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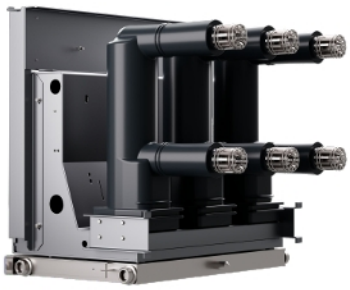
VCB

INDOOR HIGH VOLTAGE VACUUM CIRCUIT BREAKER —SOLID-SEALED TYPE



ASKM SERIES MCCB
A PRODUCT OF
POWER DISTRIBUTION





SLEEVE COUPLING TYPE STRUCTURE OVERVIEW

The main electrical circuit is in the form of solid-sealed polar poles using solidinsulation method. This is a special embedding technology to achieve solid insulation of the main electrical circuit by casting the vacuum arc extinguisher and conductive parts with ultra-low resistance value in epoxy resin. The operating mechanism is a new type of spring operating mechanism.

STRUCTURE INTRODUCTION

Solid-sealed structure:the primary main circuit ofcircuit breaker usessolid-sealed polar poles with solid insulation technology. The solid-sealed polar poles. The vacuum arc extinguisher and other parts of the primary conductive circuit are sealed directly in a special epoxy resin material using advanced automatic pressure gelation (APG) process to form a main electrical circuit module. Double skirt desian is used at the mounting end of the solid-sealed polar pole. The polar pole has the characteristics of large creepage ratio distance, highmechanical strength, high precision of parts, small number of parts, without secondary adjustment and small lap surface. The electric field distribution of the poles is uniform, avoiding the damage to the organic insulation caused by the local electric field concentration. What's more, this structure design can simplify the assembly process of primary main circuit, completely avoid the problem of loosening the primary main circuit connection bolts due to vibration in operation.ensure the high reliability of the primary main circuit connection, and make it possible to realize the maintenance-free primary main circuit of the circuit breaker.

TESTS

VCB have passed the following tests to ensure their safe operation under normal operating conditions.

- Type test: power frequency withstand voltage, lightning impulse withstand voltage, temperature rise, short-time and peak withstand current, short-circuit current breaking/closing capability and cable charging current breaking/closing test.
- Factory routine test: mechanical characteristics test, main circuit power frequency withstand voltage test, auxiliary and control circuit insulation performance test, main circuit resistance test, interlocking operation test, mechanical and electrical operation test.

QUALIFICATION DOCUMENTS



Test Report



Patent



Patent



CE



ISO

STANDARDS

The technical parameters of VCB fully comply with GB1984, GB/T11022 and Chinese electric power industry standard DL403, and also meet the provisions of IEC62271-100,IEC56 standard specification and other major industrialized countries' relevant standards.

BREAKER SELECTION TABLE

No:11010101

ASK	V	5	G	–	12KV	/	1600A	/	31.5
Company	Product code	Design code	Function code		Rated voltage		Rated current		Rated short-time withstand current
AISIKAI ELECTRIC	Vacuum circuit breaker		G:Solid-sealed Polar Pole Type T: Sleeve Type		12KV 24KV 40.5KV		630 1250 1600 2000 2500 3150 4000		20KA 25KA 31.5KA 40KA

