SG-70(B)

Sound-proof Central
(“Regular” Series)Granulator

Date: Aug. 2016

Version: Ver.C (English)

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1. General Description

Read this manual carefully before installation and using this machine to avoid personal injuries or damage of the machine.

Note!
Be careful during operation, the knives of the granulator are very sharp and can cause personal injury.

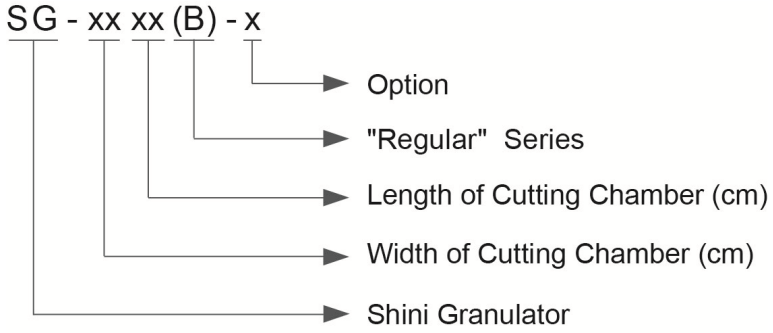
It's forbidden to process any toxic or flammable materials.

SG-70(B) series granulators are applicable to granulate various kinds of plastic materials from injection molding, blow molding or extrusion process. This series feature compact design, easy operation and quick blade replacement. It is great in motor power, cutting chamber size, and output capacity. Gradually inclined cutting and integrated power design offer a better cutting effect and a lower noise level.

Model: SG-70120

Model: SG-7090B

1.1 Coding Principle



1.2 Features

1) Rotating cutters adopt newly developed V-type cutting technology which can send the feeding material into the center of rotating cutters so to prevent the material from adhering onto the inner side of the cutting chamber while enhancing its wearability.
2) Two rows of fixed blades model has big inlet space and initially low cutting point. Material can be easily grabbed and cut thus making this rotor/housing combination ideal for the granulation of hollow objects such as bottles, crates and drums as well as large bulky materials.
3) The cutters are made of imported high quality steel featuring wearability, high rigidity, long service life and reusable after re-sharpening.
4) Equipped with presetting knife jig (optional in SG-70B), rotating and fixed blades can be adjusted in the fixture outside the machine inside of machine instead of machine inside. It made blades adjustment must easier.
5) Cutting chamber made of high rigidity material, after processing by CNC machine, has the features like high intensity, super wearability, no contamination, long service life and easy for maintenance and repairing.
6) Sound-proof feeding box reduces the noise level in operation, also equips a safety material checking curtain which ensures no material sprinkling during granulating.
7) V-type transmission belts help maintain a balanced operation mode, close contact, and also easy to disassemble and repair.
8) Both feeding hopper and screen cradle can be opened and closed by the hydraulic system which ensures safe operation.

9) Cooling water device at the rear plate of cutting chamber can effectively cool down the cutting chamber and prevent the inside material from melting up.
10) The equipped conveying device (optional in SG-70B) for auto loading has improved efficiency.
11) Equipped with flywheel (optional in SG-70B) to improve cutting ability.

All service work should be carried out by a person with technical training or corresponding professional experience. The manual contains instructions for both handling and servicing. Chapter 6, which contains service instructions intended for service engineers. Other chapters contain instructions for the daily operator.
Any modifications of the machine must be approved by SHINI in order to avoid personal injury and damage to machine. We shall not be liable for any damage caused by unauthorized change of the machine.
Our company provides excellent after-sales service. Should you meet any problem during using the machine, please contact the company or the local vendor.
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1.3 Technical specifications

1.3.1 Specifications

Table 1-1: Specifications

Model	SG-7090	SG-7090B	SG-70120	SG-70120B
Ver.	B	B	C	B
Motor Power (kW, 50/60Hz)	75	75	90	90
Rotating Speed (r.p.m. 50/60Hz)	525	525	525	525
Conveying Blower (kW, 50/60Hz)	7.5	7.5	7.5	7.5
Hydraulic Motor Power (kW, 50/60Hz)	1.5	1.5	1.5	1.5
Material of Blades	SKD11	SKD11	SKD11	SKD11
Number of Fixed Blades	2(3)	2	2(3)	2
Number of Rotating Blades	3(5)	3	3(5)	3
Cutting Chamber (mm)	700 x 900	700 x 900	700 x 1200	700 x 1200
Max. Throughput Capacity (kg/hr, 50/60Hz)	1300	1300	1800	1800
Noise Level dB(A)	115	120	115	120
Screen(mm)	Φ12	Φ12	Φ12	Φ12

Note: 1) SKD11 is material code number of Japanese JIS standard. We reserve the right to change specifications without prior notice.

