



CURVE HOIST INTRODUCTION



CNBM INTERNATIONAL CORPORATION



Specification of CMAX Curve Hoist SCQ60/SCQ120

Main technical performance parameter:

Item \ Model	SCQ60	SCQ120	Remark
Rated load	600kg	1200kg	
Rated speed	0~60 m/min	0~60 m/min	VVVF+PLC control
Cage dimension length×width×height	2.1×0.85×2.1m	2.5×1.3×2.1m	
Mast size	450x280x1508mm	650x450x1508mm	Galvanized
Rated passenger	8	16	
Adaptable angle for curve variation	-8°~+21°	-10°~+25°	
Max. height	180m	250m	

Curve building hoist is designed on the basis of mesh driving principle of pinion and rack. With the mesh driving, cage travels along the curve so as to transport the passengers to the requested place. The specially-treated track parallels with the exterior of hyperbola cooling tower, the floating leveling mechanism ensures the cage's balance and the out-fixed driving mechanism not only save the cage's space but also strengthen the cage's stability during the operation.

SCQ serial building hoist's main features are as below:

1. Control system

Building hoist's electrical control system is of VVVF+PLC control system.



VVVF control:

Equipped with the currently advanced technology of VVVF and PLC in the world, the hoist could travel at the speed of 0~60m/min and realize the stepless speed regulation at the time of starting, accelerating & decelerating and braking so as to reduce the pinion's impact on the rack when starting and braking, to improve the hoist's stability and comfortability when traveling, and to extend the working life of the hoist. The regenerative braking is used for the hoist's slowing and stopping and the mechanical braking device becomes active at the speed of zero so as to avoid wearing the braking disc. In addition, this mechanism can be used upon the condition of the wide range of voltage fluctuation, which is $\pm 5\%$ (50HZ) . VVVF+PLC system is adopted with vector control method, which could control the speed at the precision of 0.01% and realize the hoist's accurate position-stopping. VVVF also has the functions of overvoltage protection, undervoltage protection, overcurrent protection, overload protection, motor protection etc.

The VVVF+PLC system is also adopted with current-limiting function, and this function could make the motor start by a low electric current and reduce the affect against other electricity consuming equipments at the construction site.

2. Easy operation

Simple operating panel, which control the hoist's ascending, descending, emergency stopping, alarm-starting and speed-adjusting, ensures a user-friendly operation.

The VVVF+PLC system has 4 speed shifts. With its low speed, shift 1 is of high safety and convenience for installation, maintenance & repair. Shift 2, 3 and 4, as the regular running speed (each speed could be adjusted according to the actual need at the construction site), which can be changed steplessly with the different needs.