MAIN TECHNICAL PARAMETERS

Item		Unit	Technical parameters							
Rated voltage		kV	12					24		
Rated insulation level	Rated short-timepower frequency withstand voltage(1min)	kV	42					65		
	Rated lightning impulse withstand voltage(peak)	kV	75					125		
Rated frequency		Hz	50					50		
Rated current		A	630 1250	630 1250	1250 1600 2000 2500 3150 4000	1250 1600 2000 2500 3150 4000 5000	3150 4000 5000	630 1250	630 1250	1250 1600 2000 2500 3150
Rated short-circuit breaking current		kA	20	25	31.5	40	50	20	25	31.5
Rated short-time withstand current		kA	20	25	31.5	40	50	20	25	31.5
Rated peak withstand current		kA	50	63	80	100	125	50	63	80
Rated short-circuit closing current (peak)		kA	50	63	80	100	125	50	63	80
4s thermal stable current		kA	20	25	31.5	40	50	20	25	31.5
Rated dynamic stable current		kA	50	63	80	100	125	50	63	80
Rated capacitor set closing surge current		kA	12.5 (frequency not higher than1000Hz)							
Rated single/back-to-back capacitor set breaking current		A	630 / 400							
Rated short-circuit duration		S	4							
Secondary circuit power frequency withstand voltage		V	2000							
Rated operational voltage	Closing coil	V	AC 110 / 220 DC 110 / 220					AC 110 / 220 DC 110 / 220		
	Opening coil	V	AC 110 / 220 DC 110 / 220							
	Energy storage motor	V	AC 110 / 220 DC 110 / 220							
Opening time(rated voltage)		ms	20~50					⩽45		
Closing time (rated voltage)		ms	30~70					⩽60		
The allowablewear cumulative thickness of moving and fixed contacts		mm	3							
Energy storage Time		s	⩽15					⩽15		
Contact opening distance		mm	9±1(630A~1250A)		11±1(1250A~4000A)			13±1		
Overtravel		mm	3~4					4±1		
Contact closing bounce Time		ms	⩽2							
Three phase opening/closing non-synchronous characteristic		ms	⩽2							
Average opening speed		m/s	0.9~1.3					1.1~1.7		
Average closing speed		m/s	0.4~0.8		0.5~0.9(side-mounted)			0.6~1.1		
Contact opening rebound amplitude		mm	⩽2		⩽3(side-mounted)			⩽3		
Main conductive circuit resistance		μΩ	⩽55 (630A)		⩽45(630A side)			Rated current	handcart type	fixed type
			⩽45 (1250A)		⩽40(1250A side)			630~1250A	⩽60	⩽50
			⩽35 (1600A~2000A)					1600~2000A	⩽35	⩽30
			⩽25 (2500A above)					2500A above	⩽25	⩽20

Contact closing contact pressure	N	2000±200(20KA)	
		2400±200(25KA)	
		3100±200(31.5KA)	
		4750±200(40KA)	
Rated operation sequence		O-0.3s-CO-180s-CO	
Mechanical life	times	30000 (31.5kA and below)	**20000**
		20000 (40kA and above)	

1.The average opening speed refers to the average speed of the breaker contact just after opening 6mm.

2.①12kV circuit breaker: the average closing speed refers to the average speed of the breaker contact before closing 8mm

②24kV circuit breaker : the average closing speed refers to the average speed of the circuit breaker contacts full opening distance.

3.When the rated short-circuit breaking current<40kA. θ=0.3s, When the rated short-circuit breaking current is ⩾40kA, θ=180s

Energy Storage Motor Technical Parameters(Solid-sealed Type)

Model	Rated voltage	Rated input power(W)		Normal operation voltage range	Energy storage time at rated voltage(S)
		12kV	24kV		
ZYJ55-1	**DC110V**	**70,100**		**85% ~110%** rated voltage	**⩽15**
	DC220V				

Technical Parameters of Closing and Opening Electromagnets and Related Electrical Components

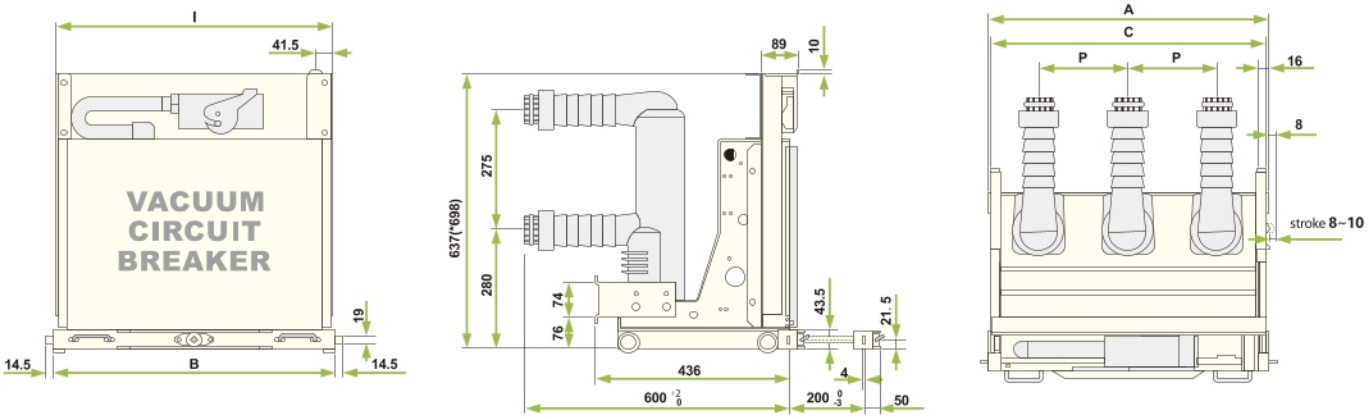
Item \ category	Closing electromagnet		Opening electromagnet		Locking electromagnet		Anti-tripping relay	
Rated operational voltage(V)	**DC220**	**DC110**	**DC220**	**DC110**	**DC220**	**DC110**	**DC220**	**DC110**
Rated operational current(A)	**1.1**	**2.2**	**1.1**	**2.2**	**25mA**		**9.1mA**	
Rated power(W)	**242**	**242**	**242**	**242**	**2.7**		**1.0**	
Normaloperational voltage range	**85%~110%** rated voltage		65%~120% rated voltage; If at voltage lower than 30% of rated voltage, the switch can not open.		—		—	

