

## 订货须知

ORDERING INSTRUCTIONS

——应注明——

ITEMS ON THE RIGHT SHALL  
BE INDICATED

- 断路器型号、名称；
- 额定电压、额定电流、额定短路开断电流、相间距、极间距及所需数量；
- 操动机构分合闸脱扣器额定电压和储能电机额定电压；
- 备品备件名称及数量。

断路器标准配置不含可选件，用户如有特殊要求应在订货前予以说明。

- Model and name of circuit breaker;
- Rated voltage, rated current, rated short-circuit breaking current, phase spacing, electrode spacing and required quantity;
- Rated voltage of actuator breaking-closing release and energy storage motor;
- Name and quantity of spare parts.

Standard configuration of the circuit breaker contains no option. If the user proposes special requirements, it shall be described before ordering.



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JIANGSU DAQO HIGH VOLTAGE SWITCHGEAR CO.,LTD.

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由于技术的不断改良，本样册上记载的产品规格和外观可能会进行变更，恕不另行通知，敬请原谅。  
Improvements to this product may result in unannounced changes to specifications and external appearance.

# VG1 SERIES INDOOR HIGH VOLTAGE VACUUM CIRCUIT BREAKER

**VG1** 系列户内高压真空断路器

 江苏大全高压开关有限公司  
JIANGSU DAQO HIGH VOLTAGE SWITCHGEAR CO.,LTD.

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## Jiangsu Daqo High Voltage Switchgear Co.,Ltd.

Jiangsu Daqo High Voltage Switchgear Co., Ltd. is a core subsidiary under Daqo Group which takes a leading position in China's electrical industry. It is specialized in research and development, production, sales and services of medium and high-voltage transmission and distribution equipment. Abiding by the business philosophy of "quality depending on specialty and concentration creating brand", it is engaged in research and development of switchgear and circuit breaker technology and application to create a famous electrical brand in China.

Daqo High Voltage Switchgear is located at Jiangning High - tech Development Zone in Nanjing. With total investment of RMB 160 million and total plant area of more than 10,000 m<sup>2</sup>, it can reach annual breaker production capacity of 20000 sets to take a leading position in China's High Voltage electrical equipment design and manufacture.

The company's main products are: 7.2KV-40.5KV indoor vacuum circuit breaker, 40.5KV high-voltage vacuum load switch-fuse combination electrical appliances, 12KV outdoor column circuit breaker, etc., serving nuclear power plants, power plants, substations, urban and rural power grids, petroleum, chemical, metallurgy, electrified railway, subway, urban light rail, ports, garbage power stations and environmental protection industries, and participated in a number of countries. Home key project construction.

Thanks to Daqo Group's engineering and service experiences of more than 40 years as well as electrical technology and design concept absorbed from foreign advanced companies, Daqo HV Switchgear can provide users with world-class products with high standard and high performance. Since inception, it has kept on offering quality products successfully applied to thousands of hundreds of power substations in different industries at home and abroad. Its products have been recognized and appraised by all users with high reliability and safety.



## 江苏大全高压开关有限公司

江苏大全高压开关有限公司是中国电气工业领军企业大全集团旗下的核心子公司，专业从事高、中压输配电设备的研发、生产、销售和服务。公司秉持“专业决定品质、专注铸就品牌”的经营理念，致力于开关设备和断路器技术及应用的研究与开发，精心打造国内知名电工品牌。

大全高压开关坐落于南京江宁高新技术开发区，总投资1.6亿元。公司厂房总面积逾万平方米，断路器年生产能力20000台，稳居国内高压电器设备设计与制造行业的一线阵营。

公司的主要产品有：7.2kV-40.5kV户内真空断路器，40.5kV高压真空负荷开关-熔断器组合电器，12kV户外柱上断路器等，服务于核电站、发电厂、变电站、城乡电网、石油、化工、冶金、电气化铁道、地铁、城市轻轨、港口、垃圾电站及环保等多个行业，并参与了多项国家重点项目建设。

得益于大全集团40多年的工程、服务经验以及吸收国外先进公司的电气技术和设计理念，大全高压开关向用户提供世界级高标准高性能的产品。自成立以来，公司持续为社会提供优质产品，成功运行于国内外不同行业的数万个变电站，产品以其优质的可靠性及安全性得到用户的一致认可与好评。



# 荣誉与资质 Honor and Qualification



VG1 SERIES INDOOR  
HIGH VOLTAGE VACUUM CIRCUIT BREAKER

## VG1系列户内高压真空断路器

VG1 SERIES INDOOR HIGH VOLTAGE VACUUM CIRCUIT BREAKER

- ① 企业法人营业执照
- ② 环境管理体系认证证书
- ③ 管理体系认证证书
- ④ 职业健康安全管理体系证书
- ⑤ 高新技术企业认证证书
- ⑥-⑪ VG1系列产品型式试验报告

- ① Business License
- ② Environmental Management System Certificate
- ③ Management System Certificate
- ④ Occupational Health and Safety Management System Certificate
- ⑤ High-Tech Enterprise Certificate
- ⑥-⑪ VG1 Series Products Type Test Report

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### 总则 / GENERAL

VG1系列户内高压真空断路器是大全集团的核心子公司——江苏大全高压开关有限公司在引进吸引国内外先进技术基础上，自主研发的具有国内领先水平的新一代真空断路器。其主要特征是主导电回路安装在全封闭的三相绝缘筒内，操作机构与主导电回路前后布置。我公司自主研发的新型弹簧操动机构，结构简单、动作可靠，被国内诸多高端真空断路器厂家采用和借鉴。

VG1 series indoor High Voltage vacuum circuit breaker is a domestic new generation circuit breaker at an advanced level, which is independently developed by Jiangsu Daqo High Voltage Switchgear Co., Ltd. as a core subsidiary under Daqo Group on the basis of introduced domestic and foreign advanced technologies. It is mainly characterized in that main conductive circuit is mounted in a fully-closed three-phase insulating cylinder and the operating mechanism is arranged with the main conductive circuit in a front-rear position. Our new spring operating mechanism has a simple structure and reliable operation and it has been used and learnt by a number of domestic high-end vacuum circuit breaker manufacturers.

### 标准 / STANDARDS

VG1系列真空断路器完全符合最新中国国家标准GB1984-2014《高压交流断路器》及中国电力部相关标准DL/T403等要求，同时还满足国际电工标准IEC62271-100:2001和德国标准DIN VDE0670的标准规范要求，可在世界各地稳定可靠的运行。

VG1 vacuum circuit breaker fully complies with the latest version of GB1984-2014 High-voltage Alternating-current Circuit-breakers and relevant standard of China's Ministry of Electric Power DL/T403 as well as requirements of IEC62271-100:2001 and DIN VDE0670. It can steadily run all around the world.

### 应用范围 / RANGE OF APPLICATION

VG1系列真空断路器要广泛应用于电厂、电网、冶金、石化、城市基础设施建设如机场、楼宇、地铁等项目。VG1系列真空断路器在配电系列中，可适用于控制和保护电缆、架空线、变压器、电动机和电容器组。

VG1 series vacuum circuit breaker is widely used for power plants, power grids, metallurgy, petrochemical industry and urban infrastructure construction of the airport, buildings, subway and other projects. In the power distribution, the VG1 vacuum circuit breaker is applicable to control and protection cables, overhead lines, transformers, electric motors and capacitor banks.

### 试验 / TEST

型式试验：工频耐压、雷电冲击耐压、温升、短时和峰值耐受电流、短路电流开合能力、机械寿命试验、投切电容器组试验、高海拔试验。

出厂例行测试：机械特性测试、主回路工频耐压试验、辅助和控制回路绝缘性能试验、主回路电阻测试、联锁操作试验、机械和电气操作试验。

Type tests: power frequency withstand voltage test, lightning impulse withstand voltage test, temperature rise test, short - time and peak withstand current test, short circuit current switching capacity test, mechanical endurance test test for switching capacitor set and high-altitude test. Routine factory test: mechanical characteristic test, main circuit power-frequency withstand voltage test, dielectric test of auxiliary and control circuit, main circuit resistance test, interlocked operation test and mechanical and electrical operation test.

### 使用环境 / OPERATING ENVIRONMENT

海拔高度：2500m以下（2500-3500m可定制）

环境温度：上限+40℃；下限-30℃

储运温度：-40℃

相对湿度：日平均值≤95%

月平均值≤90%

地震烈度：不超过8度

无火灾、爆炸、严重粉尘、化学腐蚀及剧烈振动场所

Altitude: below 2,500 m (it can be customized for 2,500m to 3,500m)

Ambient temperature: the upper limit of + 40 °C; the lower limit of - 30 °C

Storage and transportation temperature: -40 °C

Relative humidity: daily average value ≤ 95%

Monthly average value ≤ 90%

Seismic intensity: M8 or below

No fire, explosion, serious dust hazard, chemical corrosion or excessive vibration.

### 安全运行 / SAFE OPERATION

VG1系列真空断路器拥有完善的机械和电气联锁装置，同时具有极高的操作可靠性和使用寿命，配合相适应的开关柜可完成安全的配电功能，确保操作者和设备的安全。

VG1 vacuum circuit breaker is equipped with sound mechanical and electrical interlocking devices and has extremely high operation reliability and long service life. It could be equipped with an appropriate switch cabinet to perform safe distribution function and ensure safety of operators and equipment.

### 型号及含义 / MODEL AND MEANING

VG1-□/□□

— 额定短路开断电流 (kA)  
— 额定电流 (A)  
— 额定电压 (kV)  
— 大全真空断路器

VG1-□/□□

— Rated short-circuit breaking current (kA)  
— Rated current (A)  
— Rated voltage (kV)  
— Daqo Vacuum circuit breaker

# 可靠的弹簧操作机构

## Reliable Spring Operating Mechanism

操动机构结构简单、动作可靠，不同规格产品的零部件通用性强，由于该机构完全由我公司自主研发，因而可根据用户的不同要求定制特殊产品。

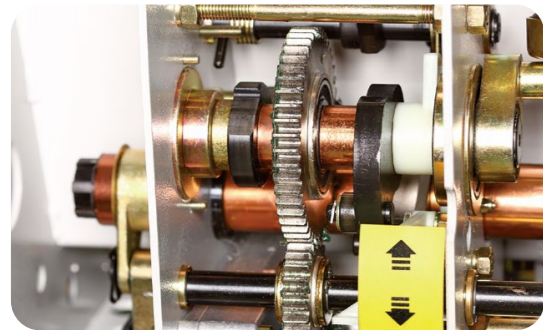
The operating mechanism has a simple structure but can run reliably. Different specifications of product parts are highly universal. The mechanism is independently developed by our company, so special products could be customized based on user requirements.



