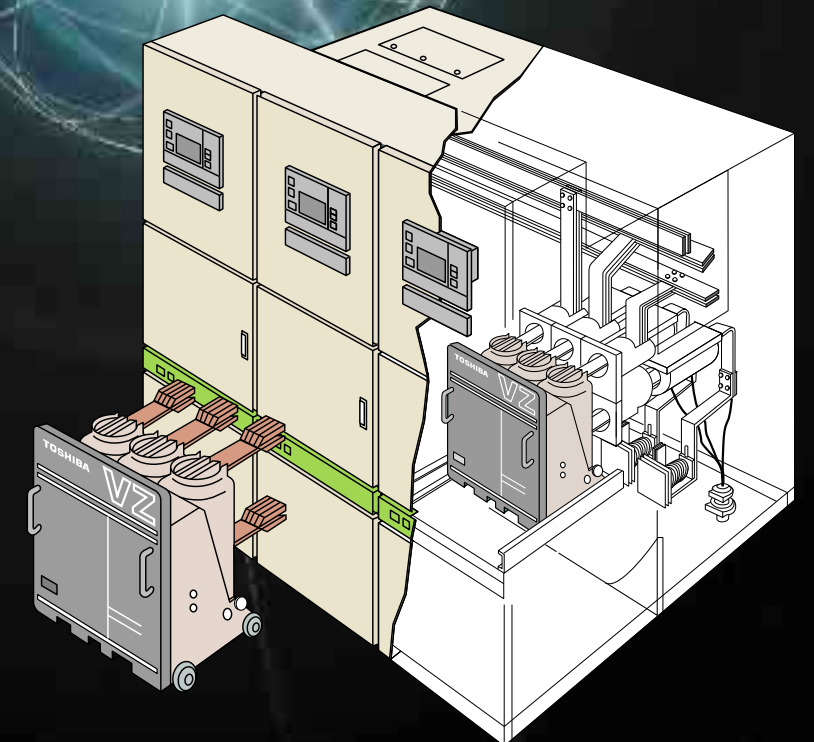


 **Safety Cautions**

- Read the entire "Instruction Manual" carefully for important information about safety, handling, installation, operation, maintenance, and parts replacements.
- This equipment is designed and built in accordance with applicable safety standard in effect on the date of manufacture. Unauthorized modifications will void warranty and can result in severe injury, death and property damage. Do not make any modifications to the equipment.
- Only qualified persons are to install, operate or service this equipment according to all applicable codes and established safety practices.
- Use only genuine Toshiba replacement parts and accessories. Improper components could cause the equipment malfunction.
- Do not install this equipment in areas where unusual service conditions exist. Using this equipment in other than usual service conditions can result in equipment failure.
- Do not exceed the ratings specified on the equipment nameplate or system accessories. Underrated equipment can fail during operation causing fire, explosion, severe injury, death, and property damage.

TOSHIBA
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<http://www3.toshiba.co.jp/sic/english/swgr/products.htm>

V **VACUUM CIRCUIT
BREAKERS**
[3.6~36kV]



VACUUM CIRCUIT BREAKERS

Having successfully supply the vacuum switches to practical use in 1965 for the first products in Japan, Toshiba has been producing various types of vacuum apparatus which are now widely used as a result of their outstanding performance.

Currently producing vacuum circuit breakers, vacuum contactors, and pole mounted vacuum switches, Toshiba has become a leader of manufacturers of vacuum interrupters and vacuum technology for such devices by following items:

(1) By using axial magnetic field type electrode for VCB, following features can be obtained.

- (a) Contact erosion by arc can be reduced
- (b) High Interrupting current can be applied
- (c) Compact size

(2) Brazed in Vacuum furnace

The vacuum interrupters are assembled in vacuum furnace, the exhaust pipe is deleted and the reliable vacuum is realized.

(3) Long experiences in manufacturing

Since the introduction of the first vacuum interrupter in 1962, Toshiba has been continuously improving and developing vacuum technology. Over 3.2 million Toshiba vacuum interrupters have been manufactured and are providing reliable service in a wide variety of applications worldwide.

Processing superb features in that maintenance/inspection service is reduced and safety is secured without using any media, the vacuum circuit breaker has become a leading product among circuit breakers of 36kV and below.

Toshiba Vacuum Circuit Breakers enjoy popularity for their excellent quality proved by the longest operation period.



FEATURES

Excellent Breaking Performance

Since the arc in vacuum disperses at high speed and extinguishes almost at the first current zero, Toshiba vacuum circuit breakers are appropriate for high-speed breaking and rapid reclosing. The vacuum enclosure is sealed so that its breaking performance is not changed by the effect of external atmosphere.

High Reliability

Toshiba vacuum circuit breakers are produced under an integrated quality control system ranging from design through production. Especially the vacuum interrupters (the OHEARTO of vacuum circuit breakers) are produced to ensure high reliability by assembling them in a modern Oclean roomO and by using a high vacuum degassing furnaces.

Safety for Personnel and Operating Safety

The vacuum circuit breaker dose not require any other media for arc extinction, hence there is no emission product which could give rise to explosion or the hazard.

Minimized Maintenance/Inspection

Since the main contacts are sealed in a vacuum envelope, and having low contact wear characteristics, the inspection and/or maintenance will be minimized. Further the operating mechanism offers easy maintenance and long-life thanks to the special mechanism involving less energy. Also the operating mechanism is mounted on the front and control circuit component are arranged on a printed board, maintenance/inspections will be performed easily. Replacement parts such as tripping coil, closing coil in mechanism and vacuum interrupter, are easily inspected and replaced.

Compact and Light

The reliable insulation material/structure and efficient mechanism make the vacuum circuit breaker compact and light weight. Toshiba vacuum circuit breakers offer simplified installation and operation, and realize lightweight and compact switchgear and multi tiers construction of cubicle.

TOSHIBA VACUUM CIRCUIT BREAKERS

Refer to Table 1 for selecting the Type-Form of TOSHIBA Vacuum Circuit Breaker.
Then refer to Table 2 for more detailed information.

Table 1 Selection Table

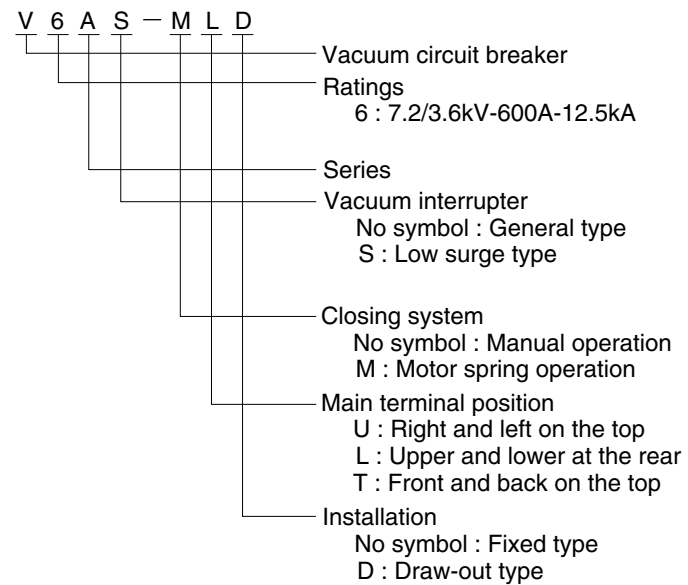
Voltage	Interrupting current		12.5kA	16kA	20kA	25kA	31.5kA	40kA	50kA
3.6kV									
7.2kV	V6A-□ (600A) V6AS-□ (600A)	VHA-6J13 (630A)	VZ-6J16 (630A)	VHA-6J20S (630A) VHA-6M20S (1250A)	VZ-6J25 (630A) VZ-6M25 (1250A) VZ-6P25 (2000A)	VZ-6M32 (1250A) VZ-6P32 (2000A)	VZ-6M40 (1250A) VZ-6P40 (2000A) VZ-6Q40 (3150A) VZ-6R40 (4000A)		
12kV			VZ-10J16 (630A)		VZ-10J25 (630A) VZ-10M25 (1250A) VZ-10P25 (2000A)	VZ-10M40 (1250A) VZ-10P40 (2000A) VZ-10Q40 (3150A) VZ-10R40 (4000A)	VZ-10M50 (1250A) VZ-10P50 (2000A) VZ-10Q50 (3150A) VZ-10R50 (4000A)		
24kV			VZ-20J16 (630A) VZ-20M16 (1250A)		VZ-20J25 (630A) VZ-20M25 (1250A) VZ-20P25 (2000A)	VZ-20M40 (1250A) VZ-20P40 (2000A) VZ-20Q40 (3150A)			
36kV						VY-30M25A (1250A) VY-30P25A (2000A)			

Table 2 Rating and specifications

Type-Form		Type	V6A, V6AS *		VHA			VZ				VZ				VZ			VY	
		Form	U L T	MU ML MT MLD	6J13S	6J20S	6M20S	6J16	6J25 6M25 6P25	6M32 6P32	6M40 6P40 6Q40 6R40	10J16	10J25 10M25 10P25	10M40 10P40 10Q40 10R40	10M50 10P50 10Q50 10R50	20J16 20M16	20J25 20M25 20P25	20M40 20P40 20Q40	30M25A 30P25A	
Rated	Voltage (kV)		7.2		3.6/7.2			7.2				12				24			36	
	Current (A)		600	600	630	630	1250	630	J : 630 M : 1250 P : 2000	M : 1250 P : 2000	M : 1250 P : 2000 Q : 3150 R : 4000	630	J : 630 M : 1250 P : 2000	M : 1250 P : 2000 Q : 3150 R : 4000	M : 1250 P : 2000 Q : 3150 R : 4000	J : 630 M : 1250	J : 630 M : 1250 P : 2000	M : 1250 P : 2000 Q : 3150	M : 1250 P : 2000	
	Frequency (Hz)		50/60				50/60				50/60				50/60					
	Interrupting current (kA)		12.5	12.5	16/12.5	25/20	25/20	16	25	31.5	40	16	25	40	50	16	25	40	25	
	Making current (kA)		31.5	31.5	40/31.5	63/50	63/50	40	63	80	100	40	63	100	125	40	63	100	63	
	Short-time current (kA)		12.5-2s	12.5-2s	16-3s	25-3s	25-3s	16-3s	25-3s	31.5-3s	40-3s	16-3s	25-3s	25-3s	50-3s	25-3s	25-3s	40-3s	25-3s	
	Interrupting time (cycle)		3		3			3				3		3		3		3		3
	Opening time (ms)		≤30		≤20			≤30				≤30		≤40		≤30		≤40		≤25
No-load closing time (ms)		----	≤300	≤50			≤40				≤40		≤50		≤40		≤50		≤55	
Insulation level	Impulse (kV)	60		60			60				75		75		125		125		170	
	Power Freq. (kV)	22		20			20				28		28		50		50		70	
Out-of phase breaking current		----		25% of rated interrupting current			25% of rated interrupting current				25% of rated interrupting current				25% of rated interrupting current					
Operating duty	Standard	O - 1min. - CO - 3min. - CO		O - 3min. - CO - 3min. - CO			O - 3min. - CO - 3min. - CO				O - 3min. - CO - 3min. - CO				O - 3min. - CO - 3min. - CO					
	Rapid reclosing	----		----			O - 0.3s - CO - 3min. - CO				O - 0.3s - CO - 3min. - CO				O - 0.3s - CO - 3min. - CO					
Closing system		Manual Op.	Motor Op.	Motor Spring Operation			Motor spring operation				Motor spring operation				Motor spring operation					
Closing	Voltage (V)	----	100AC/100DC	DC110			DC110				DC110		DC110		DC110		DC110		DC110	
	Current (A)	----	1.0/1.0	4.0			4.0				4.0		4.0		4.0		4.0		4.0	
Tripping	Voltage (V)	DC110		DC110			DC110				DC110		DC110		DC110		DC110		DC110	
	Current (A)	4.0		4.0			4.0				4.0		4.0		4.0		4.0		4.0	
Mechanical switching life (times)		10,000		10,000			10,000				10,000				10,000					
Load switching life (times)		10,000		10,000			10,000				10,000				10,000					
Numbers of auxiliary switch-contacts		2NO-2NC		4NO-4NC			4NO-4NC				4NO-4NC				4NO-4NC					
Weight (kg)		U : 21 L : 24 T : 24	MU : 23 ML : 26 MT : 26 MLD : 37	43	50	78	80	J : 80 M : 95 P : 125	M : 105 P : 125	M : 105 P : 125 Q : 240 R : 315	80	J : 80 M : 105 P : 125	M : 105 P : 125 Q : 240 R : 315	M : 160 P : 175 Q : 295 R : 360	J : 160 M : 180	J : 160 M : 180 P : 220	M : 290 P : 325 Q : 340	M : 270 P : 300		
Applicable draw-out unit		----	U6A-HLS	UHA-6JPS		UHA-6MPS	J : UKP-6JS	J : UKP-6JS M : UKP-6MS P : UKP-6PS	M : UKP-6MS3 P : UKP-6PS2	M : UKP-6MS3 P : UKP-6PS2 Q : UKP-10QS R : UZP-6RS	J : UKP-10JS	J : UKP-10JS M : UKP-10MS P : UKP-10PS	M : UKP-10MS2 P : UKP-10PS2 Q : UKP-10QS R : UZP-10RS	M : UKP-10MS3 P : UKP-10PS3 Q : UKP-10QS	J : UZP-20JS M : UZP-20MS	J : UZP-20JS M : UZP-20MS P : UZP-20PS	M : UZP-20MS1 P : UZP-20PS1 Q : UZP-20QS1	M : UYP-30MS P : UYP-30PS		

* indicated breakers are conformed to JIS, JEC (Japanese standards) only

1. Designation and type-form



2. Specifications

Table 4 List of specifications for V^{3A} series

	Motor spring operation type	Manual operation type
Applicable standards	JIS C 4603, JEC-2300	JIS C 4603
Control circuit connection	Plug connection	Terminal connection
Closing voltage and method	1. 100/110VDC 2. 48/50VDC 3. 100/110VAC silicon rectifier* 4. 200/220VAC silicon rectifier*	Manual operation
Tripping voltage	1. 100/110VDC 2. 48/50VDC 3. 100/110VAC capacitor tripping* 4. 200/220VAC capacitor tripping*	1. CT trip 2. CT trip and shunt trip (100/110VADC) 3. 100/110VDC capacitor tripping* 4. 100/110VAC capacitor tripping*
Auxiliary contacts arrange	2NO, 2NC (STD) 5NO, 5NC (MAX)	2NO, 2NC (STD) 5NO, 5NC (MAX)

* Silicon rectifier and capacitor tripping device shall be installed in the switchgear and may be ordered as accessories.

