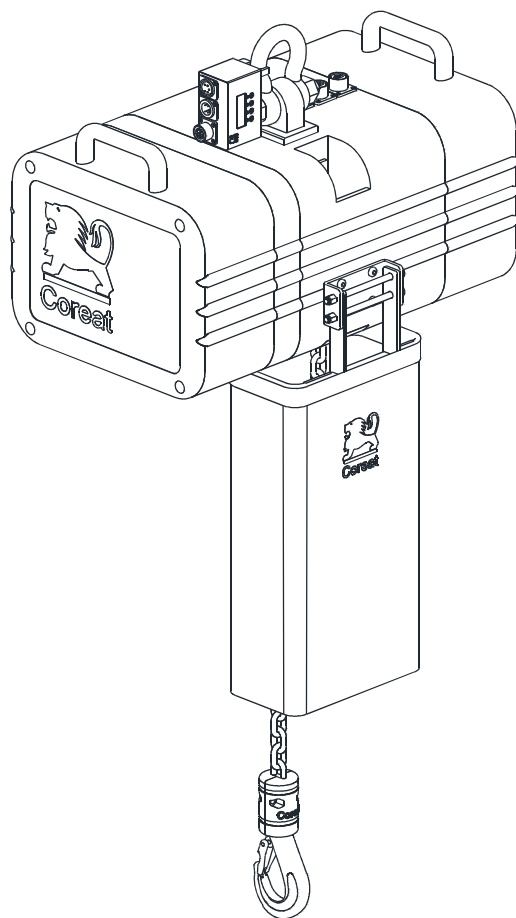




广东科励宝舞台科技有限公司
Guangdong Coreat stage technology CO.,LTD.

数控电动葫芦 CNC ELECTRIC CHAIN HOIST



Original instructions

S16/S28

使用手册
INSTRUCTION MANUAL





※重要提示：

- ◎安装和试用电动葫芦之前，请仔细阅读配套的使用说明书，严格按照使用说明书的方法使用。
- ◎一定要按规定安全接地，不能以“零”线代替，控制电箱并配以合适容量的空气断路器。
- ◎葫芦受损的链条不能继续使用，以防止断链事故发生！
- ◎链袋受损后不能能继续使用，以防止链条掉落伤人。
- ◎两台以上葫芦同时使用时各链条之间一定要保持垂直和平行，确保每台电动葫芦均受力，以防止吊索（吊带）脱出吊钩。每台葫芦要有专人监视，发现问题立即叫停。
- ◎两台1吨的电动葫芦不等于能吊2吨的货物。假如其中一台负重很小，另一台葫芦必定超载。超过负载电动葫芦的驱动器会报过载故障，影响控制系统正常使用。
- ◎始终要从地面吊起负载，切勿在已升高的吊钩上增加负荷。
- ◎切勿将吊装物体驱动到电动葫芦的底部，以免损坏外壳体。切勿将链条驱动到完全离开链袋直至链条尾部止动块碰到电动葫芦的底部，防止链条从链袋掉落。

※ Important note:

- ◎ Before installing and testing the electric hoist, please carefully read the accompanying user manual and strictly follow the instructions in the manual.
- ◎ Be sure to ground safely according to regulations and not replace it with "N" line. Control the electrical box and equip it with an appropriate capacity air circuit breaker.
- ◎ The damaged chain of the gourd cannot be used anymore to prevent chain breakage accidents!
- ◎ After the chain bag is damaged, it cannot be used again to prevent the chain from falling and injuring people.
- ◎ When two or more electric hoists are used at the same time, the chains must be kept vertical and parallel to ensure that each electric hoist is under stress, to prevent the lifting rope (strap) from coming out of the hook. Each gourd should be monitored by a dedicated person, and any problems found should be immediately stopped.
- ◎ Two 1-ton electric hoists are not equivalent to being able to lift 2 tons of cargo. If one of the gourds has a very small load, the other gourd will definitely be overloaded. The driver of the electric hoist that exceeds the load will report an overload fault, which will affect the normal use of the control system.
- ◎ Always lift the load from the ground and do not increase the load on the raised hook.
- ◎ Do not drive the lifted object to the bottom of the electric hoist to avoid damaging the outer shell. Do not drive the chain completely out of the chain bag until the end stop of the chain touches the bottom of the electric hoist to prevent the chain from falling out of the chain bag.

1、正确操作和维护说明

1-1、遵循下列说明以确保设备状况良好及保证产品安全

- 只有经过培训并获得授权的人员方可对电动葫芦进行改装。未经制造者许可，不得改动任何安全部件，也不得超出说明书内的规定。
- 未经制造者或受培训的代理授权，切勿修理或改装起重吊机；切勿调节或拆卸电动葫芦上安装的限位开关、制动器。
- 操作者若身体不适，切勿操作电动葫芦。
- 操作者操作电动葫芦时，切勿分散其注意力。
- 切勿用非许可的电源运行起重吊机（电压不足、电压过高，缺相）
- 切勿将电动葫芦暴露在有腐蚀性的环境中（温度、酸性……）
- 确保电动葫芦始终保持洁净并有防腐保护（干燥、润滑……）
- 必须依照本手册的说明定期维护电动葫芦。
- 根据本使用手册对运动部件，包括链条、导链器进行清洁和润滑，必须用符合电动葫芦型号的原配件更换，切勿使用可疑备件或不知来源的部件。
- 使用多台电动葫芦提升单个负载时，必须由有经验的监督员进行监督。必须采取所有必要的预防措施避免某台升降电动葫芦过载。
- 进行升降操作前必须仔细检查所有电动葫芦，若发生危险操作或电动葫芦出现问题时（异常响声、异常动作……），请通知必要的人员。



1. Correct operation and maintenance instructions

1-1. Follow the following instructions to ensure good equipment condition and product safety

- Only trained and authorized personnel are allowed to modify the electric hoist. Without the permission of the manufacturer, no safety components shall be modified, nor shall they exceed the provisions in the manual.
 - Do not repair or modify lifting cranes without authorization from the manufacturer or trained agents;
 - Do not adjust or disassemble the limit switch and brake installed on the electric hoist
 - When operating the electric hoist, do not distract the operator's attention.
 - Do not use unauthorized power sources to operate the crane (insufficient voltage, high voltage, phase loss)
 - Do not expose the electric hoist to corrosive environments (temperature, acidity, etc.)
 - Ensure that the electric hoist is always kept clean and protected against corrosion (dry, lubricated...)
- The electric hoist must be regularly maintained according to the instructions in this manual.
- According to this user manual, clean and lubricate moving parts, including chains and chain guides. They must be replaced with original parts that meet the model of the electric hoist.
- Do not use suspicious spare parts or parts from unknown sources.
 - When using multiple electric hoists to lift a single load, experienced supervisors must supervise.
- All necessary preventive measures must be taken to avoid overloading of a certain lifting electric hoist.
- Before carrying out the lifting operation, all electric hoists must be carefully inspected. If there is a dangerous operation or any problem with the electric hoist (abnormal noise, abnormal action, etc.), please notify the necessary personnel.