2) Maximum output is subject to the diameter and material of Screen mesh. For granulating frame and shell material, maximum output will be reduced about 50%.

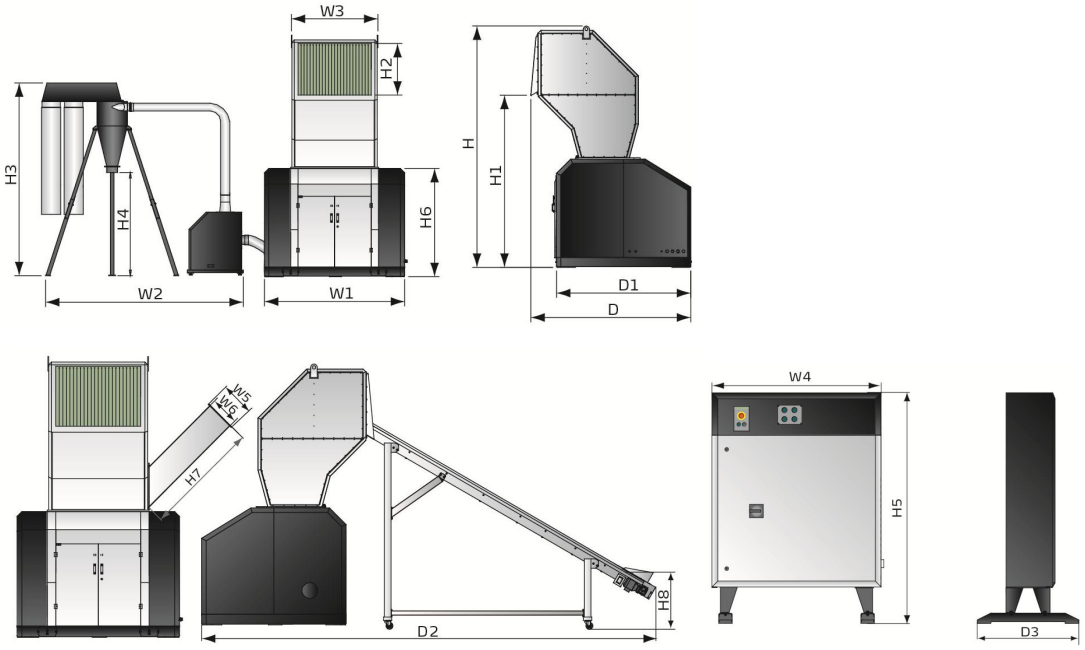
3) Noise level will vary with different materials and motor types.

4) Noise level is tested under conditions of 1m around the machine and 1.6m from the ground.

5) To avoid plastics from sticking to the blades, all materials should be crushed at normal temperature.

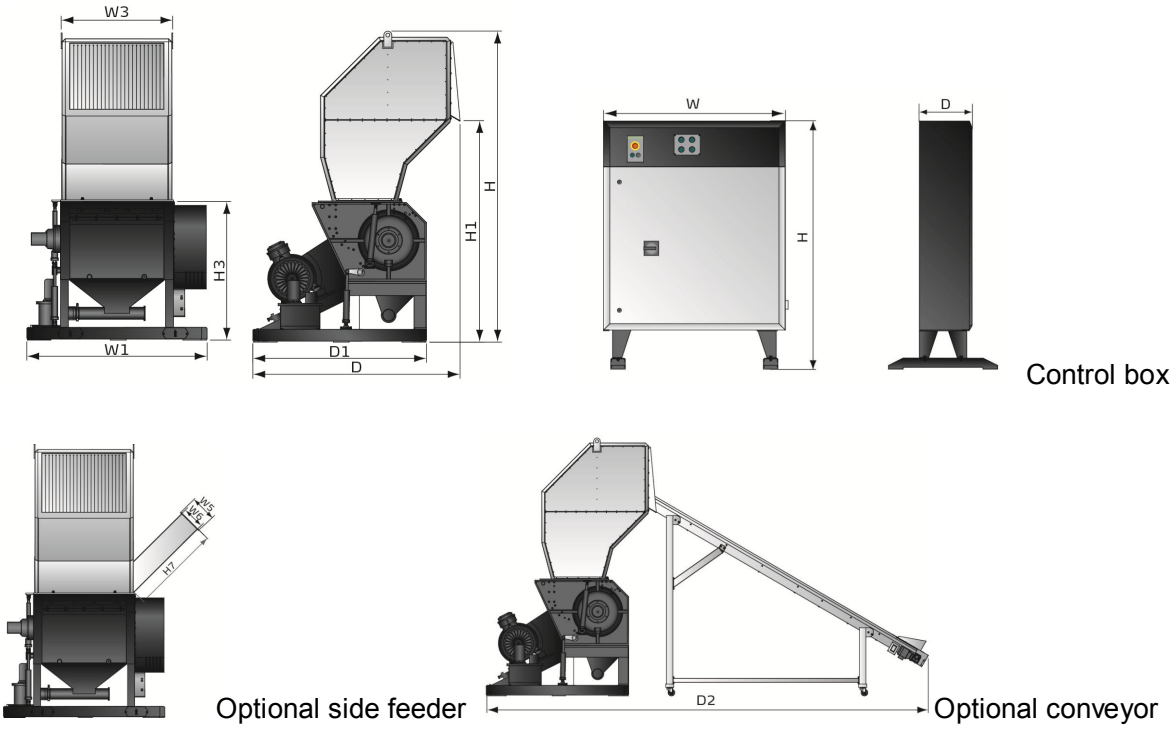
6) Power supply: 3Φ, 230 / 400 / 460 / 575VAC, 50 / 60Hz.

