

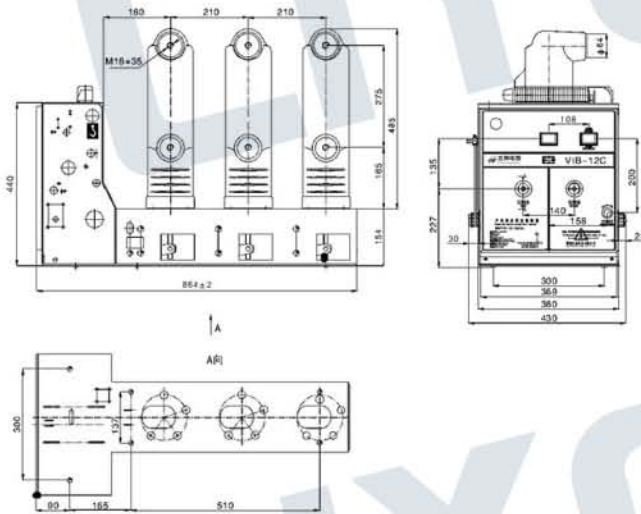
EP-12C indoor HV vacuum circuit breaker for 12kV switchgear

Specification

12kv with embedded poles indoor HV vacuum circuit breaker is a three-phase AC 50Hz, rated voltage of 12kV indoor switchgear. Our company with its own research and development of permanent magnetic actuator for industrial and mining enterprises, power generation and substation facilities as electrical control and protection purposes. The product has high reliability and long life characteristics, especially suitable for frequent operation, repeatedly breaking conditions, such as short-circuit current of the place.



Drawing

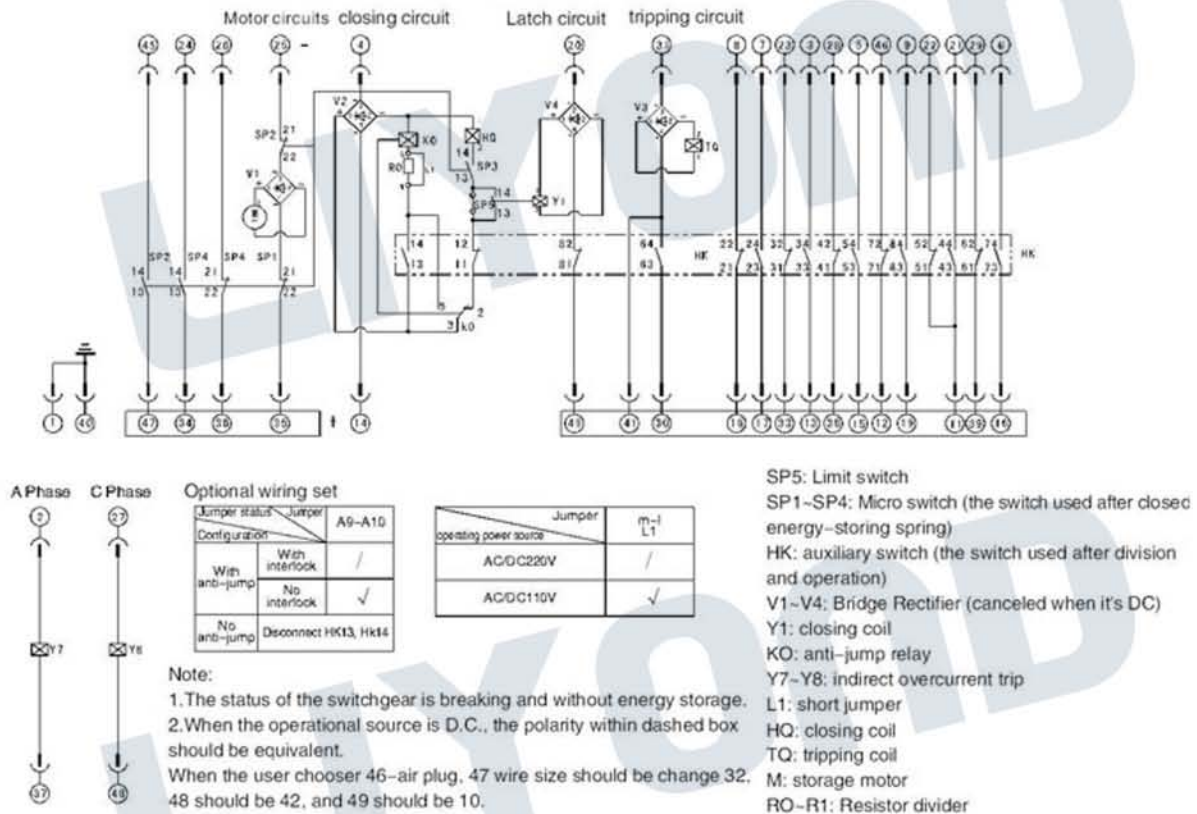


Dimensions of Lateral Operating Mechanism (match with embedded poles)

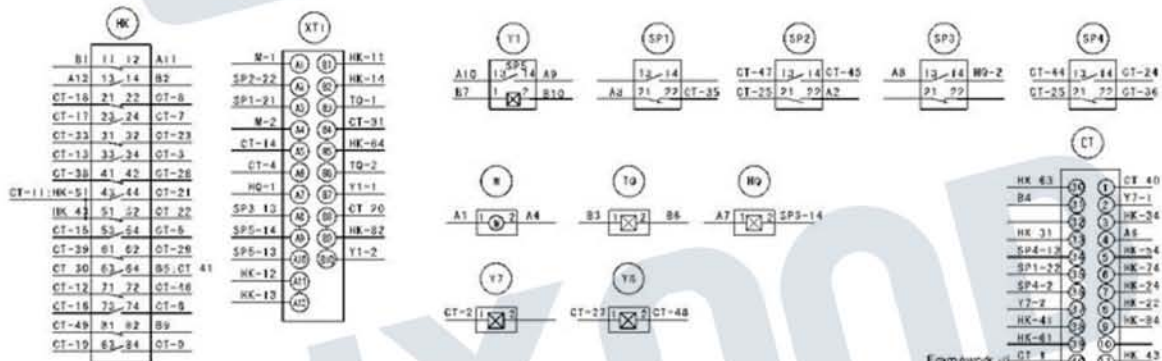
Parameters

S.N	Name	Unit	Data		
1	Rated voltage	kV	12		
2	Rated power frequency withstand voltage	kV	42		
3	Rated lightning impulse withstand voltage	kV	75		
4	Rated frequency	Hz	50		
5	Rated current	A	630	1250	1600
6	Rated short circuit breaking current	kA	20	20	
			25	25	25
			31.5	31.5	31.5
				40	40
7	Rated peak withstand current	kA	50	50	
			63	63	63
			80	80	80
				100	100
8	Conductive circuit resistance of each phase	$\mu\Omega$	≤ 40		≤ 35
9	Clearance between open contracts	mm		11 ± 1	
10	Overtravel	mm		3 ± 0.5	
11	Contact bouncing duration at closing opening	ms		≤ 2	
12	Out of simultaneity of CO operation of three poles		≤ 2		
13	Opening time		≤ 50		
14	Closing time		≤ 100		
15	Average opening speed	m/s		$0.9 - 1.3$	
16	Average closing speed		$0.4 - 0.8$		
17	D.C component			50%	

Typical wiring diagram of the second principle



Typical wiring diagram of the second principle of fixed type Vacuum Circuit Breaker



Technical requirement:

- XT1 is circuit board. Both A and B are connection style plug-ins, they could insert and pull out.
- Y1, Y7, Y8, KO is an optional component, if not chosen, the corresponding connection terminal is not connected.
- The status of the switchgear is breaking and without energy storage, truck is in the position of experimental.
- Dump circuit and over-current circuit line use the diameter is 1mm, grounding line use the diameter is 2.5mm, and the other control lines use the diameter is 1mm.
- When CT chooses 46-pin plug, fix it above the frame.

Wiring Notes:

- The jumper with anti-jump and interlock, when the voltage is 110kV, 1 and m connected use short jumper.
- When the jumper with anti-jumper but no interlock, A9 and A10 should be connected using short jumper in the position of 1 interlock, when the voltage is 110kV, 1 and m connected use short jumper.
- When the jumper no anti-jump but with interlock, please disconnect HK13, HK14.
- When the jumper no anti-jump and no interlock, A9 and A10 should be connected using short jumper in the position of interlock, and also disconnect HK13, HK14; when the voltage is 110kV, 1 and m connected use short jumper.