2、技术特征

2-1、电动葫芦型号

电动葫芦铭牌位于端盖侧面，序列号位于副箱体端面

2. Technical features

2-1. Electric hoist model

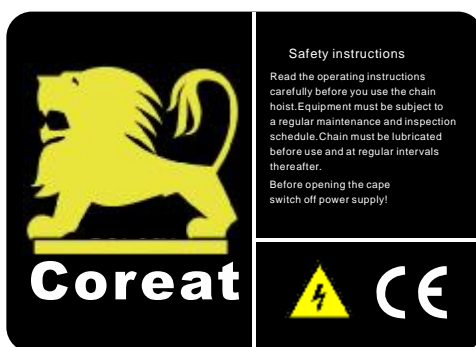
The nameplate of the electric hoist is located on the side of the end cover, and the serial number is located on the end face of the second case



电动葫芦铭牌 Electric hoist nameplate

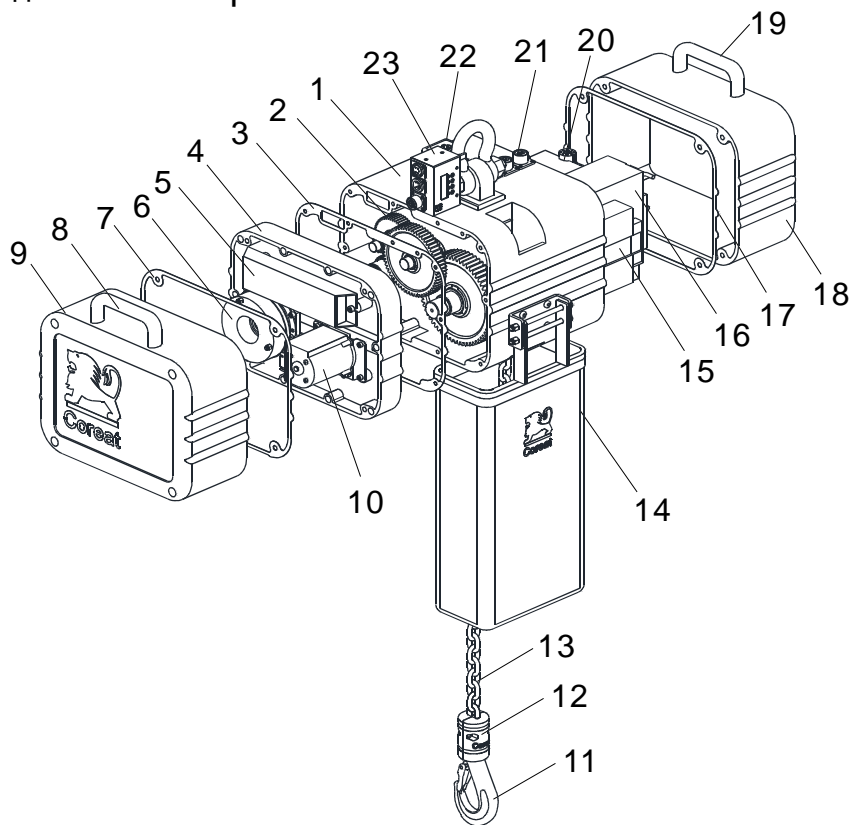
1	型号 Model
2	额定负载 Load rating
3	提升速度 Lifting speed
4	链条规格 Chain specification
5	电源功率 Power supply
6	防护等级 Protection grades

安全说明 Safety instructions





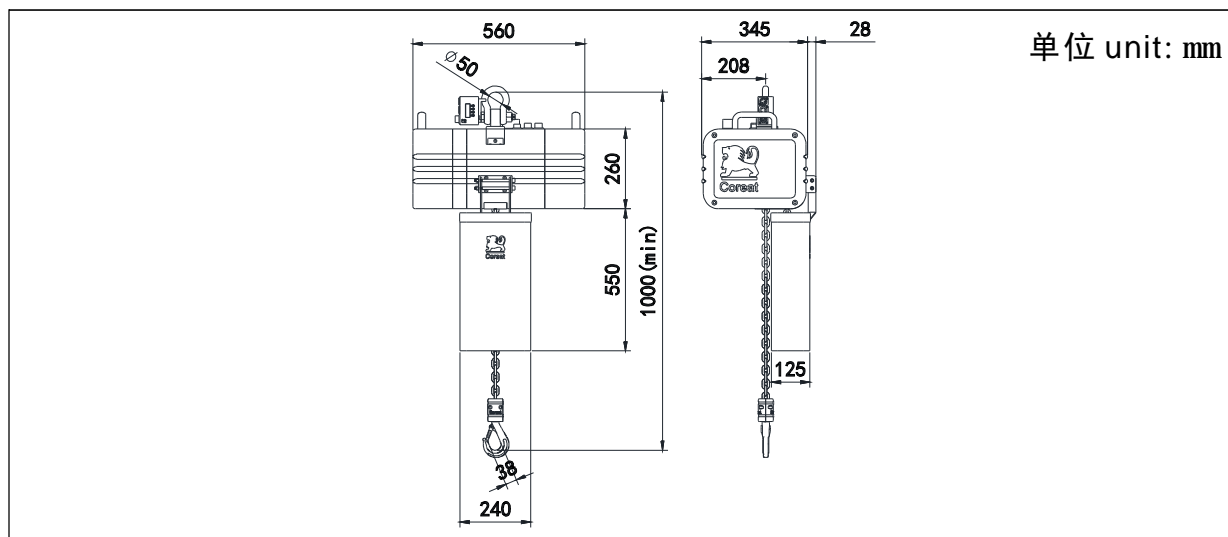
2-2、主要部件 Main components



NO.	名称 Name
1	主箱体 Main case
2	齿轮组 Gear systems
3	密封垫 Gasket
4	副箱体 Second case
5	制动电阻 Braking resistor
6	二次制动器 Second brake
7	密封垫 Gasket
8	提手 Handle
9	端盖 End cover
10	组合限位开关 Combination limit switch
11	吊钩 Hook
12	吊钩安装件 Hook mount
13	起重链条 Lifting Chain
14	链袋 Chain bag
15	制动器电源/中间继电器 Brake power supply/Intermediate relay
16	伺服驱动器 Servo driver
17	密封垫 Gasket
18	端盖 End cover
19	提手 Handle
20	伺服电机+制动器 Servo motor+Brake
21	网线插座 Network cable plug
22	电源插头 Power plug
23	负载传感器 Load sensor