### 分合闸电磁铁 / BREAKING-CLOSING ELECTROMAGNET

电磁铁采用全封闭结构设计，保证线圈不受潮。

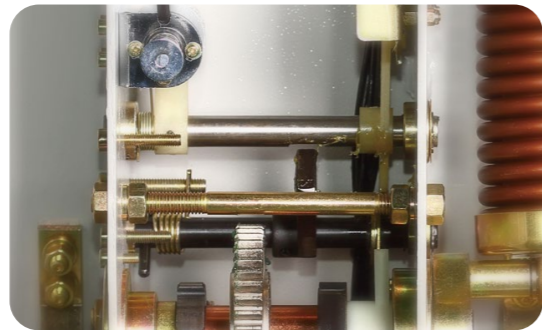
The electromagnet adopts fully enclosed structure to protect the coil from moisture.



### 表面处理 / SURFACE TREATMENT

80%的机械零件表面采用镀镍磷合金处理，大大提高了零部件的防腐能力，确保机械始终如一的稳定品质。

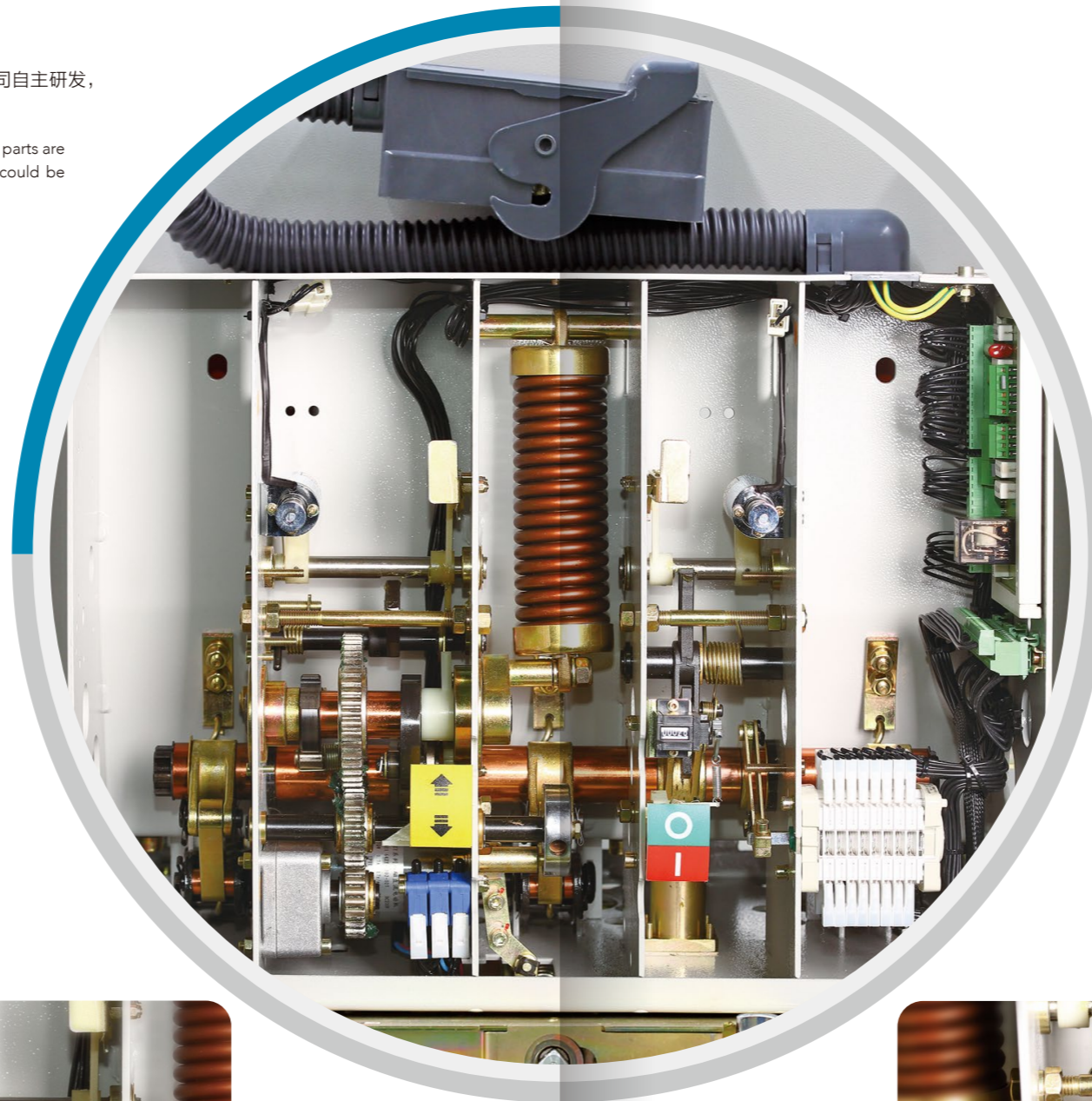
80% of mechanical part surface is treated by nickel - phosphorus alloy to greatly improve corrosion resistance of parts and ensure consistent and stable quality.



### 合闸单元 / CLOSING OPERATION UNIT

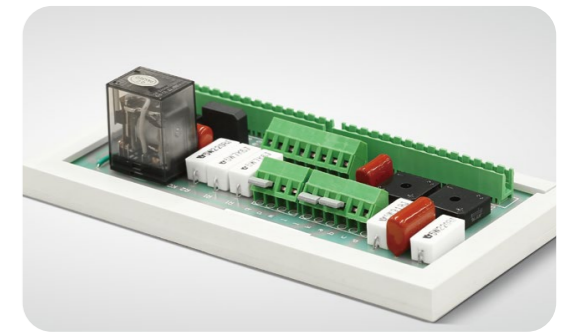
合闸单元结构简单，动作原理可靠，不仅从根本上杜绝了储能后不能保持、拒合等故障的发生，而且半轴和联锁轴设有轴承，转动灵活，脱扣功小。

The closing operation unit has a simple structure and reliable operation principle. It can fundamentally eliminate energy storage maintenance failure, closing failure and other faults; its semi-axis and interlock shaft have a bearing to facilitate rotation and reduce releasing forces.



## VG1断路器的每一个细节都力求精益求精

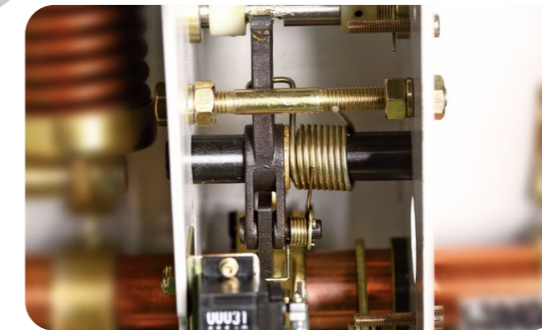
WE KEEP ALL DETAILS OF VG1 CIRCUIT BREAKER IMPROVING



### 线路板 / CIRCUIT BOARD

模块化二次控制线路板，采用带自扣紧的插接头，既方便更换，也保证了电气连接的可靠性。

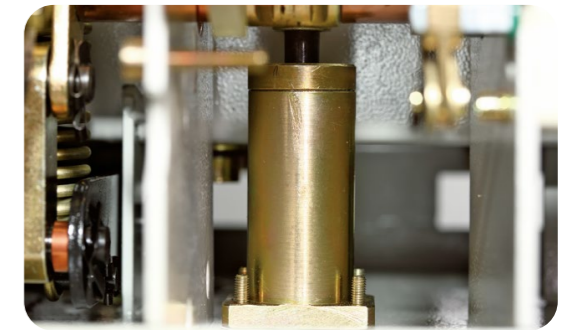
Modular secondary control circuit board adopts a self-fastening connection plug to facilitate replacement and ensure reliability of electrical connection.



### 分闸单元 / BREAKING OPERATION UNIT

分闸单元采用一级脱扣，独特的设计确保分闸脱扣功小，而且半轴和扣板轴设有轴承，转动灵活，确保机构的合闸保持和可靠分闸。

The breaking operation unit adopts primary release and its unique design can reduce the release force required for breaking. Its semi-axis and interlock shaft have a bearing to facilitate rotation and ensure closing maintenance and reliable breaking.



### 分闸缓冲器 / BREAKING BUFFER

高性能的分闸缓冲器可减少断路器在分闸时动触头过冲或反弹幅值，降低断路器分闸时电弧重燃几率。采用航空液压油，确保高、低温等恶劣环境下始终如一的缓冲性能。

High-performance breaking buffer can reduce moving contact overshoot or rebound amplitude and lower arc reigniting probability in case of circuit breaker opening. It adopts aviation hydraulic oil to ensure consistent buffer performance under high temperature, low temperature and other harsh environments.

## VG1-12 产品技术参数 Technical Parameters of VG1-12 Product

项目 / ITEM	单位 / UNIT	技术数据 / TECHNICAL DATA							
额定电压 / Rated Voltage	kV	12							
额定频率 / Rated Frequency	Hz	50							
额定电流 / Rated Current	A	630	630	2000	1250	3150	1250	3150	
		1250	1250	2500	1600	4000★	1600	4000★	
		1600	1600		2000	5000★	2000	5000★	
					2500		2500		
额定短路开断电流(有效值) / Rated Short-Circuit Breaking Current (Effective Value)	kA	25	31.5		40		50		
额定短路关合电流(峰值) / Rated Short-Circuit Making Current (Peak)	kA	63	80		100		125		
额定短路电流开断次数 / Rated Short-Circuit Current Breaking Times	次 / Times	30							
1min工频耐受电压 / 1min Power Frequency Withstand Voltage	kV	42							
雷电冲击耐受电压 / Lightning Impulse Withstand Voltage	kV	75							
额定热稳定时间 / Rated Thermal Stability Time	s	4							
额定单个电容器组开断电流 / Rated Breaking Current of Simple Capacitor Bank	A	630							
额定背对背电容器组开断电流 / Rated Breaking Current of Back-to-Back Capacitor Bank	A	400							
开断电流直流分量百分比 / DC Component Percentage of Breaking Current		≤50%/40%★★							
额定操作顺序 / Rated Operating Sequence		0-0.3s-CO-180s-CO(≤31.5kA)/0-180s-CO-180s-CO(≥40kA)							
触头开距 / Clearance Between Open Contactors	mm	10±1							
接触行程 / Contacting Travel	mm	3±0.5							
触头合闸弹跳 / Contact Closing Bouncing	ms	≤2							
三相不同期 / Three-Phase Asynchronous	ms	≤2							
平均分闸速度(0~5mm) / Average Breaking Speed (0 to 5mm)	m/s	0.9~1.7							
平均合闸速度(5~0mm) / Average Closing Speed (5 to 0mm)	m/s	0.4~0.9							
分闸时间(额定电压) / Breaking Time (Rated Voltage)	ms	20~40							
合闸时间(额定电压) / Closing Time (Rated Voltage)	ms	30~60							
机械寿命 / Mechanical Life	次 / Times	30000/10000★★★							
分/合闸脱扣器额定操作电压 / Rated Operating Voltage of Breaking/Closing Release	V	DC110/DC220							
分/合闸脱扣器功率 / Power of Breaking/Closing Release	W	< 300							
储能电机额定电压 / Rated Voltage of Energy Storage Motor	V	DC110/DC220							
储能电机额定功率 / Rated Power of Energy Storage Motor	W	70(≤31.5kA)/90(≥40kA)							
储能时间 / Energy Storage Time	s	≤15							
动、静触头允许磨损累计厚度 / Gross Thickness of Allowable Wear for Dynamic and Static Contacts	mm	3							
主回路电阻 / Main Circuit Resistance	μΩ	630A	≤55						
		1250A	≤50						
		1600-2000A	≤40						
		2500-3150A	≤25						
		4000-5000A	≤20						
分闸触头反弹幅值 / Rebound Amplitude of Breaking Contact	mm	≤2							
断路器重量 / Weight of Circuit Breaker	kg	120(≤1250A)/200(≥1600A)							