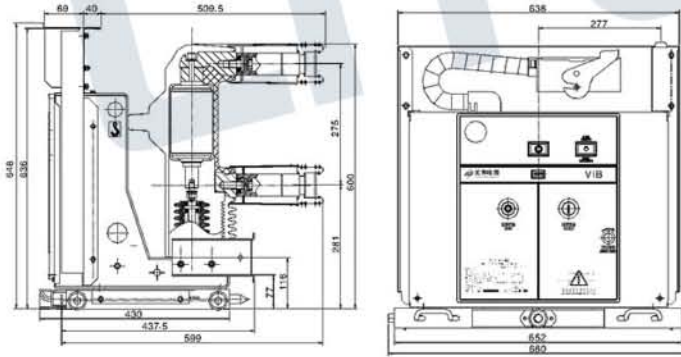
EP-12 with embedded poles indoor HV vacuum circuit breaker for 12kV switchgear

Specification

12kv with embedded poles indoor HV vacuum circuit breaker is a three-phase AC 50Hz, rated voltage of 12kV indoor switchgear. Our company with its own research and development of permanent magnetic actuator for industrial and mining enterprises, power generation and substation facilities as electrical control and protection purposes. The product has high reliability and long life characteristics, especially suitable for frequent operation, repeatedly breaking conditions, such as short-circuit current of the place.



Drawing



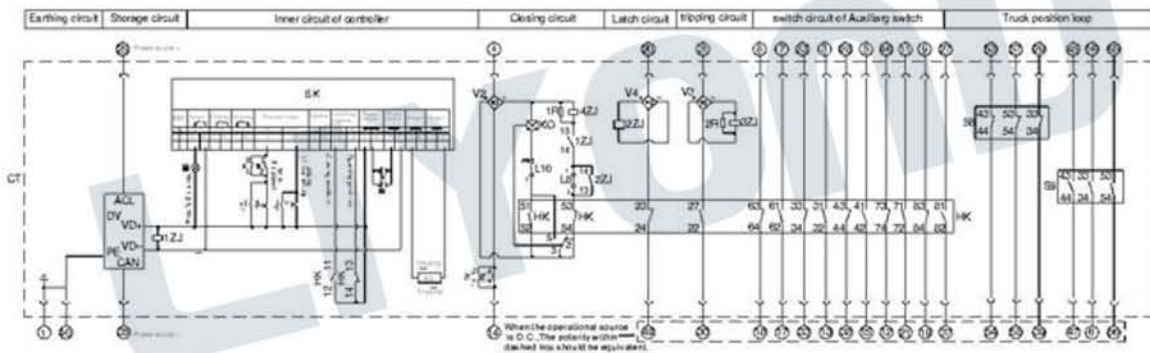
Parameters

S.N	Name	Unit	Data							
1	Rated voltage	kV	12							
2	Rated current	A	630	1000	1250	1600	2000	2500	3150	
3	Rated short circuit breaking current	kA	20	25	20	25	31.5	31.5	40	
4	Rated peak withstand current	kA	50	63	50	63	80	80	100	
5	Rated short time withstand current	kA	20	25	20	25	31.5	31.5	40	
6	Rated short circuit making current	kA	50	63	50	63	80	80	100	
7	Switching operations of short circuit current	Cycle	50						30	
8	Rated operating sequence		O-0.3s-CO-180s-CO, O-180s-CO-180s-CO (40kA)							
9	Mechanical endurance	Cycle	30000							
10	Rated breaking operations of rated current	Cycle	20000							
11	Rated lightning impulse withstand voltage (full wave)	kV	75							
12	Rated power frequency withstand voltage	kV	42							
13	Contact stroke	mm	9 ± 1							
14	Overtravel of contacts	mm	3.5 ± 0.5							
15	Closing speed	m/s	0.4 ~ 0.8							

Connected to the above table

S.N	Name	Unit	Data
16	Opening speed	m/s	0.9 ~ 1.2
17	Contact bouncing duration at closing operation	ms	≤ 2
18	Simultaneity of three phase closing and opening	ms	≤ 2
19	Closing time	ms	30 ~ 70
20	Opening time	ms	20 ~ 50
21	Distance between phases	mm	150, 210, 275
22	D.C component		50%

Typical wiring diagram



Functions	L10 (m,l)	L8 (i,j)
With anti-jump	Connect	
With interlock		Disconnect
No anti-jump	Disconnect	
No Interlock		Connect

DY: Power module

Ha: Local closing button

1C、2C: Capacitance

Sk: Control module

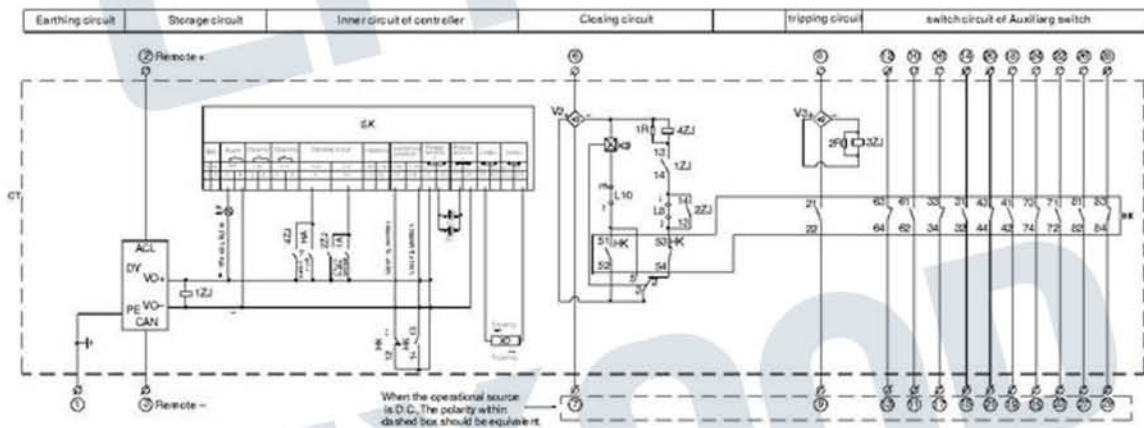
Xq: Operating coil

Ta: Local opening pushbutton

Hk: Auxiliary switch of Breaker

R1-R2: Current-limiting resistance

Truck type electrical schematic



Functions	L10 (m,l)	L8 (i,j)
With anti-jump	Connect	
With interlock		Disconnect
No anti-jump	Disconnect	
No Interlock		Connect

DY: Power module

Ha: Local closing button

1C、2C: Capacitance

Sk: Control module

Xq: Operating coil

Ta: Local opening pushbutton

Hk: Auxiliary switch of Breaker

R1-R2: Current-limiting resistance

Fixed type electrical schematic

EP-12 indoor high voltage VCB for switchgear

Specification

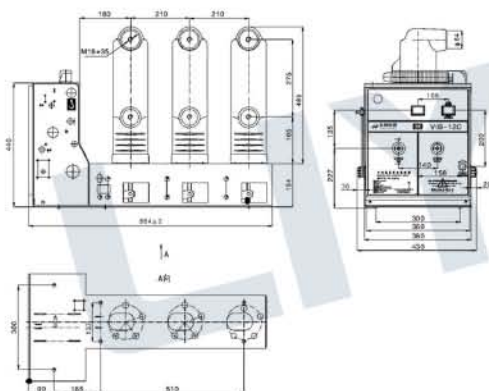
This type indoor high voltage vacuum circuit breaker are used for 12kv rated voltage and AC 50Hz indoor switch equipment components. The products meet standard of GB1984-2003 HV AC VCB, JB3855-1996 3.6-40.5kv indoor AC high voltage vacuum circuit breaker, DL/T403-2000 order technical condition of 12kv-40.5kv VCB and IEC62271-100:2001 HV AC VCB etc. As the protect and control unit in electric network equipment and power design of industrial&mining industry, circuit breaker is suitable to use in the following occasions.