3. Perfect safety devices:

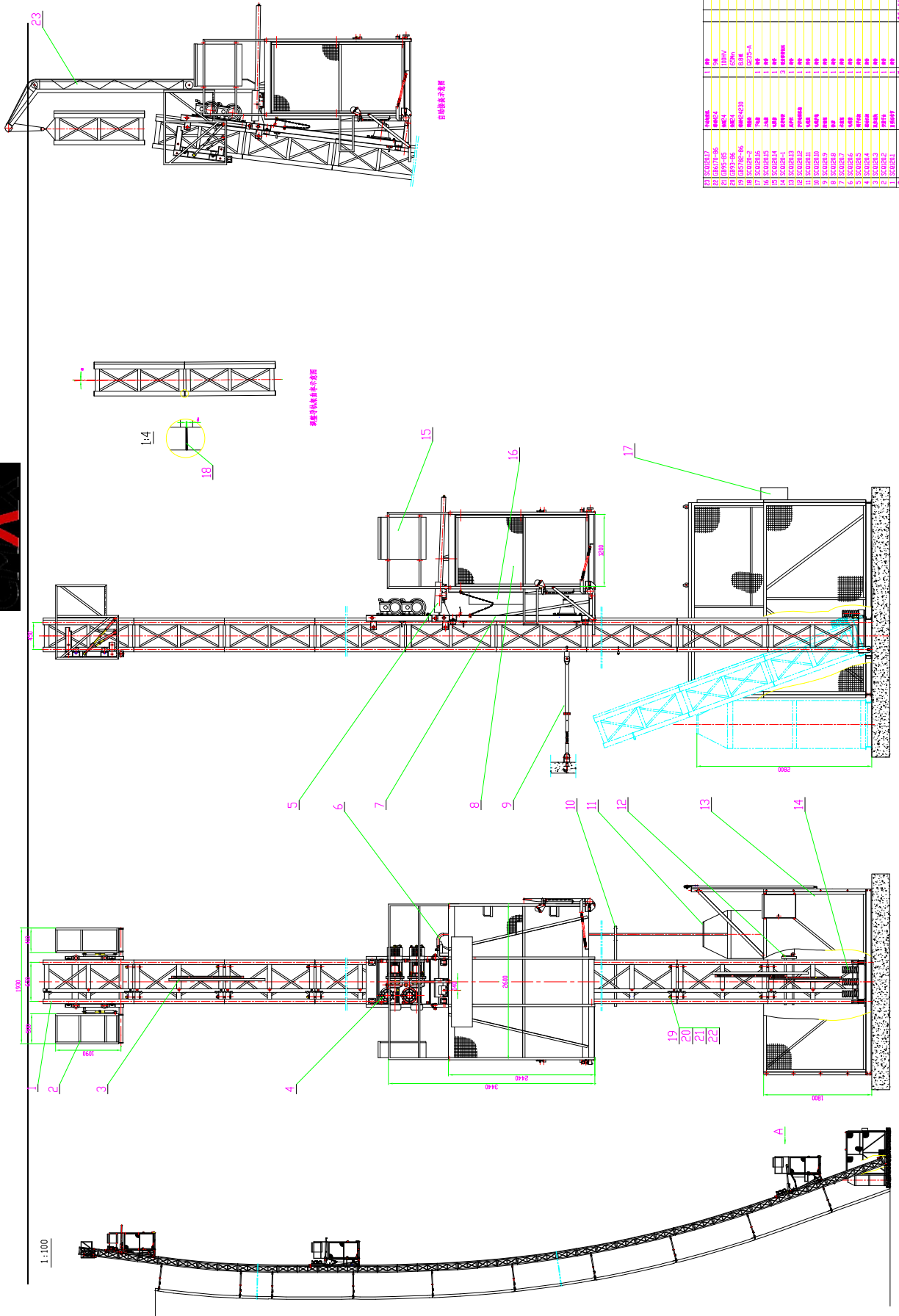
Equipped with a complete set of safety devices, including SAJ30-1.2 anti-drop safety device, top & bottom limit switches, top & bottom 3-phase switches, buffer, safety hooks, and electro-mechanical interlock, the hoist can run safely under in many circumstances. Among those safety devices, SAJ30-1.2 anti-drop safety device is patented product, which is adopted with



advanced technology of non-concussion and checking friction degree without opening machine. Top & bottom limit switches and top & bottom 3-phase switches ensure the hoist's cage not to over-climb and not to collide against the bottom. When the hoist is traveling to the top or bottom part at a high speed, with the up & down speed-slowing switches, the hoist can automatically decelerate in advance and brake steadily.

4. Automatically leveling

In order to make the cage base keep leveling when traveling along the curve, there are two ways to adjust the leveling of cage base: manually-leveling mechanism and automatically-leveling mechanism. When the cage inclines inside or outside to some extent, the limit devices will knock against the limit switch. Consequently, the leveling mechanism will work, making the cage adjust the position around the base turning axis. When the cage becomes leveling, the limit device and the limit switch will separate. This is an automatic process. While the manually-leveling mechanism is operated by the driver to adjust the cage's inclining angle so that the cage could stay level.