3. Dimensions

1. FIXED TYPE (MANUAL OPERATION)

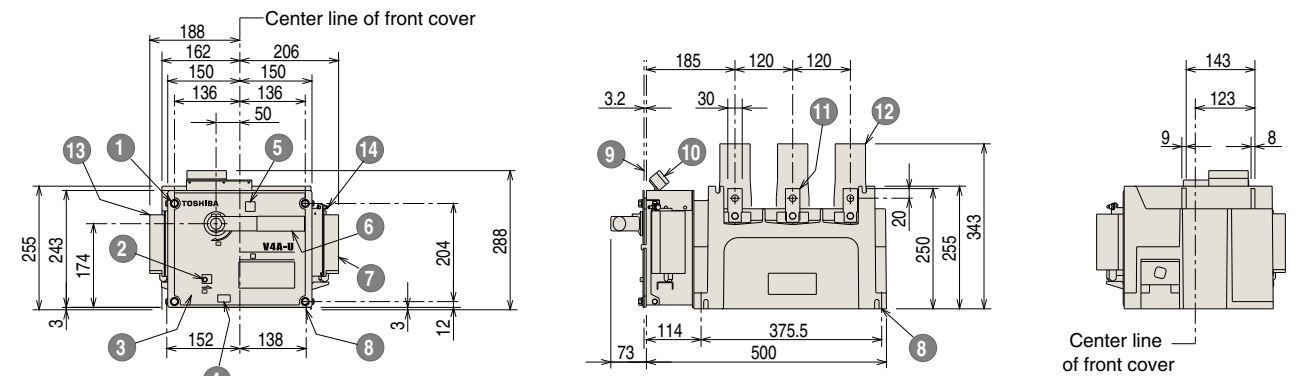


Fig. 1 Types V4A(S)-U, V6A(S)-U Vacuum circuit breakers

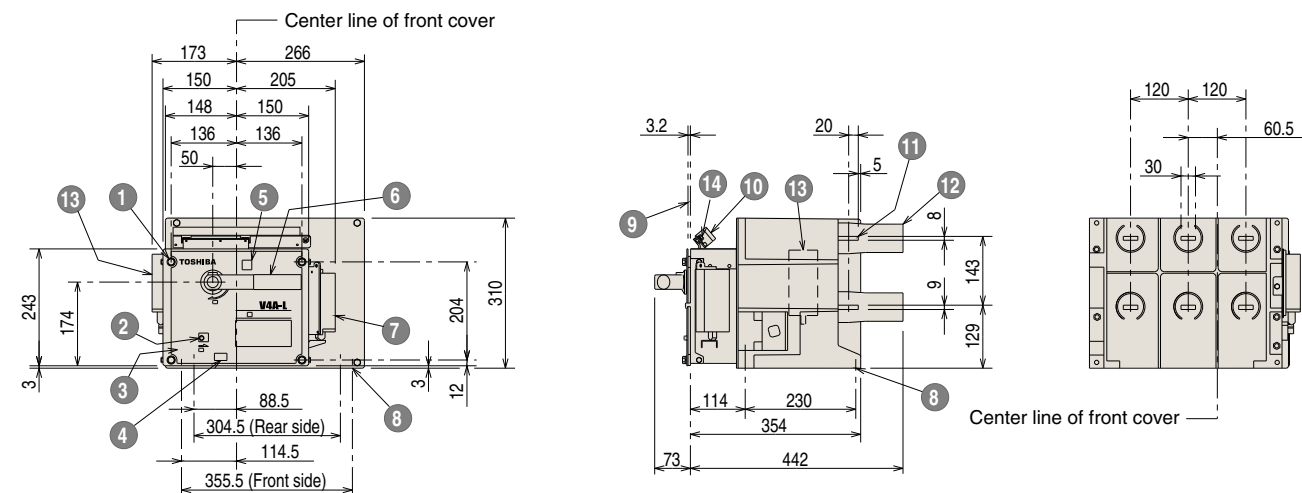


Fig. 2 Types V4A(S)-L, V6A(S)-L Vacuum circuit breakers

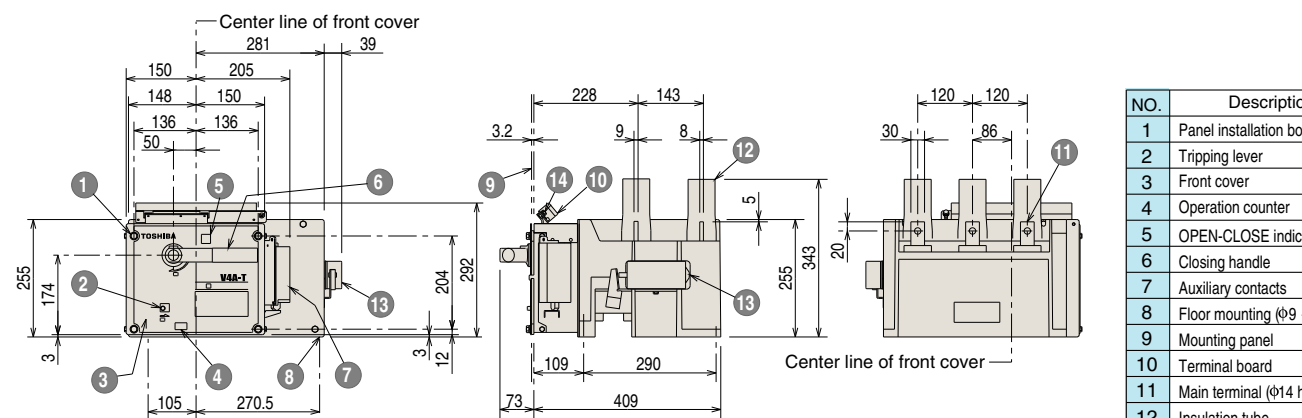


Fig. 3 Types V4A(S)-T, V6A(S)-T Vacuum circuit breakers

NO.	Description
1	Panel installation bolts (4 - M8)
2	Tripping lever
3	Front cover
4	Operation counter
5	OPEN-CLOSE indicator
6	Closing handle
7	Auxiliary contacts
8	Floor mounting (φ9 - 4 holes)
9	Mounting panel
10	Terminal board
11	Main terminal (φ14 hole)
12	Insulation tube
13	Auxiliary switch (Option)
14	Earthing terminal



2. DRAW-OUT TYPE (MOTOR SPRING OPERATION)

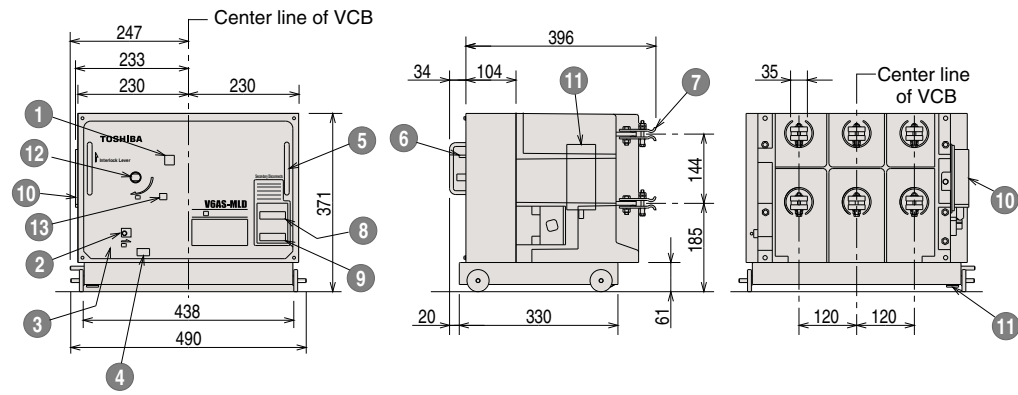


Fig. 4 Types V4A(S)-MLD, V6A(S)-MLD Vacuum circuit breakers

No.	Description
1	OPEN-CLOSE indicator
2	Opening lever
3	Front cover
4	Operation counter
5	Handle
6	Interlock release lever
7	Primary disconnecter
8	Secondary disconnecter
9	Aux. disconnecter (Option)
10	Auxiliary switch (Option)
11	Earthing terminal
12	Shaft for closing handle
13	Spring indicator

3. DRAW-OUT UNIT

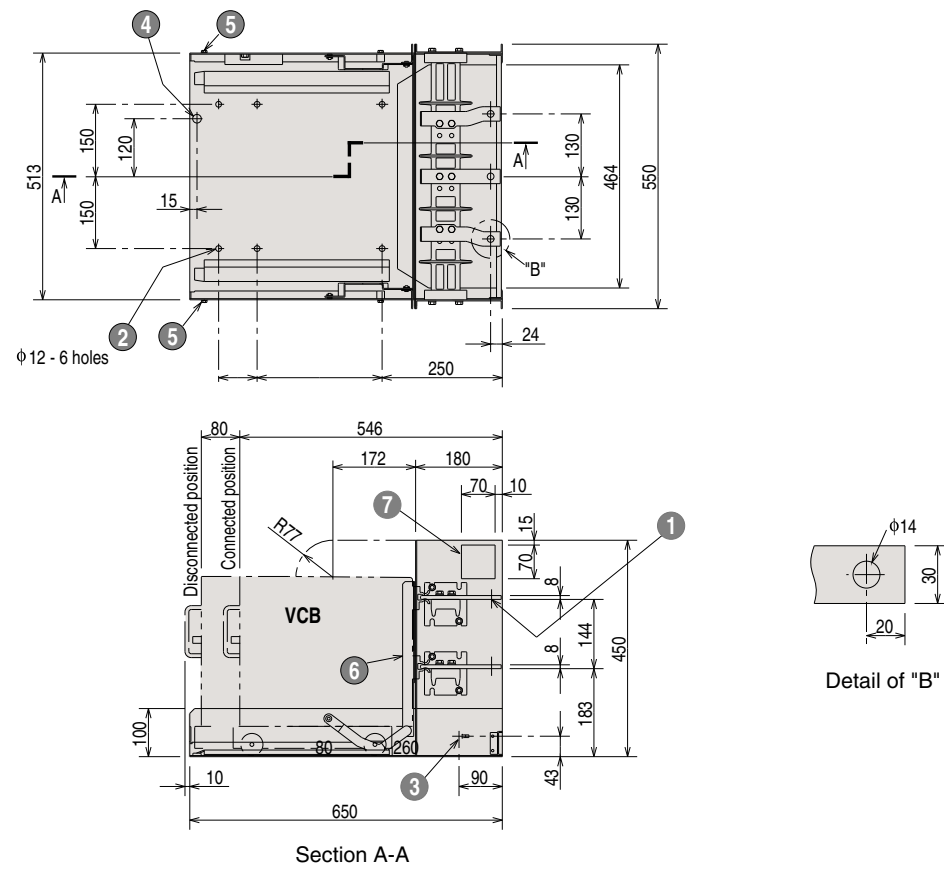


Fig. 5 Type U6A-HLS Draw-out unit

No.	Description
1	Primary terminal
2	Mounting hole
3	Earthing terminal (M8 screw)
4	Guide for lifter
5	Bolt for preventing full draw-out
6	Shutter
7	Lifting hole (2 holes)

Operating circuit (open and discharged condition)

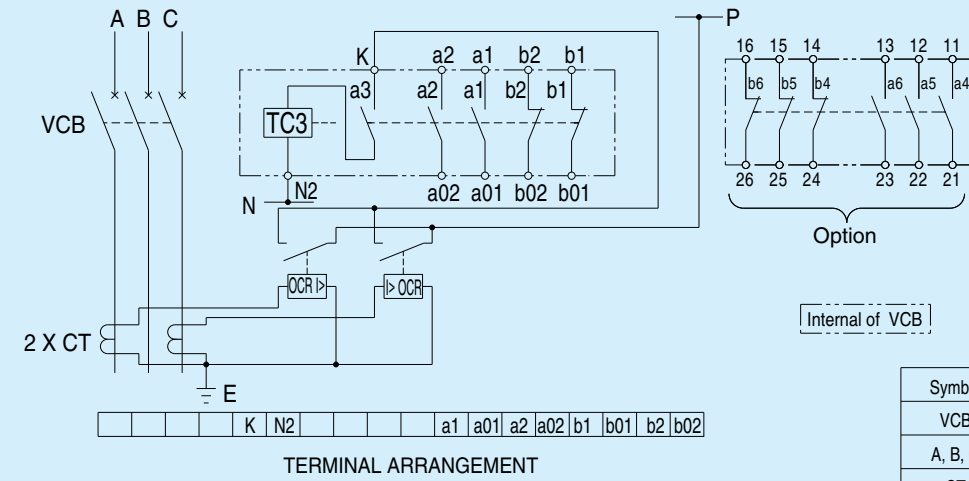


Fig. 6 Connection diagram for manual operation with shunt trip

Symbol	Description
VCB	Vacuum circuit breaker
A, B, C	Phase
CT	Current transformer
E	Ground
TC3	Voltage trip coil
a1 - a6	Auxiliary contact (N.O.)
b1, b2, b4 - b6	Auxiliary contact (N.C.)
OCR	Overload relay

