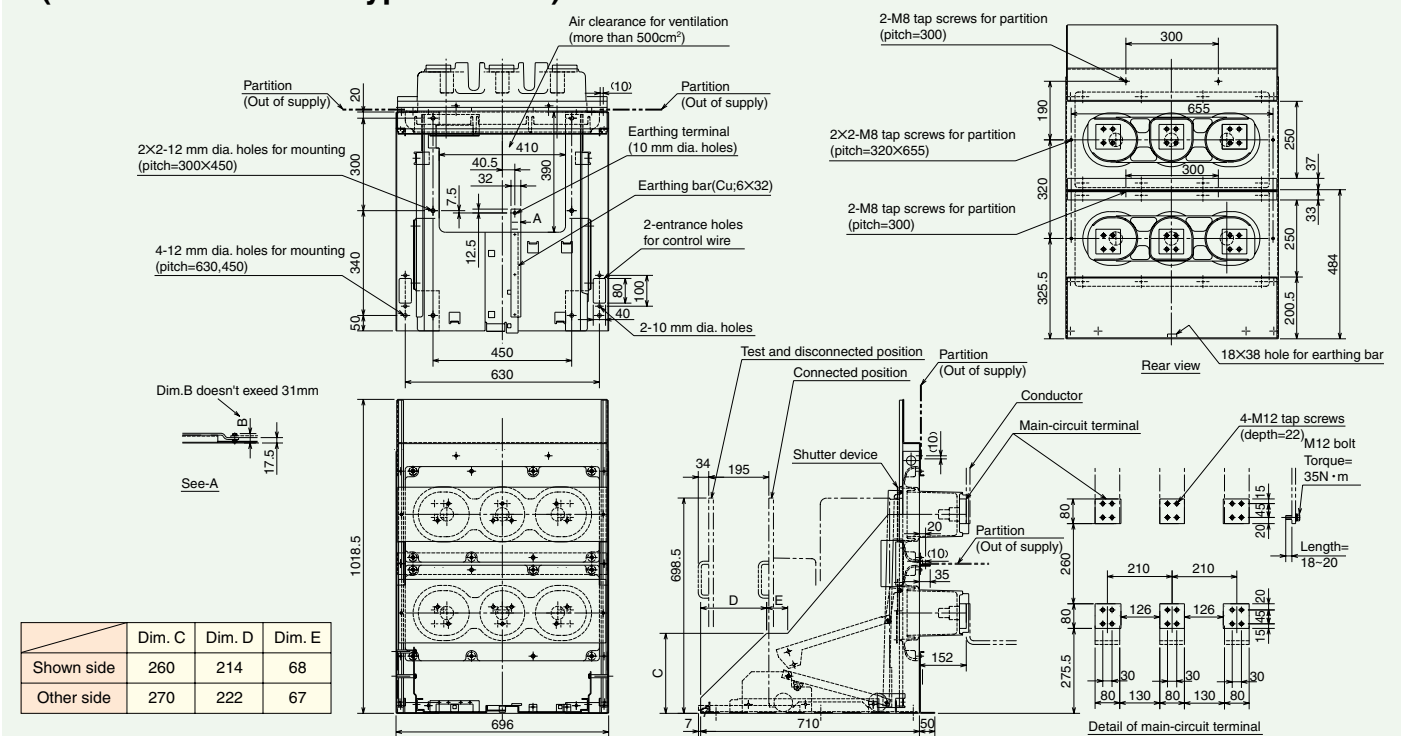


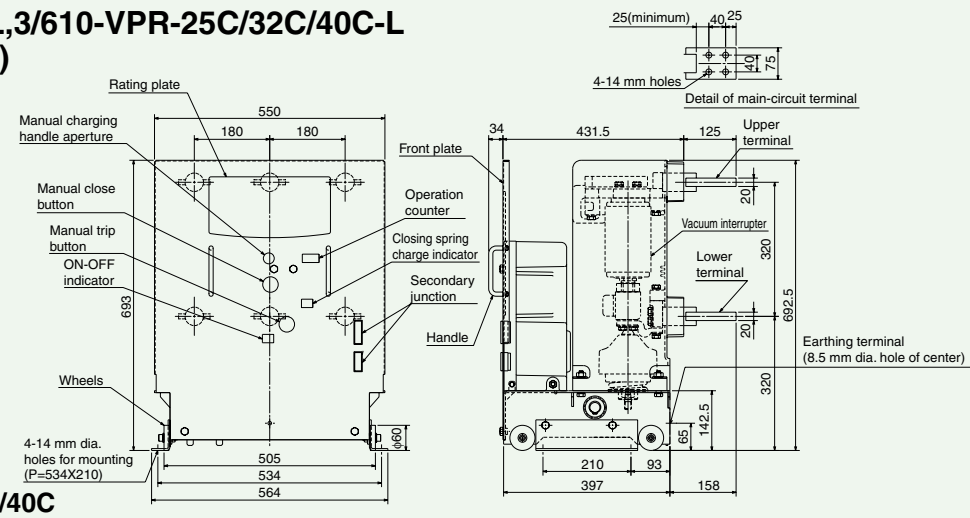
Fig. 16

OUTLINES AND DIMENSIONS (Dimension in mm)

Frame size M

1600A, 2000A : 3/6-VPR-20C, 3/6/10-VPR-25C/32C/40C (Circuit breaker)

3/6-VPR-20C-L, 3/6/10-VPR-25C/32C/40C-L (Fixed: Type L)



3/6-VPR-20C, 3/6-VPR-25C/32C/40C

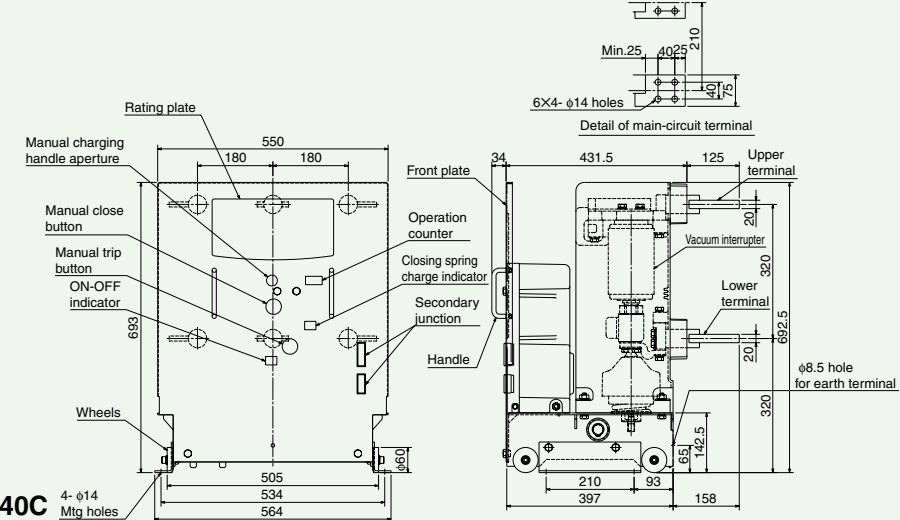


Fig. 17

10-VPR-25C/32C/40C

3/6-VPR-20C-□, 3/6/10-VPR-25C/32C/40C-□ (Withdrawable: Type C, D, and G)

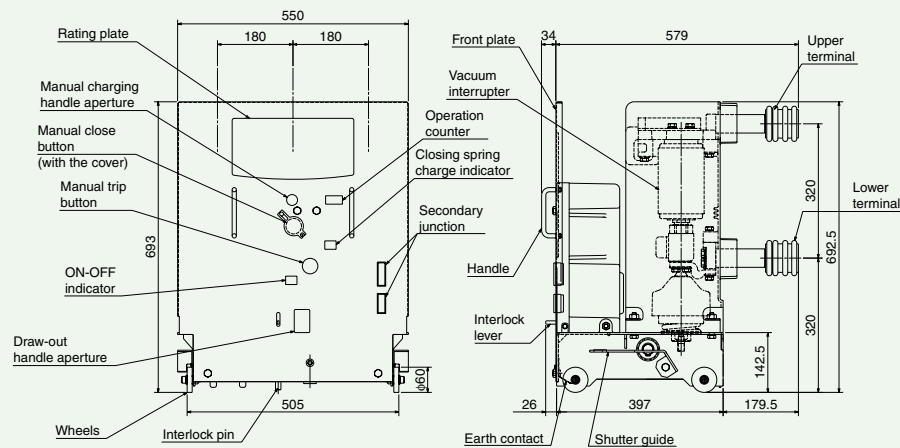
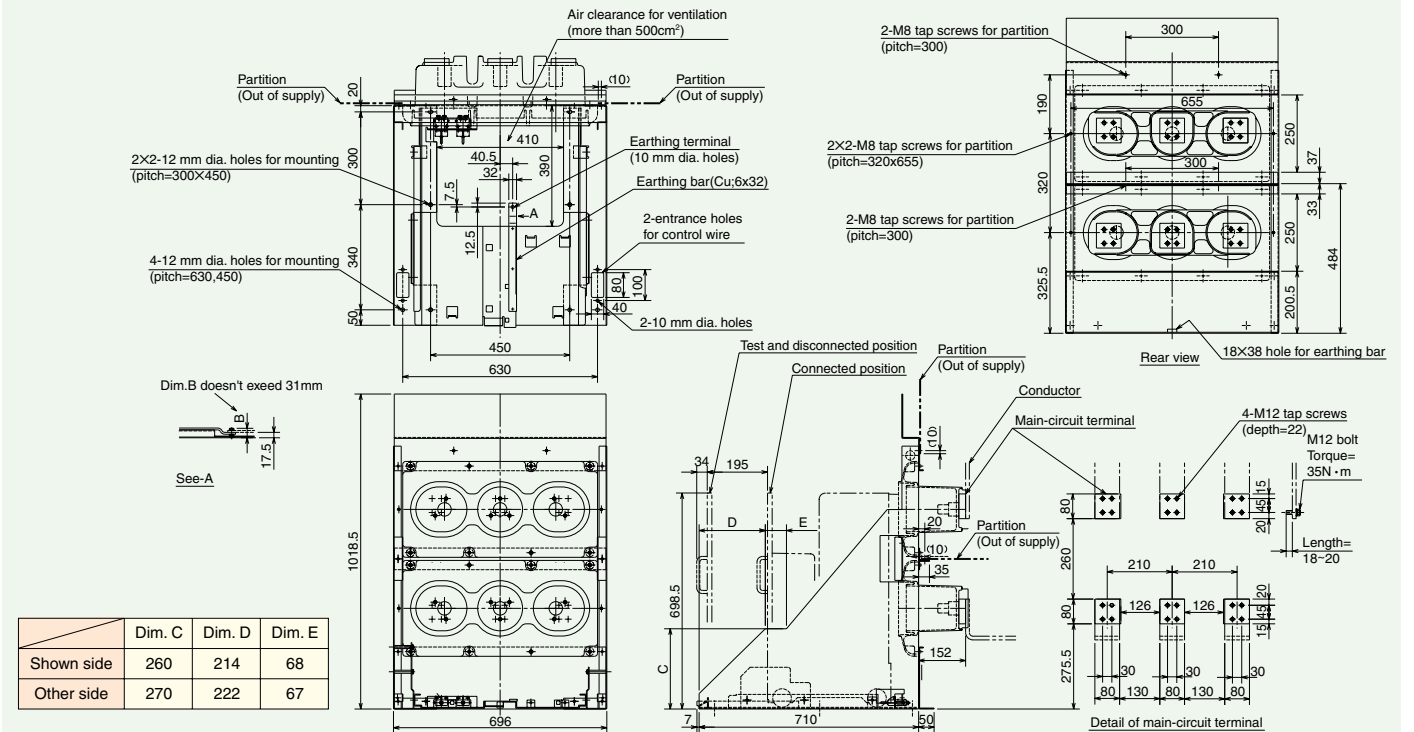


Fig. 18

1600A, 2000A : 3/6-VPR-20C, 3/6/10-VPR-25C/32C/40C (Mounting frame)

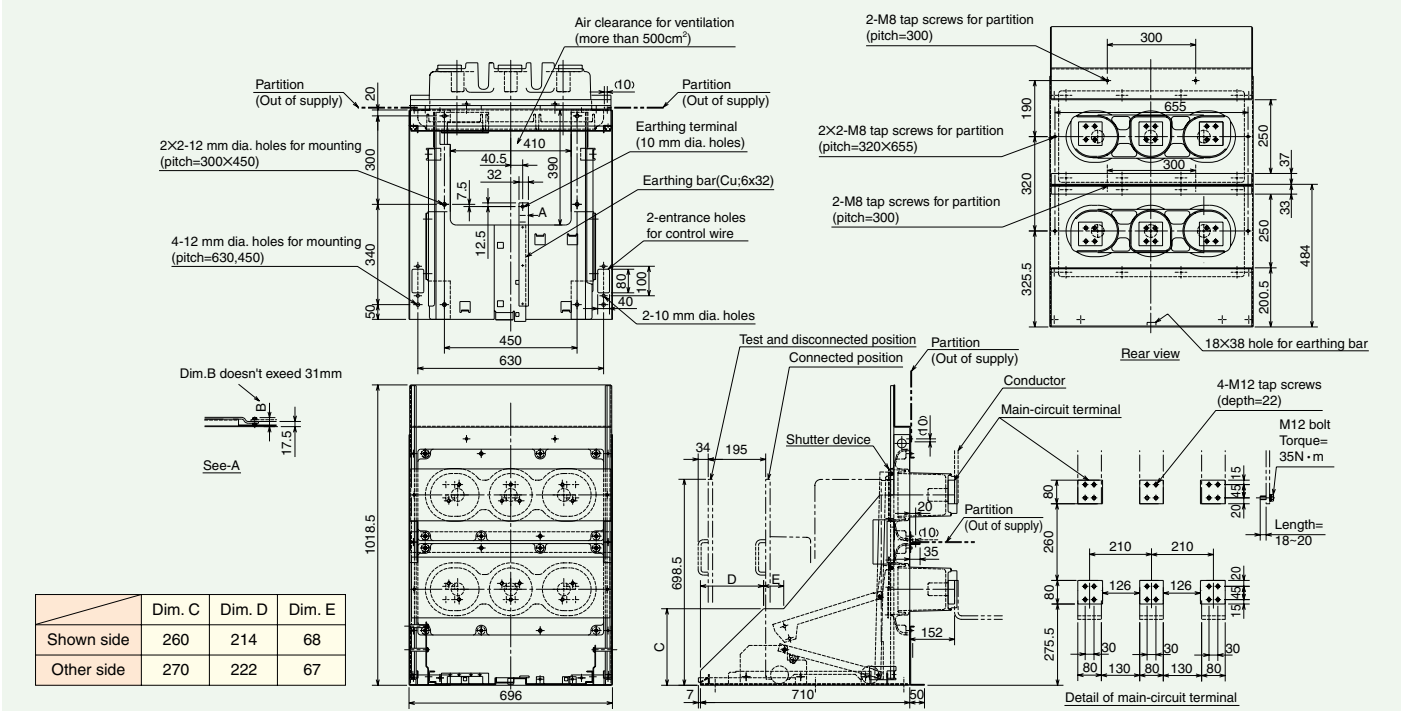
(Class CW: Type C)