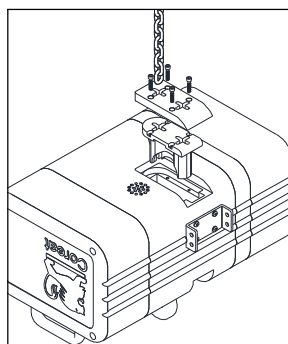
3、电动葫芦的尺寸和重量 Dimensions and weight of electric hoist



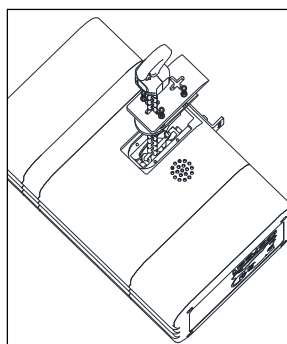
型号 Model	提升速度(m/min) Lifting speed	额定负载(kg) Rated load	电机功率(kw) Motor power	葫芦重量(kg) Hoist weight	链条重量(kg/m) Chain weight
S8	8	1000	1.8	59	1
S16	16	800	3.0	60	1.3
S28	28	500	3.0	60	1

4、链条安装方法、步骤

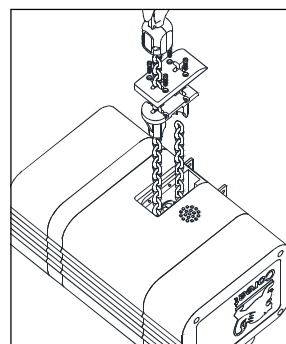
4.Chain installation methods, steps



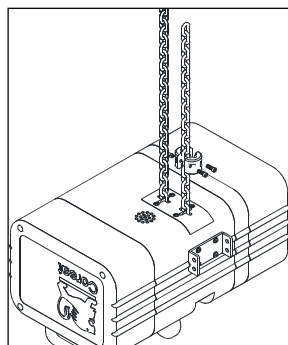
A



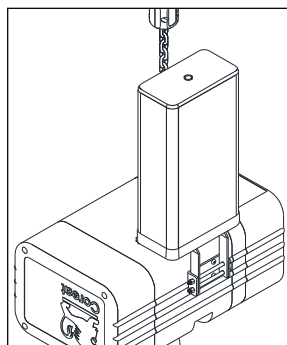
B



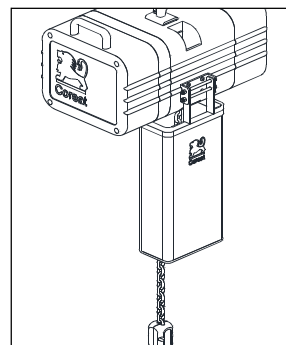
C



D



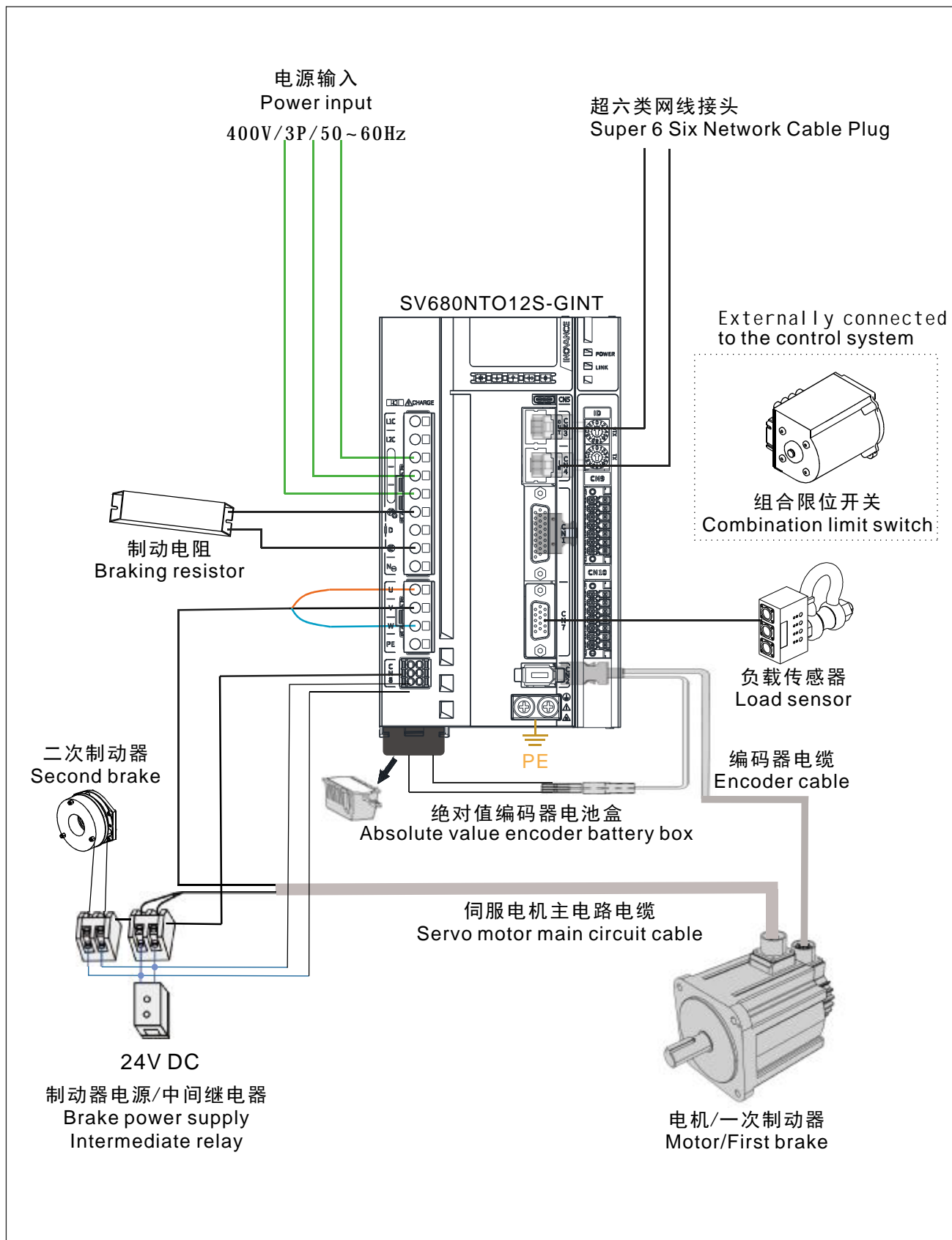
E



F

5、伺服驱动器接线图

5.Servo driver wiring diagram

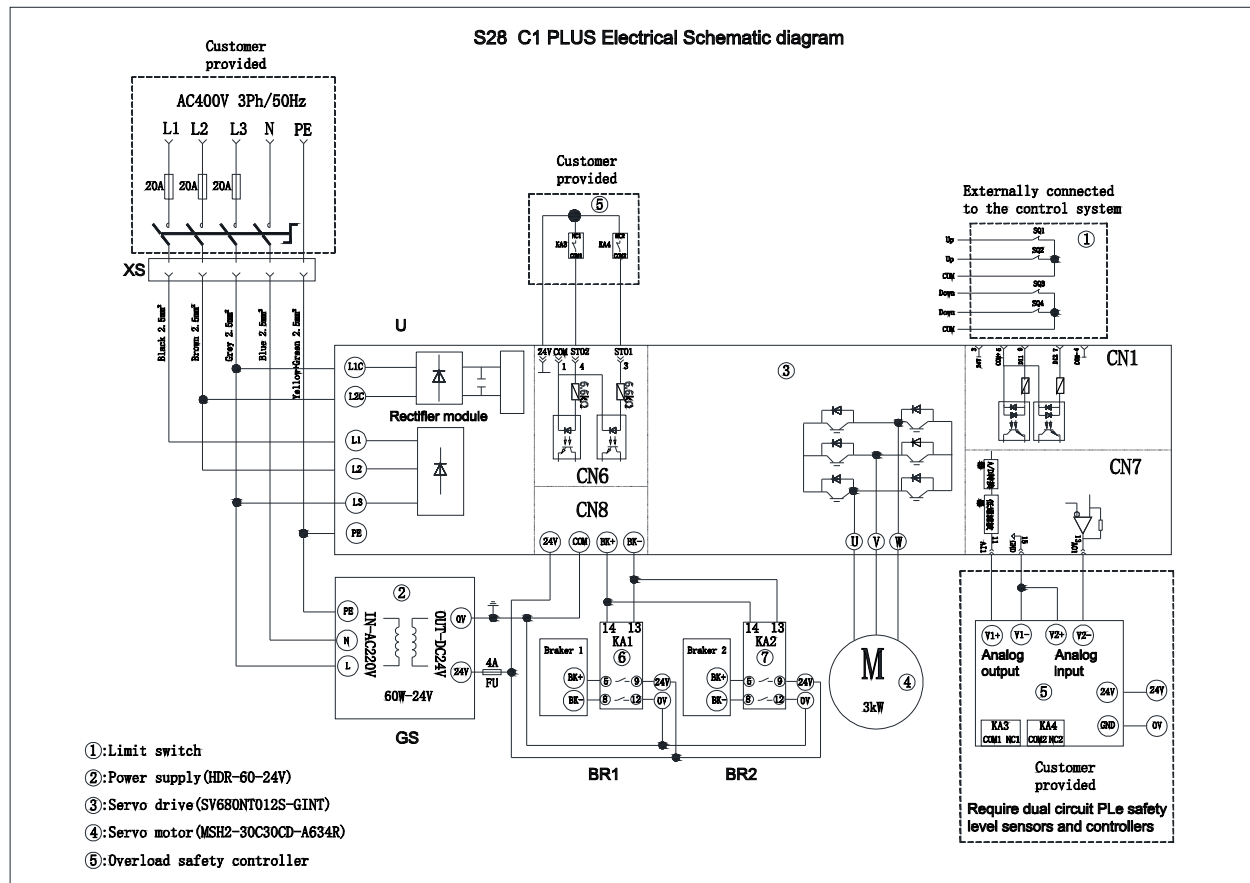


6、伺服驱动器电气原理图

6.Servo driver electrical schematic diagram

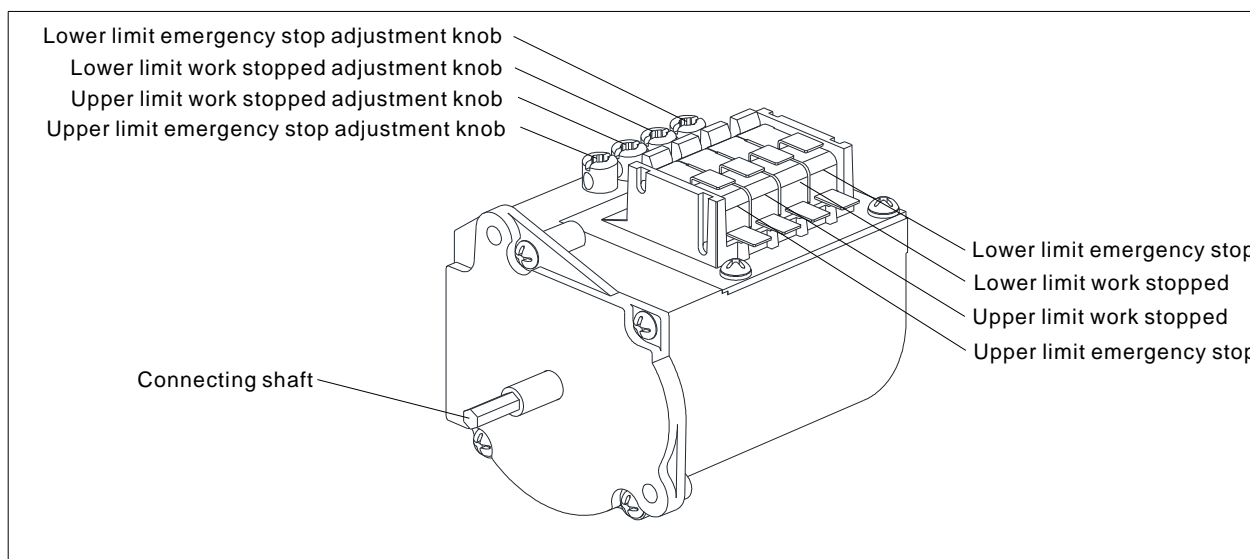
注：为确保使用安全，请接地保护。

Note: To ensure safe use, please provide grounding protection.



7、组合限位开关

7.Combination limit switch





7-1、组合限位开关调节方法

7-1.Adjustment method of combination limit switch

一、工作上限位和上升极限位置调整