注 / Note: ★≥4000A 风冷 / Air-Cooled   ★★≥40kA 40%   ★★★≥40kA 10000次 / Times

## Technical Parameters of VG1-24 Product VG1-24 产品技术参数

项目 / ITEM	单位 / UNIT	技术数据 / TECHNICAL DATA		
额定电压 / Rated Voltage	kV	24		
额定频率 / Rated Frequency	Hz	50		
额定电流 / Rated Current	A	630	630	2000
		1250	1250	2500
		1600	1600	3150★
额定短路开断电流(有效值) / Rated Short-Circuit Breaking Current (Effective Value)	kA	25	31.5	
额定短路关合电流(峰值) / Rated Short-Circuit Making Current (Peak)	kA	63	80	
额定短路电流开断次数 / Rated Short-Circuit Current Breaking Times	次 / Times	30		
1min工频耐受电压 / 1min Power Frequency Withstand Voltage	kV	65		
雷电冲击耐受电压 / Lightning Impulse Withstand Voltage	kV	125		
额定热稳定时间 / Rated Thermal Stability Time	s	4		
额定单个电容器组开断电流 / Rated Breaking Current of Simple Capacitor Bank	A	630		
额定背对背电容器组开断电流 / Rated Breaking Current of Back-to-Back Capacitor Bank	A	400		
开断电流直流分量百分比 / DC Component Percentage of Breaking Current		≤50%		
额定操作顺序 / Rated Operating Sequence		0-0.3s-CO-180s-CO		
触头开距 / Clearance Between Open Contactors	mm	12±1		
接触行程 / Contacting Travel	mm	3±0.5		
触头合闸弹跳 / Contact Closing Bouncing	ms	≤2		
三相不同期 / Three-Phase Asynchronous	ms	≤2		
平均分闸速度(0~5mm) / Average Breaking Speed (0 to 5mm)	m/s	0.9~1.7		
平均合闸速度(5~0mm) / Average Closing Speed (5 to 0mm)	m/s	0.4~0.9		
分闸时间(额定电压) / Breaking Time (Rated Voltage)	ms	20~40		
合闸时间(额定电压) / Closing Time (Rated Voltage)	ms	30~60		
机械寿命 / Mechanical Life	次 / Times	10000		
分/合闸脱扣器额定操作电压 / Rated Operating Voltage of Breaking/Closing Release	V	DC110/DC220		
分/合闸脱扣器功率 / Power of Breaking/Closing Release	W	< 300		
储能电机额定电压 / Rated Voltage of Energy Storage Motor	V	DC110/DC220		
储能电机额定功率 / Rated Power of Energy Storage Motor	W	70(≤1600A)/90(≥2000A)		
储能时间 / Energy Storage Time	s	≤15		
动、静触头允许磨损累计厚度 / Gross Thickness of Allowable Wear for Dynamic and Static Contacts	mm	3		
主回路电阻 / Main Circuit Resistance	μΩ	630A	≤60	
		1250A	≤55	
		1600-2000A	≤40	
		2500-3150A	≤25	
分闸触头反弹幅值 / Rebound Amplitude of Breaking Contact	mm	≤2		
断路器重量 / Weight of Circuit Breaker	kg	160(≤1600A)/200(≥2200A)		

注 / Note: ★3150A 风冷 / Air-Cooled

**VG1-40.5 产品技术参数** Technical Parameters of VG1-40.5 Product

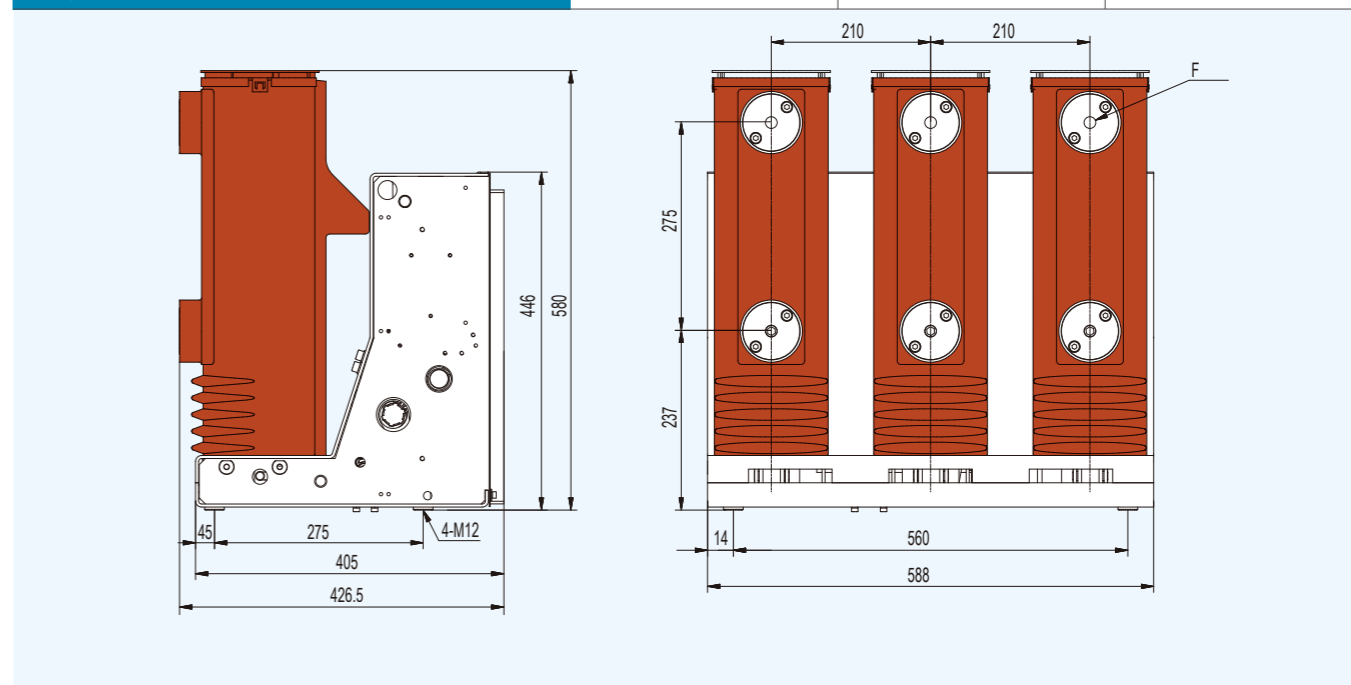
项目 / ITEM	单位 / UNIT	技术数据 / TECHNICAL DATA	
额定电压 / Rated Voltage	kV	40.5	
额定频率 / Rated Frequency	Hz	50	
额定电流 / Rated Current	A	630	630
		1250	1250
		1600	1600
		2000	2000
		2500★	2500★
额定短路开断电流(有效值) / Rated Short-Circuit Breaking Current (Effective Value)	kA	25	31.5
额定短路关合电流(峰值) / Rated Short-Circuit Making Current (Peak)	kA	63	80
额定短路电流开断次数 / Rated Short-Circuit Current Breaking Times	次 / Times	30	
1min工频耐受电压 / 1min Power Frequency Withstand Voltage	kV	95	
雷电冲击耐受电压 / Lightning Impulse Withstand Voltage	kV	185	
额定热稳定时间 / Rated Thermal Stability Time	s	4	
额定单个电容器组开断电流 / Rated Breaking Current of Simple Capacitor Bank	A	630	
额定背对背电容器组开断电流 / Rated Breaking Current of Back-to-Back Capacitor Bank	A	400	
额定操作顺序 / Rated Operating Sequence		0-0.3s-CO-180s-CO	
触头开距 / Clearance Between Open Contactors	mm	19±1	
接触行程 / Contacting Travel	mm	3.5±0.5	
触头合闸弹跳 / Contact Closing Bouncing	ms	≤3	
三相不同期 / Three-Phase Asynchronous	ms	≤2	
平均分闸速度(0~10mm) / Average Breaking Speed (0 to 10mm)	m/s	1.5-2.2	
平均合闸速度(10~0mm) / Average Closing Speed (10 to 0mm)	m/s	0.8-1.3	
分闸时间(额定电压) / Breaking Time (Rated Voltage)	ms	20~40	
合闸时间(额定电压) / Closing Time (Rated Voltage)	ms	30-60	
机械寿命 / Mechanical Life	次 / Times	10000	
分/合闸脱扣器额定操作电压 / Rated Operating Voltage of Breaking/Closing Release	V	AC110/AC220 DC110/DC220	
分/合闸脱扣器功率 / Power of Breaking/Closing Release	W	<300	
储能电机额定功率 / Rated Power of Energy Storage Motor	W	90	
储能时间 / Energy Storage Time	s	≤15	
动、静触头允许磨损累计厚度 / Gross Thickness of Allowable Wear for Dynamic and Static Contacts	mm	3	
主回路电阻 / Main Circuit Resistance	μΩ	≤60	
分闸触头反弹幅值 / Rebound Amplitude of Breaking Contact	mm	≤2	
断路器重量 / Weight of Circuit Breaker	kg	300	