1.3.2 Outline Drawing



Optional side feeder Optional conveyor Control box

Picture 1-1: Outline Drawing (SG-70)



Control box

Optional side feeder Optional conveyor

Picture 1-2: Outline Drawing (SG-70B)

Table 1-2: Outline Drawing Specifications

Model	**SG-7090**	**SG-7090B**	**SG-70120**	**SG-70120B**
H (mm)	3950	3950	3950	3950
H1 (mm)	2815	2815	2815	2815
H3 (mm)	2710~3155	1770	2710~3155	1770
H4 (mm)	1240~1690	--	1240~1690	--
H5 (mm)	1370	--	1370	--
H6 (mm)	1720	--	1720	--
H7 (mm)	1419	1419	1419	1419
H8 (mm)	846	--	846	--
W1 (mm)	2000	2000	2300	2300
W2 (mm)	2000~2400	--	2000~2400	--
W3 (mm)	1120	1120	1420	1420
W4 (mm)	1000	--	1000	--
W5 (mm)	400	400	400	400
W6 (mm)	350x350	350x350	350x350	350x350
D (mm)	2630	2625	2630	2625
D1 (mm)	2200	2200	2200	2200
D2 (mm)	6840	6840	6840	6840
D3 (mm)	600	--	600	--
Weight (kg)	4500	4000	5000	4500

1.4 Safety Guide

Operation of the machine should be done according to safety guide so as to avoid personal injuries and damage of the machine.

1.4.1 Safety Signs and Labels

 Electrical components should be installed by professionals.

 Main switch and control switch should be shut off during maintenance.

 Don't let any part of your body get into the granulator before you disconnect the main switch and control switch.

 Warning! High Voltage
This sign is attached to the surface of the control box!

 Sharp rotating blades may cause injuries!

 Rotor should not be rotated by hands. Pay more attention to it.

 You should not start the granulator before the feeding box and screen housing are tightly shut.

 The protective sponge and the quick coupling clip at storage box outlet must not be taken apart.

 When it is granulating, the operator should wear earplugs!

 When open feeding box, please make sure the front door is opened.

 Loading blower is applicable to convey regrind powder and it requires the temperature less than 80℃.

Loading blower has great suction power and it is easy to have objects and clothes suctioned into and lead to personal injuries. So the blower should not be used without any protective cover.

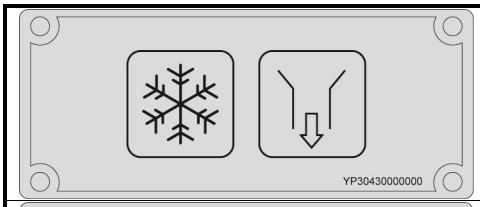
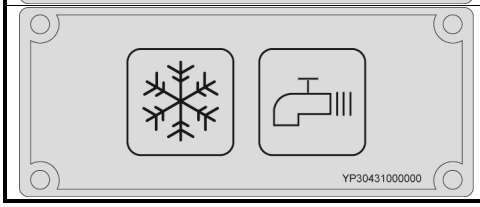
When it is working with transmission belt, please carefully check if the operator's clothes, arm or leg has been stuck by the transmission belt. Make sure the waste materials are in the center of conveyor belt.

Regularly clean the dust in inlet air.