首先，我们需要调整电动葫芦的上限位。具体步骤如下：

1. 调整时确保电动葫芦处于停电状态，以避免意外发生。
2. 将电动葫芦升至最高点，断开电源后打开电动葫芦端盖，使用螺丝刀或其他适当工具，调整限位装置工作上限位和上升极限旋钮，使凸轮触点与电动葫芦的上升位置相匹配。

二、下限位调整

接下来是下限位的调整。步骤如下：

1. 同样确保电动葫芦停电后再进行操作。
2. 将电动葫芦降至最低点，断开电源后打开电动葫芦端盖，使用螺丝刀或其他适当工具，调整限位装置工作下限位和下降极限旋钮，使凸轮触点与电动葫芦的下降位置相匹配。

三、测试与注意事项

完成上下限位的调整后，我们需要对电动葫芦进行测试，以确保其正常运行并能在设定的限位位置自动停止。在测试过程中，请注意以下几点：

1. 多次升降电动葫芦，观察其运行是否平稳，以及是否能够在限位位置准确停止。
2. 如发现异常情况，请立即停止测试并检查限位装置是否调整得当。
3. 在调整限位时，务必遵循厂家提供的操作指南和安全规范，以确保操作安全。

1、 Adjustment of work upper limit and upward limit position

Firstly: we need to adjust the upper limit of the electric hoist. The specific steps are as follows:

- 1). Ensure that the electric hoist is in a power-off state during adjustment to avoid accidents.
- 2). Raise the electric hoist to its highest point, disconnect the power supply, open the end cover of the electric hoist, and use a screwdriver or other appropriate tool Adjust the upper limit of the limit device and the upward limit knob to match the upward position of the electric hoist with the cam contact.