Parameters

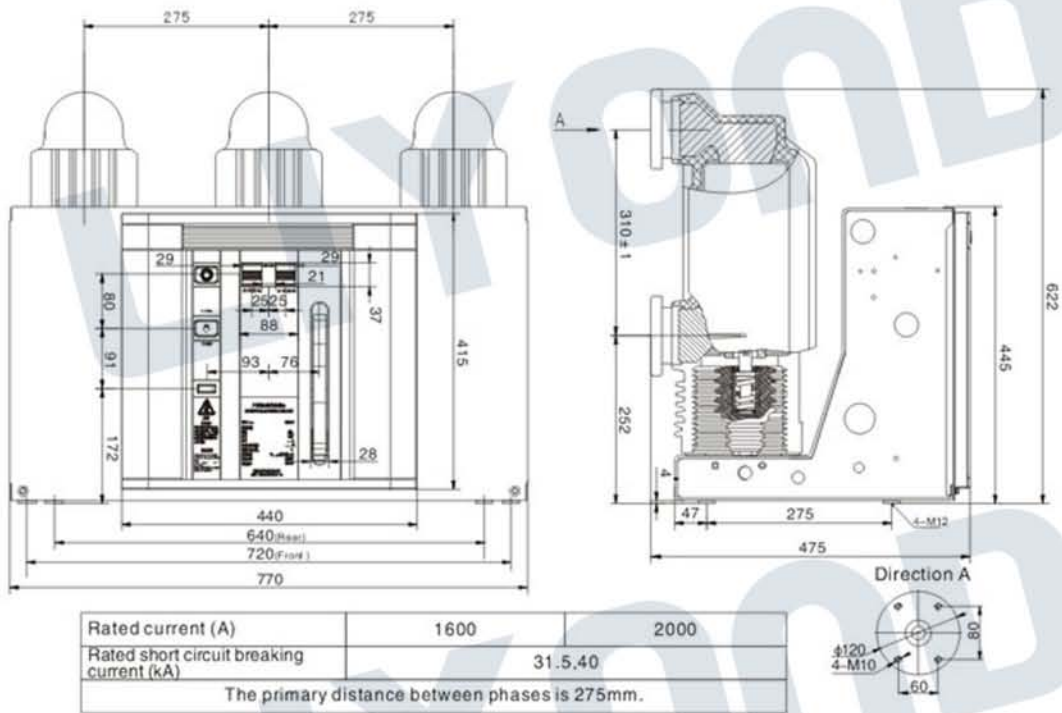
S.N	Name	Unit	Data		
1	Rated voltage	kV	12		
2	Rated power frequency withstand voltage	kV	42		
3	Rated lightning impulse withstand voltage	kV	75		
4	Rated frequency	Hz	50		
5	Rated current	A	630	1250	1600
6	Rated short circuit breaking current	kA	20	20	
			25	25	25
			31.5	31.5	31.5
			40	40	40
7	Rated peak withstand current	kA	50	50	
			63	63	63
			80	80	80
				100	100
8	Conductive circuit resistance of each phase	$\mu\Omega$	≤ 40		≤ 35
9	Clearance between open contracts	mm	11 ± 1		
10	Overtravel	mm	3 ± 0.5		
11	Contact bouncing duration at closing opening	ms	≤ 2		
12	Out of simultaneity of CO operation of three poles		≤ 2		
13	Opening time		≤ 50		
14	Closing time		≤ 100		
15	Average opening speed	m/s	0.9 - 1.3		
16	Average closing speed		0.4 - 0.8		
17	D.C component		50%		

Drawing

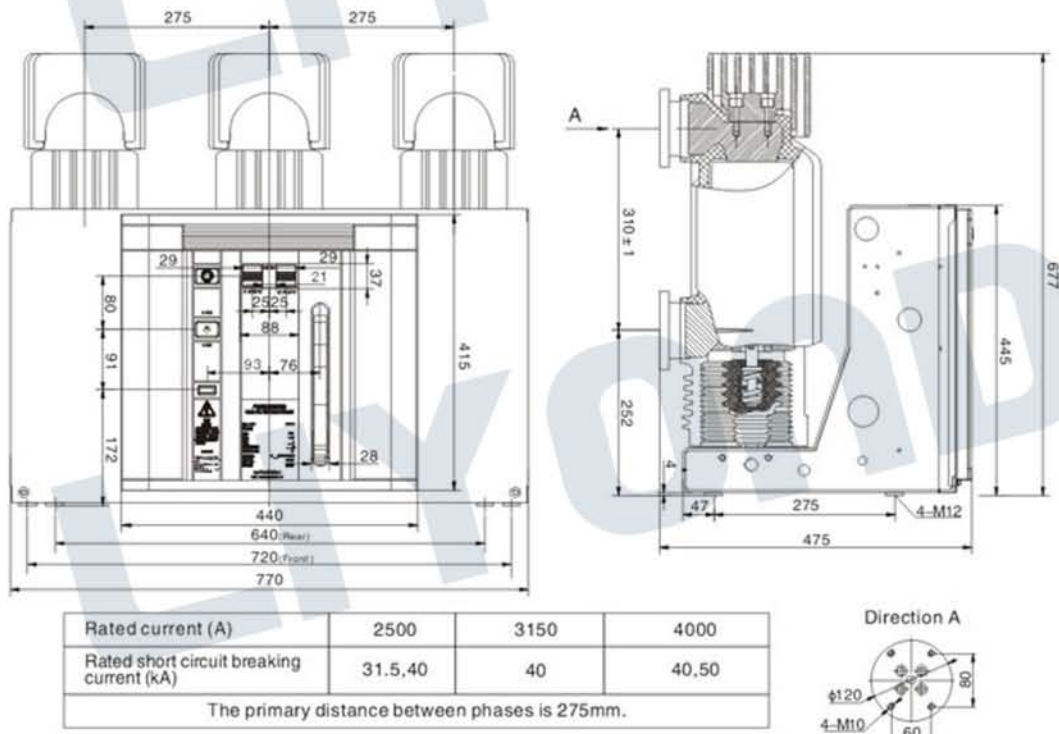


Dimensions of Lateral Operating Mechanism (match with embedded poles)

Drawing

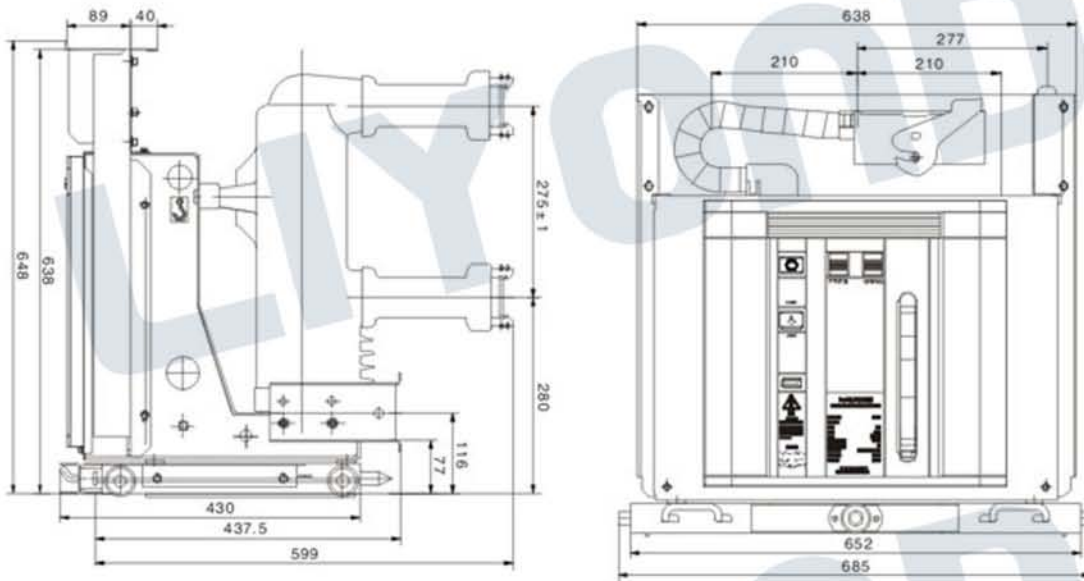


Drawing 1b The outline drawing and installation dimension of fixed type



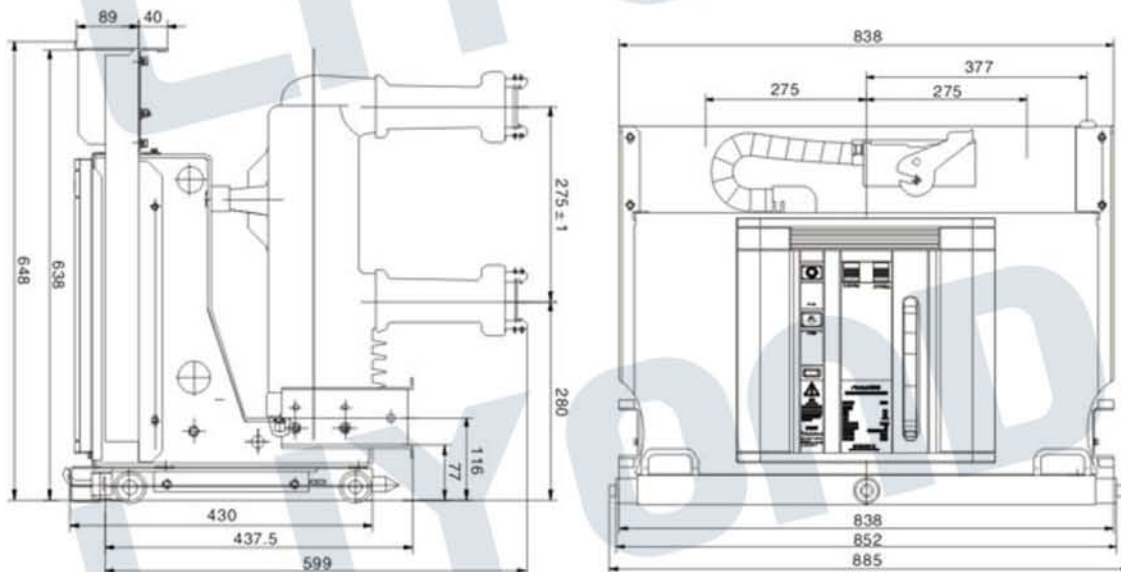
Drawing 1c The outline drawing and installation dimension of fixed type

Drawing



Rated current (A)	630	1250	1600
Rated short circuit breaking current (kA)	20,25,31.5	25,31.5,40	31.5,40
Dimension of matched fixed contact (mm)	Φ35	Φ49	Φ55
The meshing size of movable and fixed contact is not less than 15-25mm. The primary distance between phases is 210mm.			