Secondary Control Circuit Solution Portfolio

Control voltage	Locking solution	Anti-tripping solution	Under-voltage tripping solution	Over-current tripping solution		
AC220V	With electrical locking	With anti-tripping relay	With under-voltage tripper	With over-current tripper	Number of over-current trippers	Action current value
DC220V					2 units/3 units	**3.5/5**
AC110V	Without electrical locking	without anti-tripping relay	Without under-voltage tripper	Without over-current tripper		
DC110V						

OUTLINE AND INSTALLATION DIMENSIONS

12kV Low Current Handcart Vacuum Circuit Breaker Outline Dimensions(630A~1600A)



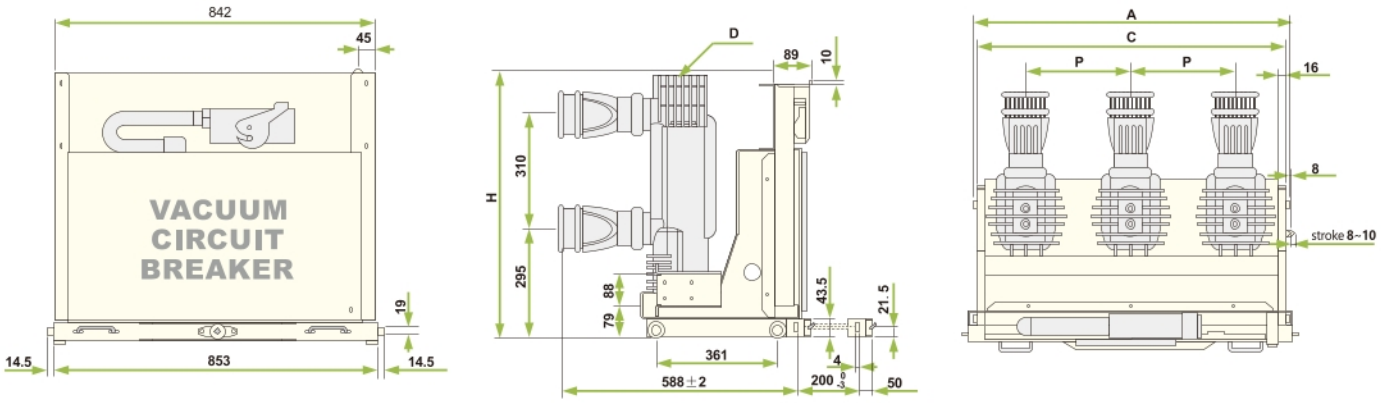
Rated current(A)	Rated short-circuit breaking curent(KA)	P(mm)	A(mm)	B(mm)	C(mm)	I(mm)	Supporting cabinet width(mm)
630~1600	20~40	210	650	653	640	635	800
		275	850	853	838	842	1000

	Rated current(A)	Star shaped contact	Static contact size(mm)
Moving and static contact fit size	**630**	**CT-24**	**Ø35**
	1250	**CT-30**	**Ø49**
	1600	**CT-36**	**Ø55**

1.Main circuit with solid-sealed pole,

2.In the diagram (*698) is an optional scheme for the height of the sealing plates with phase spacing 275

12kV High Current Handcart Vacuum Circuit Breaker Outline Dimensions(1600A~5000A)