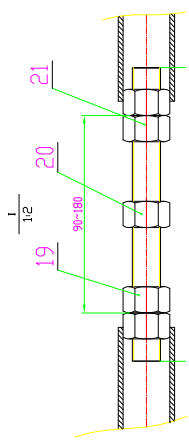
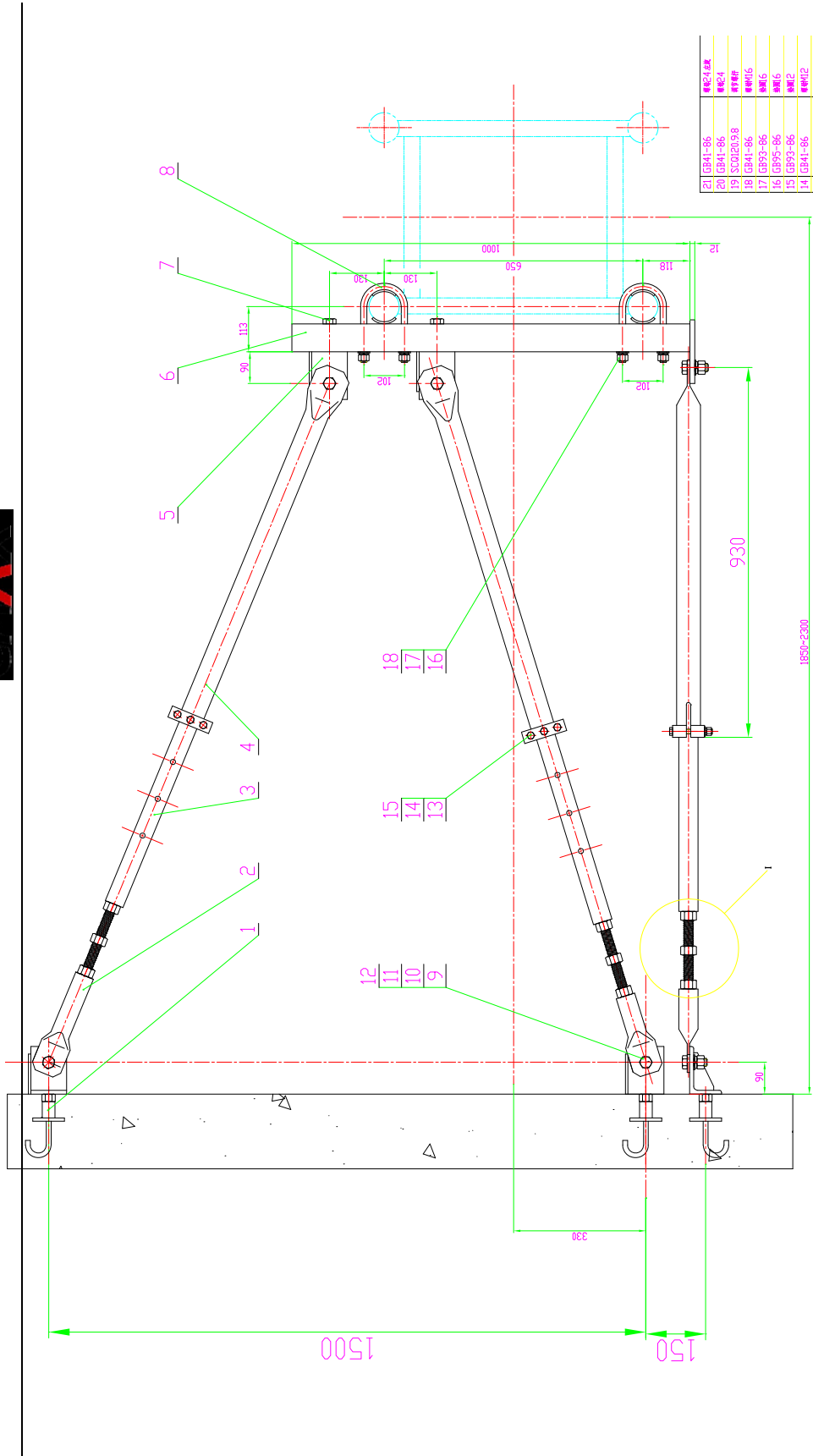