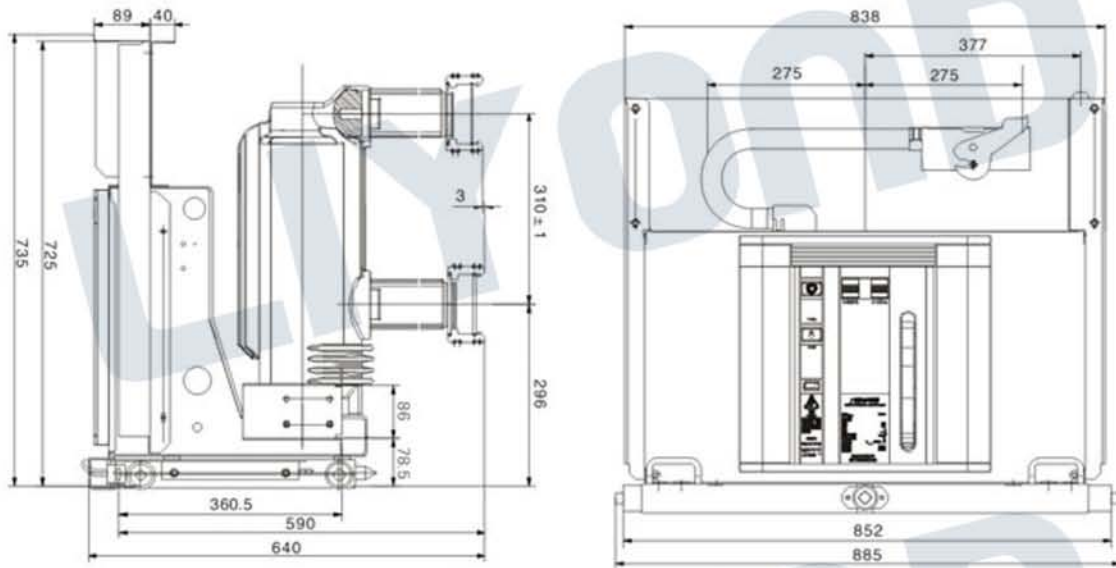
Drawing 2a The outline drawing and installation dimension of withdrawable type



Rated current (A)	630	1250	1600
Rated short circuit breaking current (kA)	20,25,31.5	25,31.5,40	31.5,40
Dimension of matched fixed contact (mm)	Φ35	Φ49	Φ55
The meshing size of movable and fixed contact is not less than 15-25mm. The primary distance between phases is 275mm.			

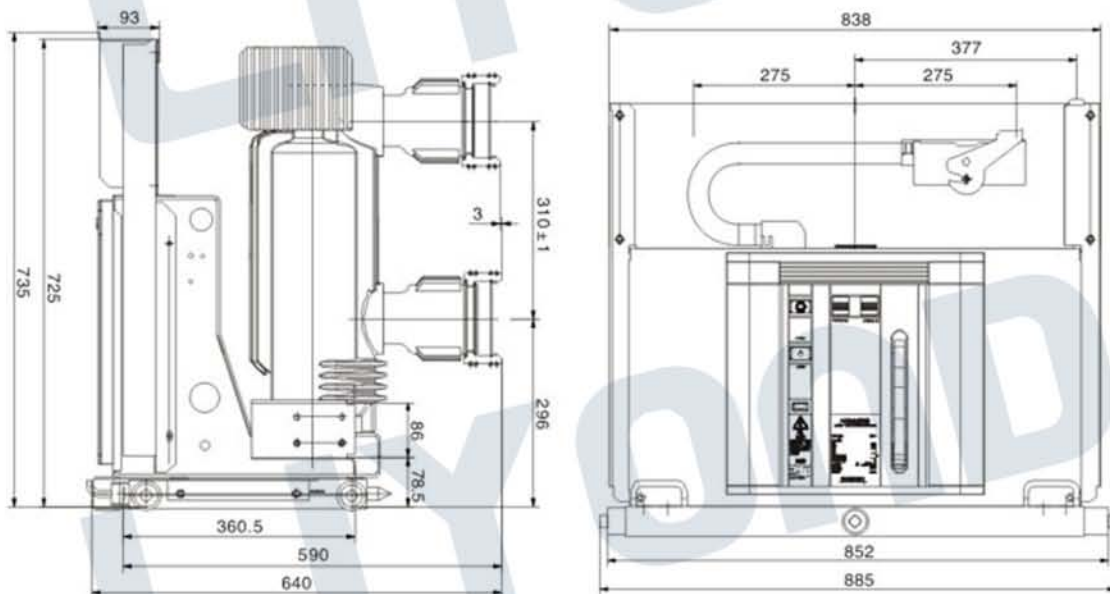
Drawing 2b The outline drawing and installation dimension of withdrawable type

Drawing



Rated current (A)	1600	2000
Rated short circuit breaking current (kA)	31.5, 40	
Dimension of matched fixed contact (mm)	Φ79	
The meshing size of movable and fixed contact is not less than 15~25mm. The primary distance between phases is 275mm.		