Rated current(A)	Rated short-circuit breaking curent(KA)	P(mm)	A(mm)	B(mm)	C(mm)	H(mm)	I(mm)	Supporting cabinet width(mm)
1600~2000	**25~40**	**275**	**850**	**853**	**838**	**698**	**842**	**1000**
2500~4000								
***4000**	**31.5~40**	**275**	**850**	**853**	**838**	**735**	**842**	
***5000**	**40~50**							

	Rated current(A)	Star shaped contact	Static contact size(mm)
Moving and static contact fit size	**2000**	**CT-48**	**Ø79**
	2500~3150	**CT-64**	**Ø109**
	4000	**CT-82**	
	5000	**CT-96**	

1.Main circuit with solid-sealed pole;

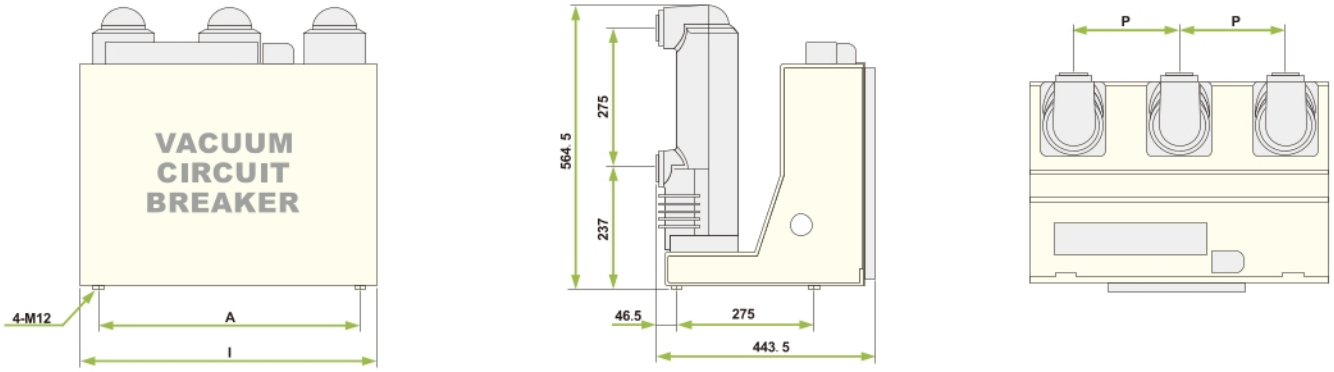
2.When the rated current is 2500A and above, the circuit breaker must have a cooling cover D;

3.Rated current up to 4000A when use forced cold air;

4.* This specification is a special type. Please contact our technician before ordering.

OUTLINE AND INSTALLATION DIMENSIONS

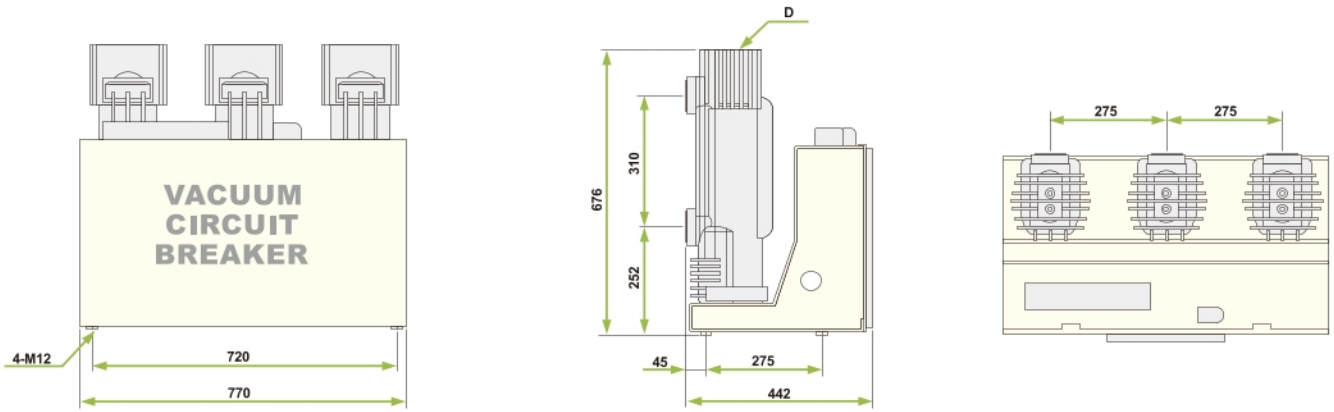
12kV Low Current Fixed Vacuum Circuit Breaker Outline Dimensions(630A~1600A)



Rated current(A)	Rated short-circuit breaking curent(KA)	P(mm)	I(mm)	A(mm)	Supporting cabinet width(mm)
630~1600	20~40	210	588	520	800
		275	770	720	1000

Main circuit with solid-sealed pole.