2、 Lower limit adjustment

Next is the adjustment of the lower limit. The steps are as follows:

- 1). Also ensure that the electric hoist is powered off before operation.
- 2). Lower the electric hoist to the lowest point, disconnect the power supply, open the end cover of the electric hoist, and use a screwdriver or other appropriate tool Adjust the lower limit and descent limit knob of the limit device to match the descending position of the electric hoist with the cam contact.

3、 Testing and Precautions

After adjusting the upper and lower limits, we need to test the electric hoist to ensure its normal operation and ability to operate within the set range The limit position automatically stops. During the testing process, please pay attention to the following points:

1. Lift and lower the electric hoist multiple times, observe whether it runs smoothly and whether it can accurately stop at the limit position. If any abnormal situation is found, please stop testing immediately and check if the limit device is adjusted properly. When adjusting the limit, it is necessary to follow the operating instructions and safety regulations provided by the manufacturer to ensure safe operation.



8、保养安全规定

- 电动葫芦必须定期维护和保养，链条使用之前加润滑油、使用后定期润滑。以保证葫芦负责载运行时链条不易磨损。
- 机械和电气部件的保养及维修工作只能由有关专业人员（经验丰富的机械师）进行。使用说明书中所规定的调整和保养工作以及检验期限，包括更换部件、部份装置的要求，必须加经遵守。
- 进行任何保养工作时，电动葫芦都必须停机断电，并且防止机器的意外或未经许可的启动（再启动）开关必须锁好。
- 在清洁剂及易燃易爆或可变形的物品（如木材、塑料件、油、脂）以及电气设备中，应避免明火、极度热效应和火花否则会酿成火灾，从而会产生有毒气体或破坏绝缘层。

8.Maintenance safety regulations

- Electric hoist must be regularly maintained and serviced, with lubricating oil added before use and regular lubrication after use. To ensure that the chain is not easily worn during the operation of the hoist.
- The maintenance and repair of mechanical and electrical components can only be carried out by relevant professionals (experienced pilots). In the user manual, The prescribed adjustment and maintenance work, as well as the inspection period, including the requirements for replacing parts and partial devices, must be strictly followed.
- When carrying out any maintenance work, the electric hoist must be shut down and powered off to prevent accidental or unauthorized starting of the machine (the switch must be locked when restarting).
- In cleaning agents, flammable, explosive or deformable items (such as wood, plastic parts, oil, grease), and electrical equipment, open flames, extreme heat effects, and sparks should be avoided, otherwise they can cause fires, which can produce toxic gases or damage the insulation layer.

9、在电气组件上进行保养工作的补充说明

- 只能在使用具有规定的电流强度和断电特性的原装电器元件！损坏的电器元件不得修理或搭接，必须换上同样型号的电器元件，出现供电故障时，应立即关掉电动葫芦！
- 更换电子和电气元件或器材方面的工作只能由电子专业人员进行。
- 如有规定，需对所保养的部件实行断电。断电之后应首先检查该部件是否仍带电。
- 定期检查电动葫芦的电气设备。如果出现部件的连接松动、导线受潮和保护触点磨损等问题，必须立即排除。

9. Supplementary instructions for maintenance work on electrical components

- Only original electrical components with specified current intensity and power-off characteristics can be used! Damaged electrical components must not be repaired or overlapped, and must be replaced with the same model of electrical components. In case of power failure, the electric hoist should be immediately turned off!
- The work of replacing electronic and electrical components or equipment can only be carried out by electronic professionals.
- If there are regulations, it is necessary to cut off the power for the components being maintained. After the power outage, the first thing to check is whether the component is still live.
- Regularly inspect the electrical equipment of the electric hoist. If there are problems such as loose connections of components, damp wires, and worn protective contacts, they must be immediately eliminated.



10、伺服驱动器规格书

10.Servo driver specification

项目 Item		描述 Describe	
速度转矩 控制模式 Speed torque control mode	性能 Performance	速度控制范围 Speed control range	1: 6000 (速度控制范围的下限是额定转矩负载时不停止的条件) 1: 6000 (The lower limit of the speed control range is the condition of not stopping at rated torque load)
		转矩控制精度(重复性) Torque control accuracy (repeatability)	±2%
		软起动时间设定 Soft start time setting	0 ~ 65s(可分别设定加速与减速) 0-65s (acceleration and deceleration can be set separately)
	输入信号 Input signal	速度指令输入 I Speed command input	网络型指令来源于EtherCAT通讯给定支持本地模式, 本地多段速度。 Network type instructions come from EtherCAT communication settings, support local mode, and local multi segment speed
转矩指令输入 Torque command input			
位置控制模式 Position control mode	性能 Performance	定位时间 positioning time	1ms~10ms
	输入信号 Input signal	位置指令 Position command	网络型指令来源于EtherCAT通讯给定支持本地模式。 Network type instructions come from EtherCAT communication settings, support local mode.
	数字 输入信号 Digital input signal	可进行信号分配的变更 Changes that can be made to signal allocation	5路DI 5 way DI
			P-OT Forward overtravel switch(正向超程开关) N-OT Reverse overtravel switch(反向超程开关) Home switch(原点开关) Touch probe1(探针1) Touch probe2(探针2)
	数字 输出信号 Digital output signal	可进行信号分配的变更 Changes that can be made to signal allocation	3路DO, DO带载能力50mA, 电压范围5V~30V 3 way DO, with a load capacity of 50mA and voltage range of 5V~30V
S-RDY: 伺服准备好 Servo ready TGON: 电机旋转输出 Motor rotation output 比较输出、刹车输出、EDM输出 Compare output, brake output, EDM output			
内置功能 Built in features	超程(OT) 防止功能 Overtravel(OT) prevention function		P-OT、N-OT动作时立即停止 P-OT、N-OT Stop immediately upon action
	保护功能 Protection function		过电流、过电压、电压不足、过载、主电路检测异常、散热器过热、超速、编码器异常、CPU异常、参数异常 Overcurrent, overvoltage, insufficient voltage, overload, abnormal detection of the main circuit, overheating of the heat sink, over speed, encoder abnormality, CPU abnormality, parameter abnormality
	LED显示功能 LED display function		主电源CHARGE, 5位LED显示 Main power CHARGE, 5-bit LED display