Drawing 2c The outline drawing and installation dimension of withdrawable type

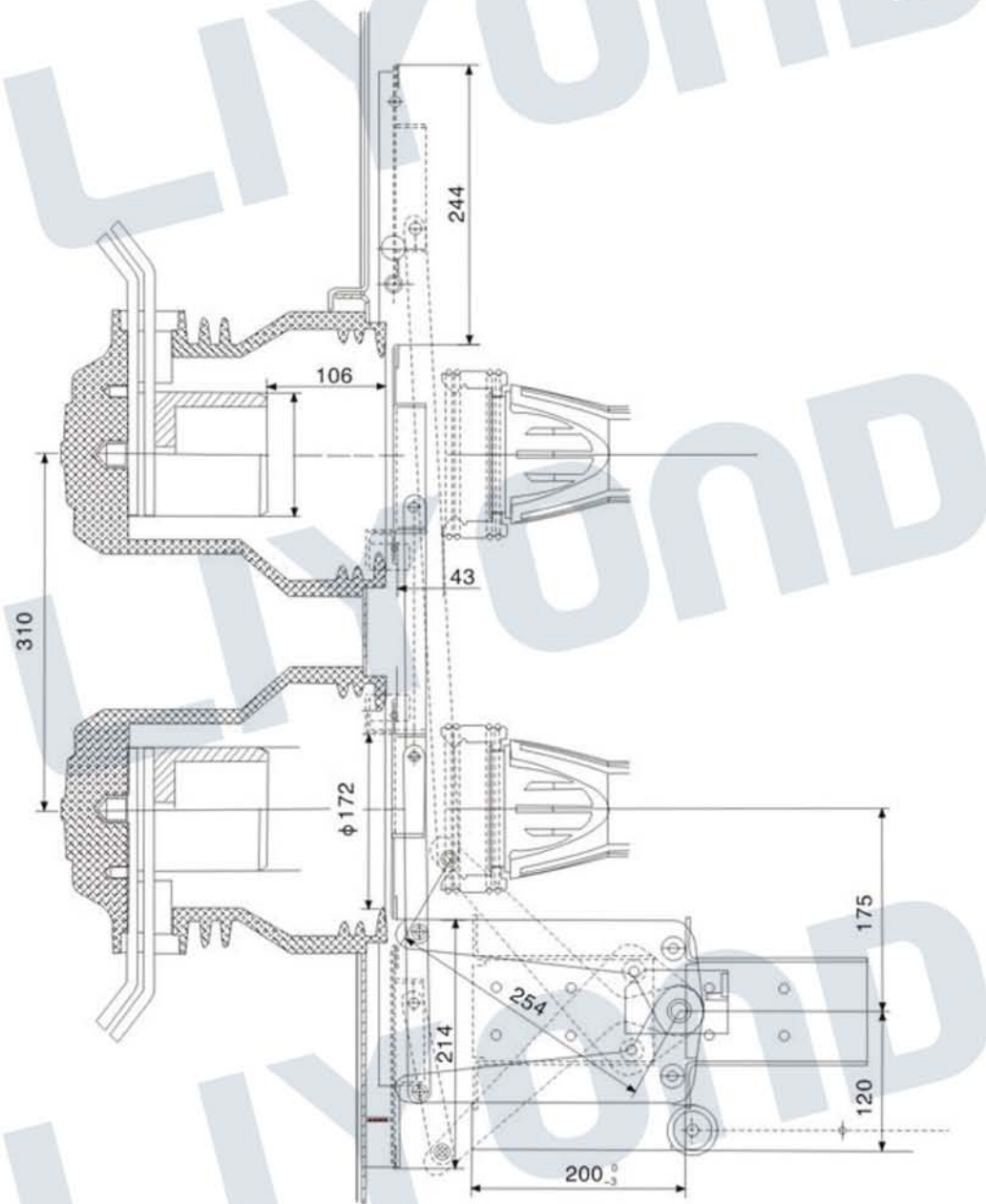


Rated current (A)	2500	3150	4000
Rated short circuit breaking current (kA)	31.5, 40	40	40, 50
Dimension of matched fixed contact (mm)	Φ109		
The meshing size of movable and fixed contact is not less than 15~25mm. The primary distance between phases is 275mm.			

Drawing 2d The outline drawing and installation dimension of withdrawable type

Drawing

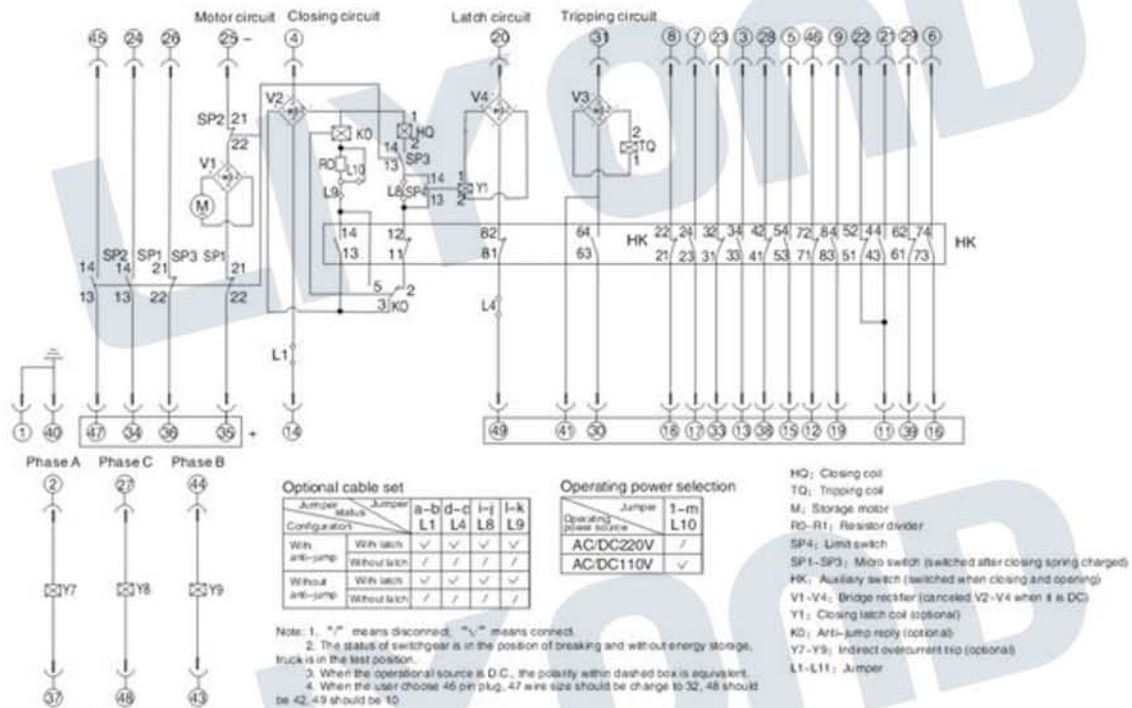
Recommended matched dimension drawing of VIB circuit breaker and switchgear (width: 1000mm)



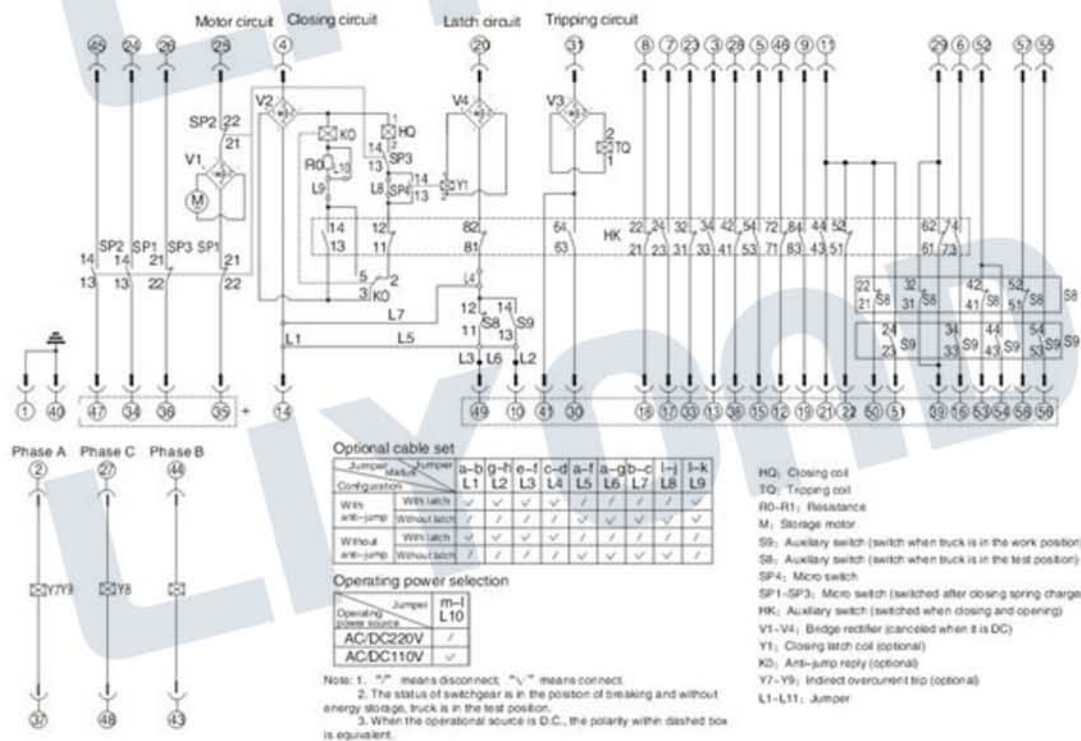
Rated current (A)	1600	2000	2500	3150
Rated short circuit breaking current (kA)	31.5, 40	31.5, 40	31.5, 40	40
Dimension of matched fixed contact D (mm)	Φ79		Φ109	

Drawing 3b

Drawing



Drawing 4a The secondary wiring principle drawing of fixed type VCB



Drawing 4b The secondary wiring principle drawing of withdrawable type VCB

EP-24 with common insulated cylinder indoor high voltage VCB for 24kV switchgear

Specification

24kV with common insulated cylinder series permanent magnetic operating mechanism is a three-phase AC 50Hz, rated voltage of 12kV indoor switchgear. Our company with its own research and development of permanent magnetic actuator for industrial and mining enterprises, power generation and substation facilities as electrical control and protection purposes. The product has high reliability and long life characteristics, especially suitable for frequent operation, repeatedly breaking conditions, such as short-circuit current of the place.

Following information is required for order

VCB full type, main technical specification, distance between phase and quantity.

Type and specification of service voltage.