注 / Note: ★2500A 风冷 / Air-Cooled

**外形尺寸** Overall Dimensions

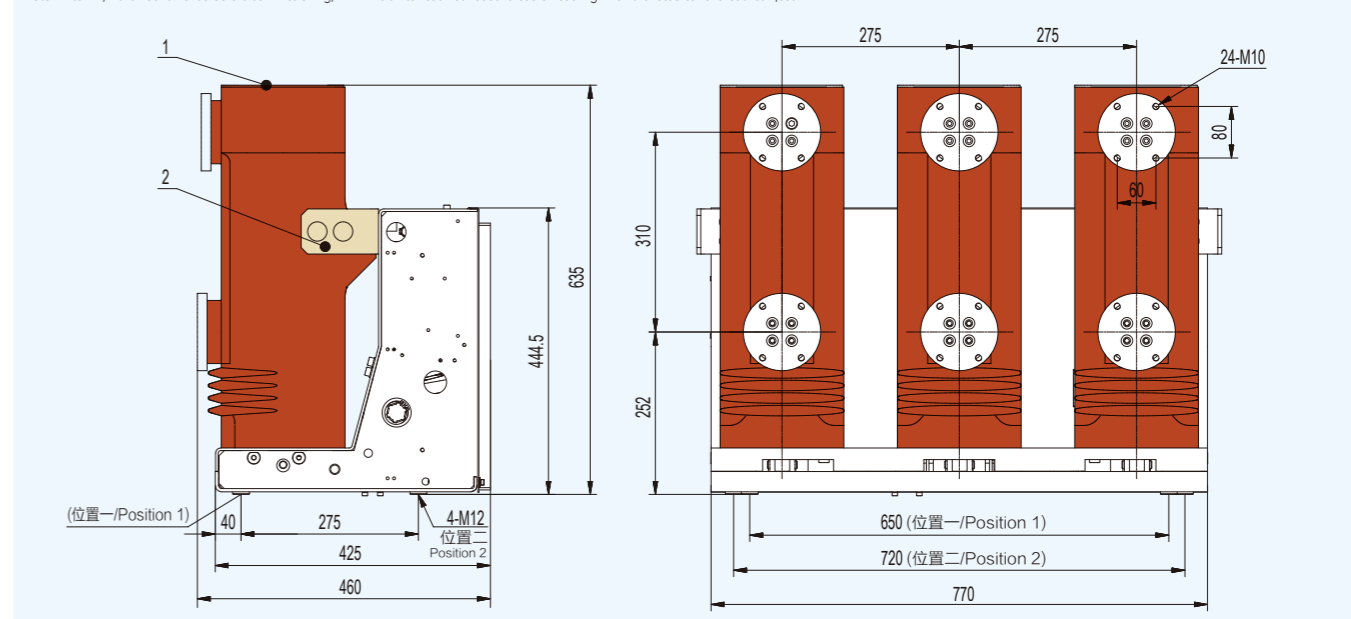
Overall Dimensions of VG1-12 Fixed Type **VG1-12 固定式外形尺寸**

额定电流(A) / Rated current (A)	630, 1250	1250	1600
额定短路开断电流(kA) / Rated short-circuit current (kA)	25, 31.5	40	25, 31.5, 40
尺寸(F) / Dimension (F)	M16	M18	M18



额定电流(A) / Rated current (A)	1250	1600, 2000	2500, 3150	4000
额定短路开断电流(kA) / Rated short-circuit current (kA)	50	31.5, 40, 50	31.5, 40, 50	40, 50

注: 1. 项1、2投运前需拆除; 2. 额定电流达到4000A时, 开关柜需强制风冷  
Note: 1. Item 1, 2 shall be removed before commissioning; 2. The switch cabinet needs forced-air cooling when the rated current reaches 4,000A.



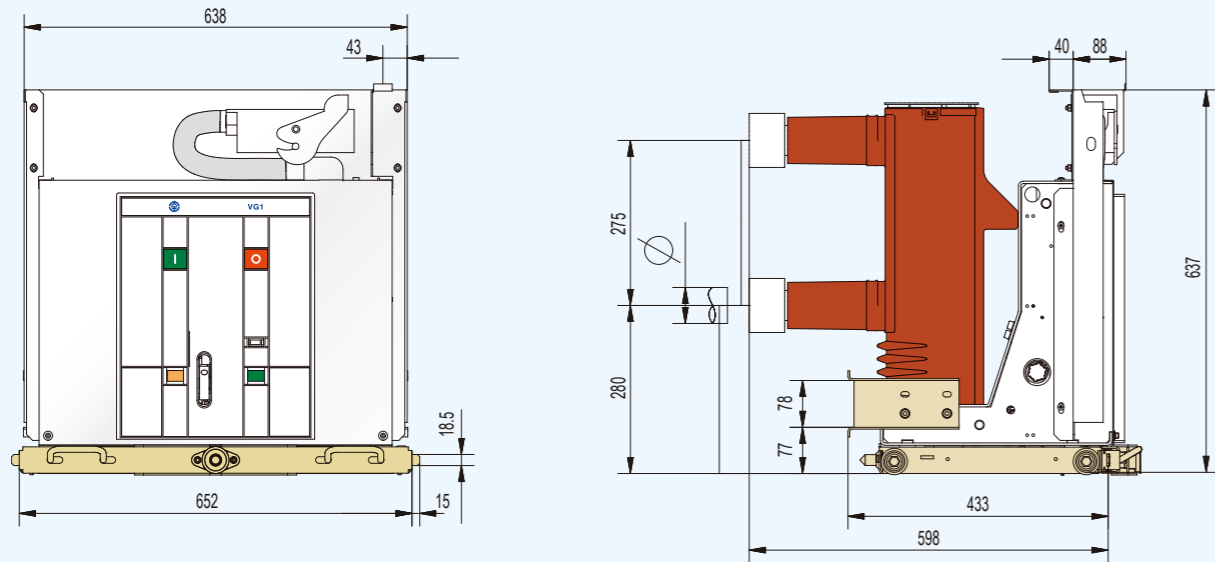


**VG1-12 手车式外形尺寸**

**Overall Dimensions of VG1-12 Handcart Type**

额定电流(A) / Rated current (A)	630	1250	1600
额定短路开断电流(A) / Rated short-circuit current (kA)	25, 31.5	25, 31.5, 40	25, 31.5, 40
配合静触头尺寸(Ø) / Size of matching static contact (Ø)	35	49	55

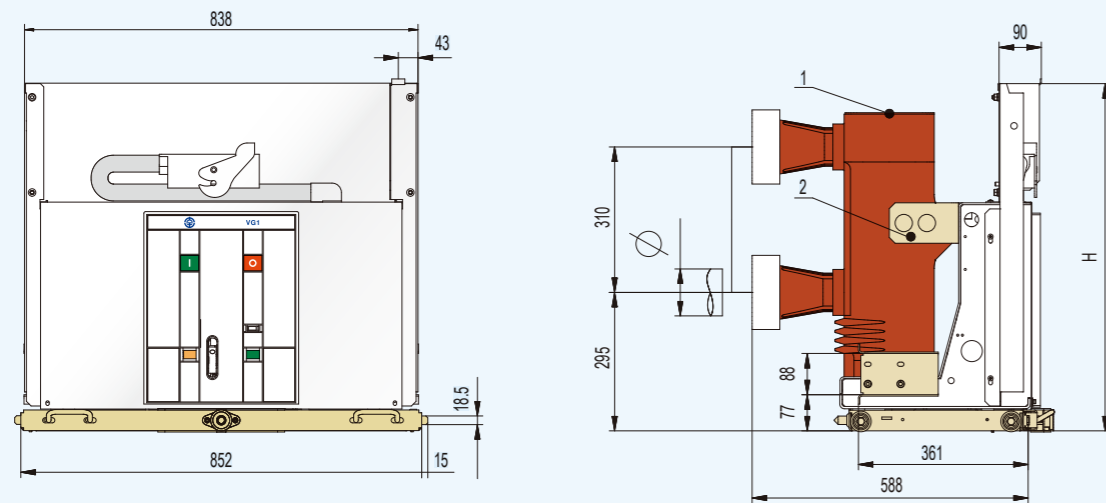
注: 相间距为210mm, 动静触头啮合尺寸不小于15mm  
Note: the phase spacing is 210mm and engaging size of dynamic and static contacts is 15mm or above.



额定电流(A) / Rated current (A)	1250	1600, 2000	2500, 3150	4000
额定短路开断电流(kA) / Rated short-circuit current (kA)	50	31.5, 40, 50	31.5, 40, 50	40, 50
配合静触头尺寸(Ø) / Size of matching static contact (Ø)	57	79	109	109
尺寸(H) / Dimension (H)	698	698	698	735

相间距为275mm, 动静触头啮合尺寸不小于15mm。  
The phase spacing is 275mm and engaging size of dynamic and static contacts is 15mm or above.

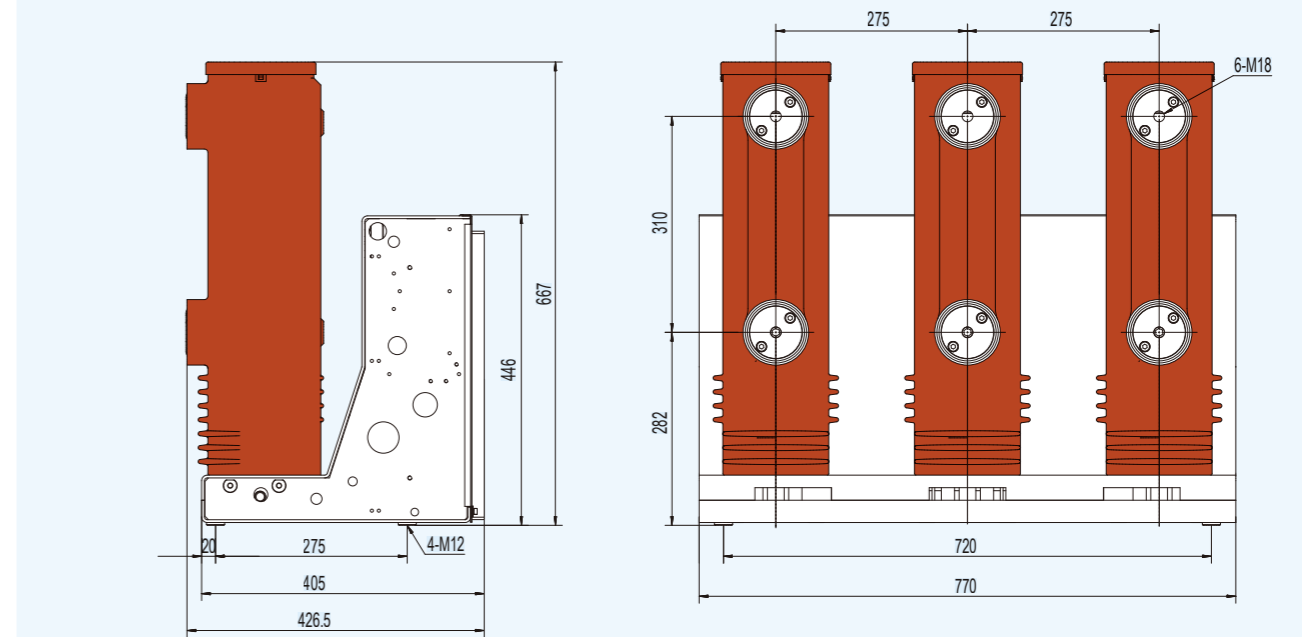
注: 1. 项1、2投运前需拆除; 2. 额定电流达到4000A时, 开关柜需强制风冷  
Note: 1. Item 1, 2 shall be removed before commissioning; 2. The switch cabinet needs forced-air cooling when the rated current reaches 4,000A.