吊钩钩体零件图

侧板零件图

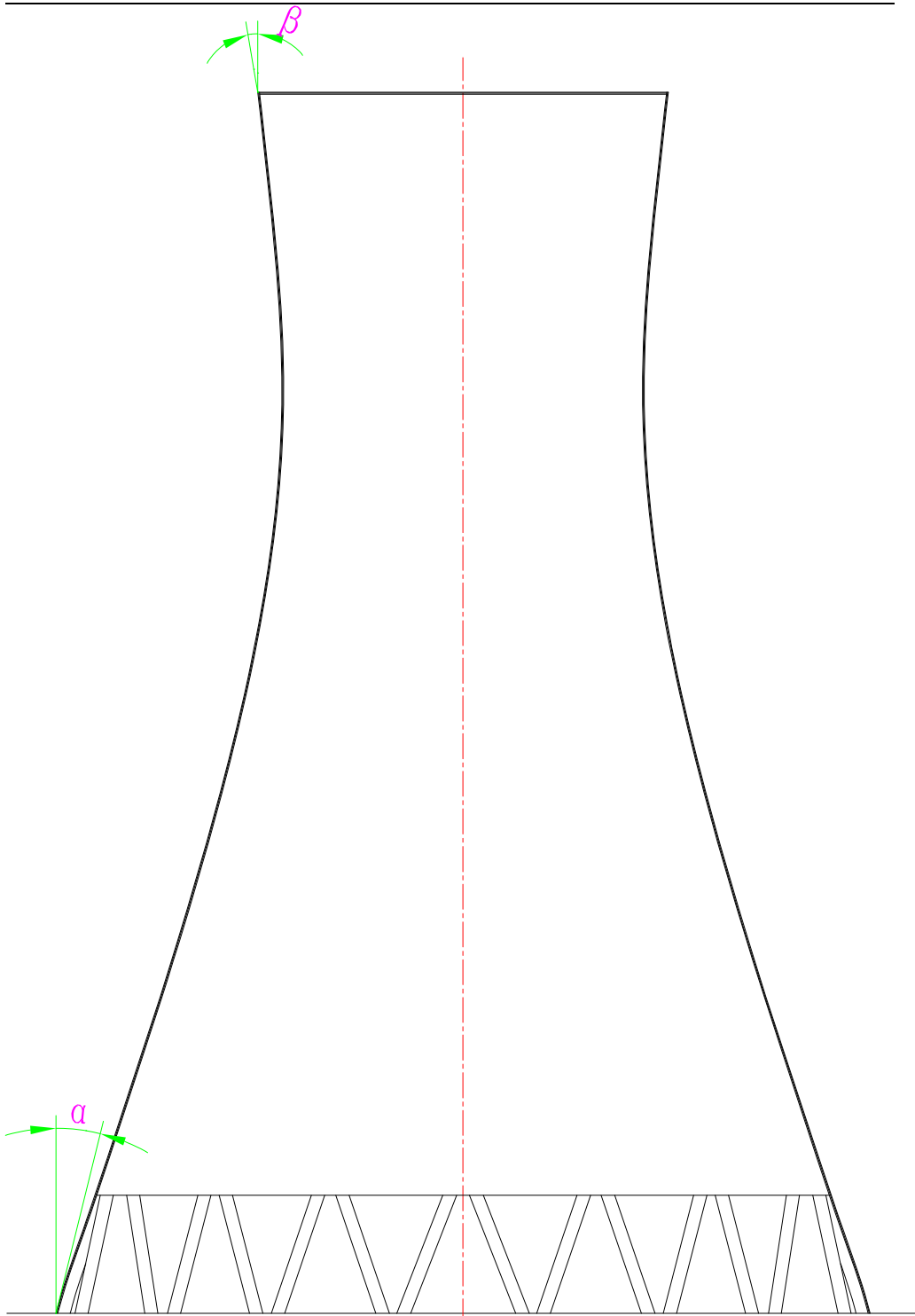
序号	材料	规格	数量	备注
1	Q235	φ100	1	
2	Q235	φ80	1	
3	Q235	φ60	1	
4	Q235	φ40	1	
5	Q235	φ30	1	
6	Q235	φ20	1	
7	Q235	φ16	1	
8	Q235	φ12	1	
9	Q235	φ10	1	
10	Q235	φ8	1	
11	Q235	φ6	1	
12	Q235	φ4	1	
13	Q235	φ3	1	
14	Q235	φ2	1	
15	Q235	φ1.5	1	
16	Q235	φ1.2	1	
17	Q235	φ1	1	
18	Q235	φ0.8	1	
19	Q235	φ0.6	1	
20	Q235	φ0.5	1	
21	Q235	φ0.4	1	
22	Q235	φ0.3	1	
23	Q235	φ0.2	1	