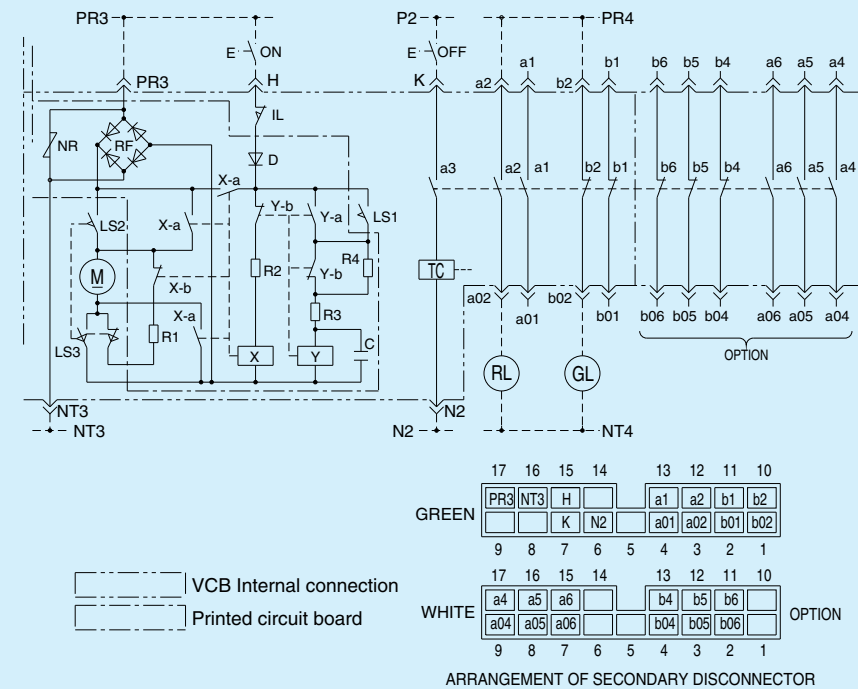
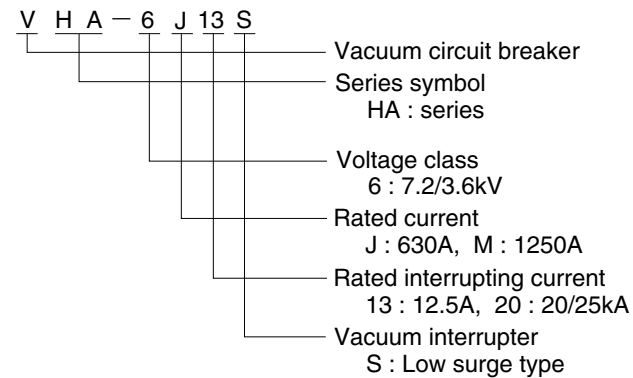


Fig. 7 Connection diagram of motor operation

Symbol	Description
M	Charging motor
TC	Trip coil
a1 - a6	Auxiliary contact (N.O.)
b1, b2, b4 - b6	Auxiliary contact (N.C.)
X	Control relay
X-a	Control relay N.O. contact
X-b	Control relay N.C. contact
Y	Auxiliary relay
Y-a	Auxiliary relay N.O. contact
Y-b	Auxiliary relay N.C. contact
LS1 - LS3	Limit switch
R1 - R4	Resistor
RF	Rectifier
D	Diode
C	Capacitor
NR	Surge suppressor
RL, GL	Lamp

1. Designation and type-form



2. Specifications

Table 4 List of specifications for VHA series

Items	Standard type	Changeable scope of spec
Applicable standard	IEC 62271-100	JEC 2300
Installation method	Draw-out	Fixed with wheel
Control circuit connection	Plug with Interlock	Plug connection (SC connector)
Closing voltage and method	100/110VDC Motor spring	1. 48/50VDC 2. 100/110VAC silicon rectifier* 3. 200/220VAC silicon rectifier*
Tripping voltage	100/110VDC	1. 48/50VDC 2. 100/110VAC capacitor tripping* 3. 200/220VAC capacitor tripping*
Auxiliary contacts arrange.	4NO,4NC	—

* Silicon rectifier and capacitor tripping device shall be installed in switchgear and may be ordered as accessories.

3. Dimensions

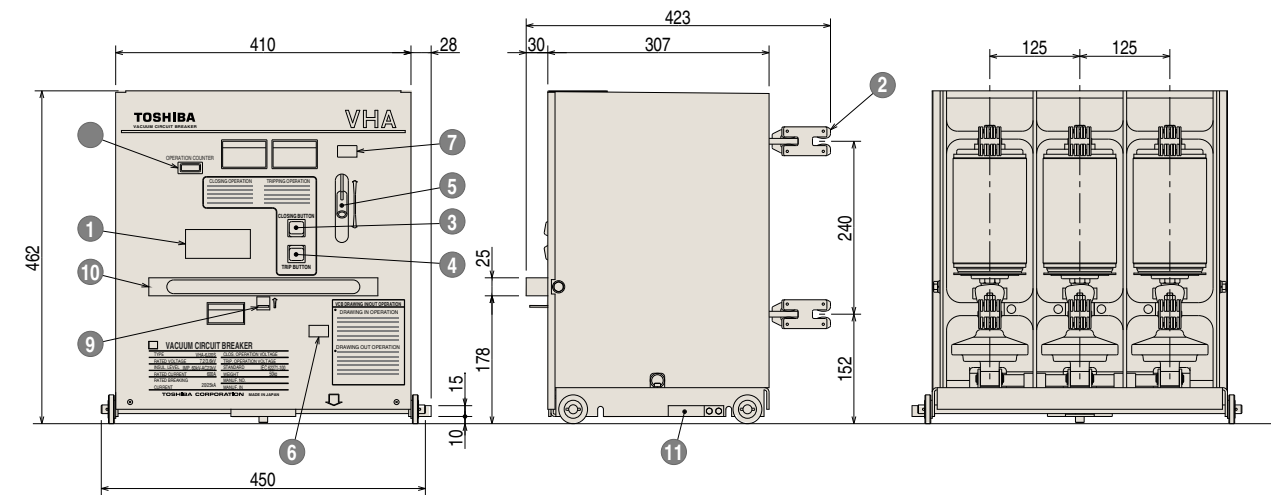


Fig. 8 Types VHA-6H8S, 6J13S, 6J20S Vacuum circuit breakers

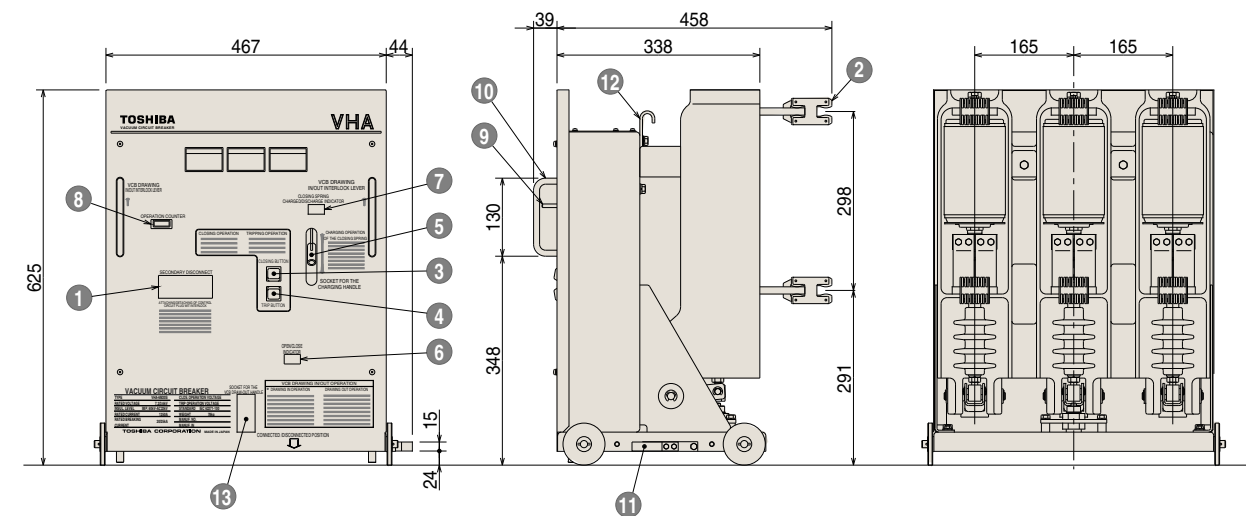


Fig. 9 Type VHA-6M20S Vacuum circuit breaker

No.	Description
1	Secondary disconnecter
2	Primary disconnecter
3	Closing button
4	Opening button
5	Opening for charging handle
6	OPEN-CLOSE indicator
7	Spring charge indicator
8	Operation counter
9	Interlock release lever
10	Handle
11	Earthing terminal
12	Hook for lift
13	Opening for draw-out handle



Dimensions (Draw-out unit)

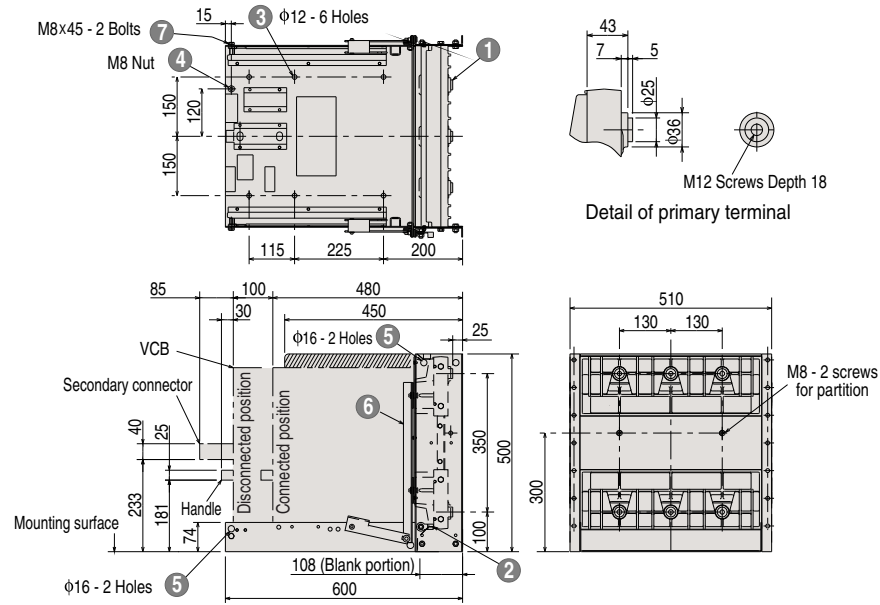


Fig. 10 Type UHA-6JPS Draw-out unit

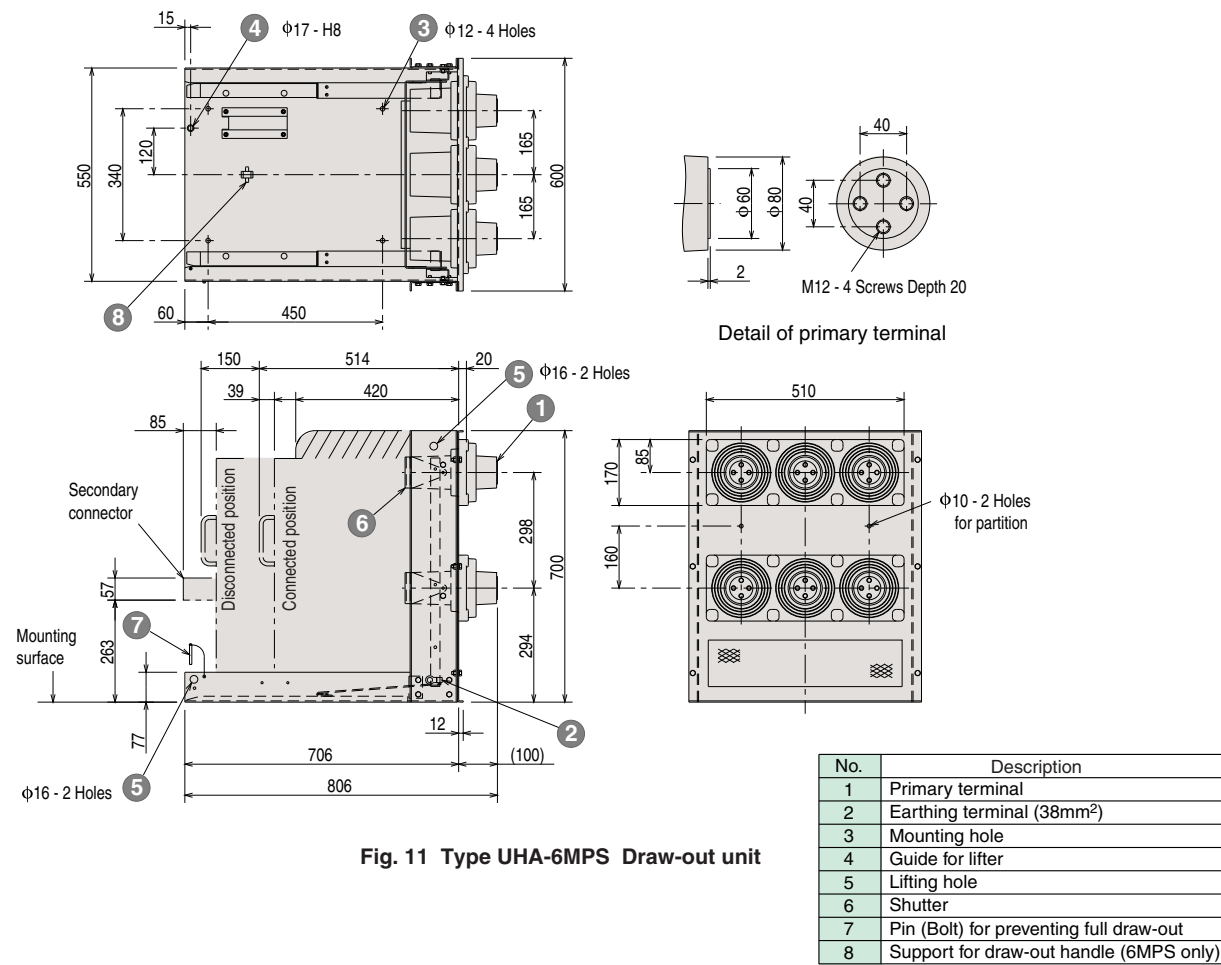
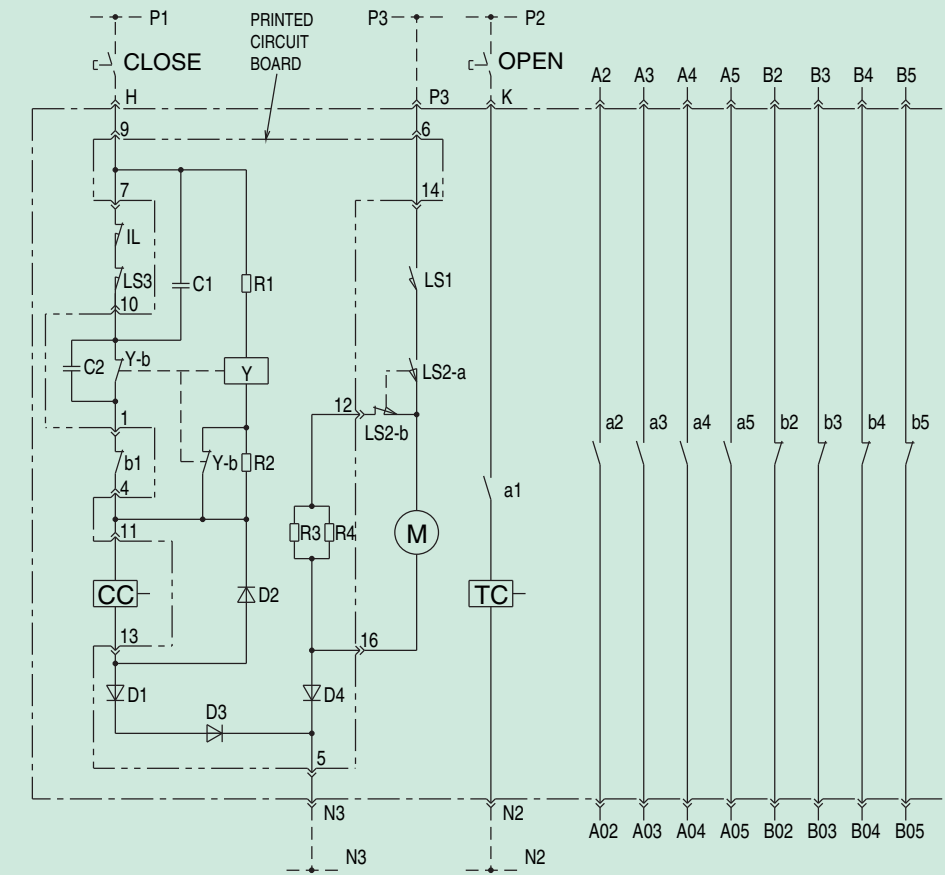
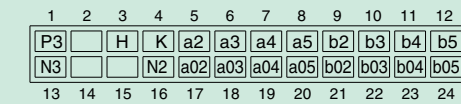