Attention!

No need for regular inspection because all the electrical parts in the control unit are fixed tightly!

When operate the granulator, please notice the following signs

	Water outlet: cooling water outlet.
	Water inlet: inlet for replenishing water and cooling water.

1.5 Exemption Clause

The following statements clarify the responsibilities and regulations born by any buyer or user who purchases products and accessories from Shini (including employees and agents).

Shini is exempted from liability for any costs, fees, claims and losses caused by reasons below:

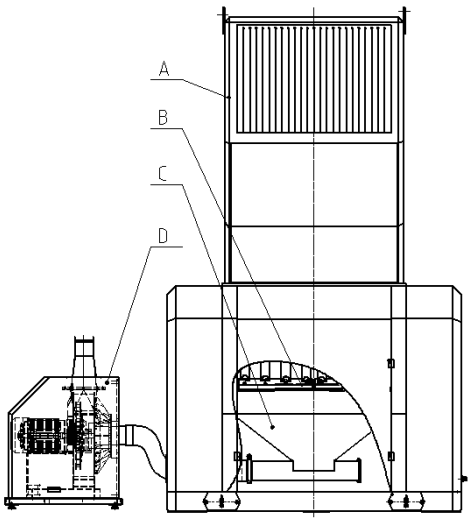
1. Any careless or man-made installations, operation and maintenances upon machines without referring to the Manual prior to machine using.
2. Any incidents beyond human reasonable controls, which include man-made vicious or deliberate damages or abnormal power, and machine faults caused by irresistible natural disasters including fire, flood, storm and earthquake.
3. Any operational actions that are not authorized by Shini upon machine, including adding or replacing accessories, dismantling, delivering or repairing.
4. Employing consumables or oil media that are not appointed by Shini.

2. Structural Features and Working Principle

2.1 Function Description

SG-70 (B) series are suitable for granulating various plastic wastes, including injection molding and blow molding and extruding process. Before granulating, you need to clean metal scraps and contaminations.

2.1.1 Working Principle



A. Feeding box B. Rotating blades C. Storage box D. Conveying blower

Picture 2-1: Function Description

Feed the material into the cutting chamber from the feeding box(A), the rotating blades(B) and fixed blades work together to granulate the materials. The size of granules is based on the diameter of screen. The screen is fixed under the cutting chamber, and is easy to replace screen of different diameters. The regrinds will fall into storage box (C) through the screen, then conveying via conveying blower, the outfit blower will convey regrinds info cyclone dust separator to separate dust and air.

2.2 Safety System

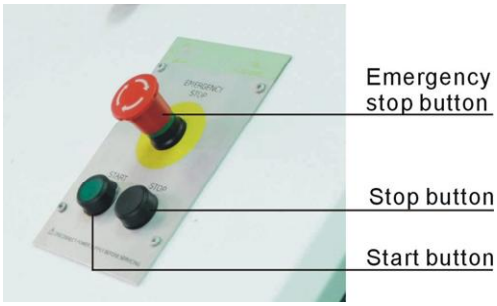
Safety system is used to prevent personal injuries caused by high rotating blades. Safety system could not be altered or accidents may happen.

Under no circumstance, the safety system could be altered otherwise the machine would be in dangerous condition and easy to have accident, so any repairing and maintenance of the safety system should be done by qualified technicians.

If there has any alteration to the safety system, our company will not fulfill our promise and all the spare parts should be purchased from Shini.

2.2.1 Emergency Stop Button

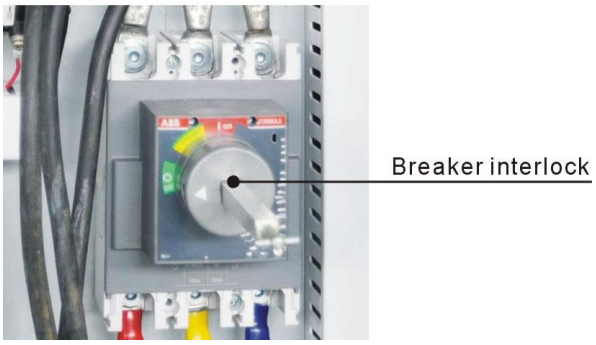
Press the red button on the control panel to stop the machine immediately. Turn the button counter-clockwise as indicated by the arrow on the button to reset.



Picture 2-2: Emergency Stop Button

2.2.2 Breaker interlock

When circuit breaker closed, the control box can't be opened, while the door plank of control box could be opened normally to ensure human safety.