	Dim. C	Dim. D	Dim. E
Shown side	260	214	68
Other side	270	222	67

Fig. 19

(Class PW and MW: Type D and G)



	Dim. C	Dim. D	Dim. E
Shown side	260	214	68
Other side	270	222	67

Fig. 20

OUTLINES AND DIMENSIONS (Dimension in mm)

Frame size M

2500A, 3000/3150A : 10-VPR-25C, 3/6/10-VPR-32C/40C (Circuit breaker)

10-VPR-25C-□, 3/6/10-VPR-32C/40C-□ (Withdrawable: Type C, D, and G)

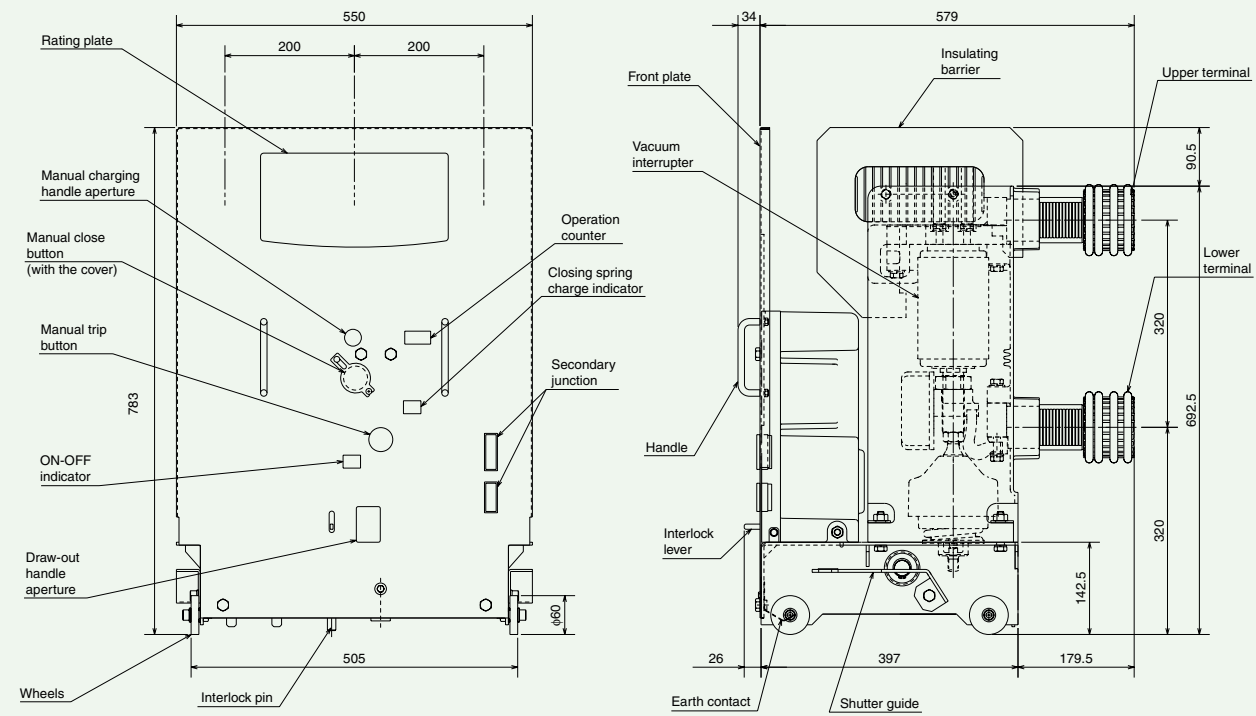


Fig. 21

2500A, 3000/3150A : 10-VPR-25C, 3/6/10-VPR-32C/40C (Mounting frame)

(Class CW: Type C)

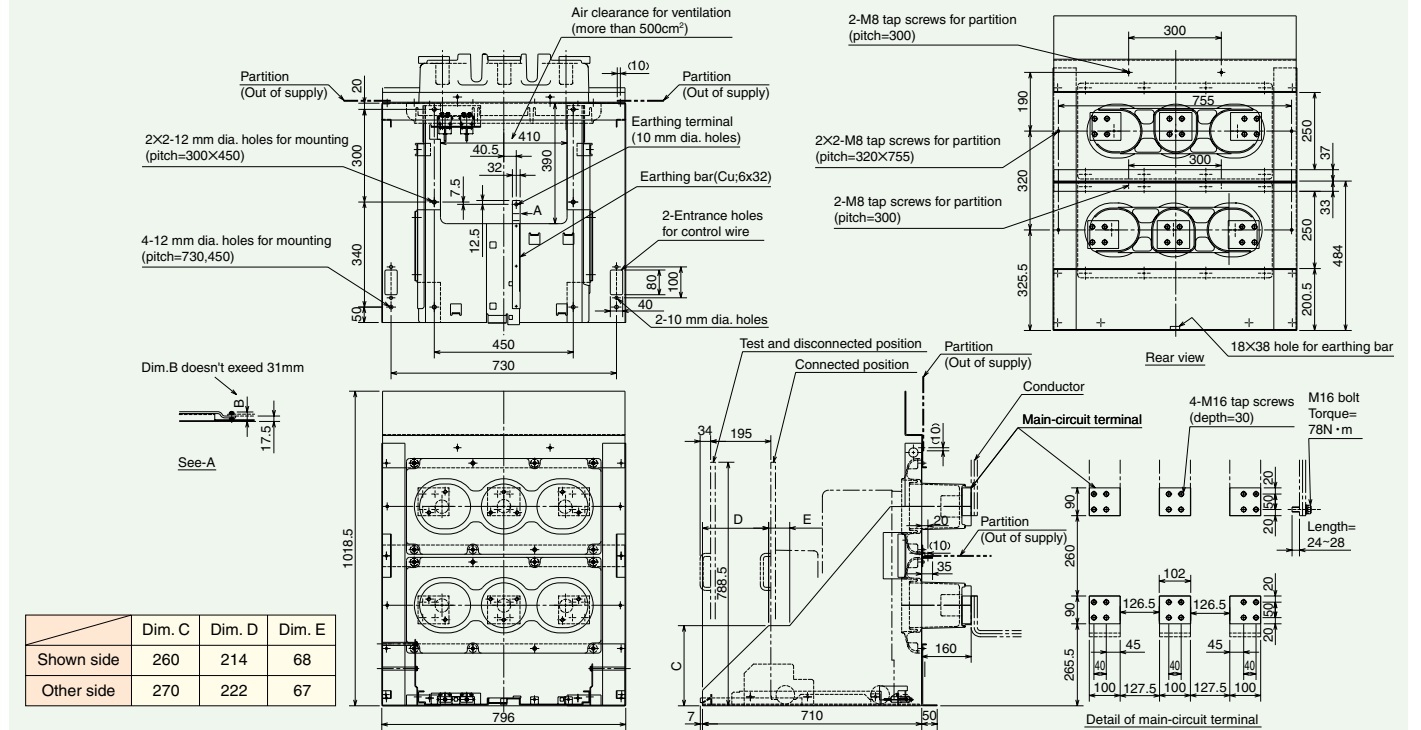


Fig. 22

(Class PW and MW: Type D and G)

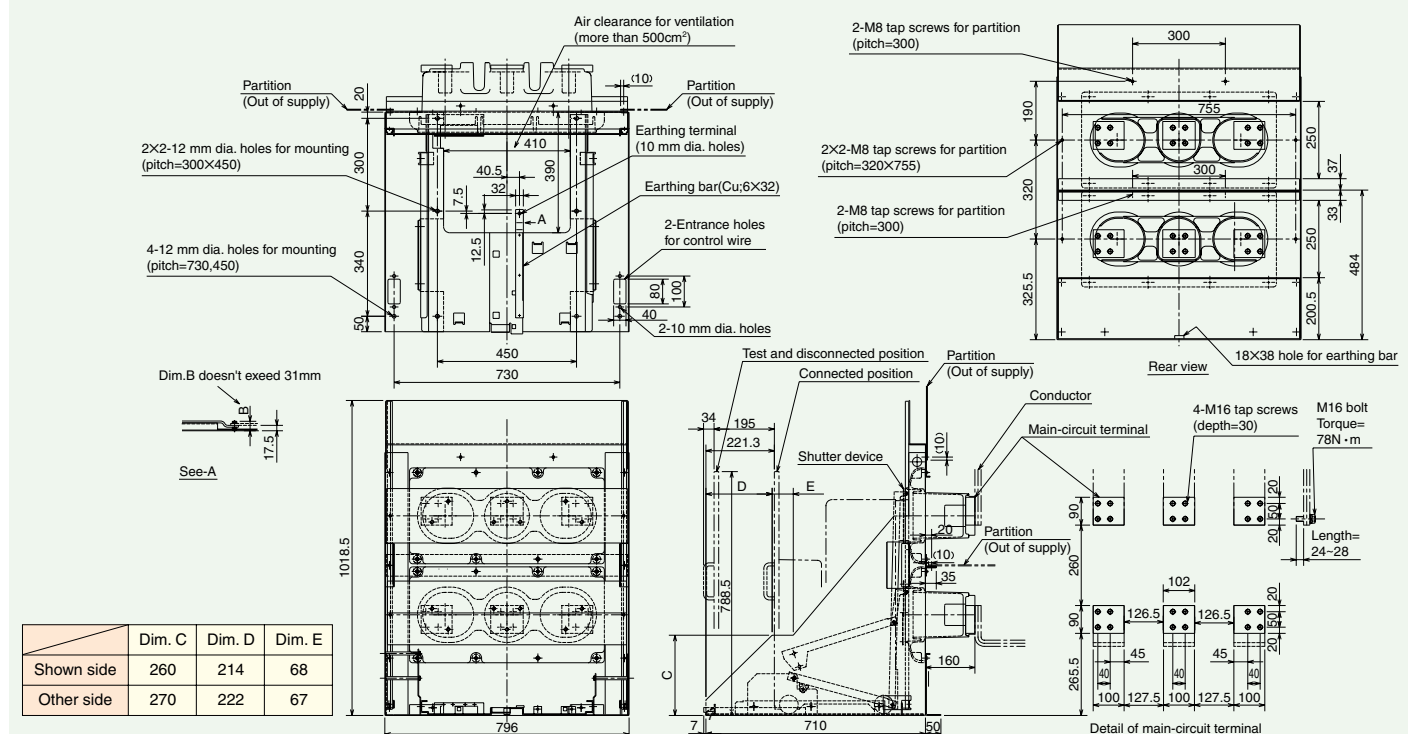


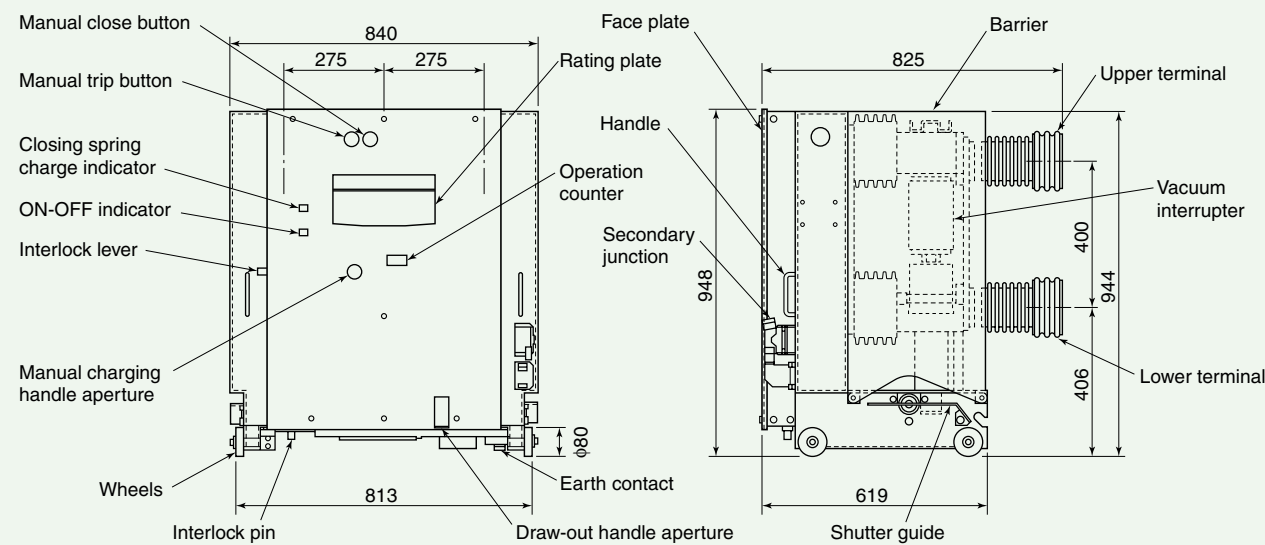
Fig. 23

OUTLINES AND DIMENSIONS (Dimension in mm)

Frame size R

4000A : 10-VPR-40C(D)

Circuit breaker (Withdrawable: Type C, D, and G)



Mounting frame (Class CW, PW, and MW: Type C, D, and G)

(Class CW: Shutter device is not equipped.)