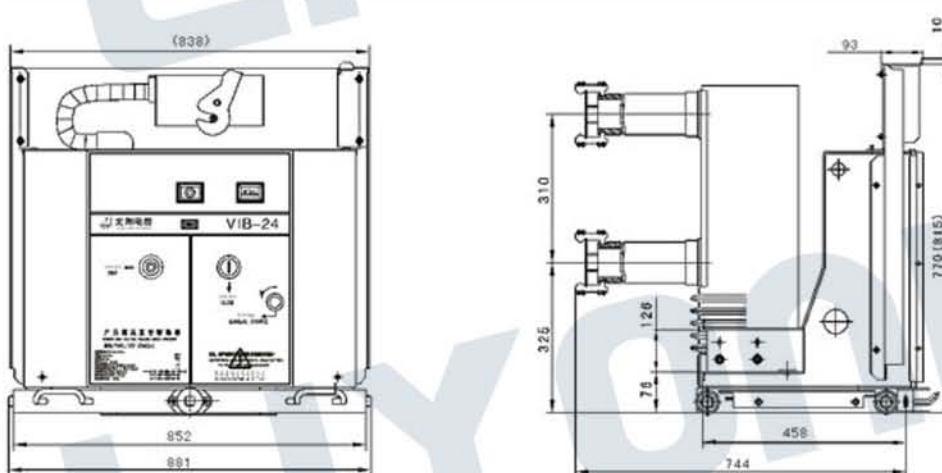
Name and quantity of spare parts.



Parameters

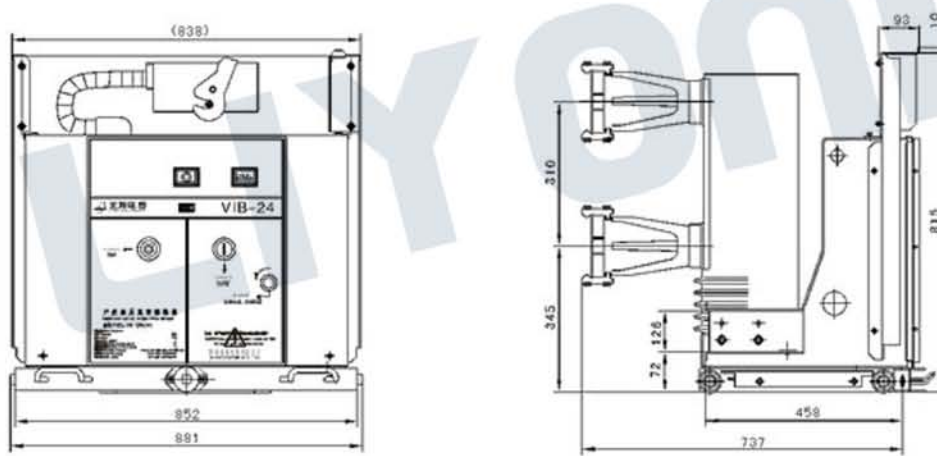
S.N	Name	Unit	Data					
1	Rated voltage	kV	24					
2	Rated current	A	630	1250	1600	2000	2500	3150
3	Rated frequency	Hz	50					
4	Rated short circuit breaking current	kA	20	25		31.5		
5	Rated short circuit making current	kA	50	63		80		
6	Rated short time withstand current	kA	20	25		31.5		
7	Rated peak withstand current	kA	50	63		80		
8	Rated power frequency withstand voltage	kV	65					
9	Rated lightning impulse withstand voltage	kV	125					
10	Rated short-circuit duration	s	4					
11	Rated operating sequence		O-0.3s-CO-180s-CO					
12	D.C component		50%					

Drawing

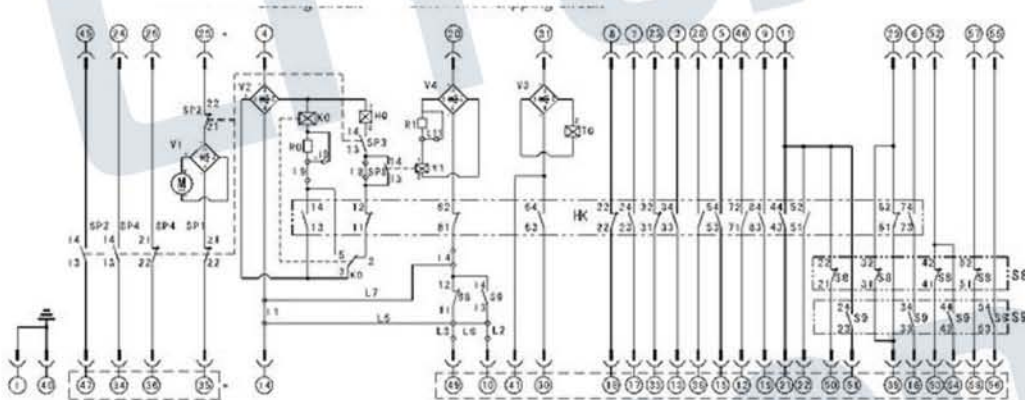


Rated current (A)	630	1250	1600
Rated short circuit breaking current (kA)	20,25	20,25,31.5	20,25,31.5
Dimension of mating fixed contact (mm)	Φ 35	Φ 49	Φ 55
Note: The mesh size between fixed and movable contacts shall be not less than 15mm. The primary distance between phases is 275 ± 1.5mm.			

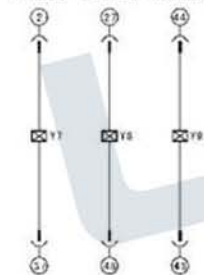
Drawing



Rated current (A)	1600	2000	2500	3150
Rated short circuit breaking current (kA)	31.5			
Dimension of mating fixed contact(mm)	Φ 79		Φ 109	
Note: The mesh size between fixed and movable contacts shall be not less than 15mm. The primary distance between phases is 275 ± 1.5mm.				



Optional wiring set



Jumper status configuration	Jumper configuration	Jumper configuration								
		B-D L1	C-B L2	A-B L3	C-D L4	B-D L5	B-C L7	C-L L8	A-L L9	
With anti-jump	With interlock	✓	✓	✓	✓	✓	✓	✓	✓	✓
No anti-jump	With interlock	✓	✓	✓	✓	✓	✓	✓	✓	✓
No anti-jump	No interlock	✓	✓	✓	✓	✓	✓	✓	✓	✓

Operating power source

operating power source	Jumper configuration	
	m-l L10	p-g L11
AC/DC220V	✓	✓
AC/DC110V	✓	✓

- S9: Auxiliary switch(the switch used in working position)
- S8: Auxiliary switch(the switch used in experimental position)
- SP5: Micro switch
- SP1-SP4: Micro switch (the switch used after closed energy-storing spring)
- HK: auxiliary switch (the switch used after division and operation)
- V1-V4: Bridge Rectifier (canceled V2-V4 when it's DC)
- Y1: Closing coil KO: Anti-jump relay
- Y7-Y9: Indirect over current trip
- L1-L11: Jumper
- HQ: Closing coil
- TQ: Tripping coil
- R0-R1: Resistor divider
- M: Storage motor

- Note: 1. "✓" means disconnect; "v" means connect.
 2. The status of switchgear is in the position of breaking and without energy storage, truck is in the position of experimental.
 3. when the operational source is D.C., the polarity within dashed box is equivalent.

EP-24 with Embedded poles indoor high voltage vacuum circuit breaker for 24kV switchgear Specification

24kV with Embedded poles series permanent magnetic operating mechanism is a three-phase AC 50Hz, rated voltage of 12kV indoor switchgear. Our company with its own research and development of permanent magnetic actuator for industrial and mining enterprises, power generation and substation facilities as electrical control and protection purposes. The product has high reliability and long life characteristics, especially suitable for frequent operation, repeatedly breaking conditions, such as short-circuit current of the place.

Following information is required for order

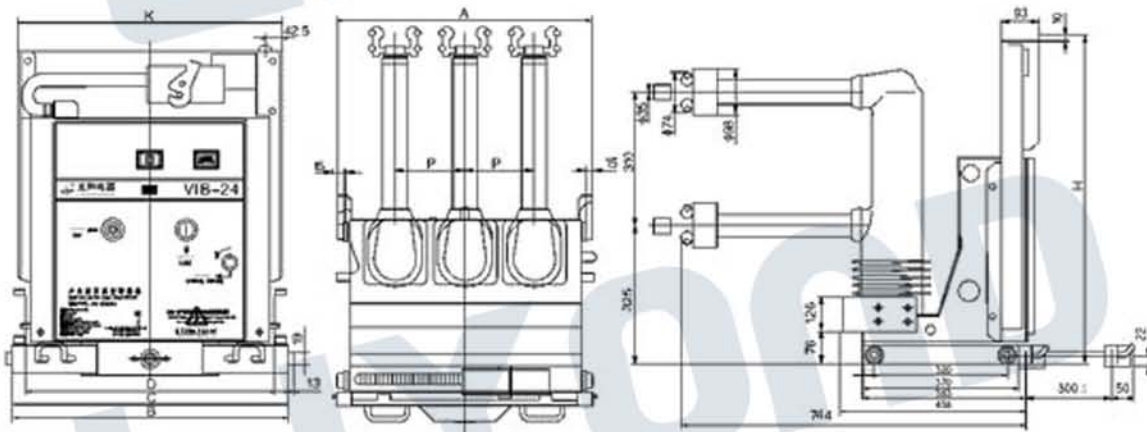
VCB full type, main technical specification, distance between phase and quantity.
Type and specification of service voltage.
Name and quantity of spare parts.