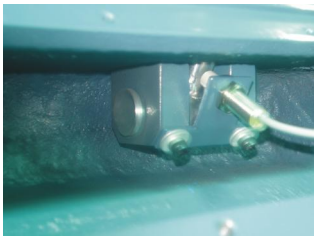
Picture 2-3: Breaker Interlock

2.2.3 Safety Switch

The granulator has three safety switches: one is between feeding box and cutting chamber, and the other two are at front and back of machine door.

Picture 2-4: Safety Switch for Door Lock

If the machine's back door is opened or the feeding box and storage box are moved under running condition, the machine will stop at once. Pay an attention to ensure the operator's security.



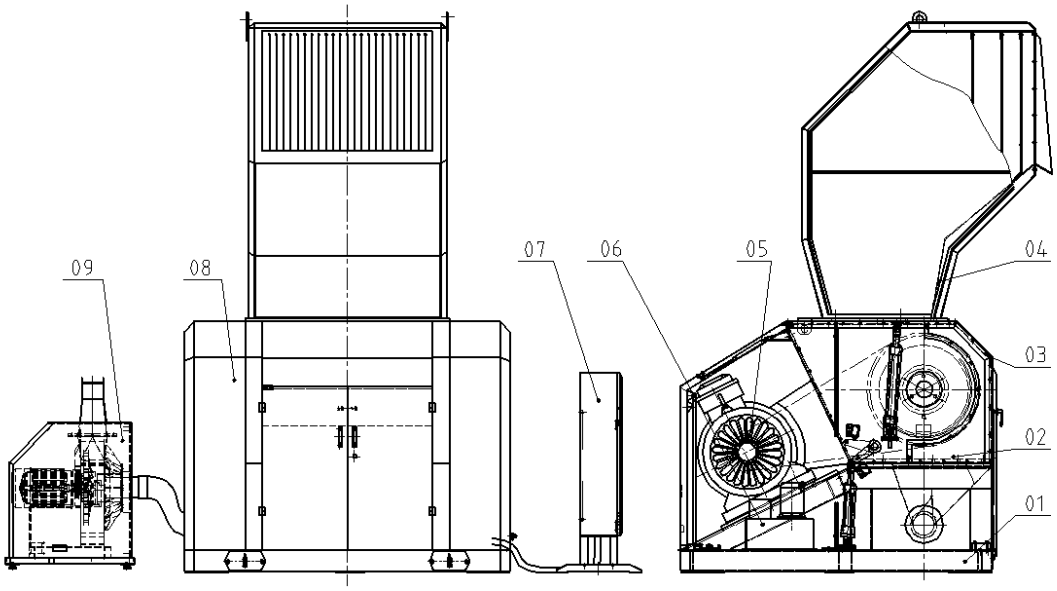
Picture 2-5: Safety Switch for Feeding Box

Pay attention to following items when start the machine:

1) Check if the feeding box has been locked up.
2) Check if the screen housing and storage box have been installed.
3) Close the machine door.

2.3 Parts List

2.3.1 Assembly Drawing (SG-70(B))

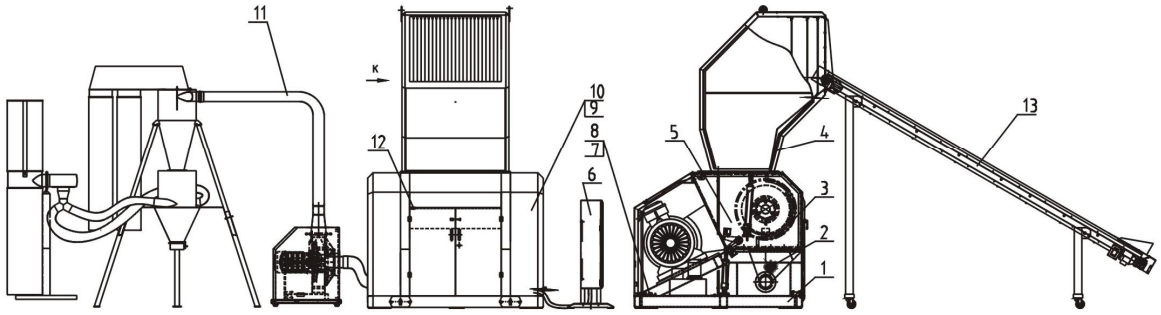


Parts name:

1. Rack assembly
2. Screen bracket assembly
3. Cutting chamber assembly
4. Feeding box assembly
5. Transmission gear
6. Hydraulic device
7. Control box assembly
8. Sound-proof box assembly (optional in SG-70B)
9. Conveying device (optional in SG-70B)

Picture 2-6: Assembly Drawing (SG-70(B))

2.3.2 System Structure Drawing(SG-70)



Note: Please refer to 2.3.3 material list about the parts code.