10、伺服驱动器规格书(续表)

10.Servo driver specification(Continued Table)

内置功能 Built in features	振动抑制功能 Vibration suppression function		具有4个陷波器，50Hz~5000Hz，其中2个可自适应设置 Equipped with 4 notch filters, 50Hz~5000Hz, of which 2 can be adaptively set
	通信功能 Communication function	连接协议 connection agreement	RS232
		通讯协议 Communication protocol	EtherCAT
		多站通信 Multi site communication	最大从站数量255 Max number of slave stations 255
		轴地址设定 Axis address setting	无物理旋钮，通过软件设置0~255 No physical knob, set 0-255 through software
		功能 Function	状态显示，用户参数设定，监视显示，警报跟踪显示，JOG运行与自动调谐操作，速度、转矩指令信号等的测绘功能 Status display, user parameter settings, monitoring display, alarm tracking display, JOG operation and automatic tuning operation, speed mapping function of torque command signals, etc
其他 Other		增益调整、警报记录、JOG运行、动态制动 Gain adjustment, alarm recording, JOG operation, dynamic braking	

11、EtherCAT 通讯技术规格

11.EtherCAT communication technology specifications

项目 Item	描述 Describe
通信协议 Communication protocol	EtherCAT
支持服务 Supporting service	CoE (PDO、SDO)
同步方式 Synchronous mode	DC-分布式时钟 DC Distributed Clock
物理层 Physical layer	100BASE-TX
波特率 Baud rate	100 Mbit/s (100Base-TX)
双工方式 Duplex mode	全双工 Full duplex
拓扑结构 Topology	线型 Linear
传输媒介 Transmission medium	带屏蔽的超五类或电气性能规格六类及以上的网线 Shielded Category 5 or Electrical Performance specification Category 6 or above Ethernet cables



11、EtherCAT 通讯技术规格(续表)

11.EtherCAT communication technology specifications (Continued Table)

EtherCAT 从站基本性能 Basic performance of the slave station	传输距离 Transmission distance	两节点间小于100M(环境良好, 线缆优良) The distance between two nodes is less than 100M (with good environment and excellent cables)
	从站数 Number of secondary stations	协议上支持到65535, 实际使用不超过100台 Protocol supports up to 65535 units, but actual usage does not exceed 100 units
	EtherCAT 帧长度 EtherCAT frame length	44字节~1498字节 44 bytes~1498 bytes
	过程数据 Process data	单个以太网帧最大1486字节 A maximum of 1486 bytes per Ethernet frame
	两个从站的同步抖动 Synchronous jitter between two slave stations	<1us
	刷新时间 Refresh	1000个开关量输入输出约30us; 100个伺服轴约 100us; 针对不同接口定义不同刷新时间 1000 switch inputs and outputs, approximately 30us; 100 servo axes, approximately 100us; Define different refresh times for different interfaces
	通讯误码率 Communication error rate	10 ⁻¹⁰ 以太网标准Linear 10 ⁻¹⁰ Ethernet standard
	存储同步管理单元 Storage synchronization management unit	8个 8
	过程数据RAM Process data RAM	8KB
	分布时钟 Distributed clock	64位 64 bit
	e2prom 容量 e2prom capacity	32 kbit

三相380V伺服驱动器

Three phase 380V servo driver

驱动器型号SV630N Drive model SV630N	T8R4	T012
连续输出电流Arms Continuous Output Current Arms	8.4	12
最大输出电流 Arms Max output current Arms	20	29.75
主电路电源 Main circuit power supply	三相 Three-phase 380V AC~440V AC, -10%~+10%, 50Hz/60Hz	
控制电路电源 Control circuit power supply	单相 Single phase 380V AC~440V AC,-10%~+10%, 50Hz/60Hz	
制动泄放功能 Brake release function	制动电阻内置, 支持外接制动电阻 Built in braking resistor, supporting external braking resistor	

12、电动葫芦维护细则

为确保电动葫芦正常工作及安全使用，必须根据以下细节定期对电动葫芦进行维护、保养。

12.Maintenance rules for electric hoist

To ensure the normal operation and safe use of the electric hoist, it is necessary to regularly maintain and upkeep the electric hoist according to the following details.

12-1、电动葫芦维护表格

12-1、Electric hoist maintenance table

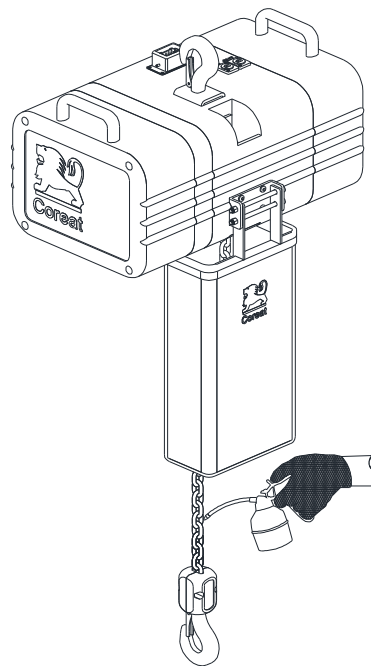
NO.	检查项 Inspection items	周期 Inspection cycle	人员类别 Personnel category
1	链条外观检查 Chain appearance inspection	每次使用前 Before each use	操作员 Operator
2	链条的清洁与润滑 Cleaning and lubrication of chain	每月 Monthly	操作员 Operator
3	链条磨损程度测量 Measurement of chain wear degree	每季度 Quarterly	操作员 Operator
4	电气线路检查 Electrical circuit inspection	每季度 Quarterly	专业电气技术员 Professional electrical technician
5	吊钩磨损程度测量 Measurement of hook wear degree	每年 Annually	操作员 Operator
6	齿轮润滑 Gear lubrication	终身润滑 Lifetime lubrication	---
7	链条润滑 Chain lubrication	根据用途 According to the purpose	操作员 Operator

链条润滑

- 为了延长链条的使用寿命，建议定期润滑链条。
- 根据用途，润滑间隔从一个月到一年不等。
- 应在出现腐蚀或干燥迹象之前进行润滑。
- 链条润滑油(剂)应为具有可渗透性、防水、无粘性的油脂或润滑油。
- 过度润滑链条可能导致使用时滴油。

chain lubrication

- To extend the service life of the chain, it is recommended to regularly lubricate the chain.
- The lubrication interval varies from one month to one year depending on the purpose.
- Lubrication should be carried out before signs of corrosion or drying appear.
- Chain lubricant should be a permeable, waterproof, and non viscous grease or lubricant.
- Excessive lubrication of the chain may cause oil dripping during use.