**Overall Dimensions of VG1-24 Fixed Type**

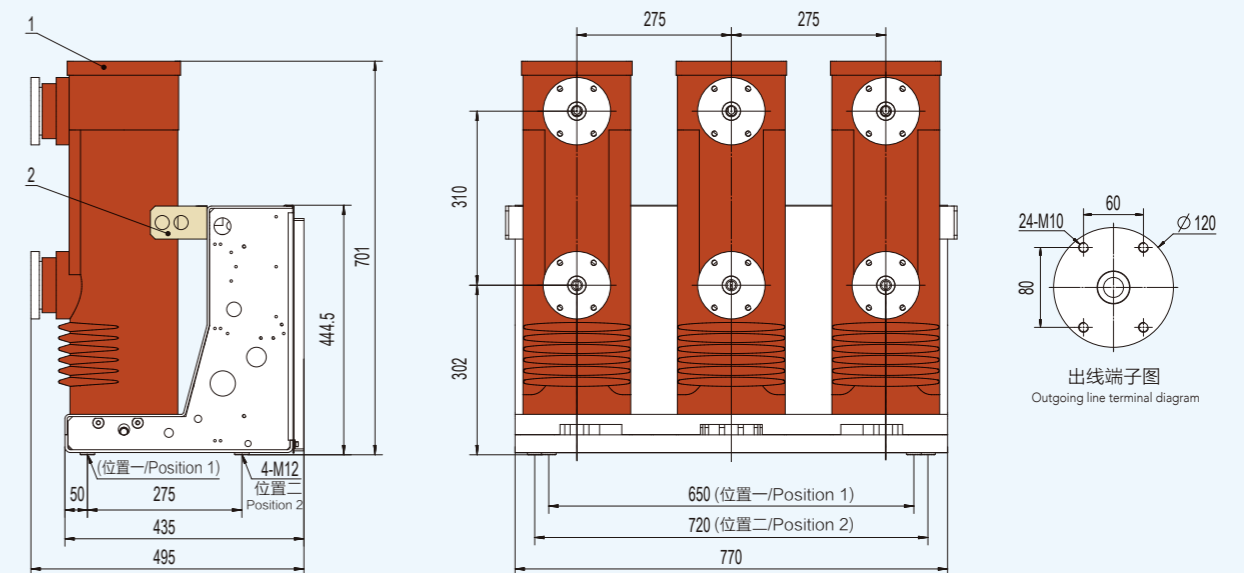
**VG1-24 固定式外形尺寸**

额定电流(A) / Rated current (A)	630	1250	1600
额定短路开断电流(A) / Rated short-circuit current (kA)	25, 31.5	25, 31.5	25, 31.5



额定电流(A) / Rated current (A)	2000	2500, 3150
额定短路开断电流(kA) / Rated short-circuit current (kA)	25, 31.5	25, 31.5

注: 1. 项1、2投运前需拆除; 2. 额定电流达到3150A时, 开关柜需强制风冷  
Note: 1. Item 1, 2 shall be removed before commissioning; 2. The switch cabinet needs forced-air cooling when the rated current reaches 3,150A.

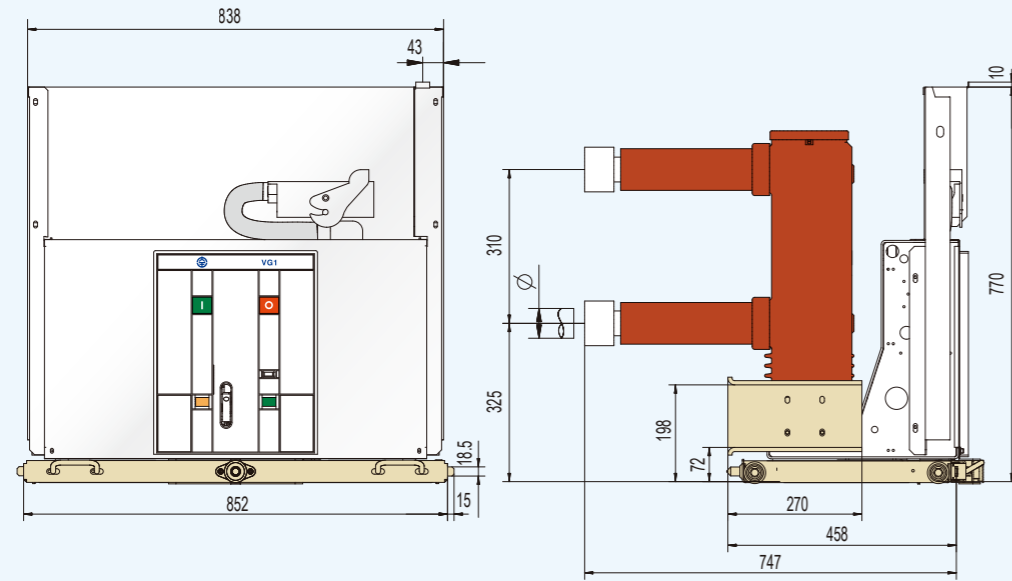


VG1-24 手车式外形尺寸

Overall Dimensions of VG1-24 Handcart Type

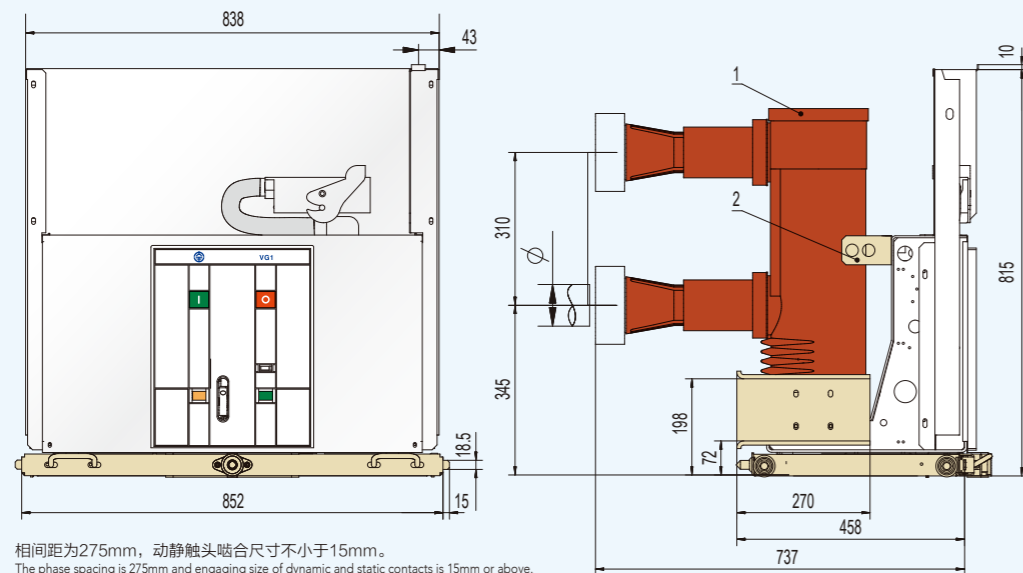
额定电流(A) / Rated current (A)	630	1250	1600
额定短路开断电流(kA) / Rated short-circuit current (kA)	25, 31.5	25, 31.5, 40	25, 31.5, 40
配合静触头尺寸(Φ) / Size of matching static contact (Φ)	35	49	55

注: 相间距为275mm, 动静触头啮合尺寸不小于15mm  
The phase spacing is 275mm and engaging size of dynamic and static contacts is 15mm or above.



额定电流(A) / Rated current (A)	2000	2500, 3150
额定短路开断电流(kA) / Rated short-circuit current (kA)	25, 31.5	25, 31.5
配合静触头尺寸(Φ) / Size of matching static contact (Φ)	79	109

注: 1. 项1、2投运前需拆除; 2. 额定电流达到3150A时, 开关柜需强制风冷  
Note: 1. Item 1, 2 shall be removed before commissioning; 2. The switch cabinet needs forced-air cooling when the rated current reaches 3,150A.



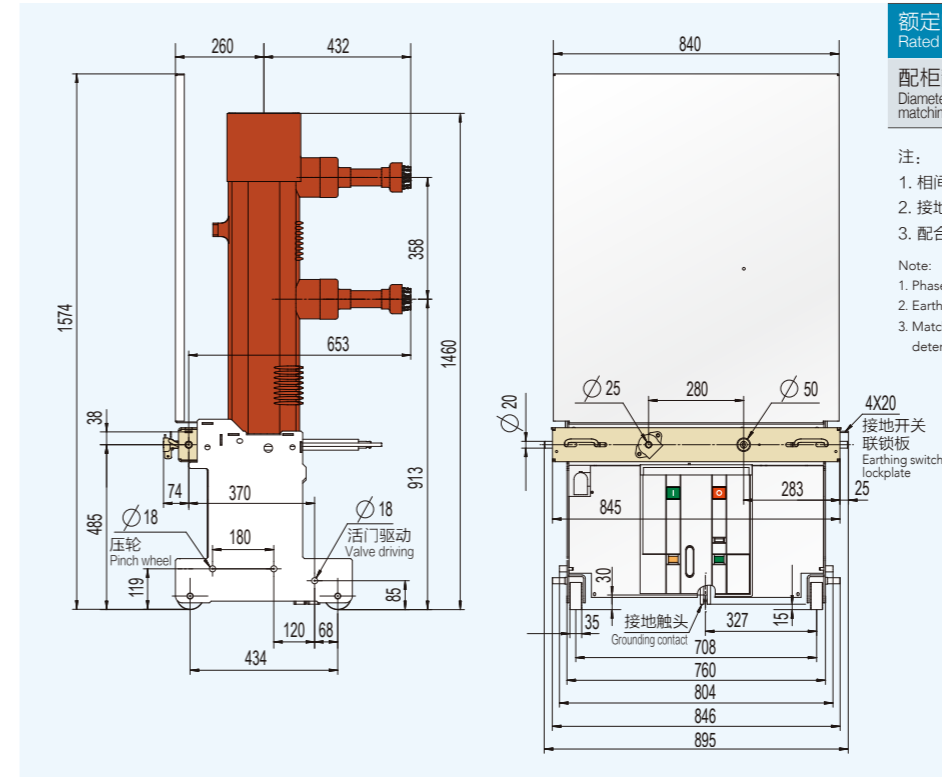
相间距为275mm, 动静触头啮合尺寸不小于15mm。  
The phase spacing is 275mm and engaging size of dynamic and static contacts is 15mm or above.