Fig. 11 Type UHA-6MPS Draw-out unit

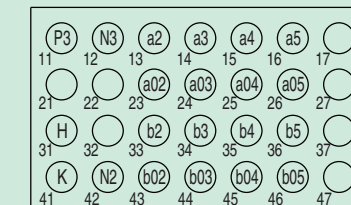
Operating circuit (Open and discharged condition)



Symbol	Description
CC	Closing coil
TC	Tripping coil
M	Charging motor
IL	Interlock switch
LS1 - LS3	Limit switch
a1 - a5	Auxiliary contact (N.O.)
b1 - b5	Auxiliary contact (N.C.)
D1 - D4	Diode
R1 - R4	Resistor
C1, C2	Capacitor



SC connector



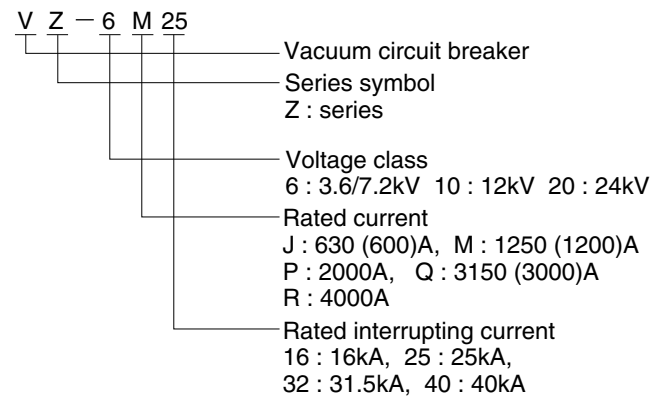
Plug interlock connector

Arrangement of secondary connector (Front view)

Fig. 12 Connection diagram 100/110VDC for VHA-breaker

VZ series

1. Designation and type-form



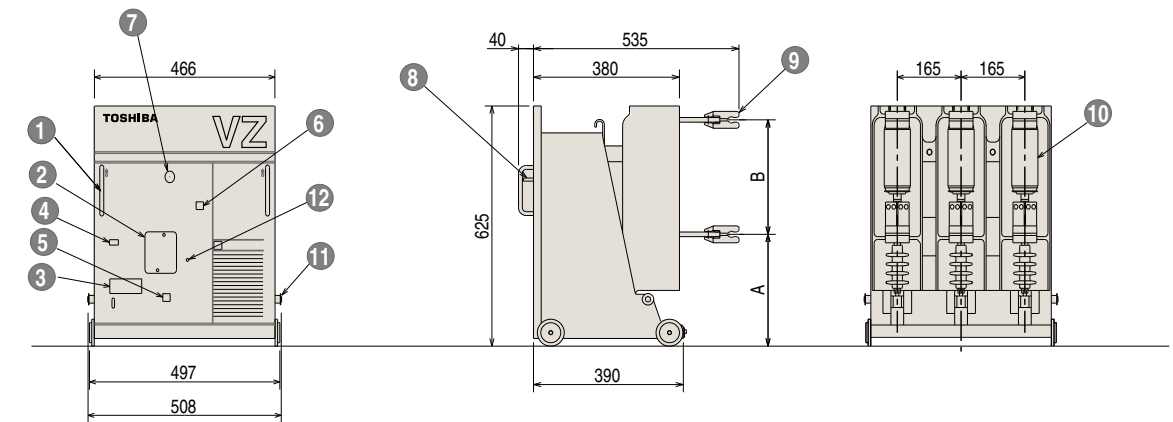
2. Specifications

Table 5 List of specifications for VZ series

Items	Standard type	Changeable scope of spec
Applicable standards	IEC 62271-100	JEC 2300
Installation method	Draw-out	Fixed with wheel
Control circuit connection	Plug with Interlock	Plug connection (MIC connector)
Closing voltage and method	100/110VDC Motor spring	1. 48/50VDC 2. 100/110VAC silicon rectifier* 3. 200/220VAC silicon rectifier*
Tripping voltage	100/110VDC	1. 48/50VDC 2. 100/110VAC capacitor tripping* 3. 200/220VAC capacitor tripping*
Auxiliary contacts arrange	4NO, 4NC	1. 5NO, 5NC(MAX) for Plug interlock

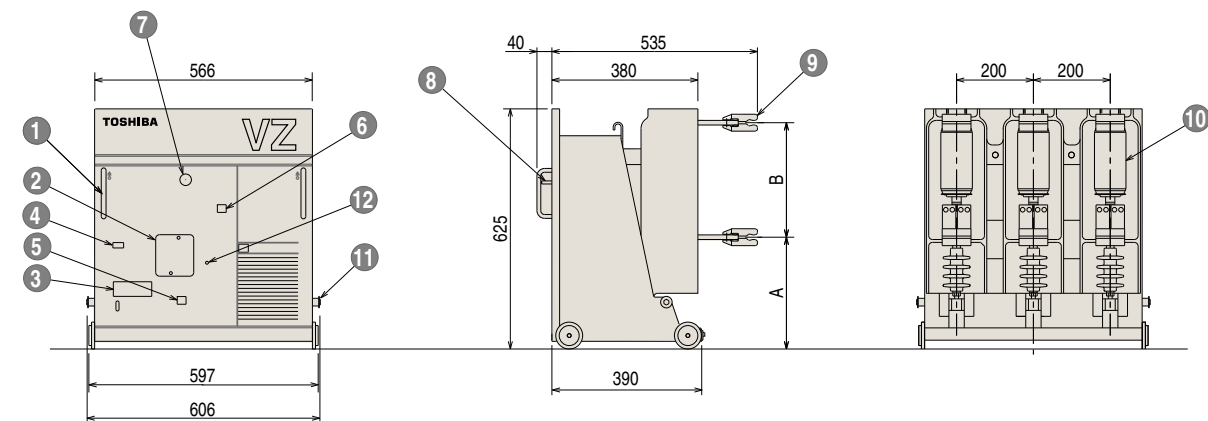
* Silicon rectifier and capacitor tripping device shall be installed in switchgear and may be ordered as accessories.

3. Dimensions



Type	A	B
VZ-6J16, VZ-6J25 VZ-10J16, VZ-10J25	289	302
VZ-6M25	291	298

Fig. 13 Types VZ-6J16, 6J25, 6M25, 10J16, 10J25 Vacuum circuit breakers



Type	A	B
VZ-10M25	291	298
VZ-6P25 VZ-10P25	295	290

Fig. 14 Types VZ-6P25, 10M25, 10P25 Vacuum circuit breakers

No.	Description
1	Handle
2	Socket for charging handle
3	Secondary disconnector
4	Operation counter
5	OPEN-CLOSE indicator
6	Spring charge indicator
7	Opening button
8	Interlock release levers
9	Primary disconnector
10	Vacuum interrupter
11	Driving rollers for shutter
12	Hole for closing operation



Dimensions

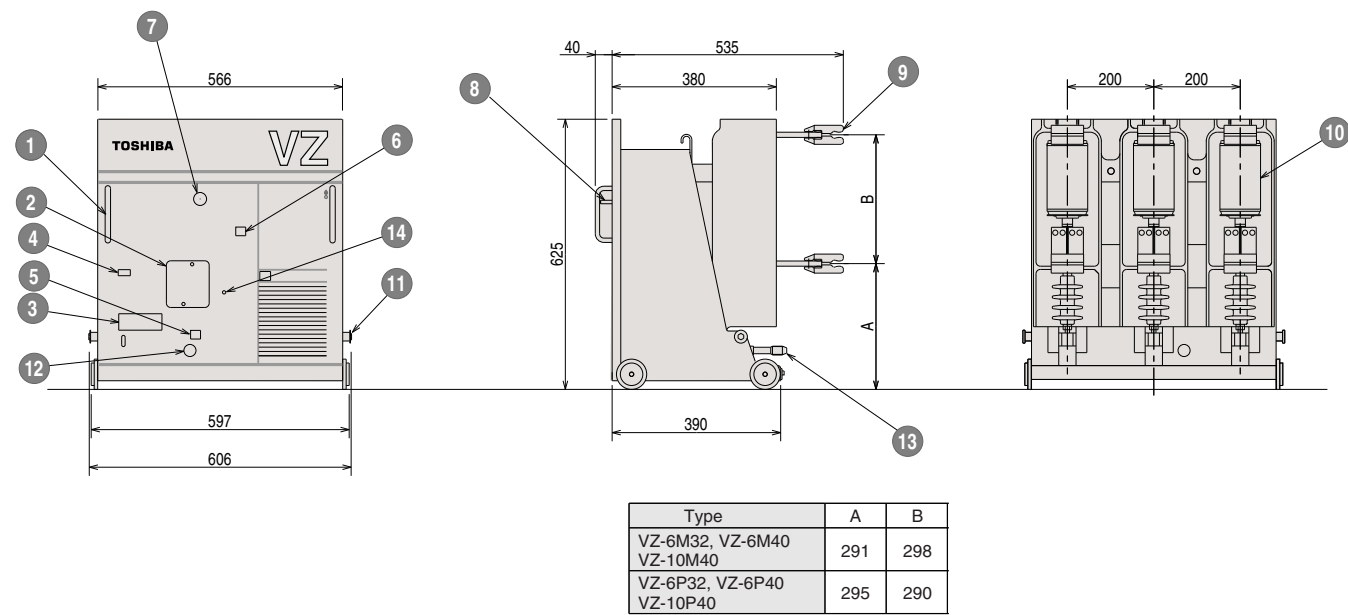


Fig. 15 Types VZ-6M32, 6M40, 10M40, 6P32, 6P40, 10P40 Vacuum circuit breakers

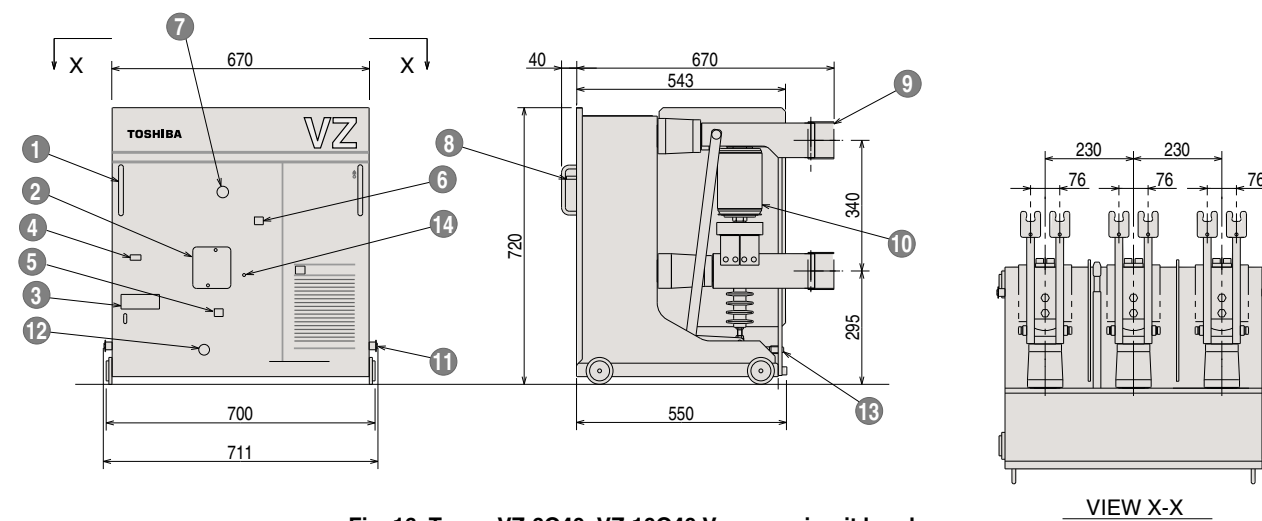


Fig. 16 Types VZ-6Q40, VZ-10Q40 Vacuum circuit breakers

No.	Description
1	Handle
2	Socket for charging handle
3	Secondary disconnecter
4	Operation counter
5	OPEN-CLOSE indicator
6	Spring charge indicator
7	Opening button
8	Interlock release lever
9	Primary disconnecter
10	Vacuum interrupter
11	Driving rollers for shutter
12	Socket for driving handle
13	Driving screw
14	Hole for closing operation