12-2、电动葫芦故障排除

12-2.Troubleshooting electric hoist

故障 Fault	原因 Reason	解决方案 Solution
电动葫芦不能工作 Electric hoist not working	急停开关按钮已启动 The emergency stop switch button has been activated	停用急停开关按钮 Deactivate the emergency stop switch button
	控制器矢量关闭 Controller vector turned off	打开控制器矢量 Turn on the controller vector
	刹车未打开 Brake not turned on	检查并更换刹车电源/继电器 Check and replace the brake power supply/relay
	驱动器报故障 Drive reporting failure	清除驱动器故障 Remove drive faults
无法提升负载 Unable to lift load	过载 overload	减少负载 Reduce load
负载升降时出现异常噪音 Abnormal noise occurs during load lifting and lowering	链条磨损 Chain wear	更换链条 Replacing the chain
	链条未润滑 Chain not lubricated	润滑链条 Lubricating chain
	链条导链板或导链槽配件磨损 Wear of chain guide plate or guide groove accessories	更换链条导链板或导链槽配件 Replace the chain guide plate or guide groove accessories
	刹车片磨损、刹车间隙过大 Brake pad wear or excessive brake clearance	更换刹车片配件或更换刹车 Replace brake pad accessories or replace brakes

※注意：更换任何配件前请切断电源。

※Attention: Please cut off the power before replacing any accessories.

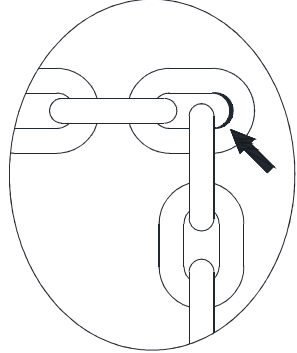
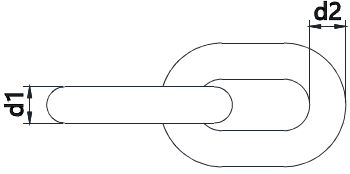
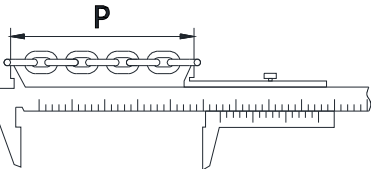


12-3、链条磨损程度测量

注意：应定期检查链条的磨损、生锈和腐蚀情况。

12-3.Measurement of chain wear degree

Attention: The chain should be regularly checked for wear, rust, and corrosion.

NO.	检查事项 Inspection items	图例 Legend												
1	<p>目视检查链条是否存在凹痕、腐蚀、扭曲的链节，链节之间支撑面是否磨损。如果链条中的链节表面存在过度凹痕、腐蚀、扭曲或磨损，应使用厂家匹配规格的链条更换。</p> <p>Visually inspect the chain for dents, corrosion, and twisted links, as well as for worn support surfaces between the links. If there are excessive dents, corrosion, distortion, or wear on the surface of the chain links in the chain, they should be replaced with a chain that matches the manufacturer's specifications.</p>													
2	<p>测量链条厚度(d) Measure the thickness of the chain (d) 测量链条的尺寸(d)，并计算尺寸(dm)。 Measure the size of the chain(d),And calculate the size (dm) $dm = (d1 + d2) / 2 \leq 0.9 \times dn$ dn=链条标称直径 Chain nominal diameter p=节距 Pitch</p> <table border="1" data-bbox="276 1153 837 1310"> <thead> <tr> <th colspan="3">链条规格 Chain specifications (mm)</th> </tr> </thead> <tbody> <tr> <td>d×p</td> <td>7×22</td> <td>7.9×21.7</td> </tr> <tr> <td>dn</td> <td>7</td> <td>7.9</td> </tr> <tr> <td>dm (max)</td> <td>6.3</td> <td>7.1</td> </tr> </tbody> </table>	链条规格 Chain specifications (mm)			d×p	7×22	7.9×21.7	dn	7	7.9	dm (max)	6.3	7.1	
链条规格 Chain specifications (mm)														
d×p	7×22	7.9×21.7												
dn	7	7.9												
dm (max)	6.3	7.1												
3	<p>测量链条长度(P) Measure the length of the chain (P) 在链条的不同区域测量P值，即跨的9个链节的节距。 Measure the P value in different areas of the chain, which is the pitch of the 9 chain links spanning. dn=链条标称直径 Chain nominal diameter p=节距 Pitch</p> <table border="1" data-bbox="276 1612 837 1769"> <thead> <tr> <th colspan="3">链条规格 Chain specifications (mm)</th> </tr> </thead> <tbody> <tr> <td>d×p</td> <td>7×22</td> <td>7.9×21.7</td> </tr> <tr> <td>dn</td> <td>7</td> <td>7.9</td> </tr> <tr> <td>P (max)</td> <td>202</td> <td>199</td> </tr> </tbody> </table> <p>注：根据ISO 7592-1983,伸长为2%。 Note: According to ISO 7592-1983, elongation is 2%</p>	链条规格 Chain specifications (mm)			d×p	7×22	7.9×21.7	dn	7	7.9	P (max)	202	199	
链条规格 Chain specifications (mm)														
d×p	7×22	7.9×21.7												
dn	7	7.9												
P (max)	202	199												

※注意：只要有一个链环存在任何方式的缺陷，必须更换该链条。

※Attention: As long as there is any defect in the chain link in any way, the chain must be replaced.

13. 使用规范Using standards EN 60204-32

通常，该系统安装在以下条件下：

- ◎电源电压：0.9-1.1标称电源电压
- ◎源频率：0.99-1.01标称频率；0.98至1.02短时间。
- ◎环境温度：-20°C和+40°C。
- ◎海拔高度：应在平均海平面上1000m的高度
- ◎相对湿度：40°C时不超过50%
- ◎大气：无过多灰尘、酸雾、腐蚀性气体和盐。
- ◎避免暴露在阳光直射或热射线下，因为这会改变环境温度。
- ◎避免接触异常振动。
- ◎电气设备应能承受-25°C至+55°C范围内的运输和储存温度的影响，并在高达+70°C的温度下承受不超过24小时的短期影响。
- ◎噪音级别：≤78分贝。

Generally, this system is installed in the following conditions:

- ◎ Supply voltage: 0.9 -1.1 nominal supply voltage
- ◎ Source frequency: 0.99- 1.01 nominal frequency; 0,98 to 1,02 short time.
- ◎ Ambient temperature: -20 °C and +40 °C.
- ◎ Altitude: shall be at altitudes up to 1000m above mean sea level
- ◎ Relative humidity: not exceed 50% at 40 °C
- ◎ Atmosphere: free from excessive dust, acid fume, corrosive gases and salt.
- ◎ Avoid exposing to direct sunlight or heat rays which can change the environmental temp.
- ◎ Avoid exposing to abnormal vibration.
- ◎ Electrical equipment shall withstand the effects of transportation and storage temperature within a range of 25 °C to +55 °C and for short periods not exceeding 24 hours at up to +70 °C.
- ◎ Noise level: ≤ 78 db