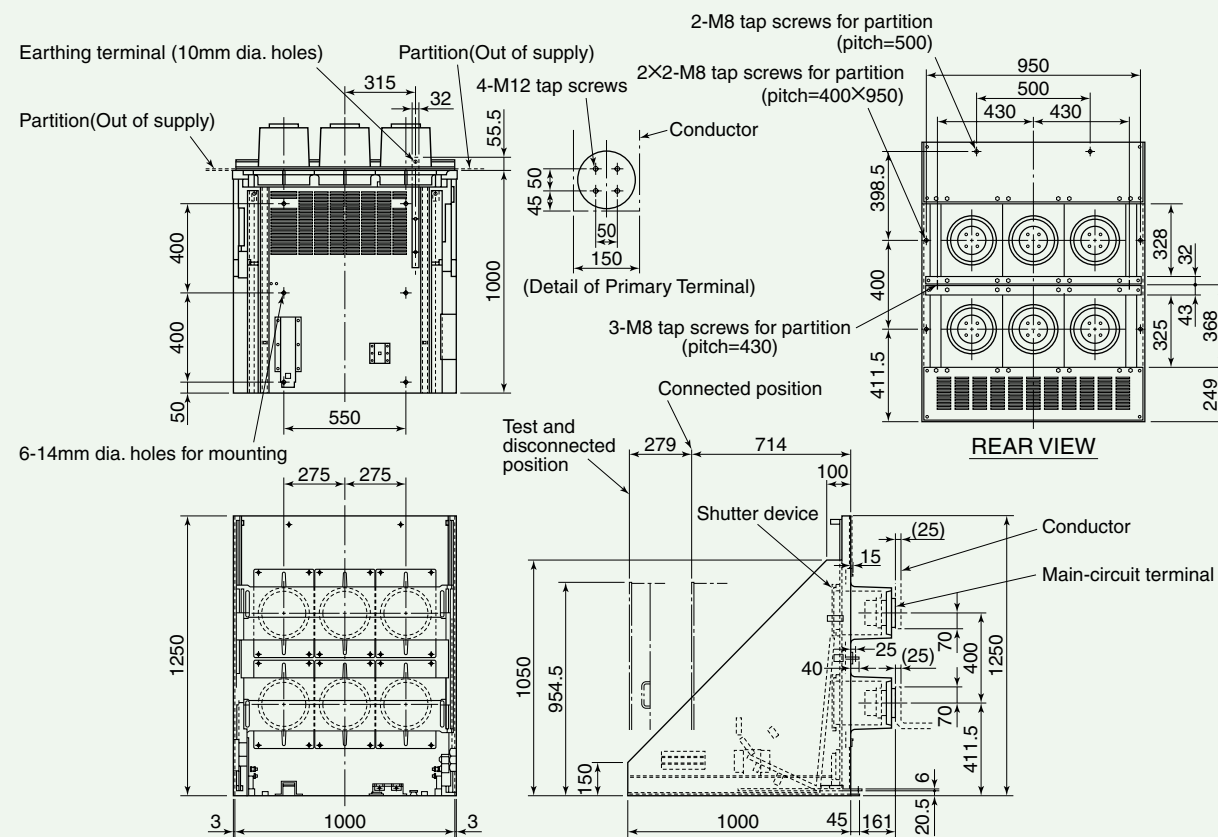
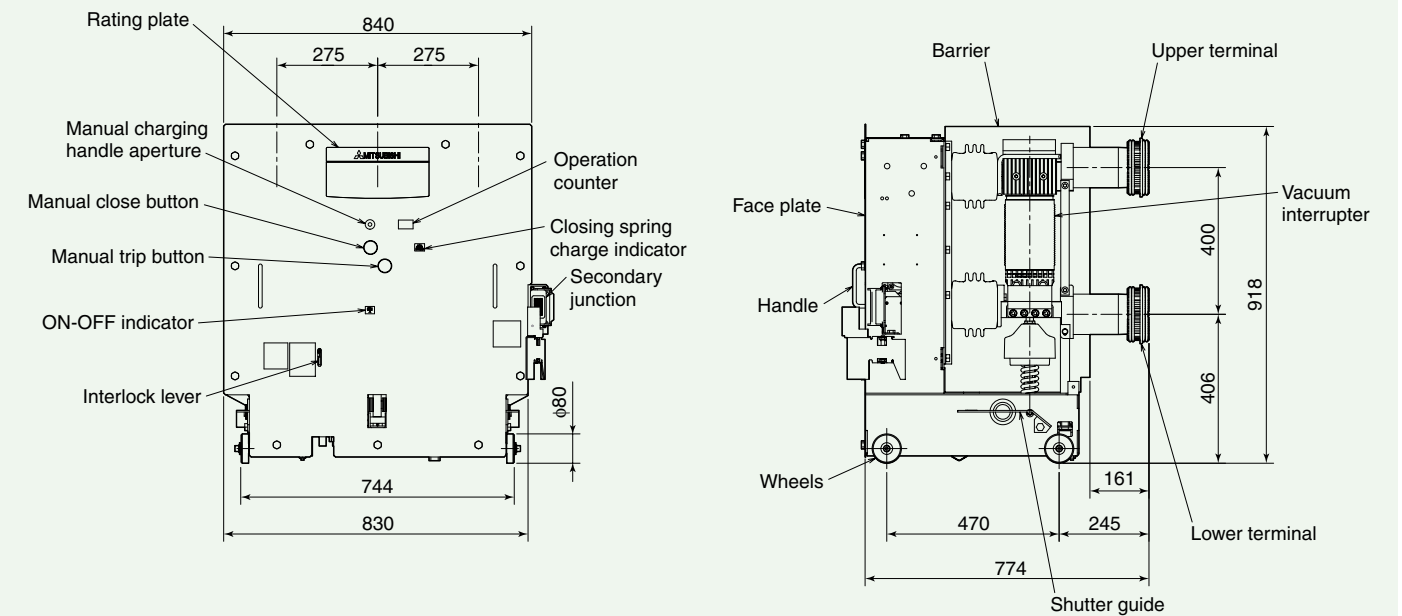


Fig. 24

Frame size R

4000A : 10-VPR-50C(D)

Circuit breaker (Withdrawable: Type C, D, and G)



Mounting frame (Class CW, PW, and MW: Type C, D, and G)

(Class CW: Shutter device is not equipped.)

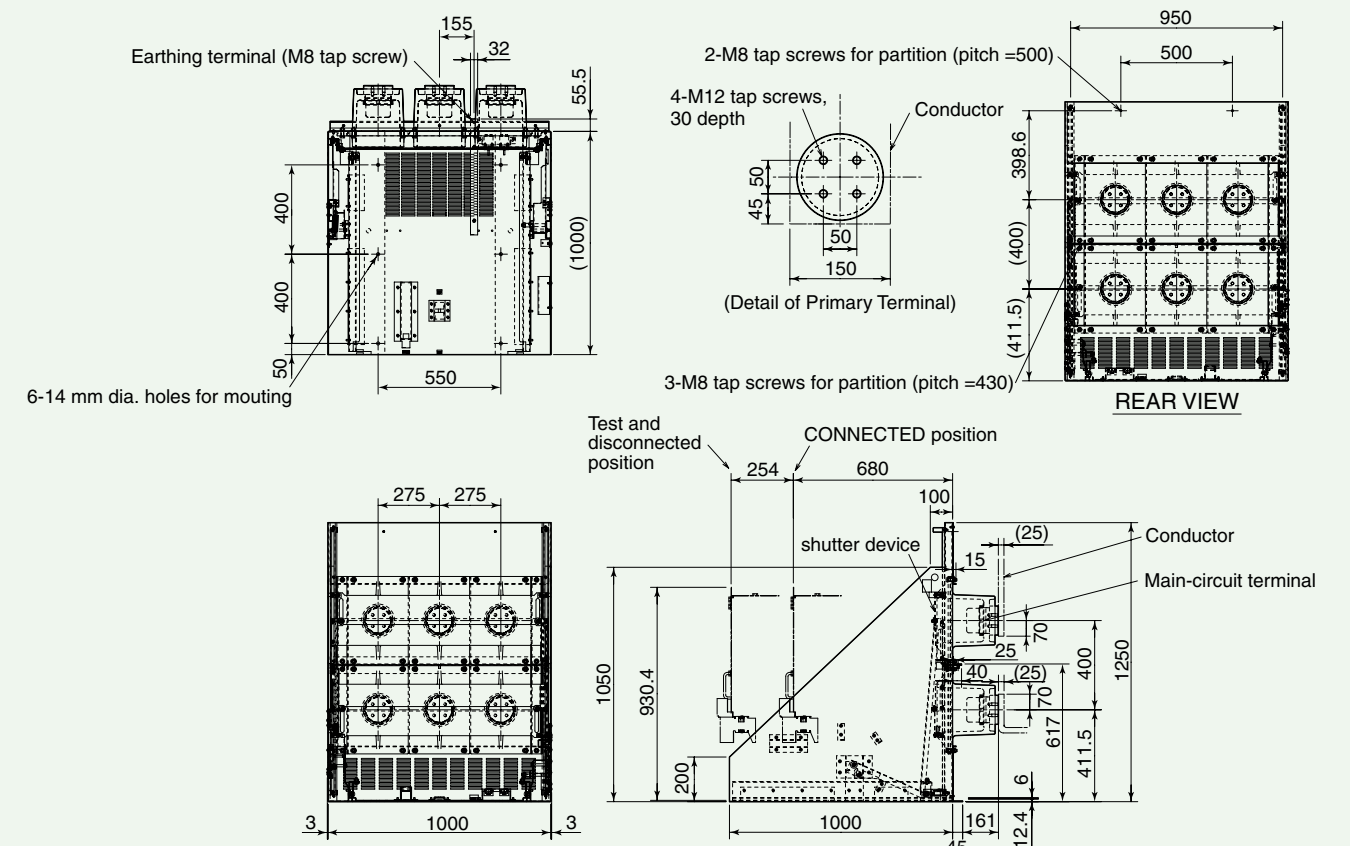


Fig. 25

OUTLINES AND DIMENSIONS (Dimension in mm)

■ Frame size H

■ 600/630A, 1200/1250A : 20-VPR-16D/25D (Circuit breaker)

20-VPR-16D/25D-□ (Withdrawable: Type C, D)

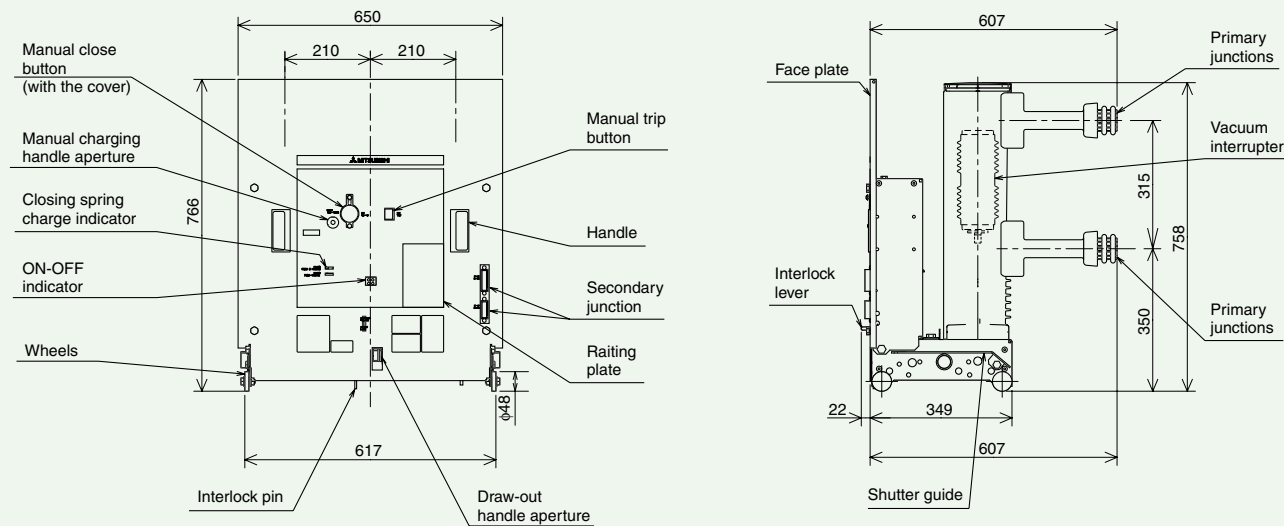


Fig. 26

■ 600/630A, 1200/1250A : 20-VPR-16D/25D (Mounting frame)

(Class CW and PW: Type C and D)

(Class CW: Shutter device is not equipped.)

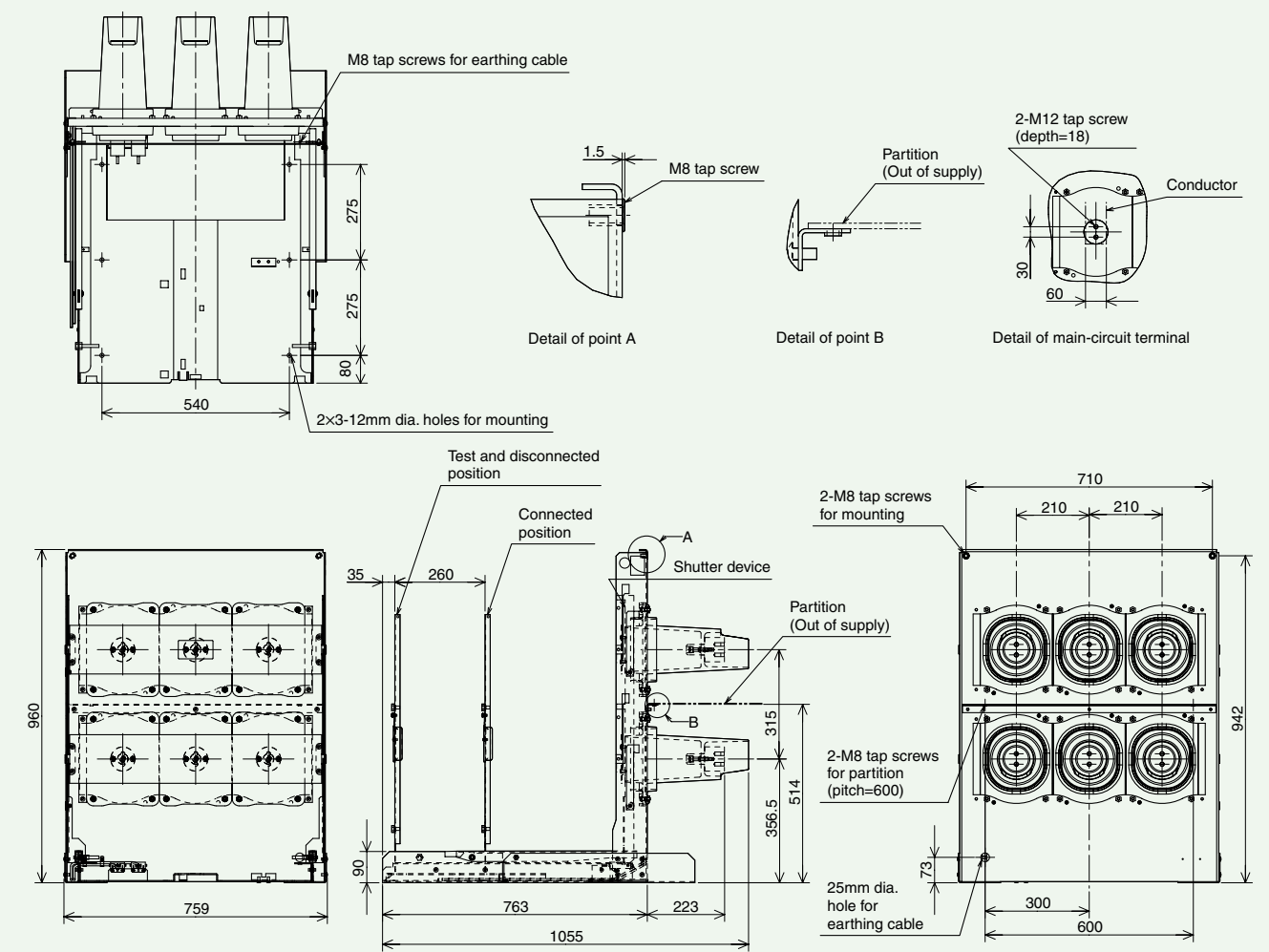


Fig. 27

OUTLINES AND DIMENSIONS (Dimension in mm)