Overall Dimensions of VG1-40.5

VG1-40.5 外形尺寸

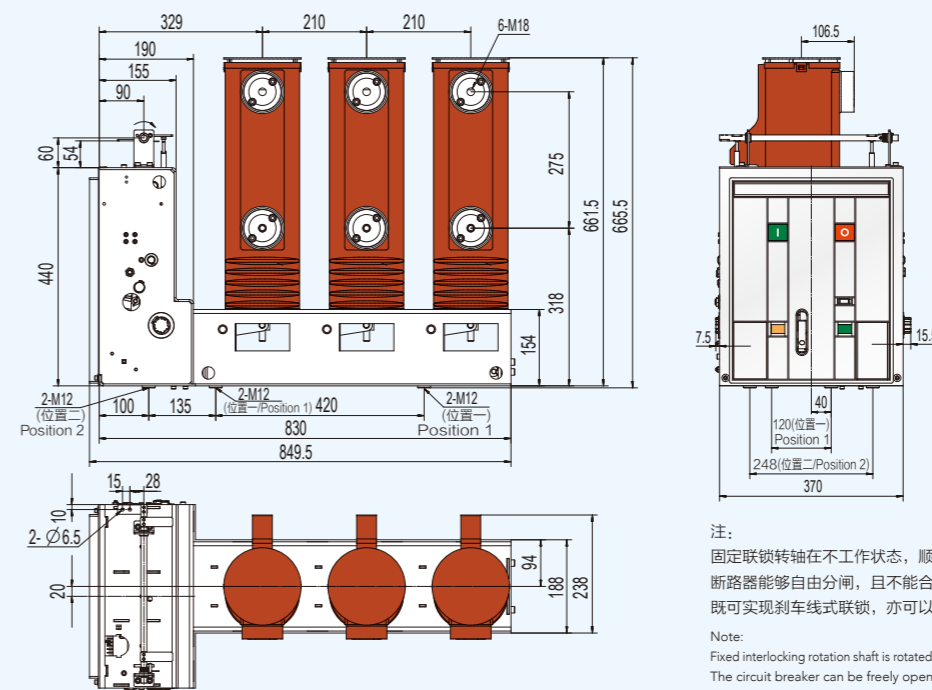
额定电流(A) / Rated current (A)	630	1250	1600	2000-2500
配合静触头直径(Φ) / Diameter of static contact for matching cabinet (Φ)	35	49	55	79

注:  
1. 相间距280mm, 手车行程450mm;  
2. 接地排规格5mm X 50mm;  
3. 配合开关柜为改型设计的ZS3.2, 具体更改协商确定。  
Note:  
1. Phase spacing is 280mm and handcart travel is 450mm.  
2. Earthing bar specification is 5mm X 50mm.  
3. Matching cabinet is improved ZS3.2 and specific change shall be determined through consultations.



Overall Dimensions of VG1-12C

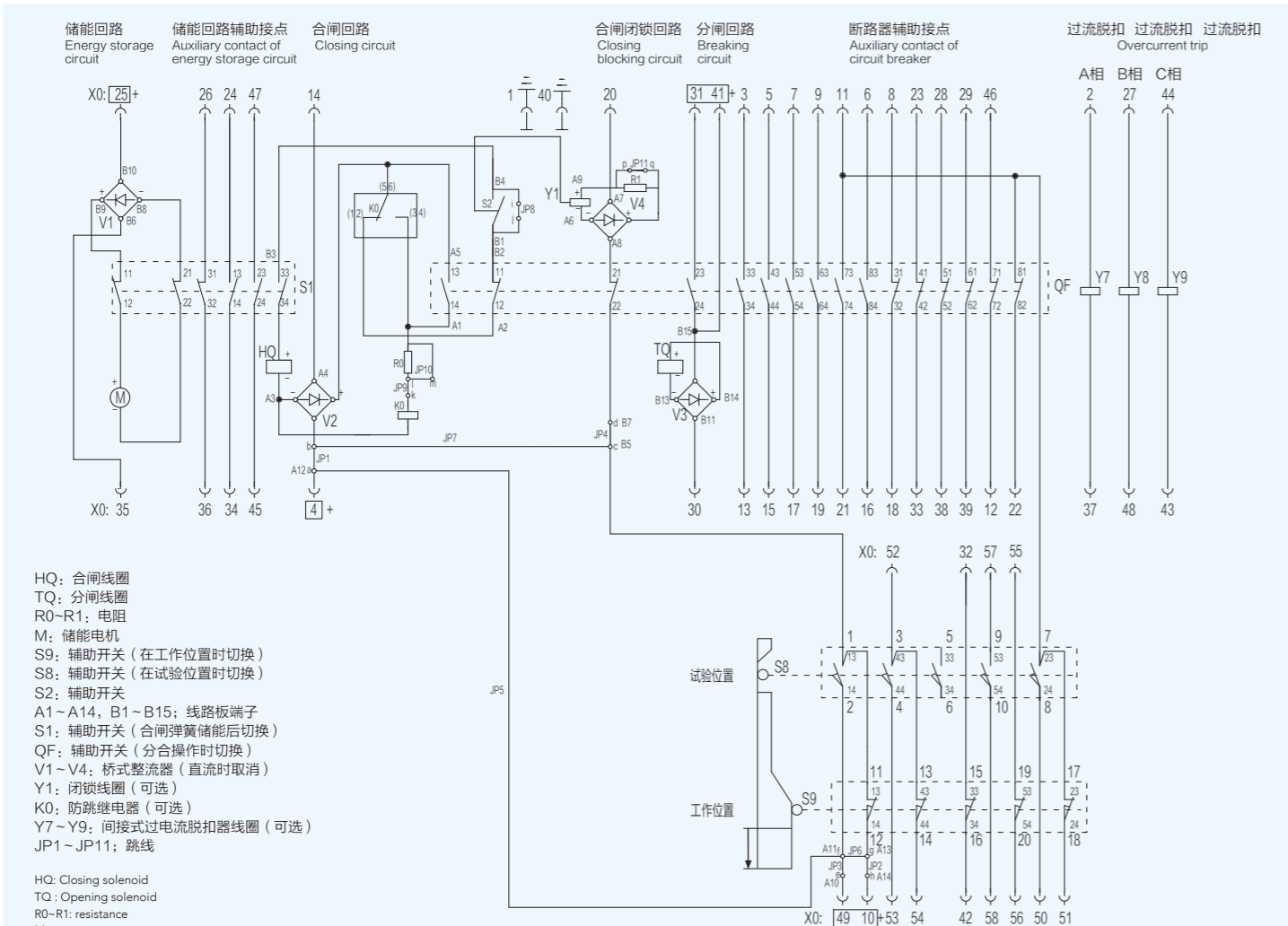
VG1-12C 外形尺寸



注:  
固定联锁转轴在不工作状态, 顺时针转动一个角度 (如图所示), 断路器能够自由分闸, 且不能合闸;  
既可实现刹车线式联锁, 亦可以实现机械式联锁。  
Note:  
Fixed interlocking rotation shaft is rotated clockwise by an angle under non-operating state (shown in the figure), The circuit breaker can be freely opened but cannot be closed;  
It can achieve brake cable type interlocking and mechanical interlocking.

## VG1 手车式真空断路器电气接线图

## Electric Wiring Diagram of VG1 Handcart Vacuum Circuit Breaker



HQ: 合闸线圈  
TQ: 分闸线圈  
R0-R1: 电阻  
M: 储能电机  
S9: 辅助开关 (在工作位置时切换)  
S8: 辅助开关 (在试验位置时切换)  
S2: 辅助开关  
A1-A14, B1-B15: 线路板端子  
S1: 辅助开关 (合闸弹簧储能后切换)  
QF: 辅助开关 (分合操作时切换)  
V1-V4: 桥式整流器 (直流时取消)  
Y1: 闭锁线圈 (可选)  
K0: 防跳继电器 (可选)  
Y7-Y9: 间接式过电流脱扣器线圈 (可选)  
JP1-JP11: 跳线

HQ: Closing solenoid  
TQ: Opening solenoid  
R0-R1: resistance  
M: energy storage motor  
S9: auxiliary switch (switching in the working position)  
S8: auxiliary switch (switching in the testing position)  
S2: auxiliary switch  
A1-A14, B1-B15: circuit board terminal  
S1: auxiliary switch (switching after energy storage of closing spring)  
QF: auxiliary switch (switching at the time of breaking-closing operation)  
V1-V4: bridge rectifier (cancelled in case of DC)  
Y1: locking coil (optional)  
K0: anti-tripping relay (optional)  
Y7-Y9: indirect overcurrent release coil (optional)  
JP1-JP11: jumper

- 注: 1、图示二次回路未加电;  
2、断路器处于分闸状态、机构已储能、手车处于工作位置;  
3、断路器标准配置中不含选配件。用户需要时, 需在订货时说明;  
4、当为直流电源操作时, 断路器不含整流桥, 虚线框中的极性应相同, 电机应按图示极性接线。
- Note: 1. The secondary circuit shown in the figure is not charged;  
2. The circuit breaker is opened, the mechanism has energy storage and the handcart is in the working position;  
3. Standard configuration of circuit breaker has no option. User requirements shall be proposed in the ordering;  
4. For DC power supply operation, the circuit breaker contains no rectifier bridge, the polarity in the dashed line box shall be the same and the motor shall be wired based on the polarity shown in the figure.