12kV High Current Fixed Vacuum Circuit Breaker Outine Dimensions(1600A~5000A)

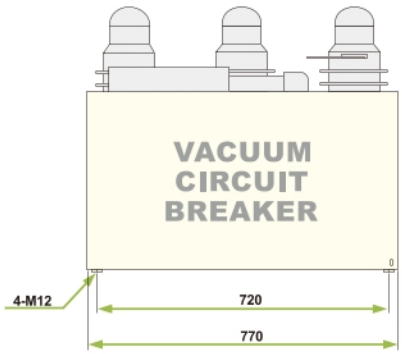


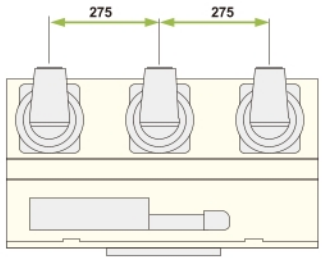
Rated current(A)	Rated short-circuit breaking curent(KA)
1600~4000	20~40
*4000	31.5~40
*5000	40~50

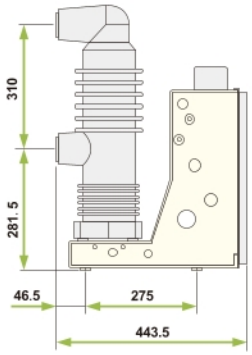
1.Main circuit with solid-sealed pole;
2.When the rated current is 2500A and above, the circuit breaker must have a cooling cover D;
3.Rated current up to 4000A when use forced cold air;
4.* This specification is a special type. Please contact our technician before ordering.

OUTLINE AND INSTALLATION DIMENSIONS

24kV Fixed Vacuum Circuit Breaker Outline Dimensions(630A~1250A)



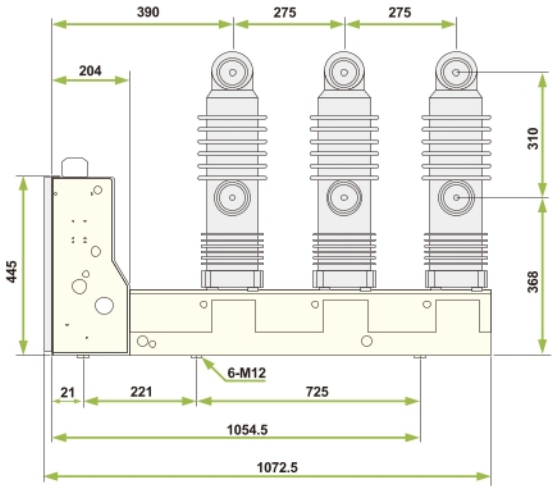


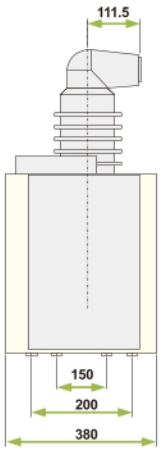


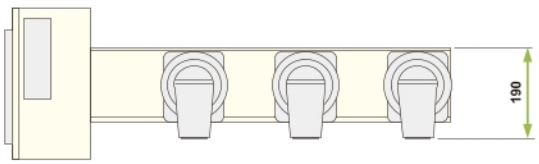
Rated current(A)	Rated short-circuit breaking curent(KA)	Supporting cabinet width(mm)
630~1250	**31.5** and below	**1000**

Main circuit with solid-sealed pole.