Frame size G

1600/2000A : 20-VPR-25C (Circuit breaker)

20-VPR-25C-□ (Withdrawable: Type C, D)

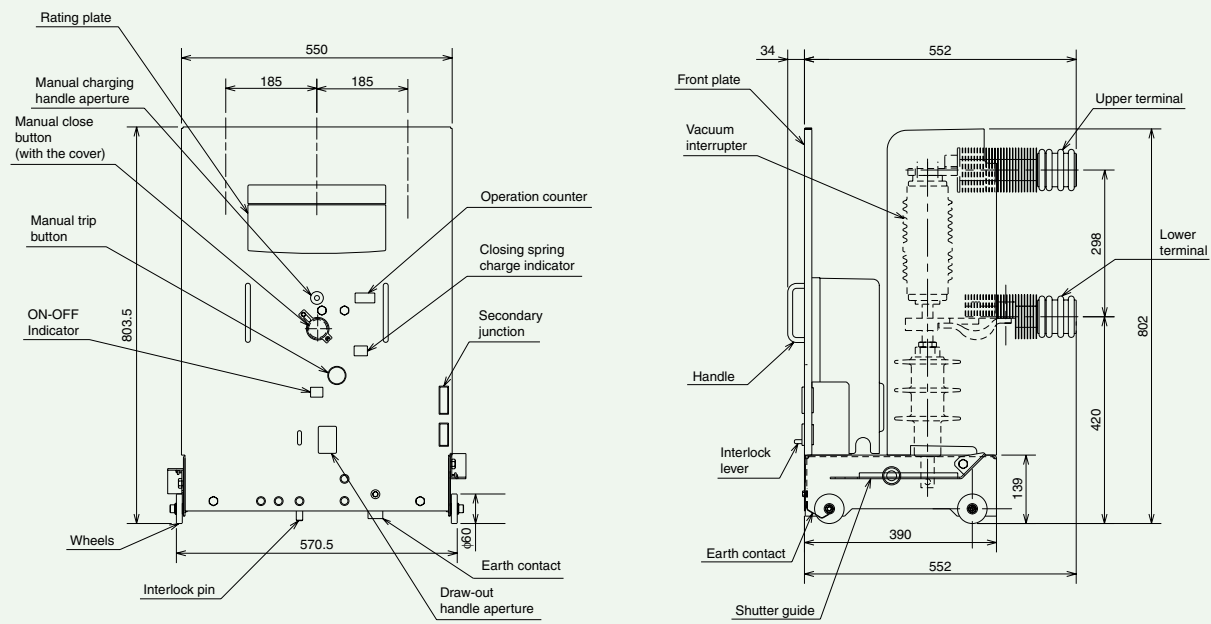


Fig. 28

1600/2000A : 20-VPR-25C (Mounting frame)

(Class CW: Type C)

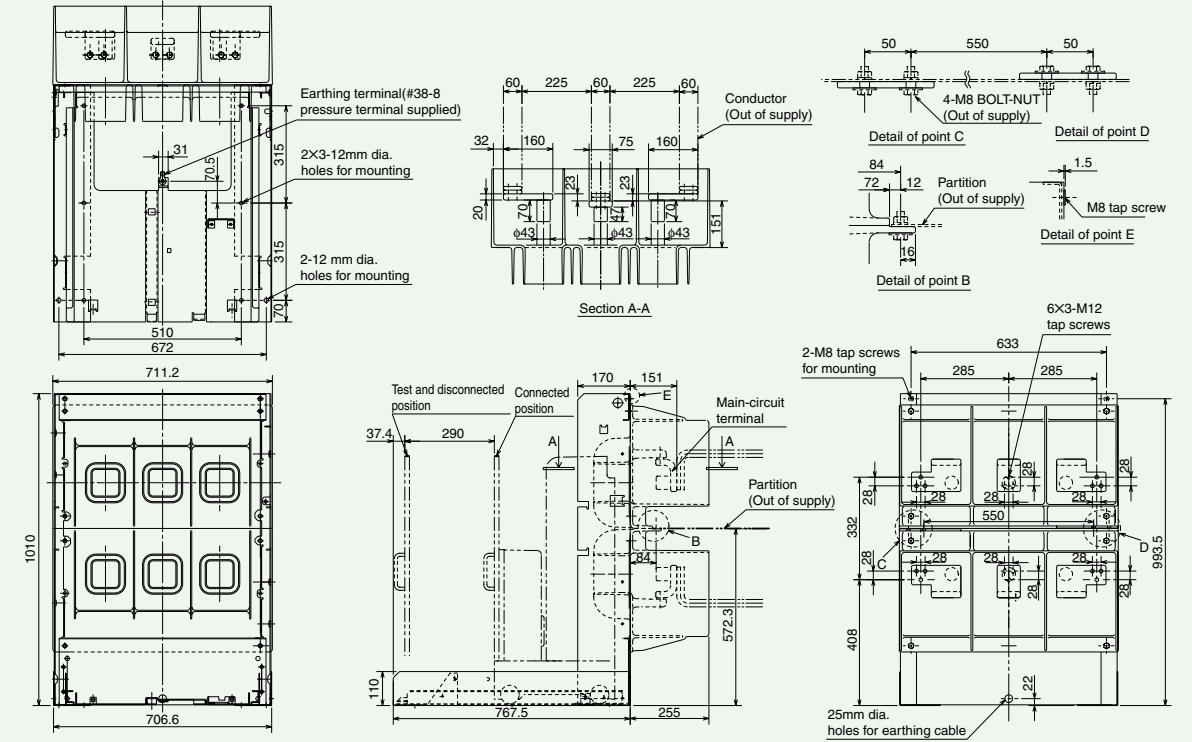


Fig. 29

(Class PW: Type D)

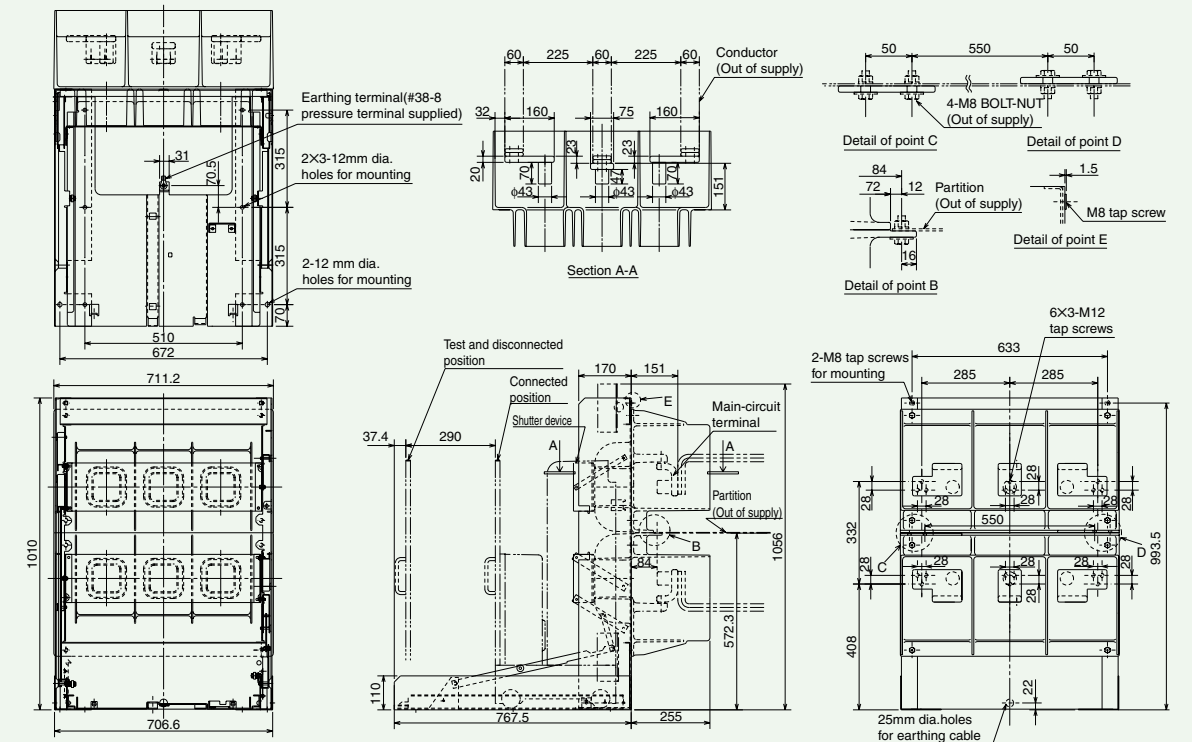


Fig. 30

OUTLINES AND DIMENSIONS (Dimension in mm)

■ Frame size R

■ 2500A : 20-VPR-25D (Circuit breaker)

20-VPR-25D-□ (Withdrawable: Type C, D)

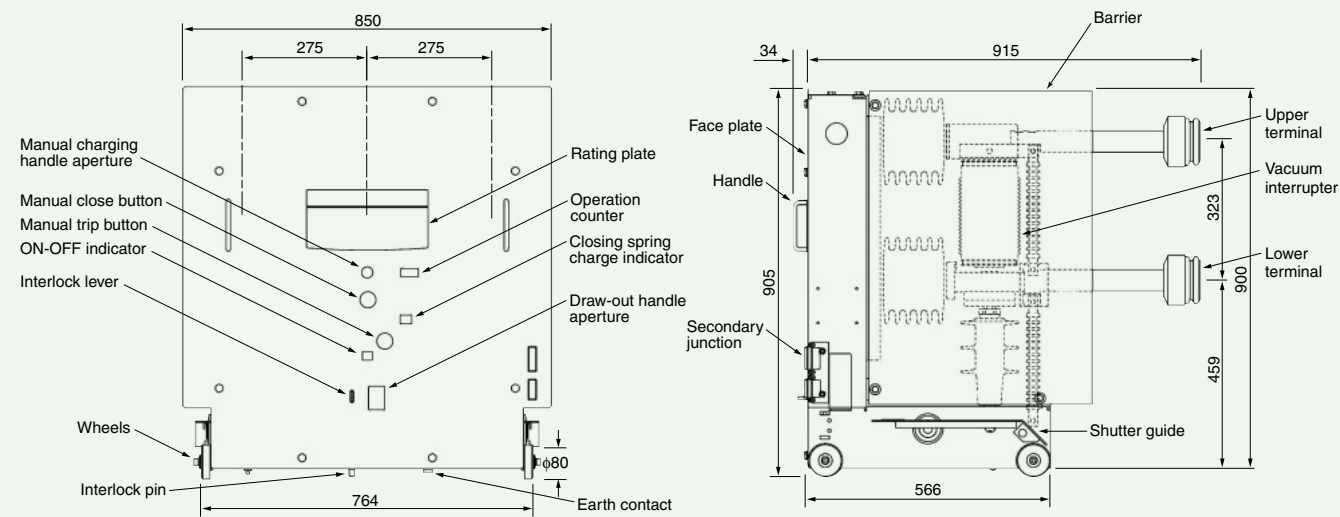


Fig. 31

■ 2500A : 20-VPR-25D (Mounting frame)

(Class CW and PW: Type C and D)

(Class CW: Shutter device is not equipped.)