Dimensions

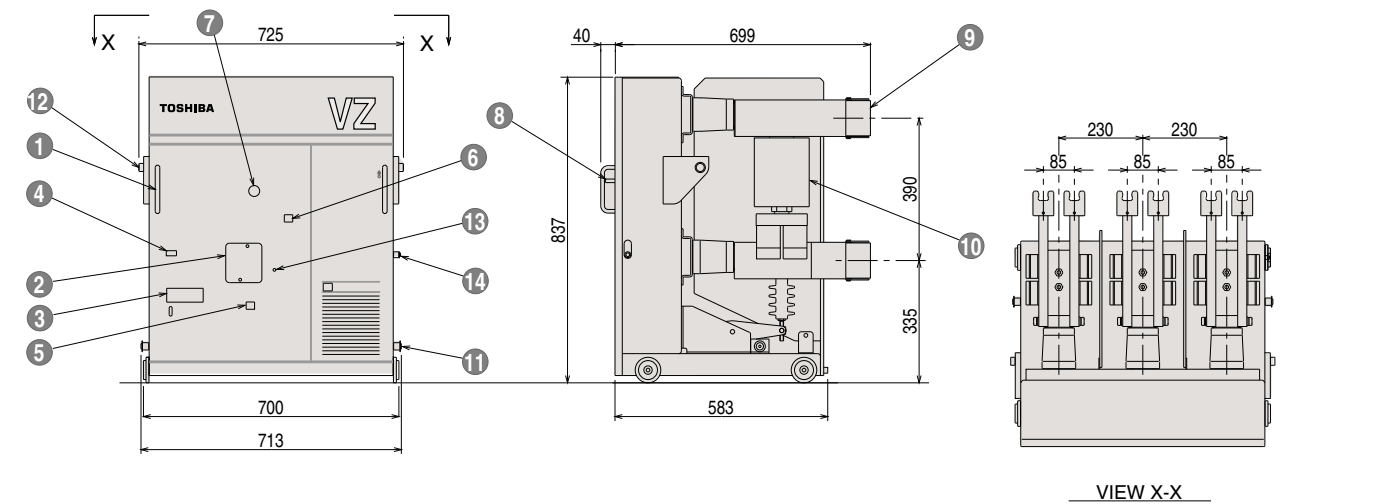


Fig. 17 VZ-6R40, VZ-10R40 Vacuum circuit breakers

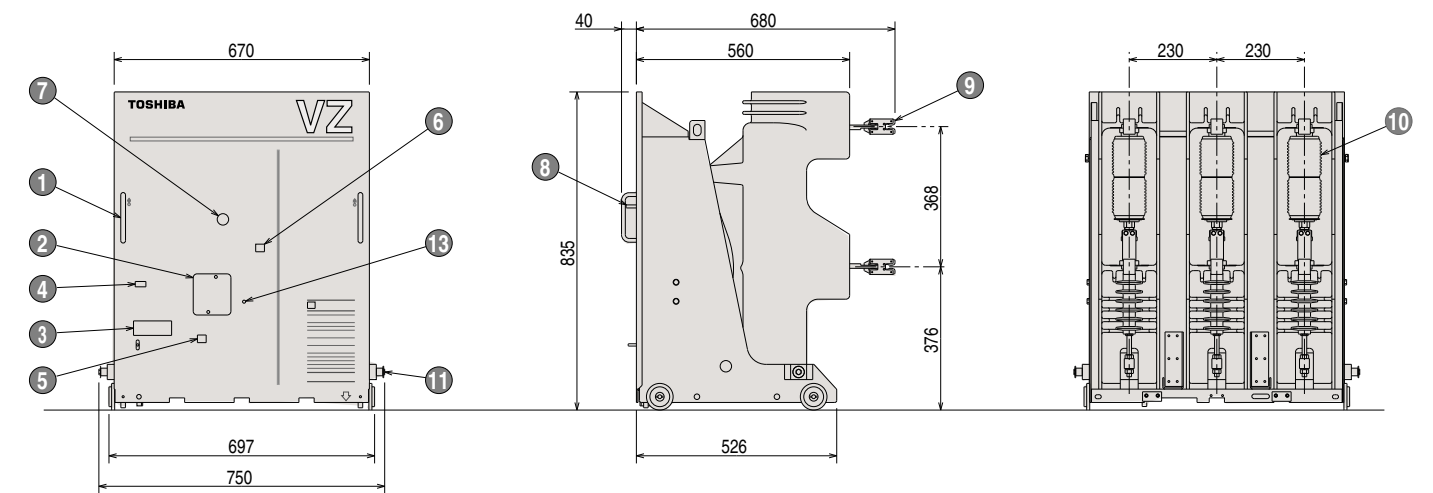


Fig. 18 Types VZ-20J16, VZ-20J25 Vacuum circuit breakers

No.	Description
1	Handle
2	Socket for charging handle
3	Secondary disconnecter
4	Operation counter
5	OPEN-CLOSE indicator
6	Spring charge indicator
7	Opening button
8	Interlock release lever
9	Primary disconnecter
10	Vacuum interrupter
11	Driving roller for shutter
12	Driving roller for draw-out/in
13	Hole for closing operation
14	Interlock pin

Dimensions

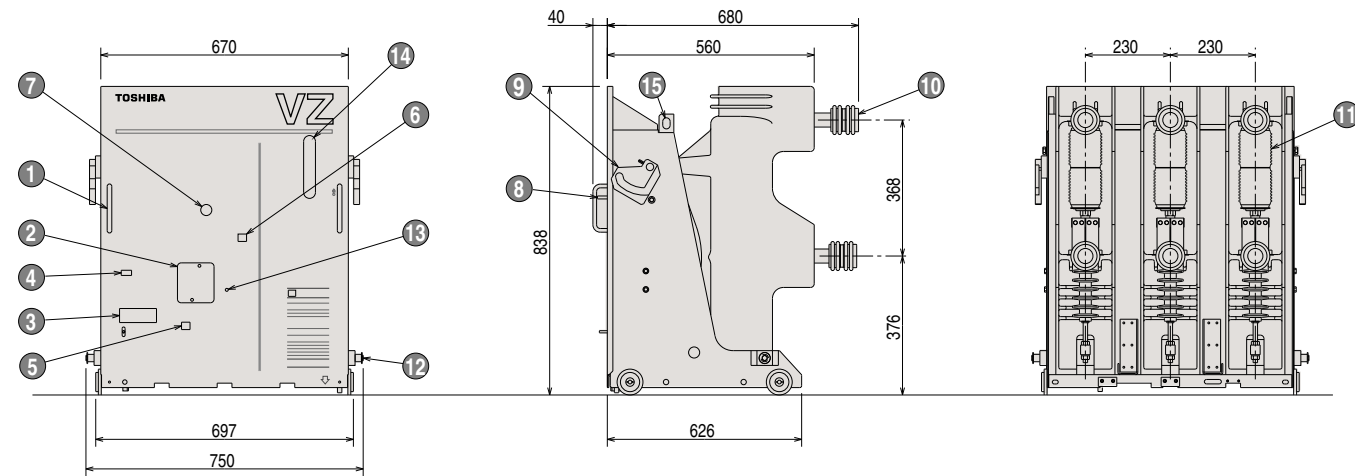


Fig. 19 Types VZ-20M16, VZ-20M25, VZ-20P25 Vacuum circuit breakers

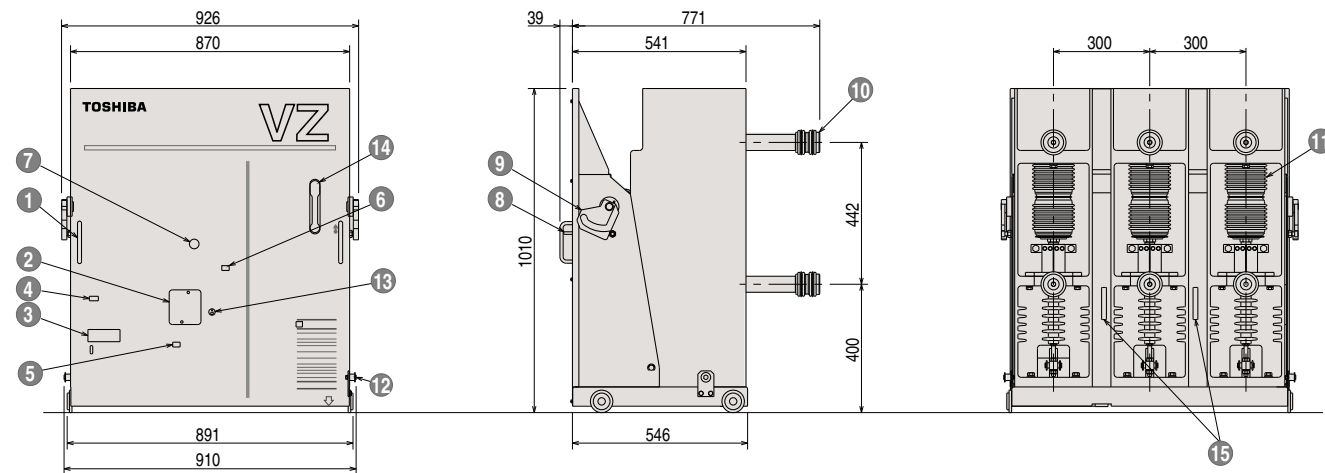


Fig. 20 Types VZ-20M40, VZ-20P40, VZ-20Q40 Vacuum circuit breakers

No.	Description
1	Handle
2	Socket for charging handle
3	Secondary disconnecter
4	Operation counter
5	OPEN-CLOSE indicator
6	Spring charge indicator
7	Opening button
8	Interlock release lever
9	Driving cam
10	Primary disconnecter
11	Vacuum interrupter
12	Driving roller for shutter
13	Hole for closing operation
14	Socket for driving handle
15	Hole for lift

Dimensions (Draw-out unit)

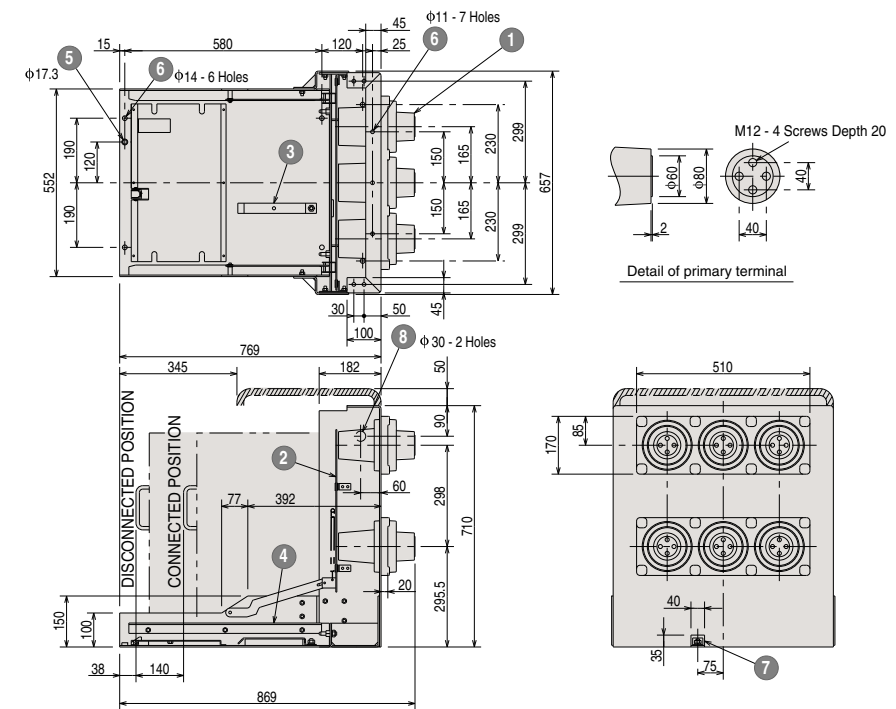


Fig. 21 Type UKP-10JS Draw-out unit

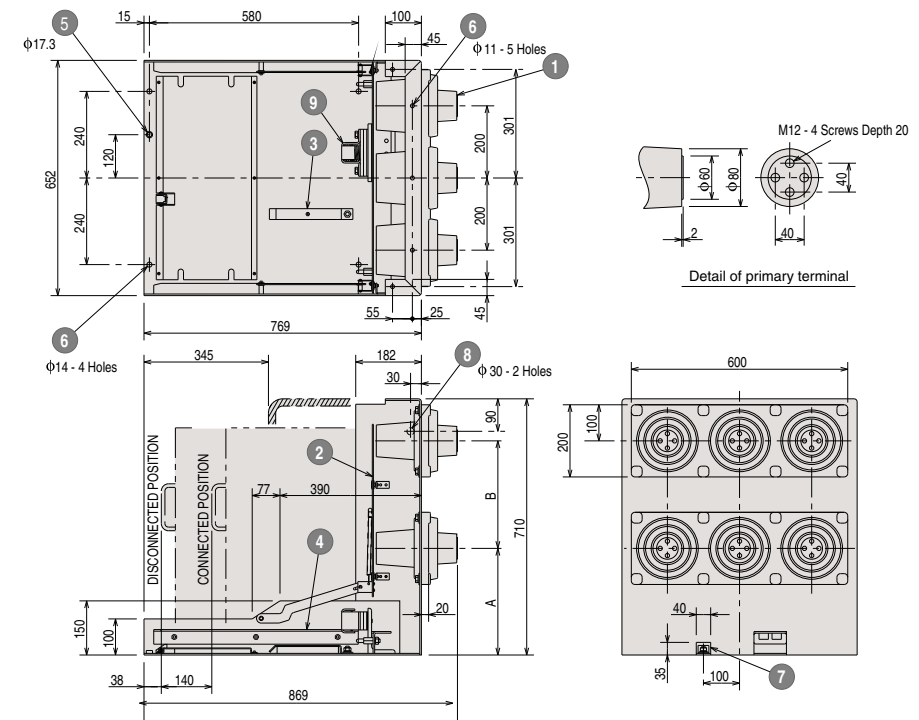


Fig. 22 Type UKP-6MS3, UKP-6PS, UKP6PS3 Draw-out unit

	A	B
UKP-6MS3	295.5	298
UKP-6PS, 6PS3	299.5	290

No.	Description
1	Primary terminal
2	Shutter device (Insulation)
3	Earthing plate
4	Guide rail
5	Connecting boss for lifter
6	Mounting hole
7	Hole for earthing wire
8	Lifting hole
9	Socket for driving screw