24kVSide-mounted Vacuum Circuit Breaker (Soid-sealed) Outline Dimensions(630A~1250A)





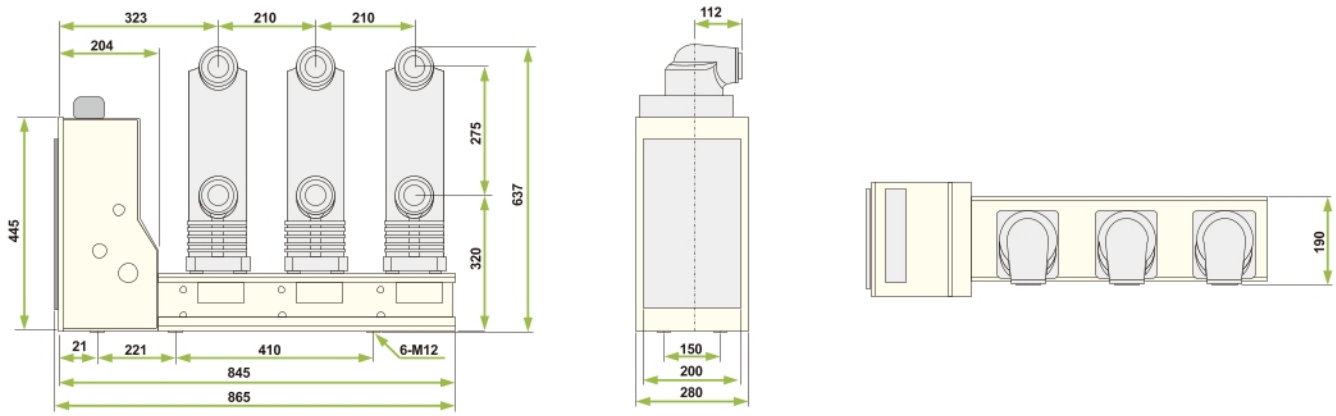


Rated current(A)	Rated short-circuit breaking curent(KA)	Supporting cabinet width(mm)
630~1250	20~31.5	380

Main circuit with solid-sealed pole,

OUTLINE AND INSTALLATION DIMENSIONS

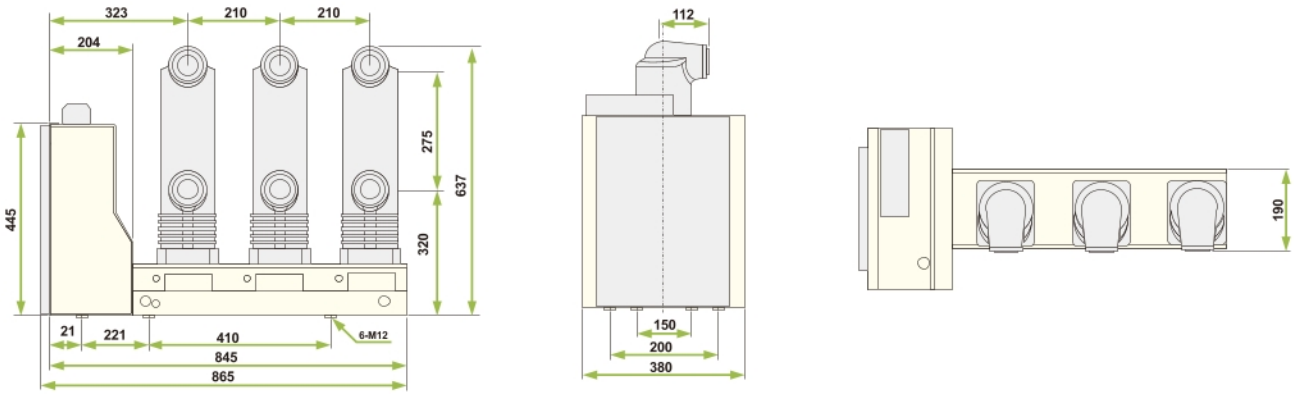
12kV Side-mounted Vacuum Circuit Breaker(Fixed) Outline Dimensions(Type C)(630A~1250A)



Rated current(A)	Rated short-circuit breaking curent(KA)	Supporting cabinet width(mm)
630~1250	**20~40**	**280**

Main circuit with solid-sealed pole.

I2kV Side-mounted Vacuum Circuit Breaker(Fixed) Outline Dimensions(Type D)(630A-1250A)