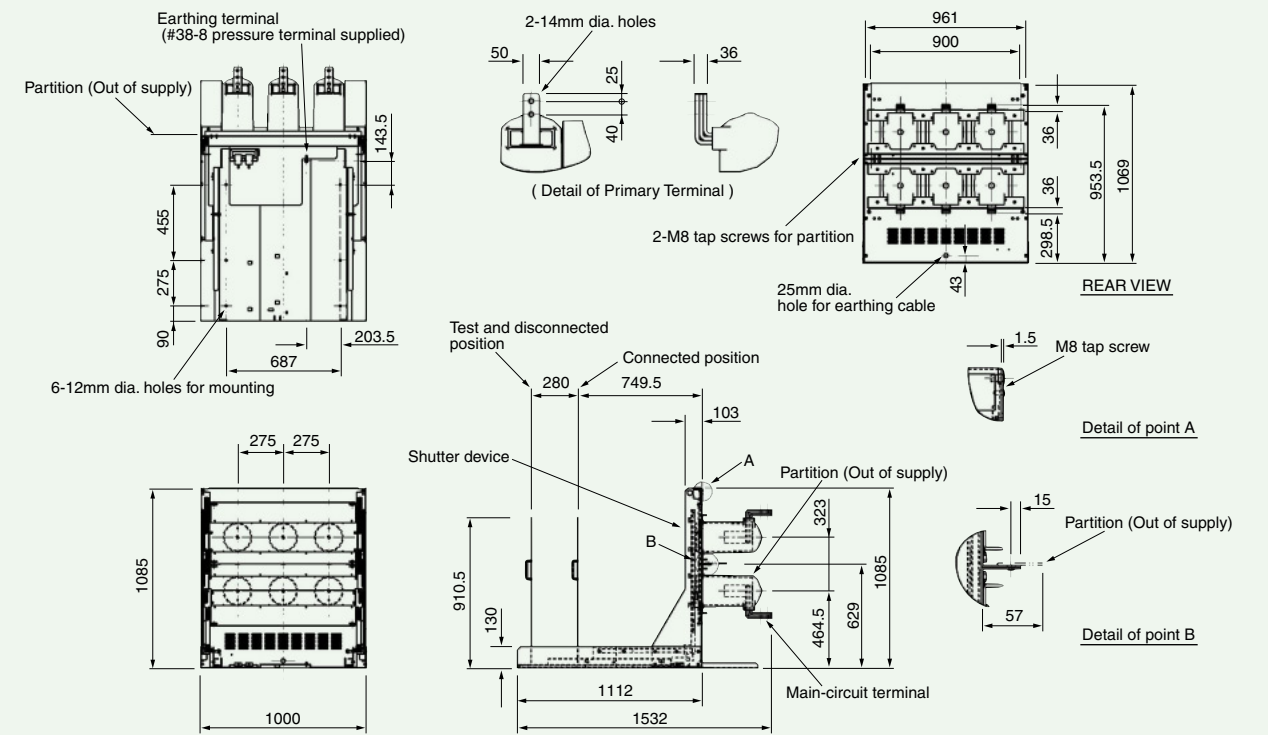
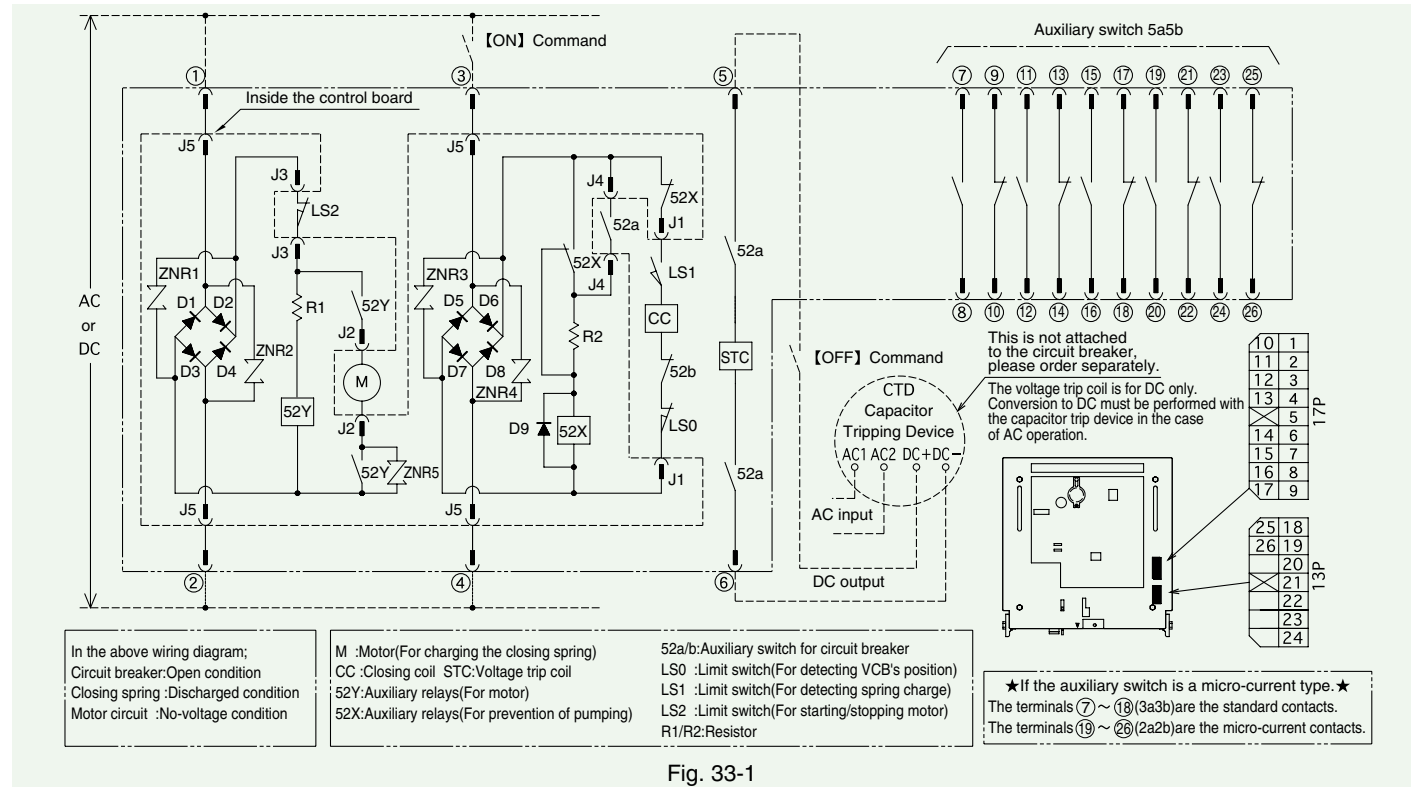


Fig. 32

CONNECTION DIAGRAM

3/6-VPR-20D/25D (600/630A, 1200/1250A)

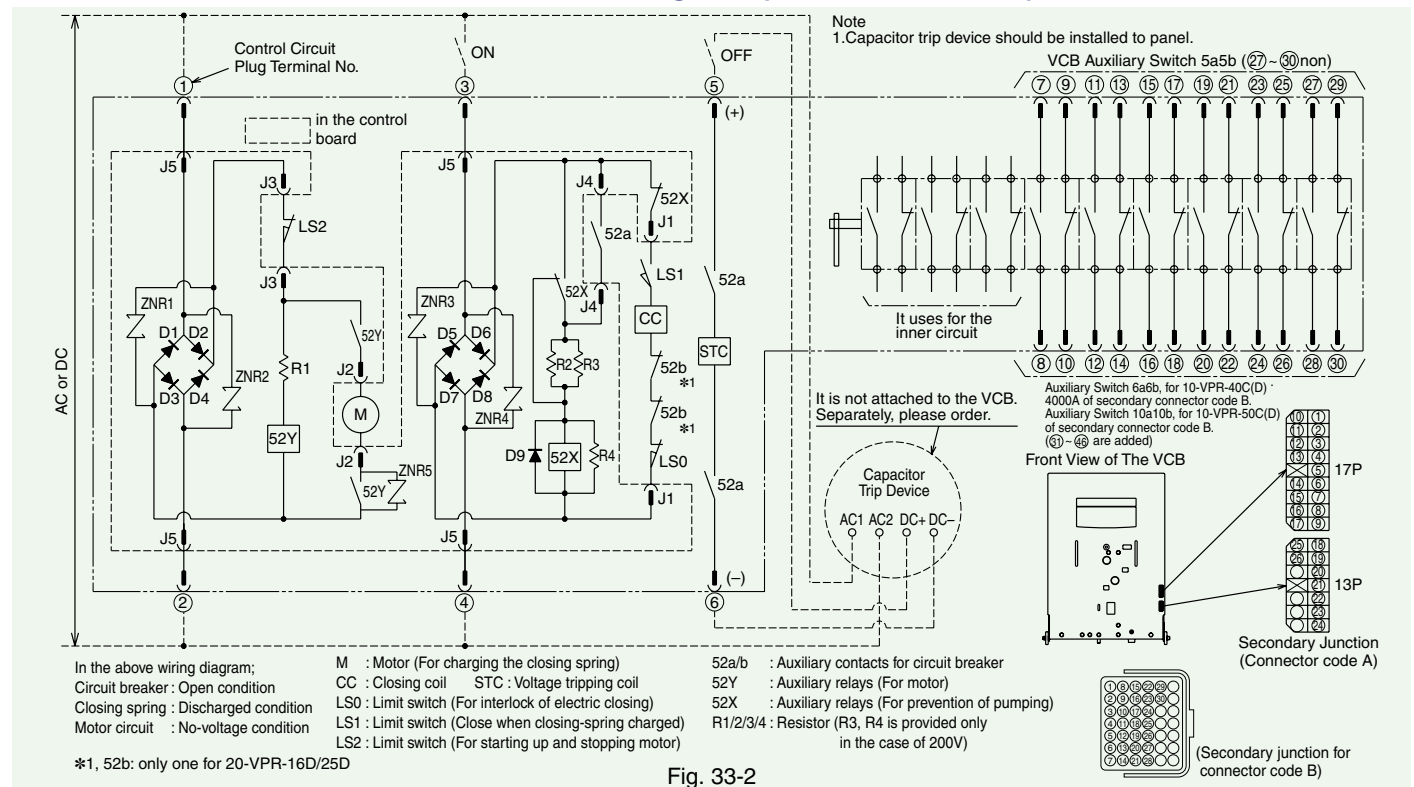
Withdrawable: Standard connection diagram (AC·DC100~125V) (Note: There is no LS0 in a fixed type.)



3/6-VPR-20C/25C (1600A, 2000A) ■ 10-VPR-25C ■ 10-VPR-50C(D)

3/6/10-VPR-32C/40C ■ 20-VPR-25C (1600A, 2000A) ■ 20-VPR-16D/25D

Withdrawable: Standard connection diagram (AC·DC100~125V) (Note: There is no LS0 in a fixed type.)



ACCESSORIES

Table 3 Accessories



Table 4 Accessories

Accessories	Circuit breaker Type name	3-VPR-20D/25D 6-VPR-20D/25D 600~1250A	10-VPR-25C(F) 600~1250A	3/6-VPR-20C/25C 1600A, 2000A 3/6/10-VPR-32C/40C 600~2000A	10-VPR-25C 2500A, 3000/3150A	10-VPR-40C(D) 10-VPR-50C(D) 4000A	20-VPR-25C 1600A, 2000A 20-VPR-25D 2500A	20-VPR-16D 20-VPR-25D
① Secondary connector		1 per unit (Please specify length when the lead wire of the length of 2m or more is necessary.)						
② Manual charging handle		1 per 1~5 VCBs (min. 1)						
③ Draw-in/draw-out handle		1 per unit	1 per 1~5 VCBs (min. 1)					
④ Wipe gauge		1 per 1~5 VCBs (min. 1)						
⑤ Lifting adapter		Not shown in list above. (Eyebolt M12) 2pcs		1 per 1~5 VCBs (min. 1)				
⑥ Sloped platform		Not shown in list above.						

Notes: 1. The bolt, washer and the nut for the connection of main circuit of fixing frame are not attached.
 2. Please order separately if a higher quantity than indicated above required.

Table 5 Auxiliary switch (10a10b for 10-VPR-50C(D) of the secondary connector code B) (6a6b for 10-VPR-40C(D) · 4000A of the secondary connector code B) (5a5b for 10-VPR-40C(D) · 4000A of the secondary connector code A and others)

Item	Circuit breaker Type name		3/6-VPR-20D/25D 600~1250A 20-VPR-16D/25D 600~1250A		Item	Circuit breaker Type name		VPR-C series 20-VPR-25D 2500A 10-VPR-40C(D) 4000A 10-VPR-50C(D) 4000A	
	Rated insulation voltage (V)	Rated operational voltage (V)	AC/DC250	AC/DC220		Rated insulation voltage (V)	Rated operational voltage (V)	AC/DC250	AC/DC220
Standard contact ※	Rated operational current (A)	AC	AC100~110	5 (power factor 0.3~0.4)	Standard contact ※	Rated operational current (A)	AC	AC100~125	5 (power factor 0.3~0.4)
			AC200~220	5 (power factor 0.3~0.4)				AC200~220	4 (power factor 0.3~0.4)
		DC	DC48	5 (time constant 40 ms)			DC	DC12~55	6 (time constant 40 ms)
			DC100~110	1 (time constant 40 ms)				DC100~110	3 (time constant 40 ms)
Minimum operational current (mA)	AC/DC	AC/DC100	30	DC200~220	1 (time constant 40 ms)	AC/DC	AC/DC100	30	
For micro current	Rated operational current (mA)	DC	AC/DC24	50	For micro current	Rated operational current (mA)	DC	AC/DC24	50
			Rated continuous current (A)	5				Rated continuous current (A)	5
			Rated operational voltage (V)	AC/DC220				Rated operational voltage (V)	AC/DC125
For micro current	Rated operational current (mA)	DC	AC24~220	1~200	For micro current	Rated operational current (mA)	DC	AC24~220	1~500
			DC24~220	1~200				DC24~220	1~500
			Rated continuous current (A)	2				Rated continuous current (A)	0.5

※ Avoid use for DC48V/200mA or less in the case of standard contact.

Note: 1. Additional auxiliary contacts can not be added to the standard 5a5b or 6a6b or 10a10b contacts.

OPTIONAL ACCESSORIES

■ Closing Spring Charged Indication Switch (Option for circuit breaker)

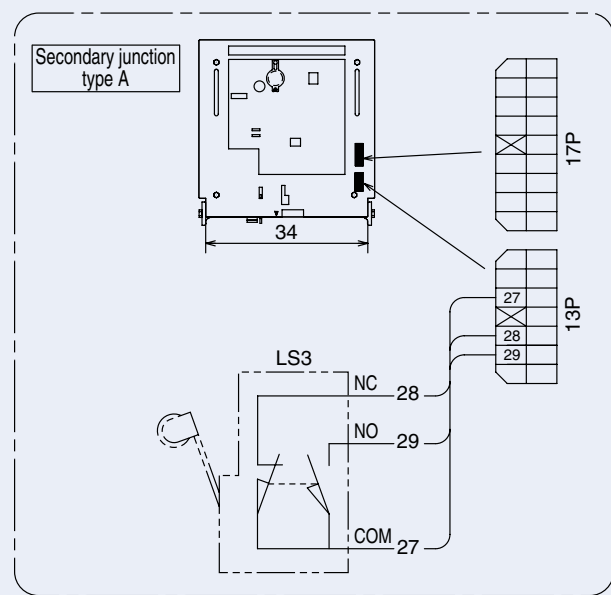


Fig. 34

Table 6 Ratings of limit switch

Rated voltage (V)	Resistive load
AC/DC 125	5.5A

Notes: 1. Refer to page 27 for a connection diagram of VCB.
2. In Fig. 34, closing spring is in discharged condition.
3. LS3 is OMRON type X-10GW22-B.

■ Capacitor Trip Power Device (CTD) Sold Separately

The installation and the performance of KF-100E and KF-200CD are compatible with former type, KF-100E and KF-200CD.