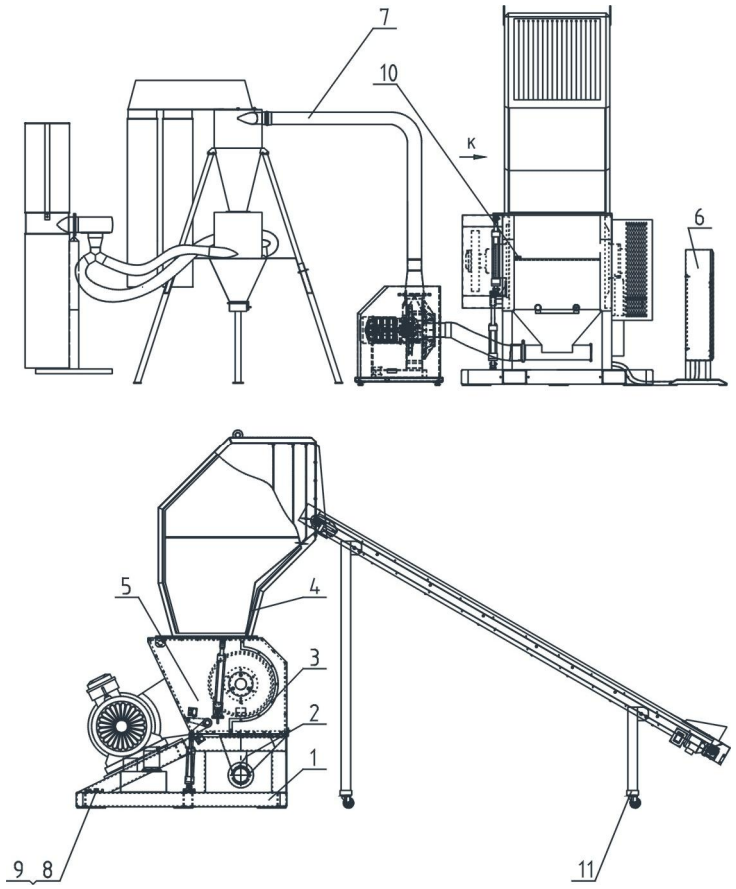
Picture 2-7: System Structure Drawing (SG-70)

2.3.3 Part Lists of System Structure Drawing (SG-70)

Table 2-1: Part Lists of System Structure Drawing (SG-70)

No.	Name	Parts No.
1	Rack assembly	--
2	Screen bracket assembly	--
3	Cutting chamber assembly	--
4	Feeding box assembly	--
5	Lifting device	--
6	Control box	--
7	Presetting knife jig	--
8	Star knob B M8x35	YR40083500000
9	Sound-proof box assembly	--
10	Sound-proof cover-plate device	--
11	Feed separating assembly	--
12	Safety switch board	--
13	Belt conveyor	--

2.3.4 System Structure Drawing (SG-70B)



Note: Please refer to 2.3.5 material list about the parts code.