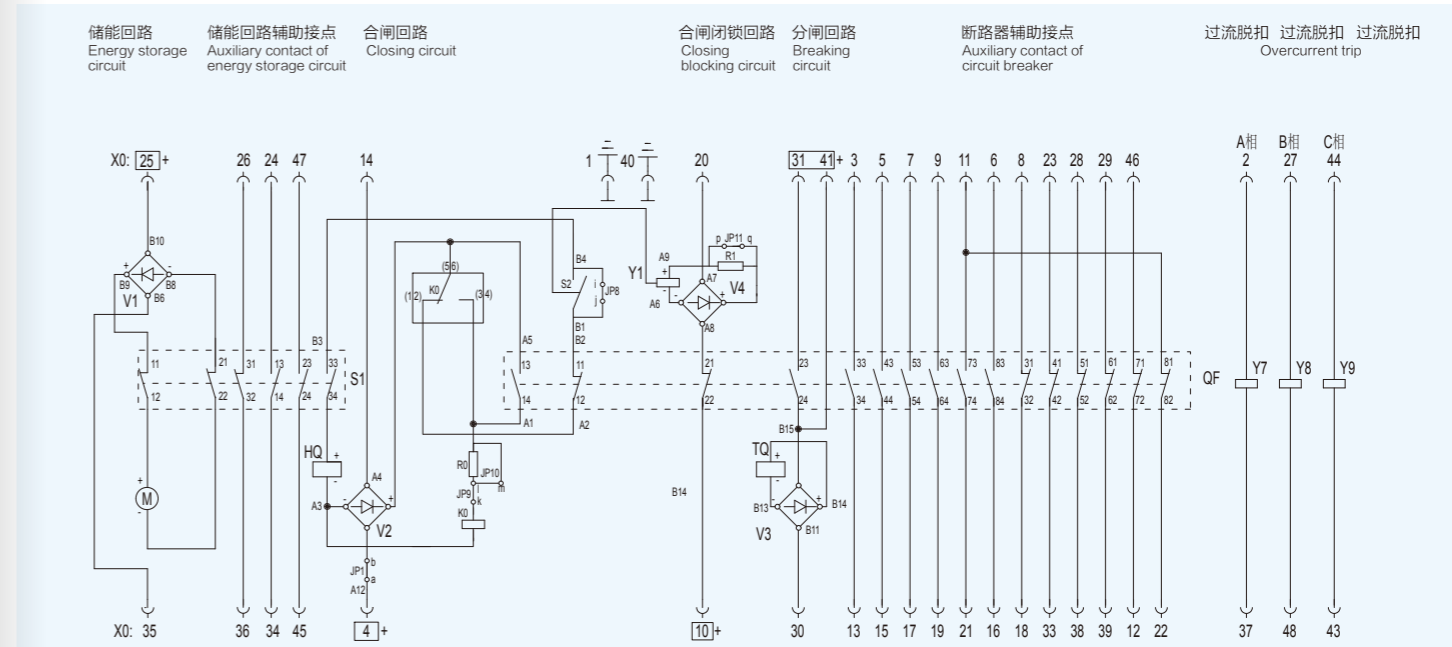
### 可选件接线设置 Option wiring position

跳线状态 Jumper State	跳线 Jumper	跳线 Jumper								
		JP1	JP2	JP3	JP4	JP5	JP6	JP7	JP8	JP9
带防跳 / Anti-trip	带闭锁 / With interlocking	√	√	√	√	/	/	/	/	√
	无闭锁 / Interlocking-free	/	/	/	/	√	√	√	√	√
无防跳 / Tripping-free	带闭锁 / With interlocking	√	√	√	√	/	/	/	/	/
	无闭锁 / Interlocking-free	/	/	/	/	√	√	√	√	/

注: “/”表示断开; “√”表示连接。 Note: /-off; √-on

## Electric Wiring Diagram of VG1 Fixed Vacuum Circuit Breaker

## VG1 固定式真空断路器电气接线图



HQ: 合闸线圈  
TQ: 分闸线圈  
R0-R1: 电阻  
M: 储能电机  
S2: 辅助开关  
S1: 辅助开关 (合闸弹簧储能后切换)  
QF: 辅助开关 (分合操作时切换)  
V1-V4: 桥式整流器 (直流时取消)  
Y1: 闭锁线圈 (可选)  
K0: 防跳继电器 (可选)  
Y7-Y9: 间接式过电流脱扣器线圈 (可选)  
JP1, JP8-JP11: 跳线

HQ: Closing solenoid  
TQ: Opening solenoid  
R0-R1: resistance  
M: energy storage motor  
S2: auxiliary switch  
S1: auxiliary switch (switching after energy storage of closing spring)  
QF: auxiliary switch (switching at the time of breaking-closing operation)  
V1-V4: bridge rectifier (cancelled in case of DC)  
Y1: locking coil (optional)  
K0: anti-tripping relay (optional)  
A1-A14, B1-B15: circuit board terminal  
Y7-Y9: indirect overcurrent release coil (optional)  
JP1, JP8-JP11: jumper

- 注: 1、图示二次回路未加电;  
2、断路器处于分闸状态、机构已储能;  
3、断路器标准配置中不含选配件。用户需要时, 需在订货时说明;  
4、当为直流电源操作时, 断路器不含整流桥, 虚线框中的极性应相同, 电机应按图示极性接线。
- Note: 1. The secondary circuit shown in the figure is not charged;  
2. The circuit breaker is opened, the mechanism has energy storage;  
3. Standard configuration of circuit breaker has no option. User requirements shall be proposed in the ordering;  
4. For DC power supply operation, the circuit breaker contains no rectifier bridge, the polarity in the dashed line box shall be the same and the motor shall be wired based on the polarity shown in the figure.

### 可选件接线设置 Option wiring position

跳线状态 Jumper State	跳线 Jumper	跳线 Jumper		
		JP1	JP8	JP9
带防跳 / Band Jump	带闭锁 / Strip off Lock	√	/	√
	无闭锁 / Unrelated Locking	√	√	√
无防跳 / No Jump	带闭锁 / Strip off Lock	√	/	/
	无闭锁 / Unrelated Locking	√	√	/

注: “/”表示断开; “√”表示连接。 Note: /-off; √-on

# 成功案例 Successful Case

## 供电 / POWER SUPPLY

北京电力公司  
重庆电力公司  
湖北省电力公司  
黑龙江电力有限公司  
哈尔滨电业局  
抚顺电业局  
佳木斯电业局  
本溪电业局  
牡丹江电业局  
西宁供电局  
文山电力公司  
云南玉溪供电局  
鄂尔多斯供电局  
太原市供电局  
江苏省电力公司  
南京市供电局  
扬中市供电局  
河北邢台供电局  
唐山供电局  
广西电网农网改造  
贵州兴义供电局  
巢湖供电局  
三明供电局  
Beijing Electric Power Company  
Chongqing Electric Power Company  
Hubei Electric Power Company  
Heilongjiang Electric Power Company  
Harbin Electric Power Bureau  
Fushun Electric Power Bureau  
Jiamusi Electric Power Bureau  
Benxi Electric Power Bureau  
Mudanjiang Electric Power Bureau  
Xining Power Supply Bureau  
Wenshan Electric Power Company  
Yunnan Yuxi Power Supply Bureau  
Erdos Power Supply Bureau  
Taiyuan Power Supply Bureau  
Jiangsu Provincial Power Company  
Nanjing Power Supply Bureau  
Yangzhong Power Supply Bureau  
Hebei Xingtai Power Supply Bureau  
Tangshan Power Supply Bureau  
Rural Power Network Reconstruction of Guangxi Power Grid  
Guizhou Xingyi Power Supply Bureau  
Chaohu Power Supply Bureau  
Sanming Power Supply Bureau

## 水电 / HYDROPOWER

中国长江三峡工程  
金沙江溪洛渡水电站  
黄河拉西瓦水电站  
张家界红岩水电站  
保山卡湾一级电站  
峨边中心沟水电站  
湖南官洪泵站  
水电十四局拉灯河电站  
云南大盈江水电站  
China Yangtze Three Gorges Project  
Jinshajiang Xiluodu Hydropower Station  
Yellow River Lawaxi Hydropower Station  
Zhangjiajie Hongbian Hydropower Station  
Baoshan Kawan First Grade Hydropower Station  
Ebian Zhongxingou Hydropower Station  
Hunan Guangzhong Pump Station  
Sinohydro 14th Bureau Ladenghe Power Plant  
Yunnan Dayingjiang Hydropower Station

## 热电 / THERMAL POWER

华能山东石岛湾核电有限公司  
华能山东发电有限公司  
山东鲁能电力  
大连庄河电厂  
安丘天天热电有限公司  
淄博热电股份有限公司  
三门峡惠能热电有限责任公司  
昆山瀛浦热电有限公司  
南京泰源热电  
石家庄热电  
湖州热电有限公司  
唐山三友热电  
哈尔滨热电  
铁岭发电厂  
天生桥水电发电厂  
包头二电厂  
阜新发电厂  
国电永福发电  
白山热电  
大唐桂冠合山发电  
神华神东电力萨拉齐发电厂  
Huaneng Shandong Shidao Bay Nuclear Power Co., Ltd.  
Shandong Huaneng Power Generation Co., Ltd.  
Shandong Luneng Electric Power  
Dalian Zhuanghe Power Plant  
Anqiu Tiantian Thermal Power Co., Ltd.  
Zibo Thermal Power Co., Ltd.  
Sanmenxia Huiheng Thermal Power Co., Ltd.  
Kunshan Yingpu Thermal Power Co., Ltd.  
Nanjing Taiyuan Thermal Power Co., Ltd.  
Shijiazhuang Thermal Power Co., Ltd.  
Huzhou Thermal Power Co., Ltd.  
Tangshan Sanyou Thermal Power Co., Ltd.  
Harbin Thermal Power Co., Ltd.  
Tieling Power Plant  
Tianshengqiao Hydroelectric Power Plant  
Baotou No. 2 Power Plant  
Fuxin Power Plant  
Guodian Yongfu Power Plant  
Baishan Thermal Power Plant  
Datang Guiguanheshan Power Plant  
Salaqi Power Plant of Shenhua Shandong Power

## 风电 / WIND POWER

华能中电长岛风力发电有限公司  
华能长岛风电厂  
华能内蒙古科右中风电二期  
龙源沈阳风力发电有限公司  
国电崇礼红花梁风电场  
国电黑山风电场  
中广核苏尼特右旗风电场  
大安中广核风力发电有限公司  
国华河北尚义风电场  
国华巴彦淖尔乌拉特中旗风电场  
内蒙古辉腾锡勒风电场  
辉腾梁风电场  
内蒙古达拉特旗金风风电场  
Hneng-CLP Changdao Wind Power Co., Ltd.  
Huaneng Changdao Wind Power Plant  
Huaneng Inner Mongolia Keyouzhong Wind Power Phase II  
Longyuan Shenyang Wind Power Co., Ltd.  
Guodian Chongli Honghualiang Wind Farm  
Guodian Heishan Wind Farm  
CGNPC Sonid Right Banner Wind Farm  
Da'an CGNPC Wind Power Co., Ltd.  
Guohua Hebei Shangyi Wind Farm  
Guohua Bayan Nur Urat Middle Banner Wind Power Station  
Inner Mongolia Huitengxile Wind Farm  
Huitengliang Wind Farm  
Inner Mongolia Damao Jinfeng Wind Farm