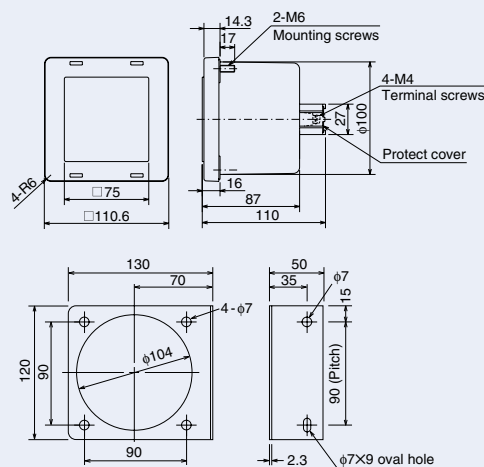


Fig. 35 Dimension of CTD and the device-mounting fixture

Table 7 Constant of element of CTD

Type name	Capacitor C	Resistance R1	Resistance R2	Resistance R3
KF-100E	820μF	10W300Ω	10W100Ω	0.5W240kΩ
KF-200CD	820μF	10W300Ω	10W100Ω	0.5W240kΩ

Table 8 Ratings of CTD

Item	KF-100E	KF-200CD
Rated operational voltage (V)	AC100/110	AC200/220
Rated frequency (Hz)	50/60	
Rated output voltage (V)	DC140/155	
Power consumption (normal conditions) (W)	0.1 or less	
Charging time constant (s)	1	2.3
VCB control voltage (V)	DC100/110	

(Remarks)

- It is standard to install the capacitor tripping power device within the switchgear.
- No device-mounting fixture is included. The device-mounting fixture allows mounting of the device pointing left, right, up or down.

(Cautions)

- The output voltage of the KF-200CD is DC140/155V, and it can not open circuit breakers with shunt tripping coil of DC200/220V which may result in accidents.
- Do not trip VCB before a capacitor is full charged. Only apply a circuit open command after capacitor charging is complete.
- Do not use this unit for any purpose other than VCB tripping.
- One power supply device is required for each VCB.
- The recommended renewal period is six years.

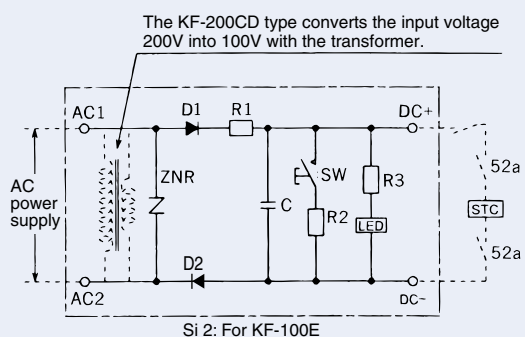


Fig. 36 Connection diagram of CTD

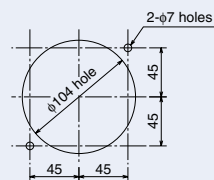


Fig. 37 Example of the device-mounting fixture

■ Position Switch (Option for mounting frame of 3/6-VPR-20D/25D 600/630A, 1200/1250A)

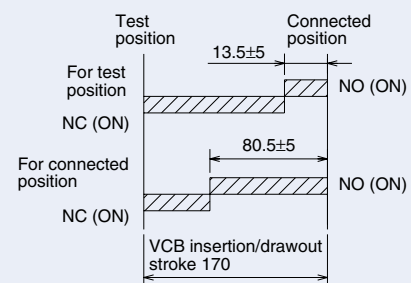


Table 9 Ratings of limit switch

Rated voltage (V)	Resistive load (A)	Inductive load (A)
AC100~125	10	6
DC100~125	0.5	0.05

1 Unit	Each 1C for test and connected position Only the switch of No.1 is installed for 2C.	
2 Units	Each 2C for test and connected position No.1 and No.2 are installed for 4C.	

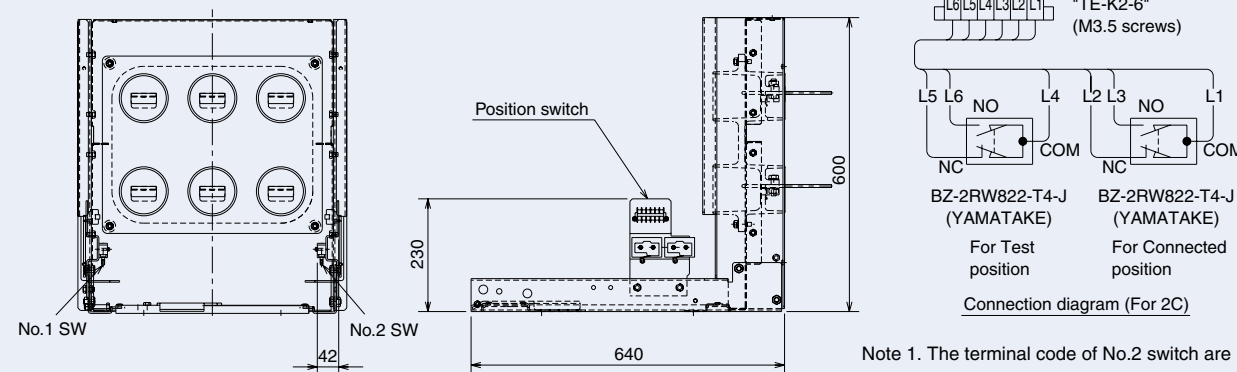


Fig. 38

Note 1. The terminal code of No.2 switch are R1-R6.

■ Position Switch (Option for mounting frame of 3/6-VPR-20C/25C 1600, 2000A, 10-VPR-25C, 10-VPR-32C/40C, 20-VPR-16C/25C, 20-VPR-25C, 20-VPR-16D/25D)

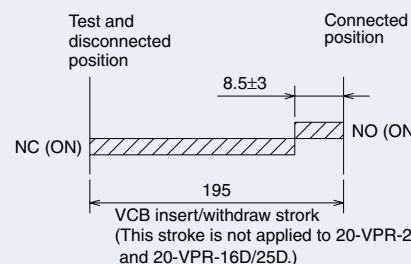


Table 10 Ratings of limit switch

Rated voltage (V)	Resistive load (A)	Inductive load (A)
AC100~125	15	10
DC100~125	0.5	0.1

1 Unit	For 2C	No.1 SW
2 Units	For 4C	No.1 and No.2 SW

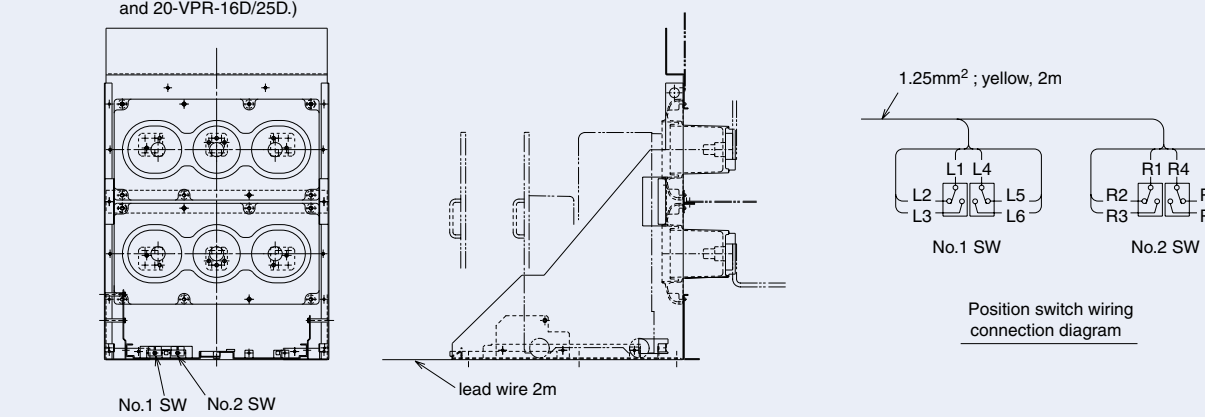


Fig. 39

Position switch wiring connection diagram

Arresters (for 3.6kV, 7.2kV) Sold Separately

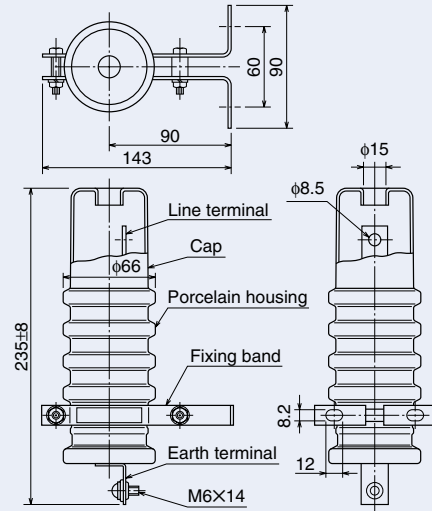


Fig. 40 Arrester (Type GL)

Table 11 Ratings of Arrester

Brand name	Otowa GL arrester	
Usage	Indoor	
Type name	GLI-3G	GLI-6G
Rated voltage (kV)	4.2	8.4
Applicable circuit voltage (kV)	3.3	6.6
AC discharge starting voltage (kV crest)	6.3	12.6
Impulse discharge starting voltage (kV peak)	17	33
Official discharge current (A)	2500	2500
Mass (kg)	1.2	1.3

Warning

Disconnect wiring to perform withstand voltage test.

Arresters (for 12kV, 24kV) Sold Separately

If information on the arrester of this class is necessary, please consult your dealer.

Surge absorbing capacitor (CR suppressor) Sold Separately

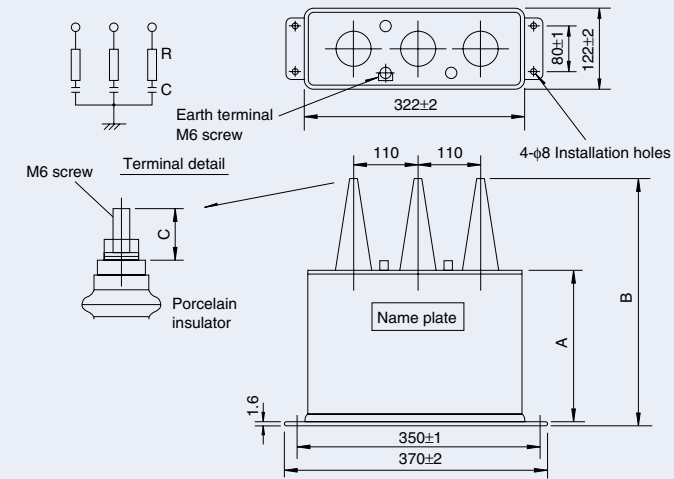


Fig. 42-1 Type CR-3 and CR-6

Table 13 Ratings of CR suppressor

Type name	CR-3	CR-6	CR-12
Applicable circuit voltage (kV)	3.3	6.6	11
Dimensions	A	150	200
	B	237	337
	C	16	20
Rated capacitance (μF)	0.05/φ	0.05/φ	0.1/φ
Series resistance (Ω)	100/φ	100/φ	100/φ
Mass (kg)	8.5	10	31
Figure	Fig. 42-1		Fig. 42-2

Warning

1. Remove connecting wires of CR suppressor during withstand voltage testing.
2. Note: Separately consultation is required when high electric strength performance is necessary.

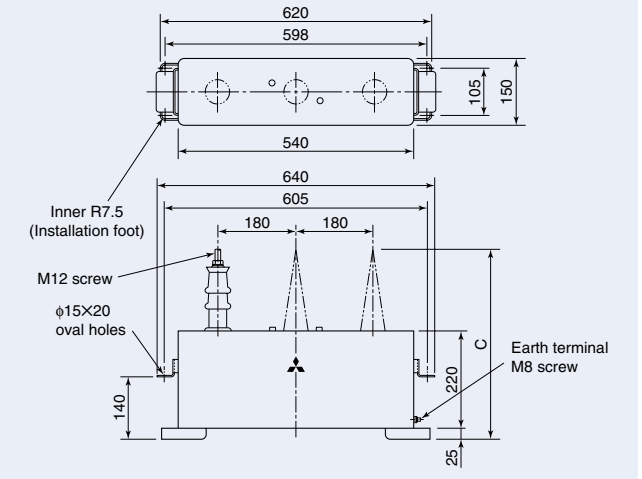


Fig. 42-2 Type CR-12

3. Application to circuit where higher harmonics wave is included
The effect value of a synthetic current including the higher harmonics wave should be below the value of the table below (1.3 times the ratings value) when used for such a circuit.

Type name	CR-3	CR-6	CR-12
Permissible value of synthetic current including higher harmonics wave	0.05Arms /phase	0.1Arms /phase	0.37Arms /phase

4. Attention on withstand voltage test
When the capacity of the transformer of the withstand voltage test is small, it is not likely to be able to test by a lot of currents' flowing too much.
When the withstand voltage test is executed with the CR suppressor installed in the panel, it is necessary to cut off the CR suppressor from a main circuit.