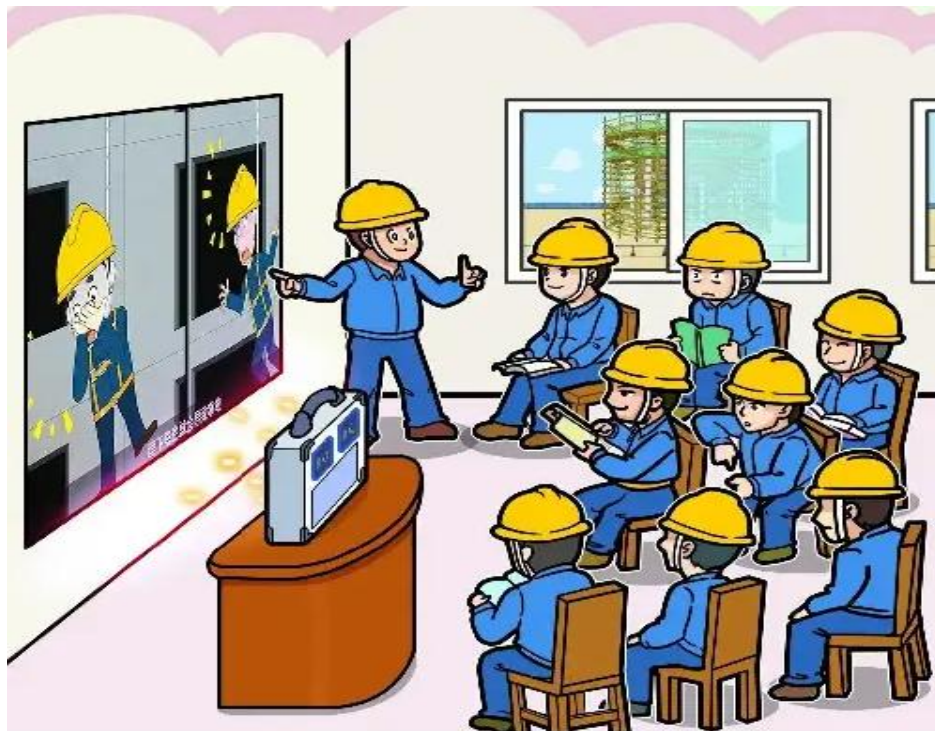
14. 使用规范Using standards EN 14492-2

操作说明应始终包括以下说明：

- 1) 应说明操作人员的必要培训；
- 2) 用户应确保操作人员接受必要的培训；
- 3) 操作员应始终按照操作说明工作；
- 4) 操作员应以起重机可用的最小速度将负载从地面提起。从地面起吊负载时，绳索（链条、皮带）应拉紧，不得处于松弛状态；
- 5) 起重机的设计不是为了提升超过起重机额定容量的负载；
- 6) 不要试图提起固定或受阻的负载；
- 7) 不要侧拉负载；
- 8) 应避免过度点动（例如向电机发出短脉冲）；

The operating instructions shall always include the following instructions:

- 1) the necessary training for the operating personnel shall be described;
- 2) the user shall ensure that the operating personnel are given the necessary training;
- 3) the operator shall always work in compliance with the operating instructions;
- 4) the operator shall lift the load from the ground with the minimum speed available at the hoist. The rope (chain, belt) shall be tightened and shall not be in the slack-condition when the load is being lifted from the ground;
- 5) the hoist is not designed to lift loads above the rated capacity of the hoist;
- 6) do not try to lift fixed or obstructed loads;
- 7) do not side-pull loads;
- 8) excessive inching (e.g. giving short pulses to the motor) shall be avoided;





15、售后服务

- 产品发生质量问题，本司执行“三包”服务；
- 终身提供配件供应服务；
- 客户提出安装要求，本司提供有偿服务；
- 提供产品维修咨询服务。

在安装和起电动葫芦前必须阅读使用说明书。因违反操作规则所引起的损坏和运行故障，我司概不负责。一旦发现设备有缺陷或故障，应立即联系报修并告知订货日期及设备出厂序列号。

下列情况不在质量担保范围之内：

- 使用不当；
- 供货和服务范围之外有缺陷的外部连接设备；
- 不属于我司供货和管理范围的电缆和导线连接错误或不当；
- 操作错误、无视使用说明或保养不当而引起的损坏和运行故障；
- 未经本公司同意而进行改装。

13. After sales service

- If there is a quality issue with the product, our company will provide "three guarantees" services;
- Lifetime accessory supply service;
- The customer requests installation, and our company provides paid services;
- Provide product maintenance consulting services.

Before installing and starting the electric hoist, it is necessary to read the user manual. Due to damage and operational malfunctions caused by violation of operating rules, the company is not responsible. Once defects or malfunctions are found in the equipment, immediate contact should be made for repair and the ordering date and equipment serial number should be informed.

The following situations are not within the scope of quality assurance:

- Improper use;
- Defective external connection equipment outside the scope of supply and service;
- Incorrect or improper connection of cables and wires that are not within the scope of our company's supply and management;
- Damage and operational malfunctions caused by operational errors, disregard for user instructions, or improper maintenance;
- Modify without the consent of our company.

16、附注

- 因产品不断改进，如货物与本册资料有所差异，始终以我公司最新版本为准，如有不明之处联系本公司技术报务。
- 本说明书为本公司版权，本司对说明书有最终解释权，任何人不得翻印，复印。

16. Annotations:

Due to continuing improvement, there could be differences between product and what's described in this manual. In that case, please refer to our latest version. Any doubts, please contact our technical department.

This publication belongs to our company and is subject to our final interpretation, reproduction or copy not allowed.



EC Declaration of Conformity
according to the Machinery Directive 2006/42/EC

For the following equipment

Product : Electric Chain Hoist
 Type Designation /Trademark : S28
 Manufacturers Name : Guangzhou Coreat Stage Equipment Co., Ltd
 Manufacturers Address : 102-Guangzhou 511483 Guangdong P.R. China

Refer to in this declaration conforms with the following directive(s):

Machinery Directive 2006/42/EC

Annex I of 2006/42/EC, EN 60204-32:2008, EN 14492-2:2019

The company named above will keep on file for review the following technical documentation :

- Operating and maintenance instructions
- Technical drawings
- Risk assessment
- Description of measures designed to ensure conformity
- Other technical documentation ,e.g. quality assurance measures for design and production

Name and address of the person (established in the Community) compiled the technical file:

.....

Responsible for making this declaration is the :

Manufacturer Authorized representative established within the EU

Authorized representative established within the EU (if applicable):

Company Name :.....

Company Address :.....

Person responsible for making this declaration

Name ,Surname : „Huangpei“.....

Position/ Title : General Manager.....

Guangzhou **2026-1-30**.....
 (place) (date) (company stamp and legal signature)