Dimensions (Draw-out unit)

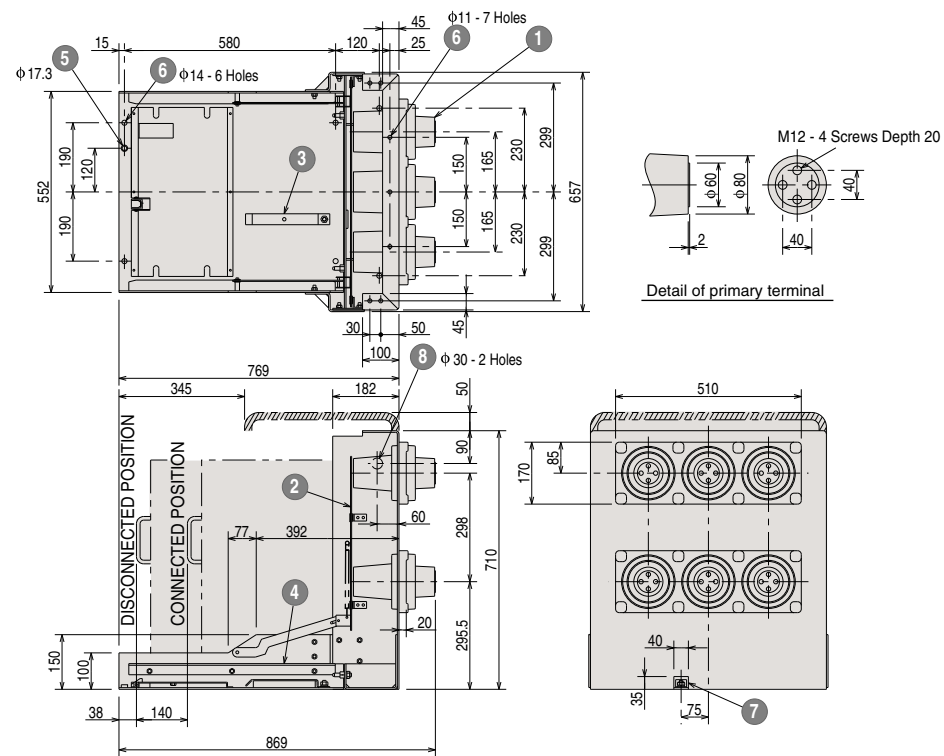


Fig. 23 Type UKP-10JS, UKP-10MS Draw-out units

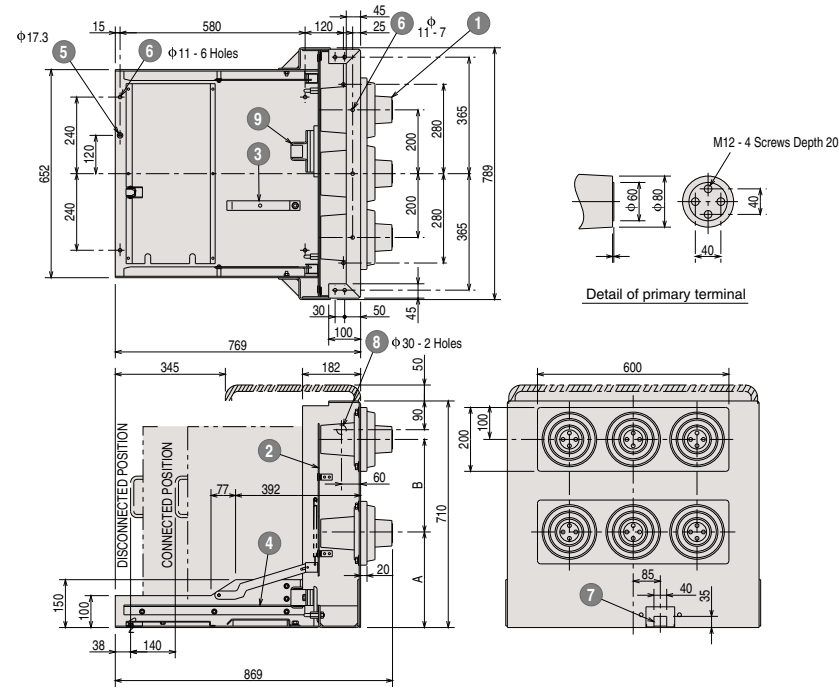


Fig. 24 Type UKP-10MS, UKP-10MS2, UKP-10PS, UKP-10PS2 Draw-out units

	A	B
JKP-10MS, 10MS2	295.5	298
JKP-10PS, 10PS2	299.5	290

No.	Description
1	Primary terminal
2	Shutter device (Insulation)
3	Earthing plate
4	Guide rail
5	Connecting boss for lifter
6	Mounting hole
7	Hole for earthing wire
8	Lifting hole
9	Socket for driving screw

Dimensions (Draw-out unit)

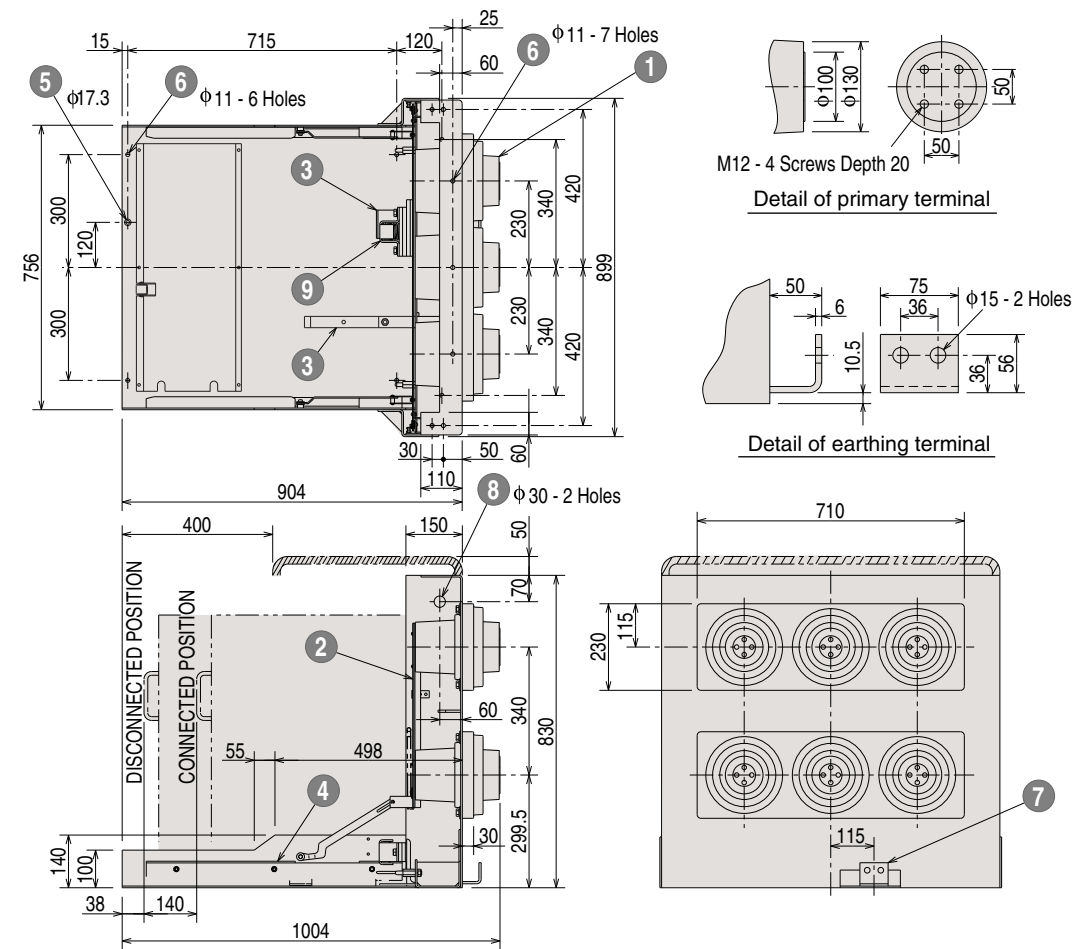


Fig. 25 Type UKP-10QS Draw-out unit

No.	Description
1	Primary terminal
2	Shutter device (Insulation)
3	Earthing plate
4	Guide rail
5	Connecting boss for lifter
6	Mounting hole
7	Earthing terminal
8	Lifting hole
9	Socket for driving screw

Dimensions (Draw-out unit)

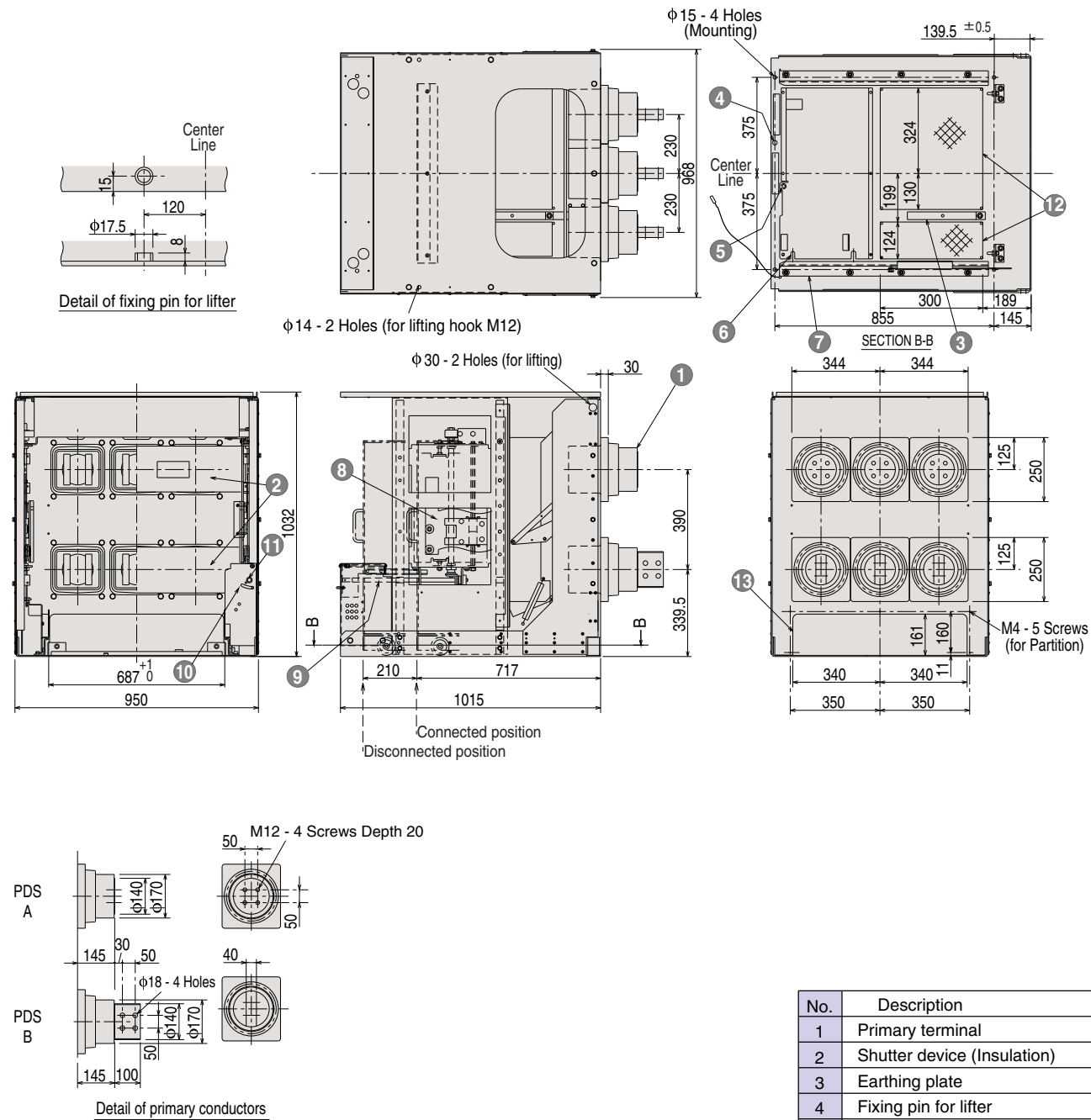


Fig. 26 Type UZP-10RS Draw-out unit

No.	Description
1	Primary terminal
2	Shutter device (Insulation)
3	Earthing plate
4	Fixing pin for lifter
5	Stopper for dropout of VCB
6	Interlock grave (Disconnected pos.)
7	Wheel guide
8	Driving mechanism
9	Driving shaft
10	Lever for driving handle
11	Opening for driving handle
12	Ventilation hole (Floor)
13	Ventilation hole (Rear)

Dimensions (Draw-out unit)