Permissible testing voltage of CR suppressor

Rated testing voltage	Type name	AC	Type name			
			CR-3	CR-6	CR-12	
AC	Between T-T	1 minute	6.6kV	13.2kV	24kV	
			Between T-C	7.6kV	14.2kV	28kV
			Between T-C	10 minutes	4.95kV	9.9kV

T: Terminal, C: Case

5. Replacement recommendation service life
When 15 years have passed since it manufactured it.

Vacuum checker Sold Separately

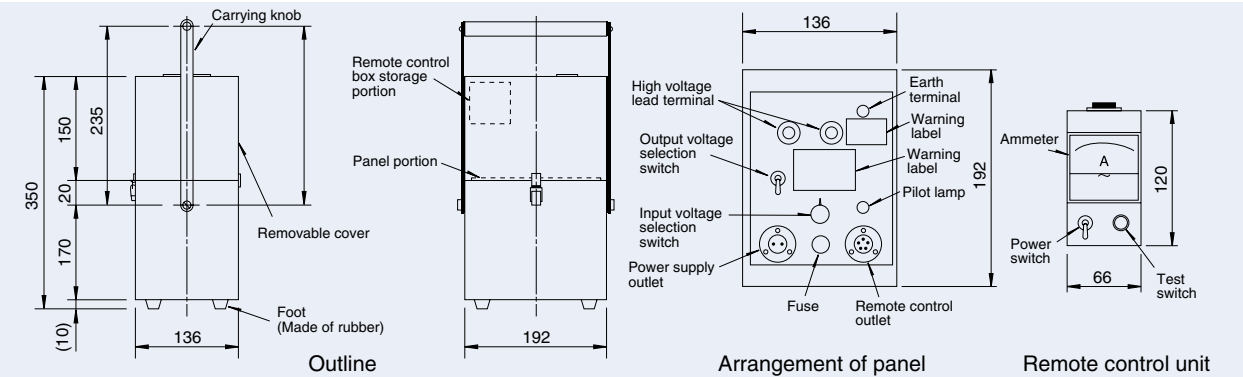


Table 14 Specifications of Vacuum Checker

Type name	Input voltage (V AC)	Output voltage (kV AC)
V-1C	100/110/120	20 (For 3/6/10-VPR · 600A ~ 3150A)
V-2C	200/220/240	20 (For 3/6/10-VPR · 600A ~ 3150A)
V-3C	100/110/120/200/220/240	30 (For 20-VPR-25C, 20-VPR-16D/25D, 10-VPR-40C(D) · 4000A and 10-VPR-50C(D))

Fig. 43 Vacuum checker

■ Lifter Sold Separately

For 3/6-VPR-20D/25D 600~1250A

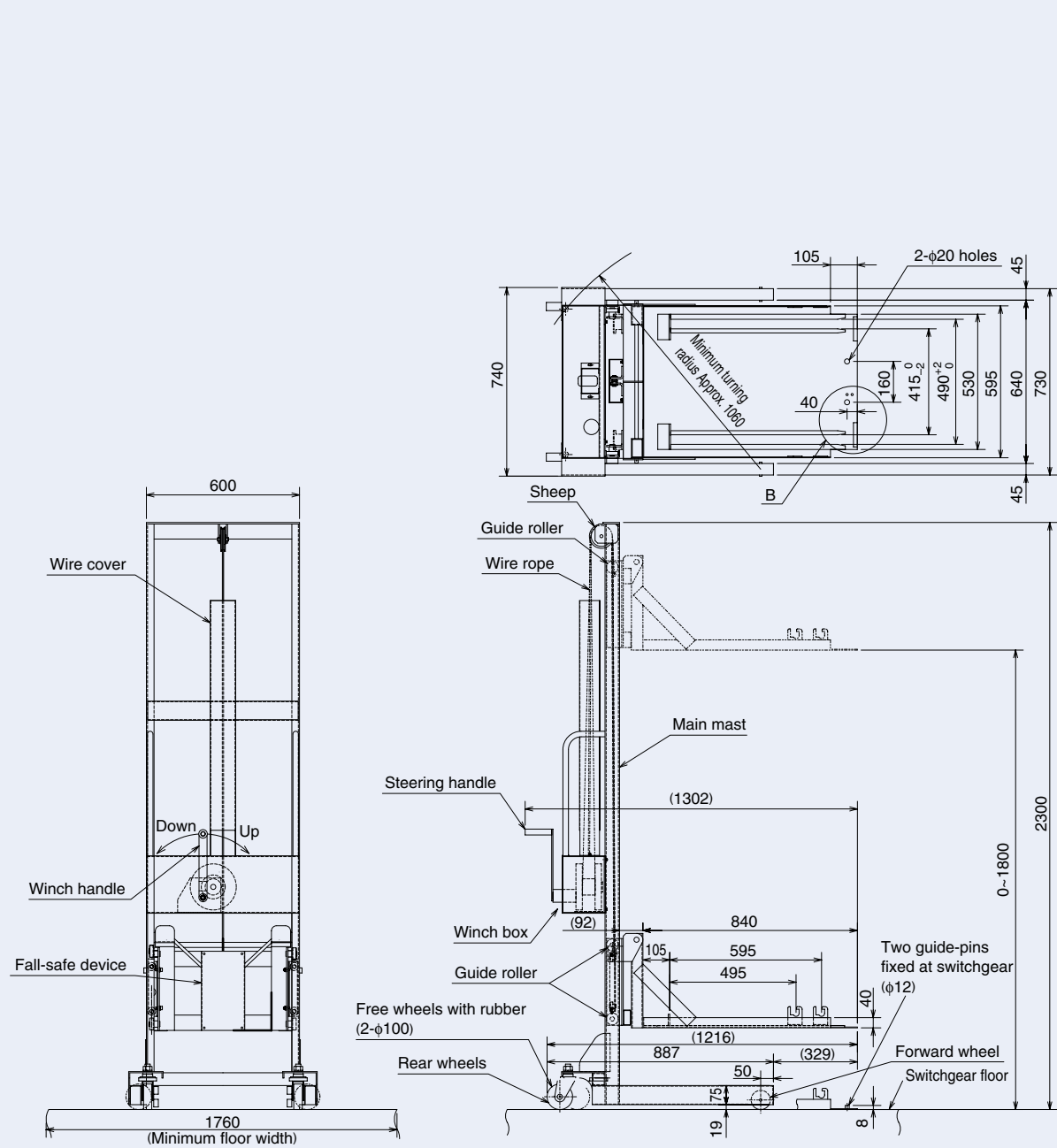


Fig. 44 Type F-2C lifter

■ Lifter Sold Separately

For 3/6-VPR-20C/25C 1600,2000A, 10-VPR-25C, 3/6/10-VPR-32C/40C

When you need a lifter for 10-VPR-40C(D) or 10-VPR-50C(D), please consult your dealer. Type F-3C lifter is not available for 10-VPR-40C(D) or 10VPR-50C(D).

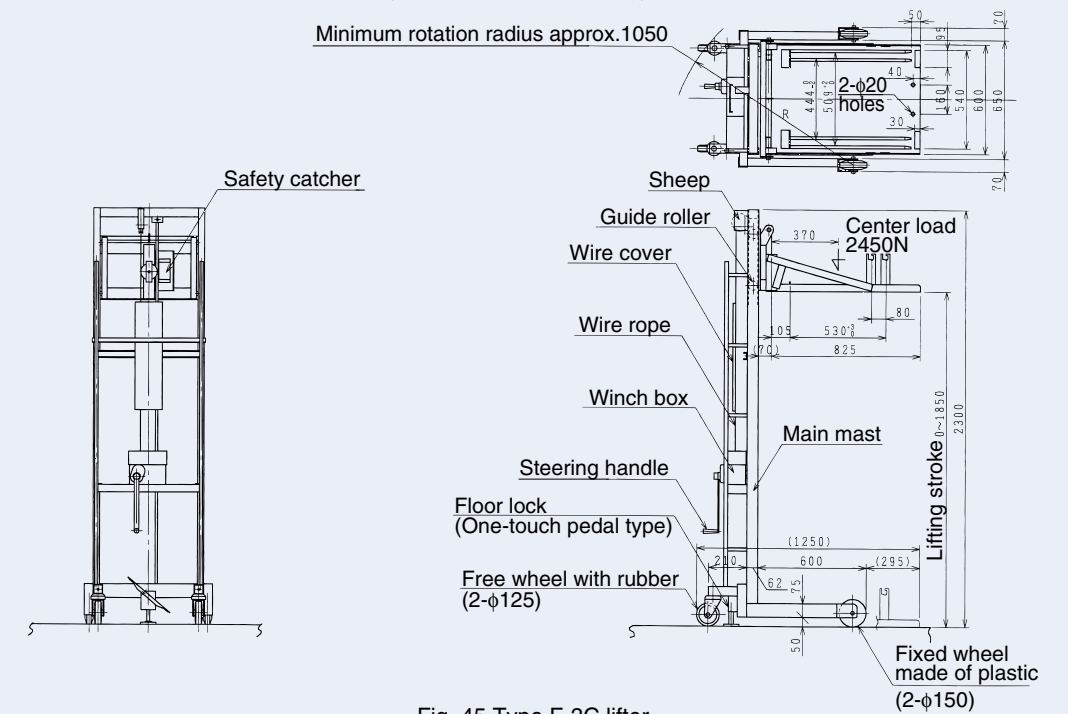


Fig. 45 Type F-3C lifter

For 20-VPR

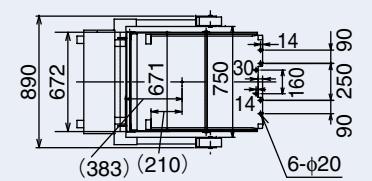


Fig. 46-1 For 20-VPR-16D/25D 600A, 1200A

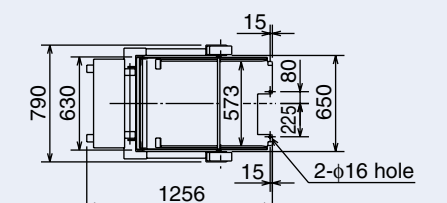


Fig. 46-2 For 20-VPR-25C 1600A, 2000A

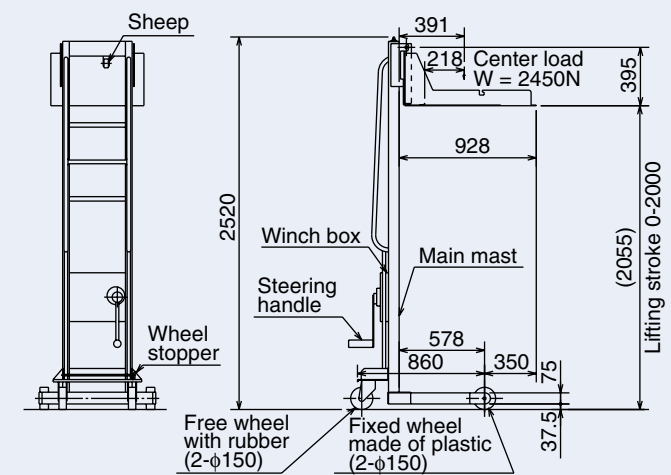


Fig. 46-3 Lifter for 20-VPR-25C

Operation and control circuit

Electrical closing and tripping operation

Fig. 47, shows the circuit breaker in an opened circuit state and with the closing spring in a discharged state.

Closing Operation

①When the power supply is connected, auxiliary relay 52Y is excited via the limit switch LS2 and the contact of auxiliary relay 52Y closes which activates the motor via LS2 and the contact of auxiliary relay 52Y starts to charge the closing spring. When the closing spring is completely charged, limit switch LS2 opens and the motor stops and the limit switch LS1 closes (the closed control circuit is formed).

②By closing the closing command switch CS1 in this state, the closing coil [CC] is excited and the closing latch at the operating mechanism is released and the circuit breaker closes by the charged closed spring energy. The discharging of the closed spring, LS2 is closed and LS1 is opened.

③By the limit switch LS2 closing, the motor activates and performs charging of the closing spring and to prepare for the next closing operation.

④When the circuit breaker is closed, circuit breaker auxiliary contact 52b opens and shuts off excitation of closing coil [CC]. At the same time auxiliary contact 52a closes and forms a trip circuit of the voltage tripping coil [STC] and at the same time excites the auxiliary relay (for anti-pumping prevention) [52X].

Tripping Operation

①By closing the trip command switch CS2, the voltage tripping coil [STC] is excited and engagement of tripping latch at the operating mechanism is released and the circuit breaker opens.

Trip Free Operation

If the closing command and trip command are given simultaneously when the circuit breaker is in an opened state and the closing spring is in a charged state (closing preparation):

①Operation takes place in order of ②, ③ and ④ of the electrical (closing) operation. Then because the trip command is being continued, operation ① of the electrical (trip) operation takes place.

②Electrical (circuit closing) operation ① is returned but since the auxiliary relay [52X] is continuously being excited, closed circuit is not formed by contact 52Xb and the circuit remains in the opened state.

③When performing the closing operation, it is necessary to release the closing command by closing command switch CS1 and restore auxiliary relay [52X].

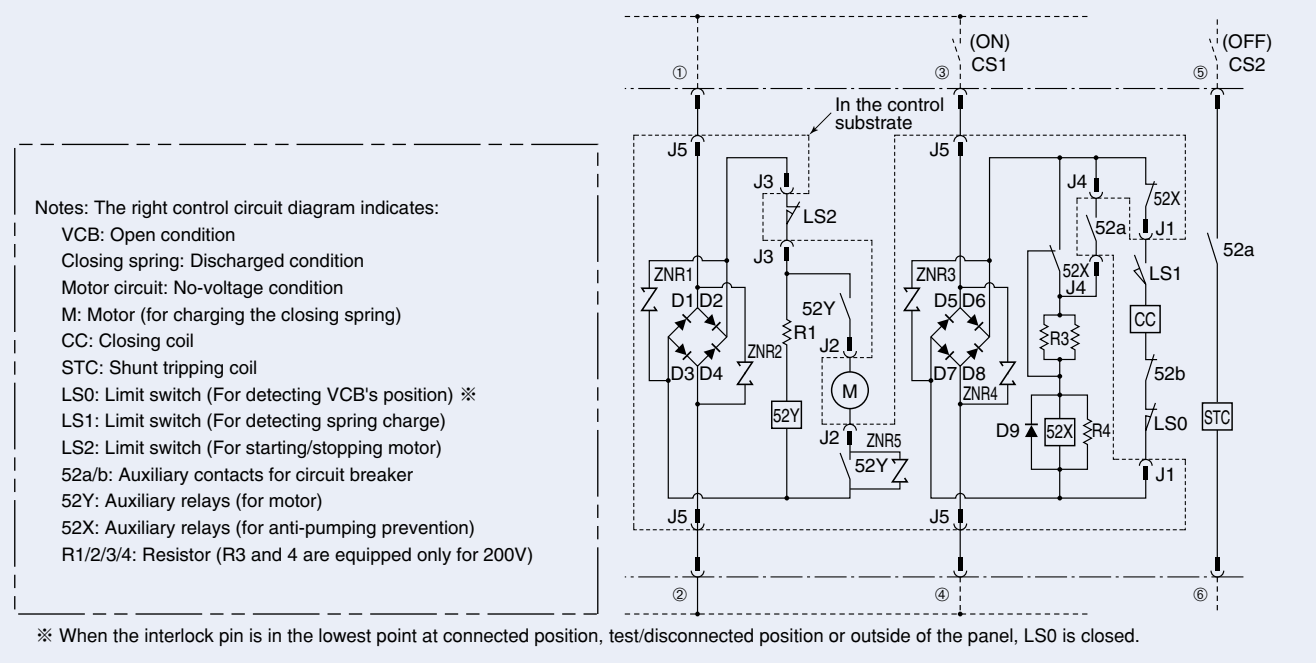
If the closing command and trip command are given simultaneously when the circuit breaker is in a closed state and the closing spring is in a charged state (closing preparation):

①Since the auxiliary contact 52b is opened, closed control circuit is not formed and electric (trip) operation ① occurs.

②Electrical (circuit closing) operation ② is returned but since the auxiliary relay [52X] is continuously being excited, closed circuit is not formed by contact 52Xb and the circuit remains in the opened state.

③When performing the closing operation, it is necessary to release the closing command by closing command switch CS1 and restore auxiliary relay [52X].