The General Drawing of SCQ Series Curve Hoist



序号	代号	名称	规格
21	GB41-86	螺母	M20
20	GB41-86	垫圈	M20
19	SCQ20.9.8	球铰衬套	
18	GB41-86	螺母	M16
17	GB93-86	垫圈	M16
16	GB95-86	垫圈	M16
15	GB93-86	垫圈	M12
14	GB41-86	螺母	M12
13	GB5782-86	球铰衬套	M12
12	GB5780-86	球铰衬套	M20
11	GB93-86	垫圈	M20
10	GB95-85	垫圈	M20
9	GB41-86	螺母	M20
8	SCQ20.9.7	球铰衬套	M16
7	GB5782-86	球铰衬套	M10
6	SCQ20.9.6	球铰衬套	
5	SCQ20.9.5	球铰衬套	
4	SCQ20.9.4	球铰衬套	
3	SCQ20.9.3	球铰衬套	
2	SCQ20.9.2	球铰衬套	
1	SCQ20.9.1	球铰衬套	

Anchor Drawing



$$\alpha \leq 25^\circ, \beta \leq 10^\circ$$

The angle degree of hyperbola cooling tower



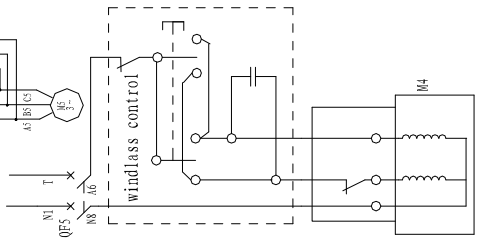
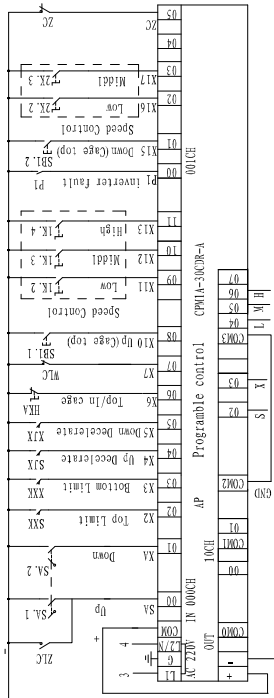
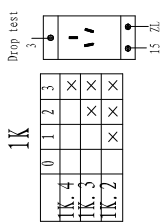
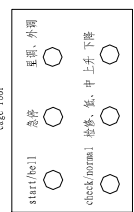
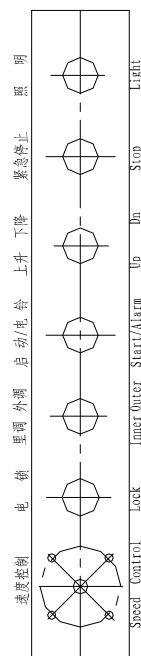
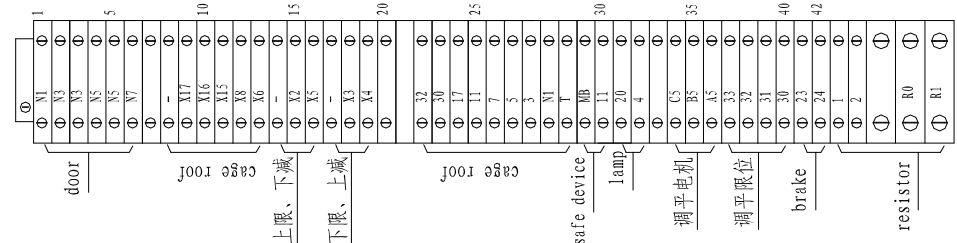
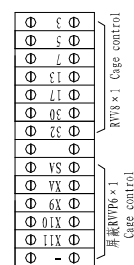
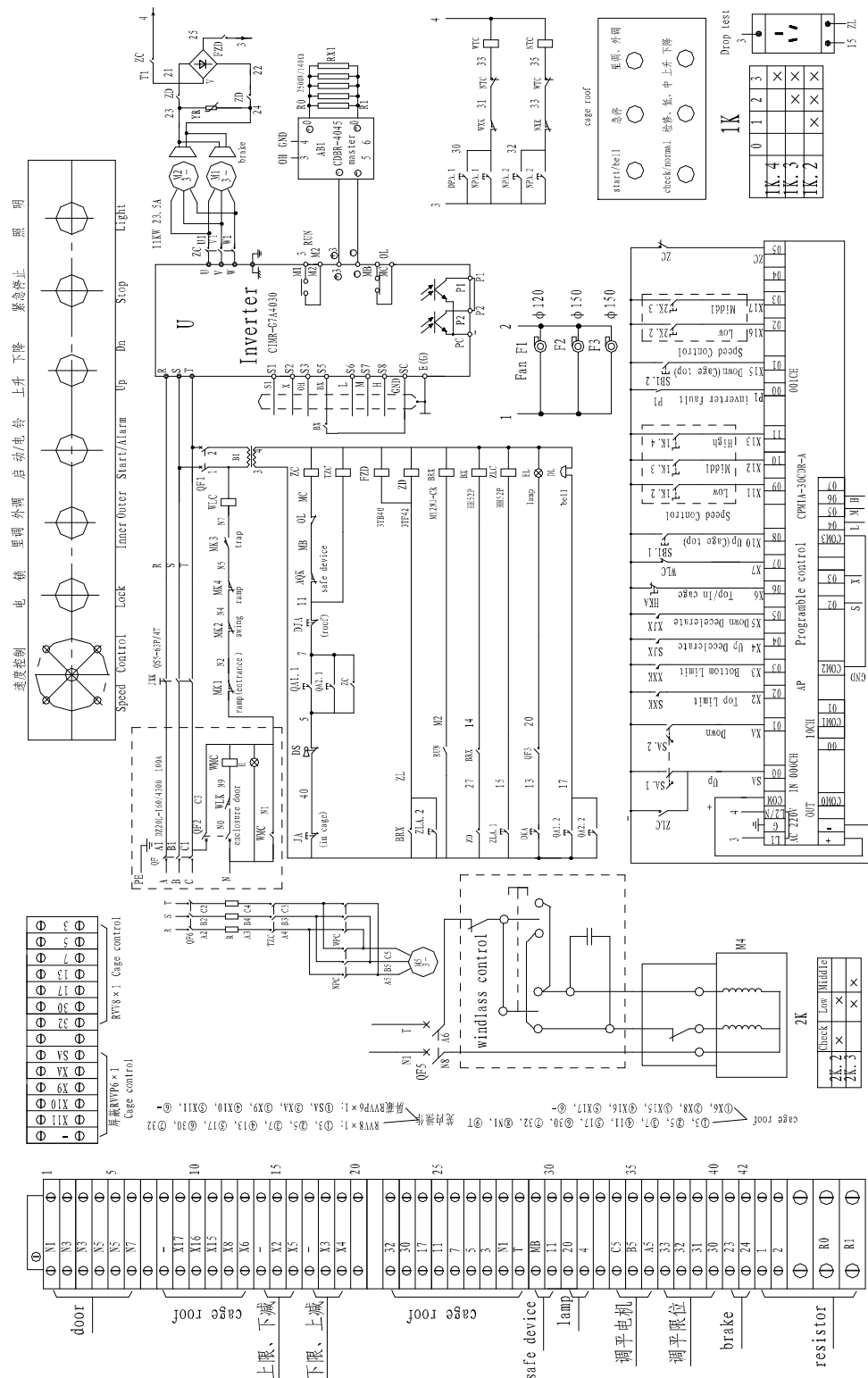
SCQ60 Electric parts list