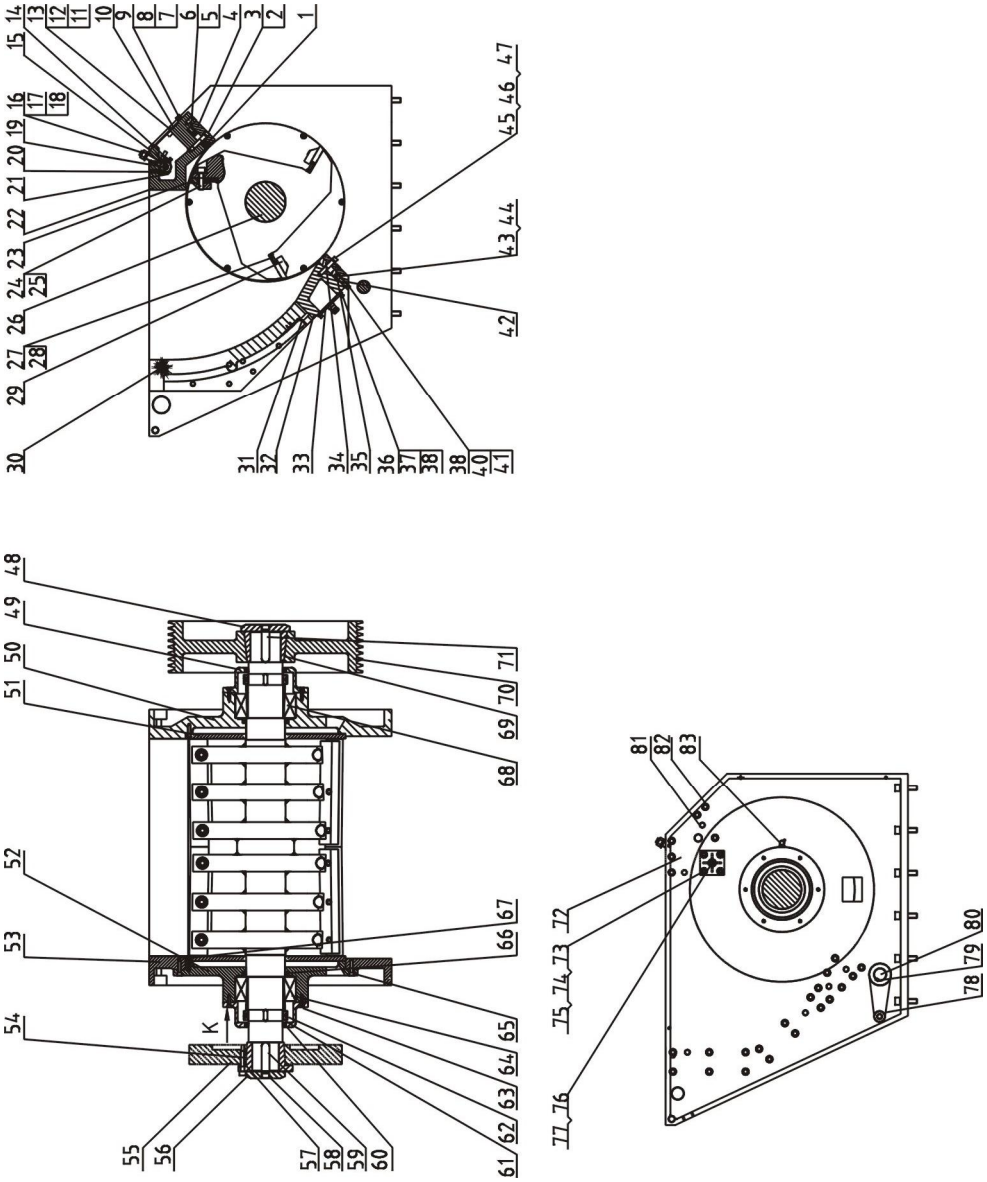
Picture 2-8: System Structure Drawing (SG-70B)

2.3.5 Part Lists of System Structure Drawing (SG-70B)

Table 2-2: Part Lists of System Structure Drawing (SG-70B)

No.	Name	Parts No.
1	Rack assembly	--
2	Screen bracket assembly	--
3	Cutting chamber assembly	--
4	Feeding box assembly	--
5	Lifting device	--
6	Control box	--
7	Feed separating assembly	--
8	Presetting knife jig	--
9	Star knob B M8x35	YR40083500000
10	Safety switch board	--
11	Belt conveyor	--

2.3.6 Cutting Chamber Assembly



Note: Please refer to 2.3.7 material list about the parts code.

Picture 2-9: Cutting Chamber Assembly

2.3.7 Parts List of Cutting Chamber Assembly

Table 2-3: Parts List of Cutting Chamber Assembly

No.	Name	Parts No.	
		SG-7090(B)	SG-70120(B)
1	Fixed blade	YW40709000300	YW43070120000
2	Inner hexagon cylindrical screw GB/T70.1 M16x70-12.9(thread length 50)- Longzine	YW61167000000	YW61167000000
3	Spring washer 16	YW65016000000	YW65016000000
4	Fixed blade pressing blade I	BH11791100210	BH11701206910
5	Hexagon bolt GB/T5783 M10x40-10.9- Longzine	YW60104000000	YW60104000000
6	Hexagon nut GB/T6170 M10- Longzine	YW64001000100	YW64001000100
7	Inner hexagon cylindrical screw GB/T70.1 M10x100-12.9- Longzine	YW61101000000	YW61101000000
8	Flat gasket A Grade GB/T97.1 10 (11x20x2)- Longzine	YW66102000100	YW66102000100
9	Standard spring washer GB/T93 10- Longzine	YW65010000000	YW65010000000
10	Front block cover plate	--	--
11	Inner hexagon cylindrical screw GB/T70.1 M6x16-12.9 Longzine	YW61061601200	YW61061601200
12	Flat gasket A Grade GB/T97.1 10 (6.6x12x1.6)- Longzine	YW66061300000	YW66061300000
13	Standard spring washer GB/T93 6	YW65060000000	YW65060000000
14	Sensor bracket	--	--
15	Feeding box locking bolt	BH10070150040	BH10070150040
16	C Grade hexagon nut GB/T 41 M20x2.5- Longzine	YW64200200000	YW64200200000
17	Flat washer C Grade GB/T95 20	YW66203700000	YW66203700000
18	Standard spring washer GB/T93 20- Longzine	YW65205200000	YW65205200000
19	Locking bolt hinge pin	--	--
20	Inner hexagon cylindrical screw GB/T70.1 M8x50-12.9- Longzine	YW61085000000	YW61085000000
21	Locking bolt base	BH10701201110	BH10701201110
22	Front block	BW30791300010	BW30701280010
23	Rotating blade	YW42709000200 left YW42709000300 right	BH11701207210
24	Inner hexagon cylindrical screw GB/T70.1 M20x80-12.9- Longzine	YW61208000000	YW61208000000
25	Standard spring washer GB/T93 20	YW65020000000	YW65020000000