Parameters

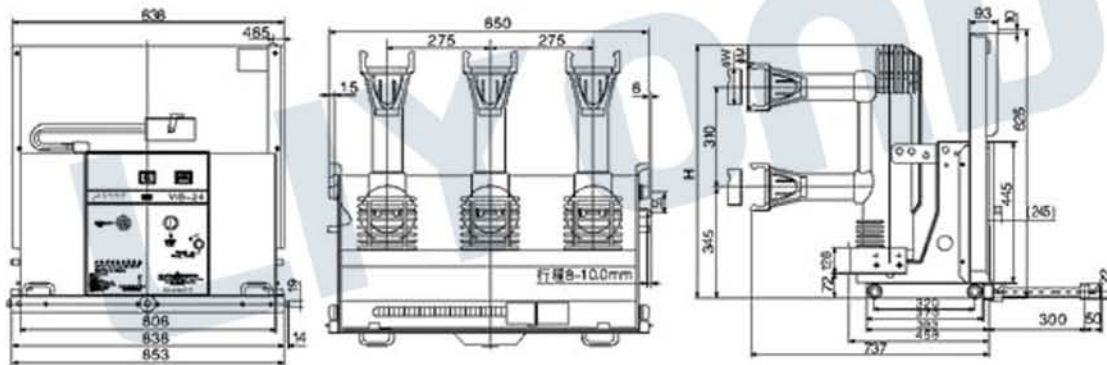
S.N	Name	Unit	Data					
1	Rated voltage	kV	24					
2	Rated current	A	630	1250	1600	2000	2500	3150
3	Rated frequency	Hz	50					
4	Rated short circuit breaking current	kA	20		25		31.5	
5	Rated short circuit making current	kA	50		63		80	
6	Rated short time withstand current	kA	20		25		31.5	
7	Rated peak withstand current	kA	50		63		80	
8	Rated power frequency withstand voltage	kV	65					
9	Rated lightning impulse withstand voltage	kV	125					
10	Rated short-circuit duration	s	4					
11	Rated operating sequence		O-0.3s-CO-180s-CO					
12			50%					

Drawing

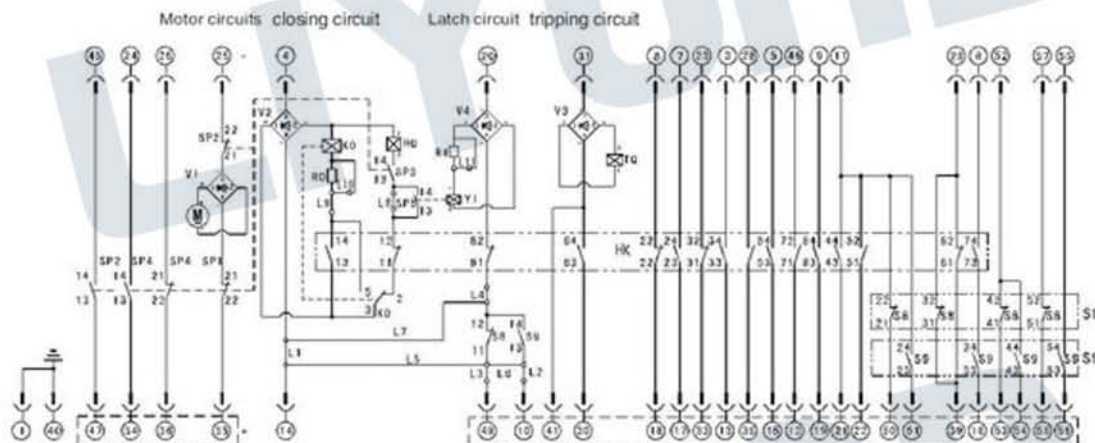


Specification		P	A	B	C	D	K	H	质量kg
Rated current	Rated short circuit breaking current	210	650	653	638	608	638	780	150
630A, 1250A	20kA, 25kA	275	650	653	638	608	638	825	160

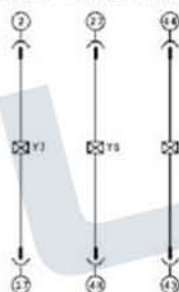
Drawing



Specification		H	W	M	Masskg
Rated current	Rated short circuit breaking current				
630A, 1250A	20kA, 25kA	706	79	115	235
2000A, 2500A	25kA, 31.5kA	785	109	149	325
3150A	31.5kA	785	109	149	330



A Phase C Phase B Phase Optional wiring set



Jumper status Configuration	Jumper								
	b-b L1	c-h L2	e-h L3	o-d L4	B-g L5	B-g L6	b-c L7	i-j L8	i-k L9
With anti-jump	✓	✓	✓	✓	✓	✓	✓	✓	✓
With interlock	✓	✓	✓	✓	✓	✓	✓	✓	✓
No anti-jump	✓	✓	✓	✓	✓	✓	✓	✓	✓
No interlock	/	/	/	/	✓	✓	✓	✓	✓

Operating power source

operating power source	Jumper	
	m-i L10	b-q L11
AC/DC220V	/	✓
AC/DC110V	✓	✓

- S9: Auxiliary switch (the switch used in working position)
- S8: Auxiliary switch (the switch used in experimental position)
- SP5: Micro switch
- SP1-SP4: Micro switch (the switch used after closed energy-storing spring)
- HK: auxiliary switch (the switch used after division and operation)
- V1-V4: Bridge Rectifier (canceled V2-V4 when it's DC)
- Y1: Closing coil
- KO: Anti-jump relay
- Y7-Y9: Indirect over current trip
- L1-L11: Jumper
- HQ: Closing coil
- TQ: Tripping coil
- R0-R1: Resistor divider
- M: Storage motor

- Note: 1. "/" means disconnect; "✓" means connect.
 2. The status of switchgear is in the position of breaking and without energy storage, truck is in the position of experimental.
 3. when the operational source is D.C., the polarity within dashed box is equivalent.

VIB/RX-12/T Indoor High Voltage Vacuum Circuit Interrupter Specification

VIB/RX-12/T indoor high voltage vacuum circuit breaker with lateral operating mechanism is used for 3.6-12kV three phase AC 50Hz electrical system. It can be used as breaking/making loading current, overload current and fault current in the power station and transformer substation, also it can apply to frequent operation occasion. It's widely used in power station, power grid, petrochemical, metallurgical, subway, airport and building projects.



Parameters

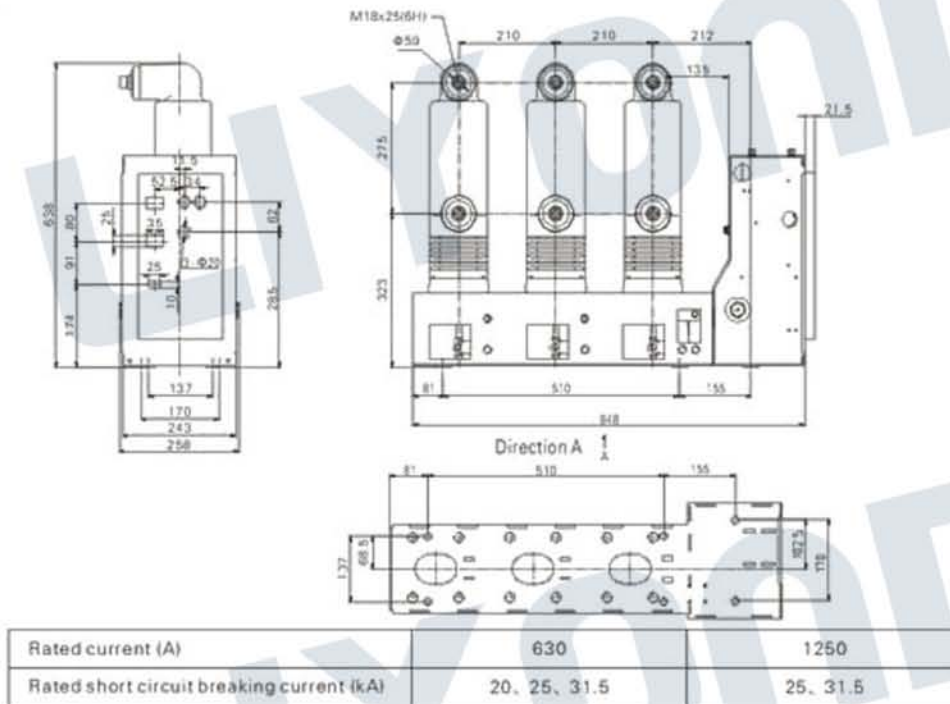
Main technical specification

S.N	Name	Unit	Data	
1	Rated voltage	kV	12	
2	Rated power frequency withstand voltage 1 min	kV	42	
3	Rated lightning impulse withstand voltage	kV	75	
4	Rated frequency	Hz	50	
5	Rated current	A	630	1250
6	Rated short circuit breaking current	kA	20	20
			25	25
			31.5	31.5
			50	50
7	Rated peak withstand current	kA	63	63
			80	80
			80	80
8	Conductive circuit resistance of each pole	$\mu\Omega$	≤ 50	≤ 45