Fig. 47 Basic control circuit diagram



Operation and control voltages (currents)

Table 15 Operation and control voltage fluctuation range

Classification	Standard	JEC-2300	IEC 60056 and IEC 62271-100
	Closing operation/control voltage	DC	75~125%
AC		85~110%	
Tripping control voltage	DC	60~125%	70~110%
	AC		85~110%

Table 16 Closing and tripping control current vs. current-flow time (see Fig. 48)

VCB type name	Control voltage (V)	DC (V)	
		100	
		I (A)	T (s)
3/6-VPR-20D/25D 600~1250A	Closing	3.5	0.05
	Tripping	3.5	0.03
3/6-VPR-20C/25C 1600A, 2000A 10-VPR-25C, 3/6/10-VPR-32C/40C	Closing	4	0.05
	Tripping	4	0.03
10-VPR-40C (D) 4000A	Closing	5	0.05
	Tripping	5	0.035
10-VPR-50C (D) 4000A	Closing	3.2	0.08
	Tripping	3.2	0.03
20-VPR-25C 1600A, 2000A	Closing	3.4	0.05
	Tripping	3.4	0.03
20-VPR-16D/25D 600~1250A	Closing	4	0.05
	Tripping	3.4	0.03
20-VPR-25D 2500A	Closing	4.5	0.05
	Tripping	4	0.03

Table 17 Motor-operation control current vs. current-flow time (see Fig. 49)

VCB type name	Control voltage (V)	DC (V)			
		100			
		I ₁ (A)	I ₂ (A)	T ₁ (s)	T ₂ (s)
3/6-VPR-20D/25D 600~1250A		4	0.8	0.1	8
3/6-VPR-20C/25C 1600A, 2000A 10-VPR-25C, 3/6/10-VPR-32C/40C 20-VPR-25C 1600A, 2000A		5	1.2	0.1	5
10-VPR-40C (D) 4000A		11.5	6	0.1	6
10-VPR-50C (D) 4000A		6	1.5	0.1	10
20-VPR-16D/25D 600~1250A		4	1	0.1	6
20-VPR-25D 2500A		5	1	0.1	5

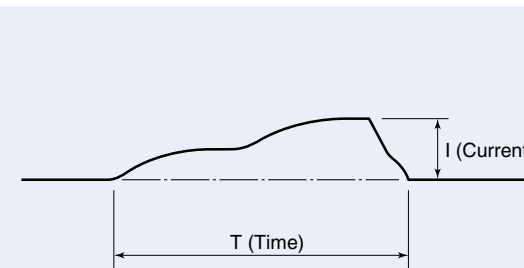


Fig. 48

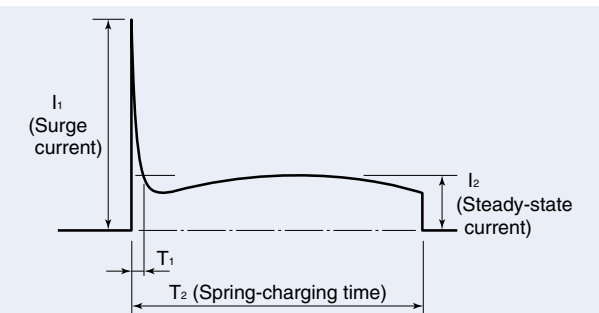


Fig. 49

Operation and control voltages (currents)

●Table 18 Burden VA of Closing Coil and Electrifying Time in Alternating Current (AC) Operation

Model name	Control Voltage (V)	
	Burden (VA)	Electrifying time (s)
3/6-VPR-20D/25D 600~1250A	480	0.05
Excluding the above	680	0.05

●Table 19 Motor burden VA and Drive Time in Alternating Current (AC) Operation

Model name	Control Voltage (V)	
	Burden (VA)	Electrifying time (s)
3/6-VPR-20D/25D 600~1250A	150	8
Excluding the above	180	6

●Table 20 VT Capacity, and Number of VCBs Operable at the same time in Alternating Current (AC) Operation

Model name	VT type name	
	PD-50/100HF (Notes1,3)	PD-200KFH (Notes2,3)
3/6-VPR-20D/25D 600~1250A	2 units	3 units
Excluding the above	1 unit	2 units

Notes: 1. For PD-50/100HF, all-time load of 50VA is considered in addition to VCB operation.
 2. For PD-200HF, all-time load of 200VA is considered in addition to VCB operation.
 3. The operation duty of O-1min-CO-3min-CO or O-3min-CO-3min-CO is considered. If operated more than this, keep enough interval.
 4. 10-VPR-40C(D) 4000A is not included in the above-mentioned table.

Applicable Standards

Special Environment and Application

●Operation Environment

VPR type vacuum circuit breakers conform to the JEC-2300 and IEC 60056 or 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 table 21. 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 table 21, consult the manufacture.

●Instructions 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.

●Table 21

Normal operation condition
1. Altitude: 1,000 m or less
2. Ambient temp: -5°C ~ 40°C (The average temperature for 24 hours must not exceed 35°C.)
3. Relative humidity: 45% ~ 85% (Relative humidity; there must be no dew condensation.)
4. Degree of pollution: There must be no pollution. (As a guideline, the equivalent salt deposit density should be less than 0.01 mg/cm ²)
5. Poisonous gas etc.: There must be no corrosive gas.
6. Powder dust: There must be no excessive powder dust. (As a guideline, the powder dust should be less than 2 mg/m ³)

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 table 22. Use the as table 22 of standard bellows as reference when selecting models.

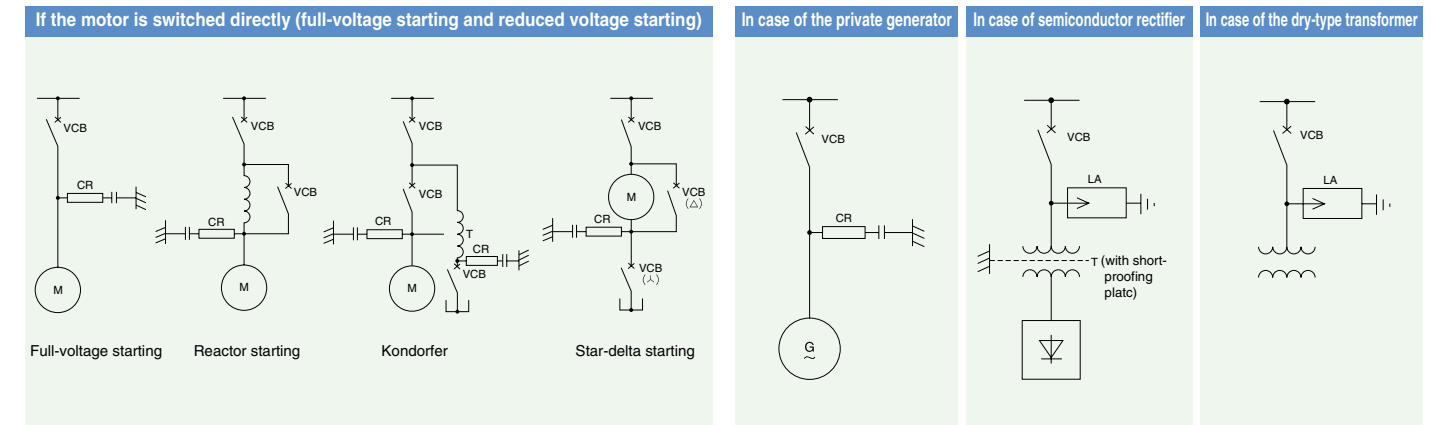
●Surge Protection Standards

●Table 22

VCB type	Load	Generator	Motor	Dry-type transformer	Oil transformer	Mitsubishi molded transformer and oil transformer (Note 4)	Phase-advance capacitor
		3/6/10-VPR-C 3/6-VPR-D 10-VPR-50C(D)	CR suppressor	CR suppressor	Lightning arrester (Note 1)	Not required (Note 1)	Not required (Notes 1,2) (10-VPR is not applicable)
	20-VPR-C/D	Not applicable	Not applicable	Ditto	Ditto	Not applicable	Not required
	Low-surge product (3/6-VPR-CG/DG)	Not required	Not required (Note 3)	Not required	Ditto	Not required	Not required

Notes: 1. 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 molded transformer. When such currents must be interrupted, apply general-purpose arrester. To use any molded 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. Mitsubishi molded 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.

Fig. 50 Surge Protection Standards (In case of general-purpose VCB)



Service Life and Application

The service life of vacuum circuit breaker is specified in the terms of the vacuum service life of Vacuum Interrupters, electrical and mechanical service lives.

●Vacuum Service Life of Vacuum Interrupters (VI)

Since the vacuum circuit breaker maintains the switching characteristics and insulation characteristics by using high vacuum in VI, it is most important to maintain such vacuum. VI produced by our own original quality control is checked severely by full-lot testing, and therefore can be operated safely for a long time. It is also possible to check the vacuum in a simple way by voltage-resistance method in periodical maintenance. Portable type vacuum checkers are also available.

●Electrical Service Life of VI (see Table 23)

The electrical service life of VI is determined by the electrode consumption and the number of switchings. In VCB, such service life can be judged by the number of load switchings, because the electrode consumption is extremely small.

●Mechanical Service Life (see Table 23)

This can be determined by the operation counter provided in the vacuum circuit breaker (provided in all types as standard specification).

●Replace when having reached at the service life

When it reached mechanical life or 20 years have passed since it was manufactured, it is necessary to replace the VCB.

●Table 23 List of switching service lives

Model name	Item	Load switching service life (times)	Mechanical switching service life (times)
3-VPR 6-VPR 10-VPR 20-VPR		10,000	10,000

Remark: 1. When the switching times reached the value of table 23, it is necessary to replace the VCBs.

●Table 24 List of capacities for which capacitor is applicable

Model name	Item	Max. switching capacity (kvar)	Multiple switching capacity (kvar)
3-VPR		2,500	1,500
6-VPR		5,000	3,000
10-VPR		7,000	4,000
20-VPR-16D		12,000	6,000
20-VPR-25C, 20-VPR-25D		17,000	8,500

Remarks: 1. The electrical service life for the max. switching capacity is about 2,000 times, and multiple switching capacity is 10,000 times.
 2. Applicable capacities with 6 ~ 13% series-connected reactor are shown.

Polarity of Main Circuit Connection

It is needless to classify the polarity in the power/load sides in connecting the top and bottom main circuit terminals of the vacuum circuit breaker. (Electrical or mechanical performance is not changed whether it is connected to the power side or load side.)

ORDERING INFORMATION

0 6 V P R 2 5 D - 1 D 1 1 1 1 A 0 1

Type name code

Optional specifications

Rated voltage	Type name	Rated short-circuit breaking current	Series name	VI selection	Standards (Note1)	Mounting configuration	Rated current	Closing operation/control voltage	Tripping control voltage(STC)	Position switch	Secondary connector	Auxiliary switch	Closing spring charged indication switch
03 : 3.6kV 06 : 7.2kV 10 : 12kV 20 : 24kV	VPR	20 : 20kA 25 : 25kA 32 : 31.5kA 40 : 40kA 50 : 40/50kA	C D	- : Standard G : Low surge	J : JEC I : IEC	L: Fixed type mounting frame P: With out frame C: With CW class mounting frame D: With PW class mounting frame G: With MW class mounting frame	06 : 600/630A 12 : 1200/1250A 16 : 1600A 20 : 2000A 25 : 2500A 30 : 3000/3150A 40 : 4000A	1 : DC100/110V 2 : DC200/220V 7 : DC24V 8 : DC48V 5: AC 100/110V 100/110V with CTD 6: AC 200/220V 200/220V with CTD	1 : 100/110V 2 : 200/220V 3 : 220V 4 : 240V 7 : 240V 8 : 240V	0 : None 1 : 1 unit (2C) 2 : 2 units (4C)	[Standard] A : Without interlock [Option] B : With interlock [Option] C : Automatic self-aligning *Code B and C cannot be selected for fixed type.	0 : Standard S : With contact for small current	0 : None 1 : With 1C

Specification list

Rated voltage	Type name	Rated short-circuit breaking current	Series name	VI selection	Standards (Note1)	Mounting configuration	Rated current	Closing operation/control voltage	Tripping control voltage(STC)	Position switch	Secondary connector	Auxiliary switch	Closing spring charged indication switch	Specification list			
														Rated voltage	Type name		
3	VPR	20	D	-	J, I	L, P, C, D, G	06, 12 (Series D) 16, 20 (Series C)				A, B, C						
			C	-	J, I	L, P, C, D, G	06, 12 (Series D) 16, 20 (Series C)				A, B, C						
		25	D	-	J, I	L, P, C, D, G	12				0	A, B, C					
			C	-	J, I	L, P, C, D, G	12				1	A, B, C					
		32	D	-	J, I	L, P, C, D, G	16, 20				2	A, B, C					
			C	-	J, I	L, P, C, D, G	16, 20				3	A, B, C					
	6	VPR	20	D	-	J, I	L, P, C, D, G	06, 12 (Series D) 16, 20 (Series C)				A, B, C					
				C	-	J, I	L, P, C, D, G	06, 12 (Series D) 16, 20 (Series C)				A, B, C					
			25	D	-	J, I	L, P, C, D, G	12				0	A, B, C				
				C	-	J, I	L, P, C, D, G	12				1	A, B, C				
			32	D	-	J, I	L, P, C, D, G	16, 20				2	A, B, C				
				C	-	J, I	L, P, C, D, G	16, 20				3	A, B, C				
10	VPR	25	D	-	J, I	L, P, C, D, G	06, 12 (Series D) 16, 20 (Series C)				A, B, C						
			C	-	J, I	L, P, C, D, G	06, 12 (Series D) 16, 20 (Series C)				A, B, C						
		32	D	-	J, I	L, P, C, D, G	12				0	A, B, C					
			C	-	J, I	L, P, C, D, G	12				1	A, B, C					
		40	D	-	J, I	L, P, C, D, G	16, 20				2	A, B, C					
			C	-	J, I	L, P, C, D, G	16, 20				3	A, B, C					
	20	VPR	16	C(F)	-	J, I	L, P, C, D, G	06, 12				A, B					
				C	-	J, I	L, P, C, D, G	06, 12				A, B					
			25	C(D)	-	J, I	L, P, C, D, G	40				0	A, B				
				C(D)	-	J, I	L, P, C, D, G	40				1	A, B				
			25	D	-	J, I	L, P, C, D	06, 12				2	A, B				
				C	-	J, I	L, P, C, D	06, 12				3	A, B				

Note1: The application standard of 3/6-VPR-20D/25D and 3/6-VPR-20DG/25DG is only IEC.



for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

MITSUBISHI ELECTRIC CORPORATION

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Safety Warning

To ensure proper use of the products listed in this catalog, please be sure to read the instruction manual prior to use.