Code No.	Qty.	Name	Type	
U	1	Inverter	VS-616G7-4030	
AP	1	Programmable control(PLC)	CPM1A-30CDR-A	
ZC	1	contactor	3TF4922 -0X M0	~220V
WLC 、 WMC	2	contactor	LC1-D0901	~220V
ZD	1	contactor	3TF4222 -0X M0	~220V
FZD	1	contactor	3TB4022 -0X M0	~220V
TZC	1	contactor	3TB4022 -0X M0	~220V
NTC 、 WTC	2	contactor	3TB4022 -0X M0	~220V
B1	1	transformer	JBK1-400VA,415/220V	
QF	1	total power switch	DZ20L-160/4300, 100A	
QF1	1	circuit breaker	C65N 2P D6	
QF2	1	circuit breaker	DZ47 2P D3	
QF3	1	circuit breaker for lamp	DZ47 1P C3	
QF4	1	circuit breaker	DZ47 2P D3	
QF5	1	circuit breaker	DZ47 3P D5	
JA	1	Emergency stop button	XB2-BS542C	inside cage
DJA	1	emergency stop button	XB2-BS542C	cage roof
HSA	1	Up and Down switch	XD2PA-24CR	inside cage
SB1	1	up and down switch	ZB2BD5C+ZB2BZ103C	cage roof
DKA	1	lamp switch	ZB2BD2C+ZB2BZ102C	
DS	1	EL.lock	ZB2BG2C+ZB2BZ103C	
HKA	1	conversion switch of cage roof and cage inside	ZB2BD2C+ZB2BZ102C	
QA	1	start and bell button	ZB2BA3C+ZB2BZ103C	
2K	1	change speed switch on	ZB2BD3C+ZB2BZ104C	cage roof
1K	1	change speed switch	LW39B-16H0123/Z	inside cage
DPA 、 NPA	2	leveling switch	ZB2BD3C+ZB2BZ103C	
AB1	1	brake unit	CDBR-4045	
RR1 、 RR2	5	discharge resistor	2500W 140Ω	



Code No.	Qty.	Name	Type	
M1、M2	2	motor	YZEJ132M-4 11KW	
BRX	1	relay	MY2NJ-CR	~220V
ZLC、BX	2	relay	HH52P	~220V
JXK	1	3-phase limit switch	QS5-63P/4T	
MK1、MK2	2	cage ramp door switch	LXK3-20S/B	
MK3	1	trap door switch	LXK3-20S/T	
MK4	1	cage sliding door switch	LXK3-20S/B	
AQK	1	safety device switch	LX56-11M	
SXK	1	Upper limit switch	LXK3-20S/T	
XXK	1	Lower limit switch	LXK3-20S/T	
SJK	1	top decelerate switch	LXK3-20S/T	
XJK	1	bottom decelerate switch	LXK3-20S/T	
WLK	1	enclosure gate switch	LXK3-20S/B	
WXK、NXK	2	leveling limit switch	LXK3-20S/T	
V	1	rectifier	36MB160A	
YR	1	Varistor	MY20D- 470V TL-90	
H	1	indicator light	AD16-22D/R	
DL	1	bell	Φ75 ~220	
EL	1	lamp	~220V 8W	
F1、F2	2	fan	~380V φ150	
F3	1	fan	~380V φ120	

SCQ60 Electric schematic diagram



Pictures of actual case