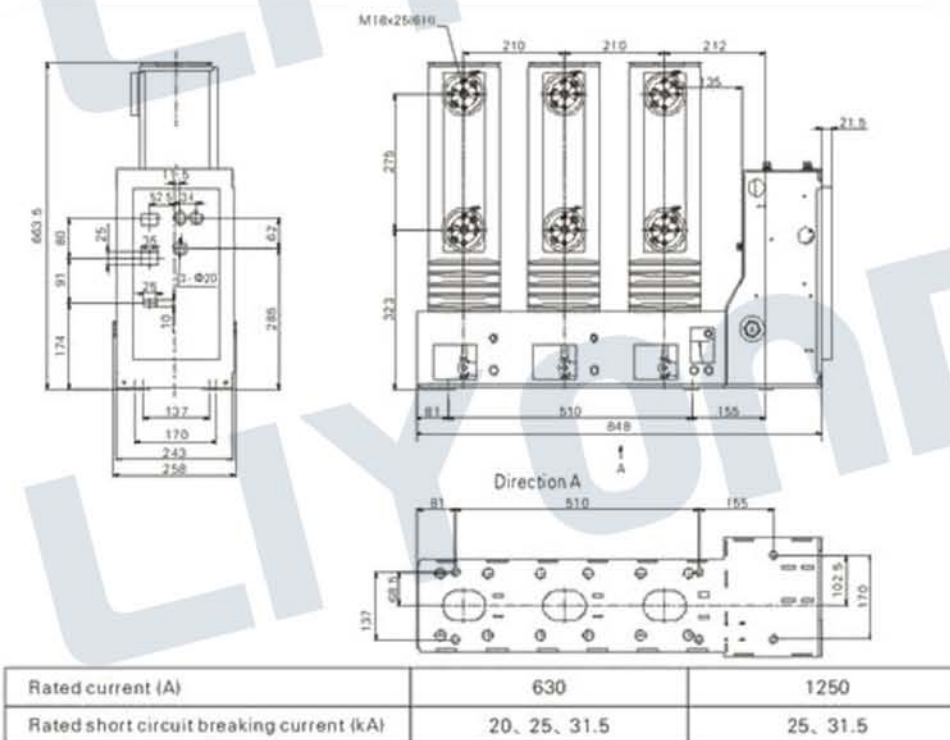
Mechanical characteristic specification

S.N	Name	Unit	Data
1	Clearance between open contacts	mm	11 ± 1
2	Overtravel	mm	3.5 ± 0.5
3	Contact bouncing duration at closing operation	ms	≤ 2
4	Out of simultaneity of CO operation of three poles	ms	≤ 2
5	Opening time	ms	20 - 50
6	Closing time	ms	30 - 70
7	Average opening speed	m/s	0.9 - 1.3
8	Average closing speed	m/s	0.4 - 0.8

Drawing

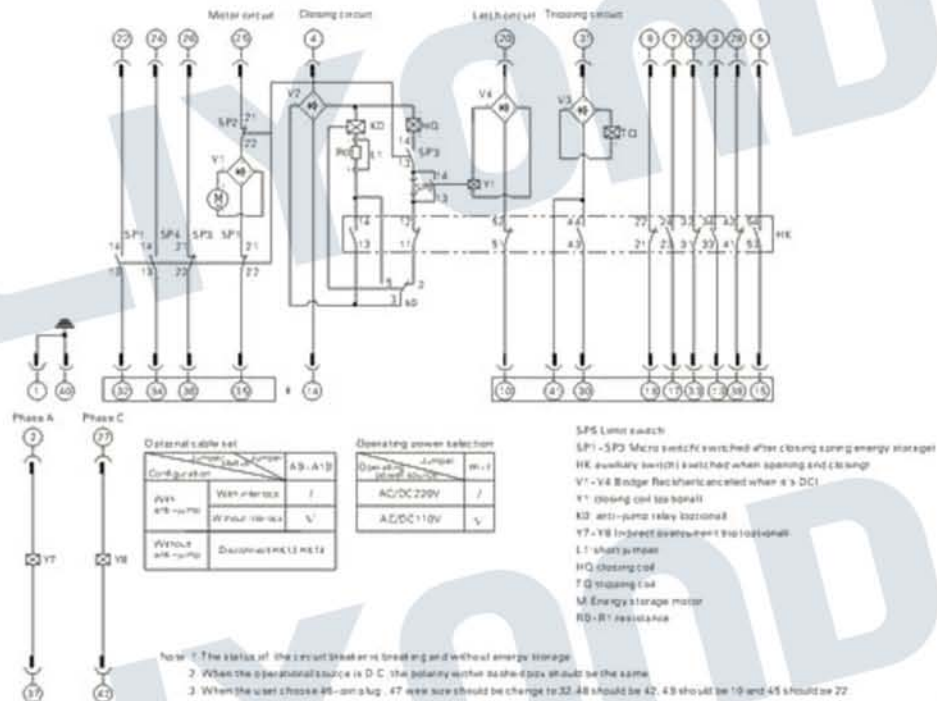


Overall drawing and installation dimensions of circuit breaker with embedded poles

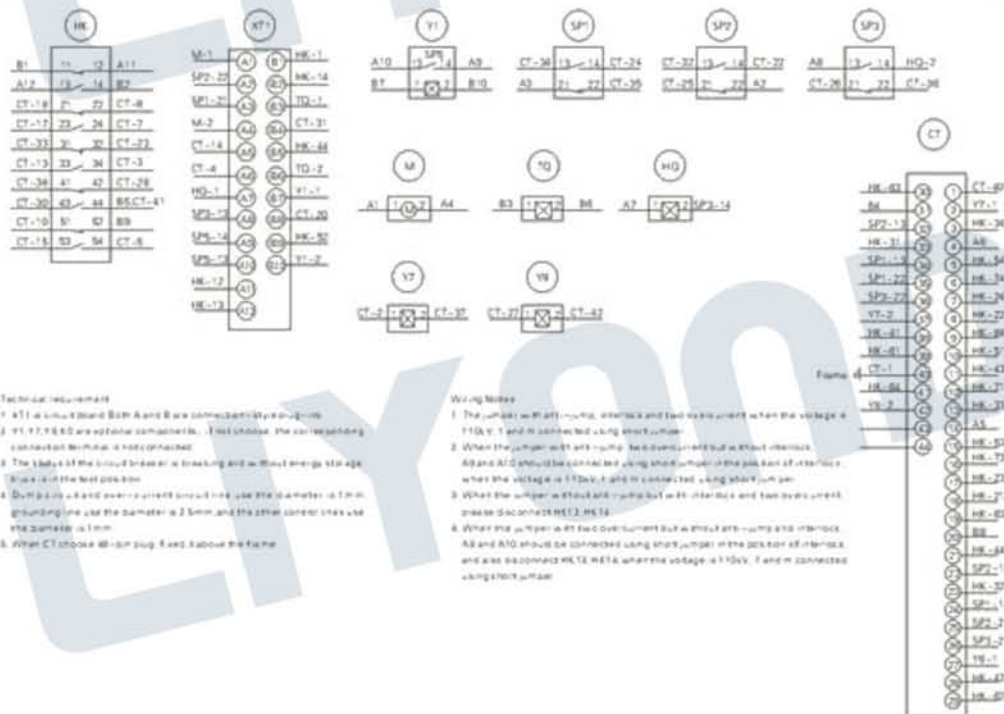


Overall drawing and installation dimensions of circuit breaker with common insulated cylinder

Drawing



The Internal Secondary Wiring Diagram of Circuit Breaker



The Internal Secondary Wiring Diagram of Circuit Breaker