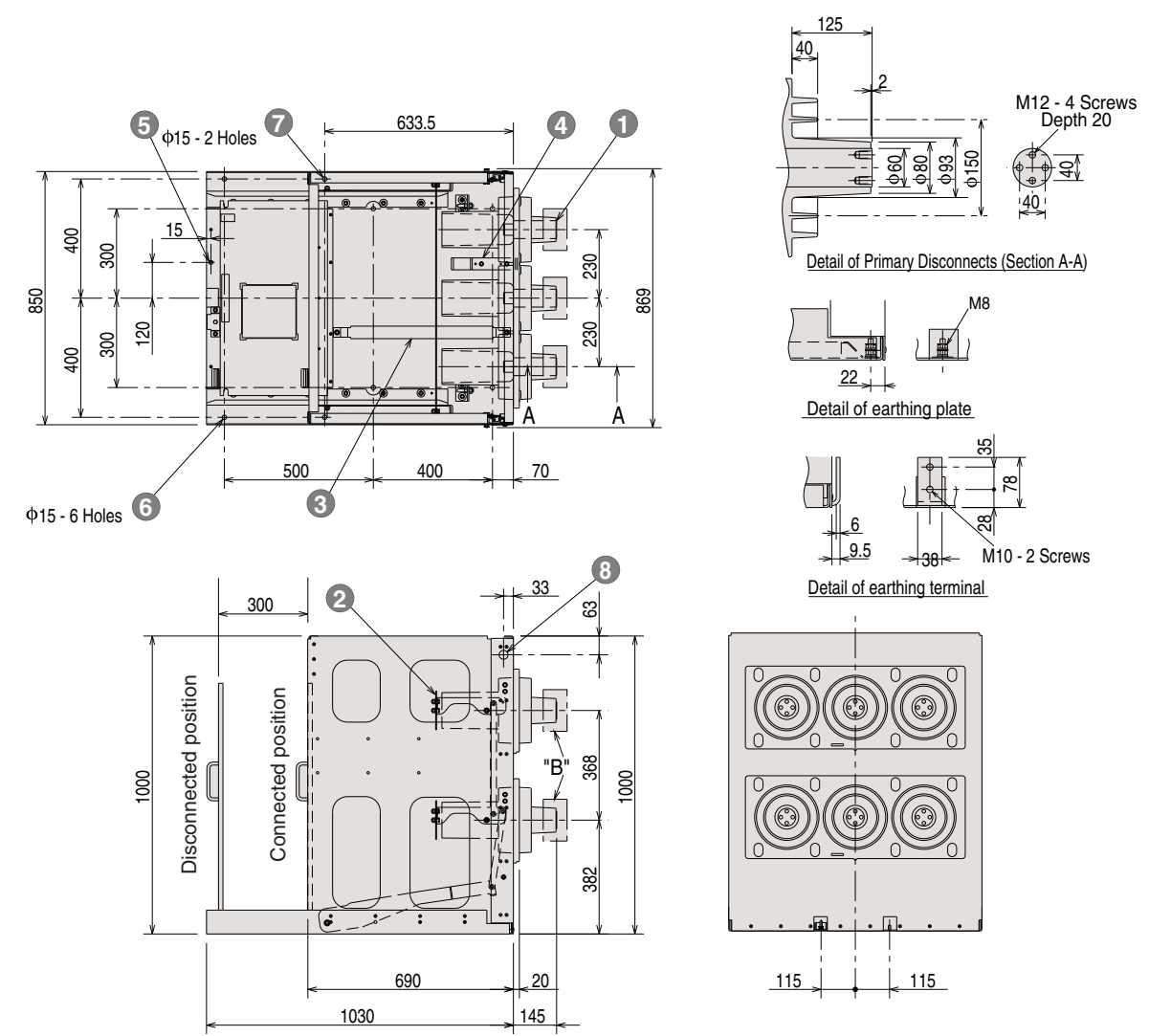


Fig. 27 Types UZP-20JS, UZP-20MS, UZP-20PS Draw-out units

No.	Description
1	Primary terminal
2	Insulation shutter
3	Earthing plate
4	Earthing terminal
5	Connecting boss for lifter (M8 Nut)
6	Mounting holes (Floor plate)
7	Mounting holes (Top plate)
8	Lifting hole

Dimensions (Draw-out unit)

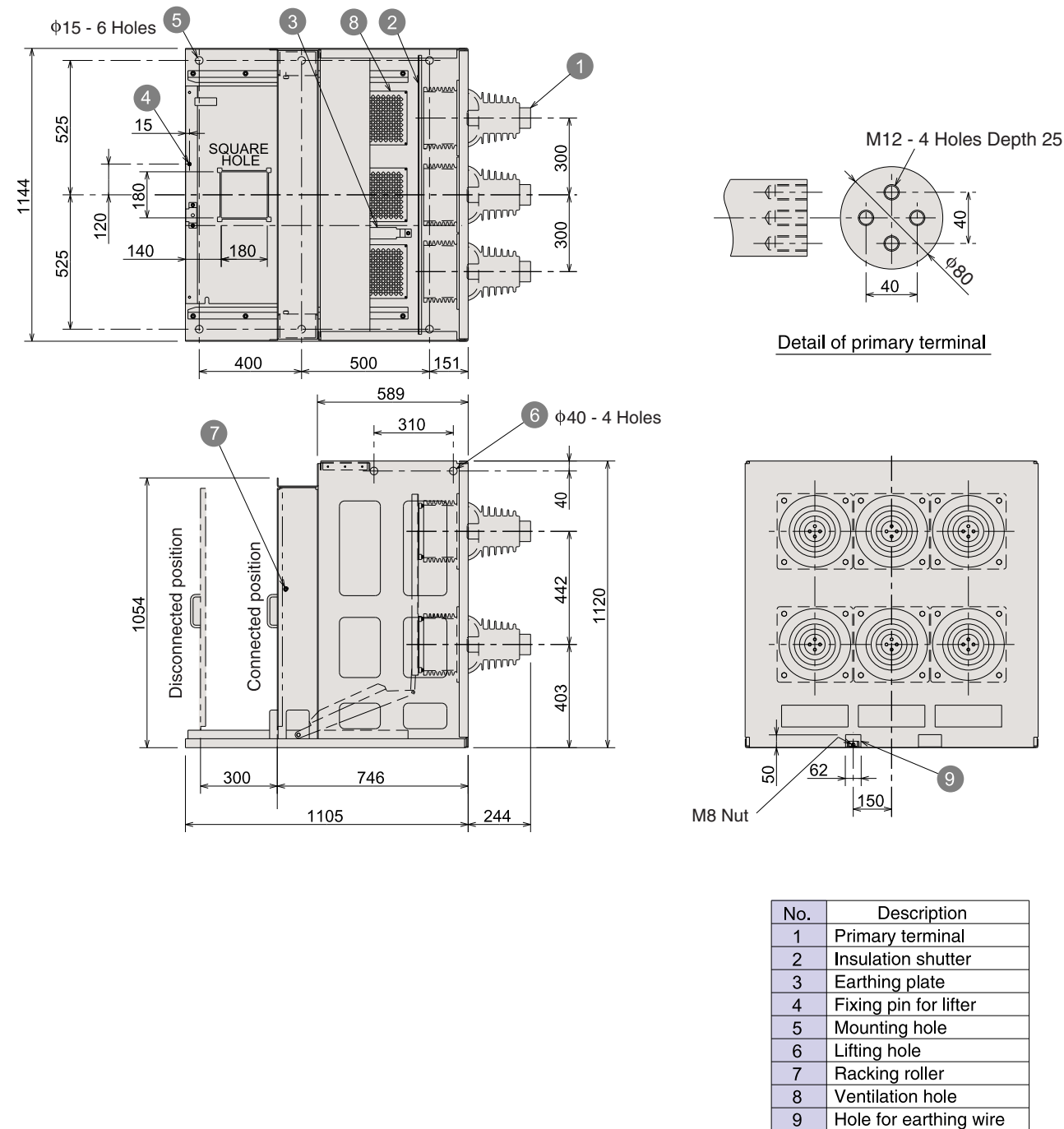


Fig. 28 Type UZP-20MS1, -20PS1, -20QS1 Draw-out units

Operating circuit (open and discharged condition)

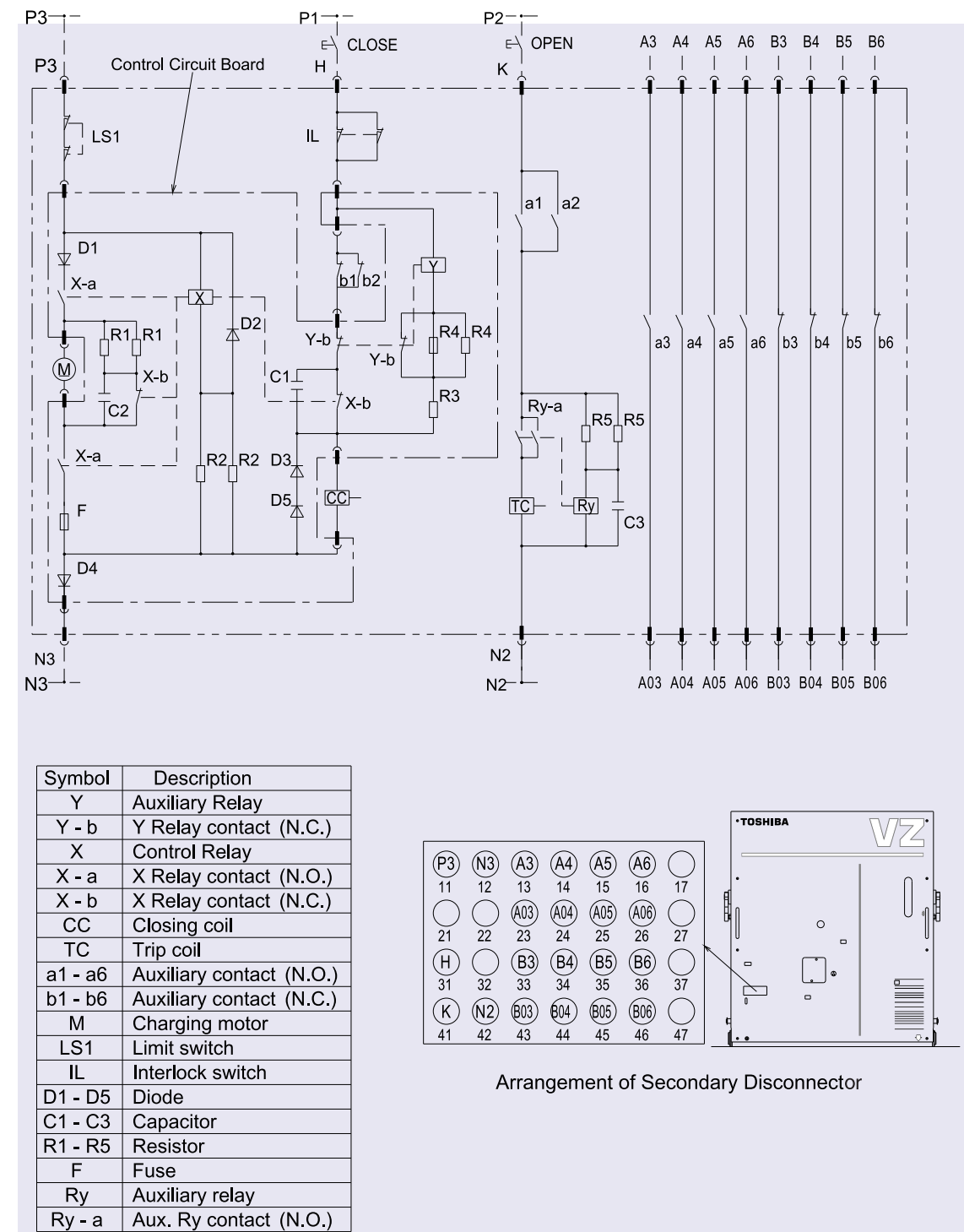
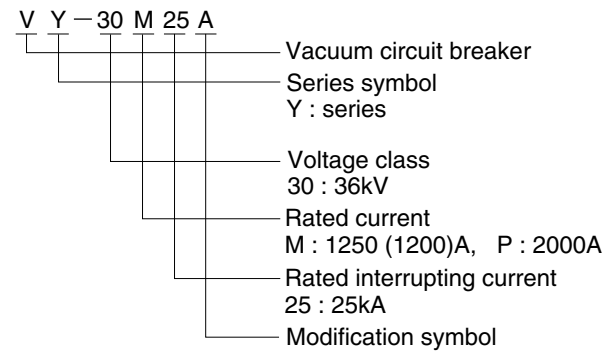


Fig. 29 Connection diagram of Type VZ Vacuumcircuit breakers

VY series

1. Designation and type-form



2. Specifications

Table 6 List of specifications for VY series

Items	Standard type	Changeable scope of spec
Applicable standards	IEC 60056	JEC 2300
Installation method	Draw-out	Fixed with wheel
Control circuit connection	Plug with Interlock	Plug connection (MIC connector) Self coupling
Closing voltage and method	100/110VDC Motor spring	1. 48/50VDC 2. 100/110VAC silicon rectifier* 3. 200/220VAC silicon rectifier*
Tripping voltage	100/110VDC	1. 48/50VDC 2. 100/110VAC capacitor tripping* 3. 200/220VAC capacitor tripping*
Auxiliary contacts arrange.	4NO,4NC	1. 5NO, 5NC(MAX) (for Plug interlock)

*Silicon rectifier and capacitor tripping device shall be installed in switchgear and may be ordered as accessories.