## 建材 / BUILDING MATERIALS

海螺水泥  
冀东水泥  
峨胜水泥  
华新水泥  
天瑞水泥  
江西南方水泥  
常州盘固水泥有限公司  
溧阳扬子水泥  
徐州龙山水泥  
海南昌江华盛水泥  
江西南昌兰丰水泥  
浙江尖峰水泥  
四川峨眉山水泥有限公司  
四川泰昌建材水泥  
贵州广宇水泥  
青海金鼎水泥  
山东联合王舅水泥  
三亚华盛粉磨水泥  
澄迈华盛天涯水泥  
黑龙江浩泉河水泥  
宜兴市金鹭水泥有限公司  
中材里能水泥有限公司

Conch Cement  
Jidong Cement  
Esheng Cement  
Huaxin Cement  
Tianrui Cement  
Jiangxi South Cement  
Changzhou Pangu Cement  
Liyang Yangqi Cement  
Xuzhou Longshan Cement  
Hainan Changjiang Huasheng Cement  
Jiangxi Nanchang Lanfeng Cement  
Zhejiang Jianfeng Cement  
Sichuan Emei Mountain Cement Co., Ltd.  
Sichuan Taichang Building Materials Cement  
Guizhou Guangyu Cement  
Qinghai Jinding Cement  
Shandong Lianhewangchao Cement  
Sanya Huasheng Grinding Cement  
Chengmai Huasheng Tianya Cement  
Heilongjiang Haoquanhe Cement  
Yixing Jinshu Cement Co., Ltd.  
Sinoma Lineng Cement

## 矿业 / MINING

山东省济西生建煤矿  
滕州郭庄矿业有限责任公司  
山东济矿  
济宁矿业集团有限公司  
广西玉柴动力机械有限公司  
内蒙古通大煤业有限责任公司  
山东济西煤矿  
枣庄矿业（集团）有限责任公司  
贵州金兴黄金矿业有限责任公司  
马鞍山市金庄铜材有限公司  
济南华玖矿业有限责任公司  
洛阳矿业集团  
江苏环胜铜业有限公司

Shandong Jixi Shengjian Coal Mine  
Tengzhou Guozhuang Mining Co., Ltd.  
Shandong Jining Mining  
Jining Mining Group  
Inner Mongolia Tongda Coal Co., Ltd.  
Shandong Jixi Coal Mine  
Zaozhuang Mining (Group) Co., Ltd.  
Guizhou Jinxing Gold Mining Co., Ltd.  
Maanshan Jinzhuang Copper Co., Ltd.  
Jinan Huamei Mining Co., Ltd.  
Luoyang Mining Group  
Jiangsu Huansheng Copper Co., Ltd.

## 冶金 / METALLURGY

机州钢铁集团  
南昌钢铁有限公司  
马鞍山钢铁股份有限公司  
南京钢铁股份有限公司  
武汉钢铁集团有限公司  
石家庄钢铁  
本钢集团  
山东富伦钢铁有限公司  
东北特钢集团  
江苏鸿泰钢铁有限公司  
青岛莱粉冶金有限公司  
云南铝业股份有限公司  
山东信发希望铝业有限公司  
贵州遵义铝业股份有限公司  
张家港宏发炼钢厂  
湖南创元铝业有限公司  
淄博蟠龙山钢铁厂  
山西侯马卓钛业  
通辽胶建铝业有限公司  
天津中冶钢铁有限公司  
广西百色兴和铝业有限公司

Hangzhou Iron & Steel Group  
Nanchang Iron & Steel Co., Ltd.  
Maanshan Iron & Steel Co., Ltd.  
Nanjing Iron & Steel Co., Ltd.  
Wuhan Iron & Steel Group  
Shijiazhuang Iron & Steel  
Benxi Steel Group  
Shandong Fulun Steel Co., Ltd.  
Dongbei Special Steel Group  
Jiangsu Hongtai Iron & Steel Co., Ltd.  
Qingdao Laixin Powder Metallurgy Co., Ltd.  
Yunnan Aluminum Co., Ltd.  
Shandong Xinfu Aluminum Industry Co., Ltd.  
Guizhou Zunyi Aluminum Co., Ltd.  
Zhangjiagang Hongfa Steel Plant  
Hunan Chuangyuan Aluminum Co., Ltd.  
Zibo Panlongshan Steel Plant  
Shanxi Houmazhuo Titanium Industry  
Tongliao Jiaojian Aluminum Co., Ltd.  
Tianjin MCC Iron & Steel Co., Ltd.  
Guangxi Baixe Xinghe Aluminum Co., Ltd.

## 交通 / TRANSPORTATION

青岛北海船舶重工有限责任公司  
南京地下铁道有限责任公司  
四川绵阳机场使用油库工程  
广铁广州电务工程公司电务部  
南京长安汽车有限公司  
广西玉柴动力机械有限公司  
南京武家嘴船舶制造有限公司  
常州市高速公路建设指挥部  
天津滨海国际机场  
湖北襄樊机场  
长安汽车股份有限公司  
中铁电气化局集团城铁公司  
Qingdao Beihai Shipbuilding Heavy Industry Co., Ltd.  
Nanjing Metro Co., Ltd.  
Sichuan Mianyang Airport Oil Depot Project  
Electrical Department of Guangzhou Electrical Engineering Co., Ltd.  
Nanjing Chang'an Automobile Co., Ltd.  
Guangxi Yuchai Power Machinery Co., Ltd.  
Nanjing Wujiazui Shipbuilding Co., Ltd.  
Changzhou Expressway Construction Headquarters  
Tianjin Binhai International Airport  
Hubei Xiangfan Airport  
Changan Automobile Co., Ltd.  
Urban Railway of China Railway Electrification Bureau Group

## 化工 / CHEMICAL

中原油田  
大庆油田  
中国石化集团南京工程公司  
中国石油抚顺石化公司  
江苏梅兰化工集团有限公司  
徐州徐能橡胶  
四平昊华化工有限公司  
青岛橡胶厂  
毕节煤海化工有限公司  
安徽华星化工股份有限公司  
贵州兴华化工有限责任公司  
奎屯锦疆化工有限公司  
山东海化集团有限公司  
浙江巨化股份有限公司  
中国核工业建峰化工总厂  
南京金陵石化工程有限责任公司  
广西田东锦盛化工有限公司  
安丘天裕生物化学有限公司  
抚顺金新化工有限责任公司  
甘肃北方三泰氯碱工程公司  
湖北香溪化工有限公司  
江苏扬农化工集团有限公司  
林通化工  
南宁化工股份有限公司  
山东飞扬化工  
山西霍州化工有限公司  
四川泸州火炬化工厂  
唐山氯碱有限责任公司  
永州化工  
章丘日月化工有限公司  
浙江合盛化工有限公司  
镇江新昌源化工有限公司  
镇江优利德（江苏）化工有限公司

Zhongyuan Oilfield  
Daqing Oilfield  
Sinopet Nanjing Engineering Co., Ltd.  
PetroChina Fushun Petrochemical Company  
Jiangsu Meilan Chemical Group  
Xuzhou Xuneng Rubber  
Siping Haohua Chemical Co., Ltd.  
Qingdao Rubber Plant  
Bijie Meihai Chemical Co., Ltd.  
Anhui Huaxing Chemical Co., Ltd.  
Guizhou Xinghua Chemical Co., Ltd.  
Kuitun Jinjiang Chemical Industry Co., Ltd.  
Shandong Haihua Group Co., Ltd.  
Zhejiang Juhua Co., Ltd.  
China National Nuclear Jianfeng Chemical Plant  
Nanjing Jinling Petrochemical Engineering Co., Ltd.  
Guangxi Tiandong Jinsheng Chemical Co., Ltd.  
Anqiu Tianyu Biochemical Co., Ltd.  
Fushun Jinxin Chemical Co., Ltd.  
Gansu Beifangantai Chlorine-alkali Engineering Co., Ltd.  
Hubei Xiangxi Chemical Co., Ltd.  
Jiangsu Yangong Chemical Group  
Lintong Chemical  
Nanning Chemical Industry Co., Ltd.  
Shandong Feiyang Chemical  
Shanxi Huozhou Chemical Co., Ltd.  
Sichuan Luzhou Huoju Chemical Plant  
Tangshan Chlor-alkali Co., Ltd.  
Yongzhou Chemical  
Zhangjiu Riyue Chemical Co., Ltd.  
Zhejiang Huaxing Chemical Co., Ltd.  
Zhenjiang Xinchangyuan Chemical Co., Ltd.  
Zhenjiang Unid (Jiangsu) Chemical Co., Ltd.

## 环保 / ENVIRONMENTAL PROTECTION

南通污水处理厂  
阳泉污水处理厂  
大同市西郊污水处理厂  
泰州市污水处理厂  
无锡东亭污水处理厂  
乡宁县城市污水处理厂  
莱西污水处理厂  
济源污水处理厂  
富平县污水处理厂  
韶关污水处理厂  
Nantong Sewage Treatment Plant  
Yangquan Sewage Treatment Plant  
Datong Xijiao Sewage Treatment Plant  
Taizhou Sewage Treatment Plant  
Wuxi Dongting Sewage Treatment Plant  
Xiangning Urban Sewage Treatment Plant  
Laixi Sewage Treatment Plant  
Jiyuan Sewage Treatment Plant  
Fuping Sewage Treatment Plant  
Shaoguan Sewage Treatment Plant

## 其他 / OTHERS

潍坊自来水厂  
泰州市财政局  
金国农业展览馆  
蚌埠市丰源集团自备水厂  
如皋市人民医院  
丽江工业园  
江苏省张家港经济开发区  
盐城城市防洪工程建设处  
潍坊市自来水厂  
淮安金马广场  
马鞍山监狱  
抚顺监狱  
通辽职业学院  
电信四川分公司办公楼  
昆明螺狮湾国际商贸城  
洛阳万达购物广场  
宿迁体育馆  
通辽检察院  
溧阳平陵广场  
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Weifang Water Plant  
Taizhou Bureau of Finance  
Jingguo Agricultural Exhibition Center  
Bengbu Fengyuan Group Self-provided Water Plant  
The People's Hospital of Rugao  
Lijiang Industrial Park  
Jiangsu Zhangjiagang Economic Development Zone  
Yancheng Urban Flood Control Construction Division  
Weifang Water Plant  
Huai'an Jinma Square  
Maanshan Prison  
Fushun Prison  
Tongliao Vocational College  
China Telecom Sichuan Branch Office Building  
Kunming Luoshuiwan International Trade City  
Luoyang Wanda Shopping Plaza  
Suqian Gymnasium  
Tongliao Procuratorate  
Liyang Pingling Square  
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