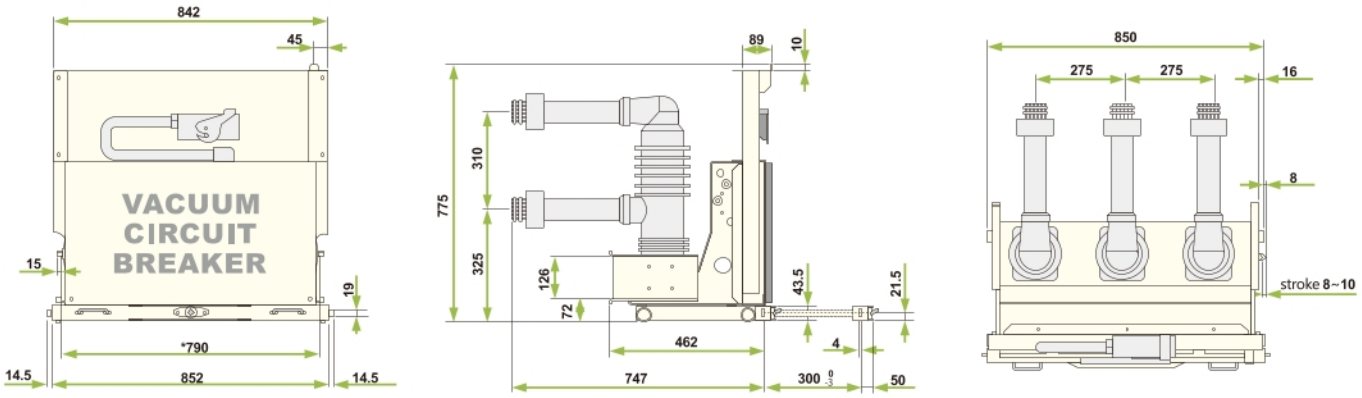


Rated current(A)	Rated short-circuit breaking curent(KA)	Supporting cabinet width(mm)
630~1250	**20~40**	**380**

Main circuit with solid-sealed pole,

OUTLINE AND INSTALLATION DIMENSIONS

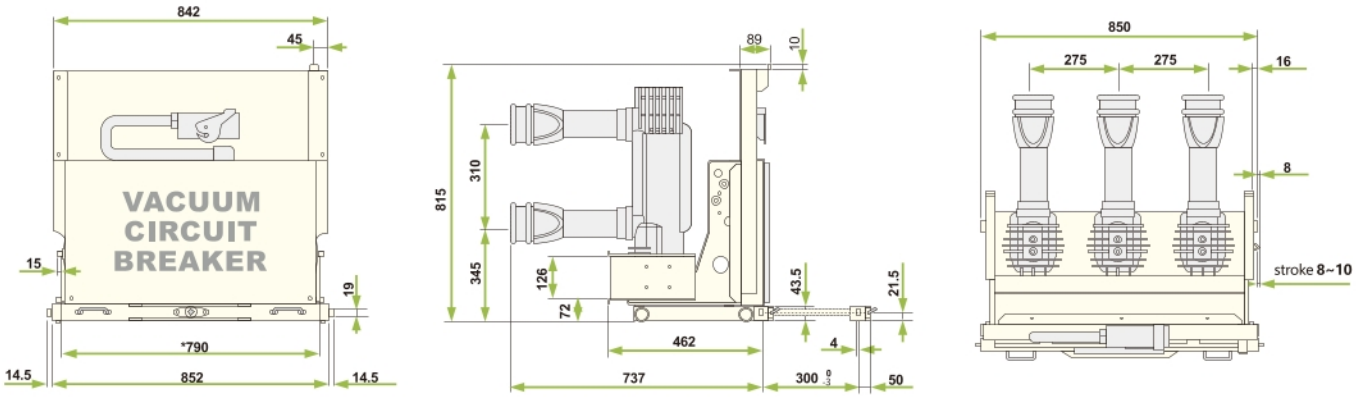
24kV Handcart Vacuum Circuit Breaker Outline Dimensions(630A-1250A)



Rated current(A)	Rated short-circuit breaking curent(KA)	Supporting cabinet width(mm)	Moving and static contactfit size	Star-shaped contact	Static contact size(mm)
630	**31.5** and below	**1000**		**CT-24**	**Ø35**
1250				**CT-30**	**Ø49**

Main circuit with solid-sealed pole,

24kV Handcart Vacuum Circuit Breaker Outline Dimensions(1600A-3150A)



Rated current(A)	Rated short-circuit breaking curent(KA)	Supporting cabinet width(mm)	Moving and static contactfit size	Star-shaped contact	Static contact size(mm)
1600	**31.5** and below	**1000**		**CT-36**	**Ø55**
1600/2000/2500min				**CT-48**	**Ø79**
2500max/3150				**CT-64**	**Ø109**

1.Main circuit with solid-sealed pole ;
2.*min/max:Representative pole size specification.

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