3. Dimensions

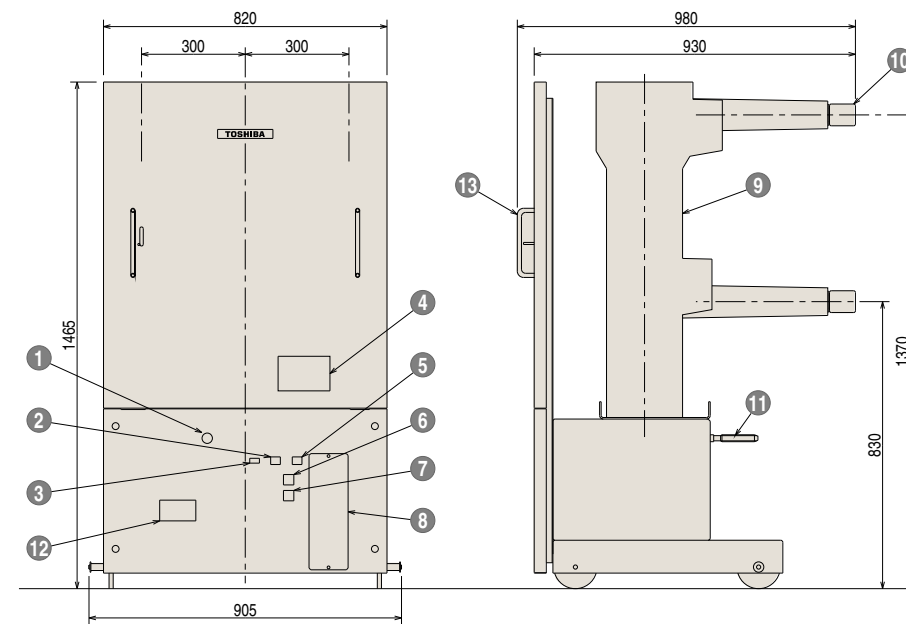


Fig. 30 Types VY-30M25A, VY-30P25A Vacuum circuit breakers

No.	Description
1	Opening for racking handle
2	Spring charge indicator
3	Operation counter
4	Rating plate
5	OEN-CLOSE indicator
6	Closing button
7	Opening button
8	Opening for charging handle
9	Interrupter and molding
10	Primary disconnector
11	Racking screw
12	Secondary disconnector
13	Handle

Dimensions (Draw-out unit)

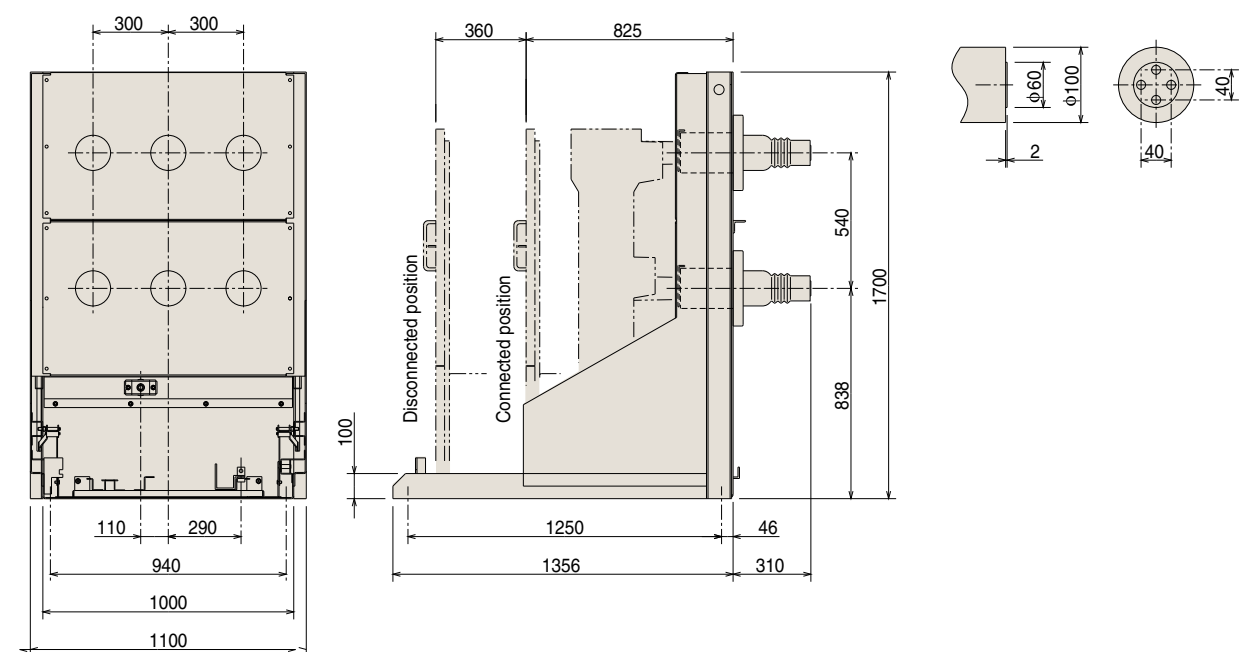


Fig. 31 Types UYP-30MS, UYP-30PS Draw-out units



Accessories

Name of parts	Type-form or ordering code	Application
Control wire with plug	—	Supplied 1 set with Draw-out unit
Manual charging handle	—	Supplied 1 pc for V6A, VHA only, required for others
Racking handle	—	Required for VZ : 31.5kA or more (except 4000A) VK : 40kA or more VY : all ratings
Rectifier unit	2N4BUL	For closing operation with 100-200VAC class
Capacitor tripping device	LC-9	For tripping operation with 100/110VAC
	LC-10	For tripping operation with 200/220VAC
	CIT-10Q	For tripping operation with 100/200VAC class Provide alarm contact
CR surge suppressor	NV60K304T1	For 6.6kV, 3 phase type
	NV95K304T1	For 11kV, 3 phase type

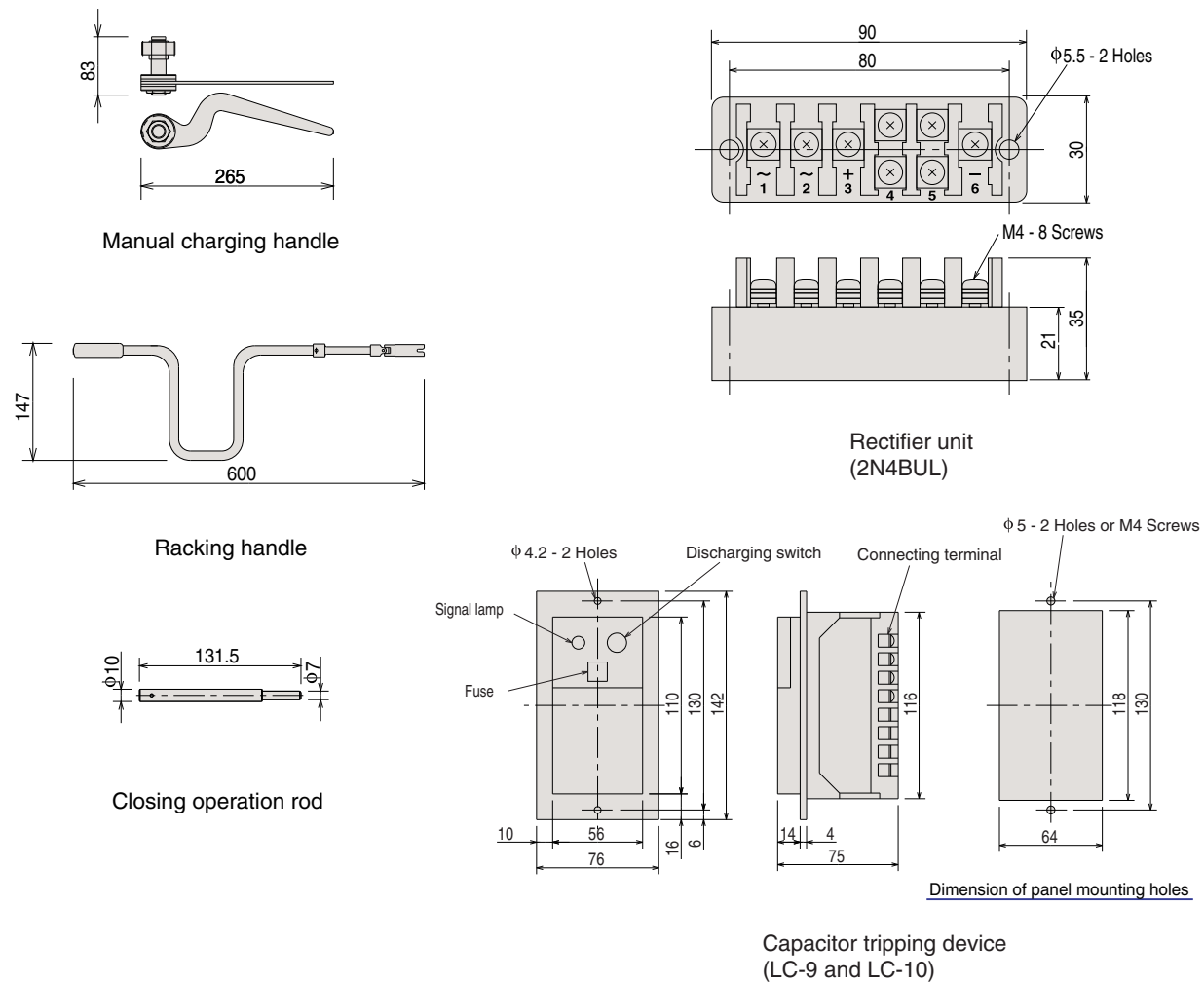


Fig. 32 Accessories

Accessories

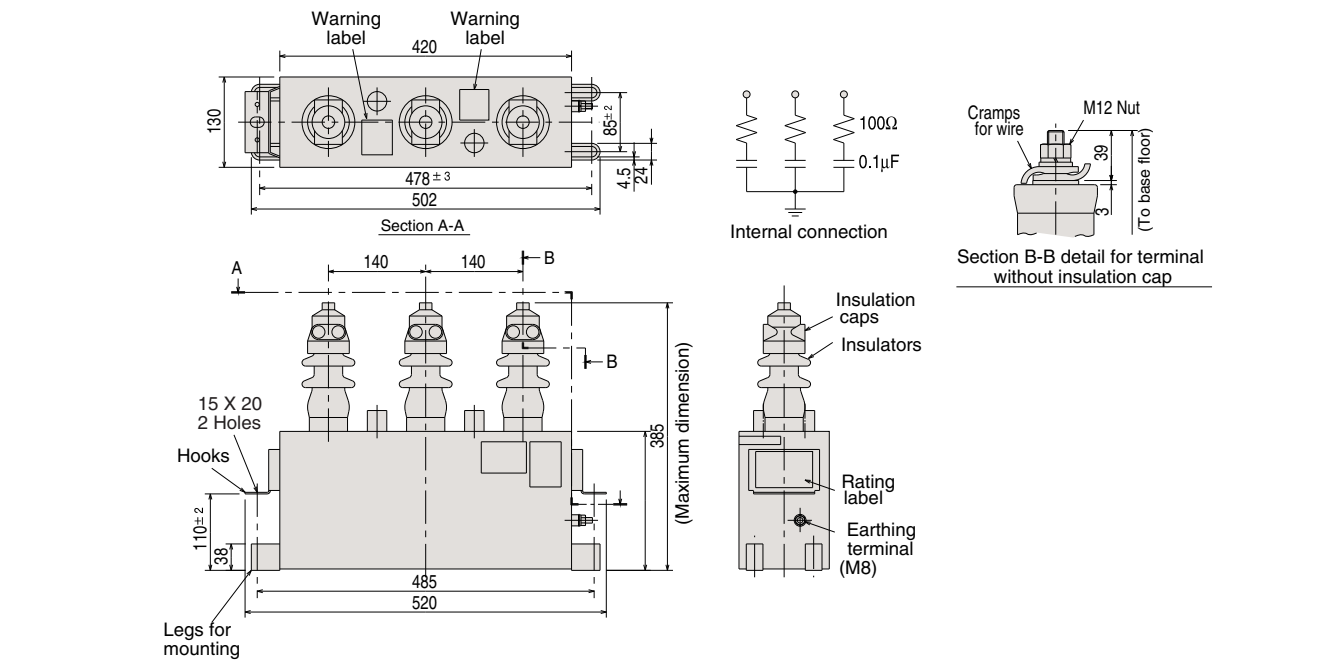


Fig. 33 CR Surge suppressor NV60K304T1

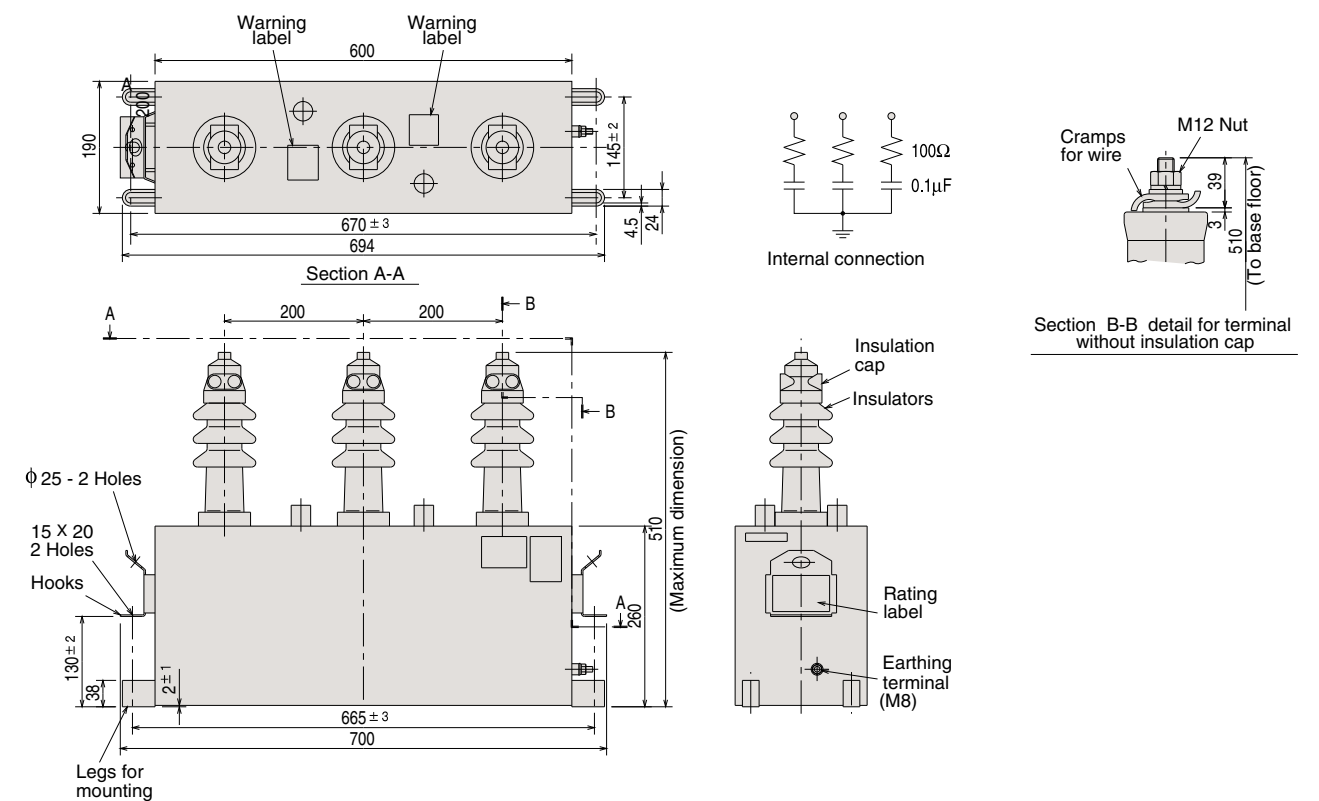


Fig. 34 CR Surge suppressor NV95K304T1