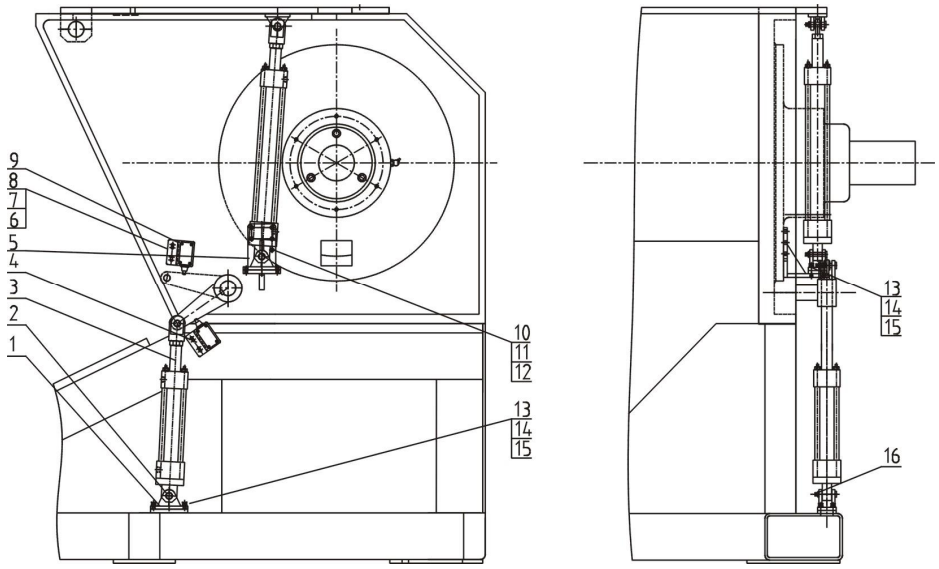
No.	Name	Parts No.	
		SG-7090(B)	SG-70120(B)
26	Blade rest shaft	BH10792100010 BH11709005810 (5 rotating blade)	BH11701207710 BH11701208510 (5 rotating blade)
27	Hexagon bolt GB/T5783 M10x50-8.8- Longzine	YW60105000000	YW60105000000
28	Hexagon bolt GB/T6170 M10- Longzine	YW64001000100	YW64001000100
29	Rotating blade pressing plate	--	BH10701214010
30	Rear upper block	BW30790300210 BH11709006010 (5 rotating blade)	BH10701430010 BH11701208010 (5 rotating blade)
31	Inner hexagon cylindrical screw GB/T70.1 M12x60-12.9- Longzine	YW61260000000	YW61260000000
32	Rear lower block	BW30790400010	BH10701410010
33	Water tank cover plate	BH10794200010	BH10701209410
34	Fixed blade	YW40709000300	YW43070120000
35	Fixed blade pressing plate Ⅱ	BH11794400010	BH11701207110
36	Inner hexagon cylindrical screw GB/T70.1 M10x40-12.9- Longzine	YW61104000200	YW61104000200
37	Flat gasket A Grade GB/T97.1 10 (11x20x2)- Longzine	YW66102000100	YW66102000100
38	Standard spring washer GB/T93 10- Longzine	YW65010000000	YW65010000000
39	Inner hexagon cylindrical screw GB/T70.1 M10x95-12.9- Longzine	YW61109500000	YW61109500000
40	Flat gasket A Grade GB/T97.1 10 (11x20x2)- Longzine	YW66102000100	YW66102000100
41	Standard spring washer GB/T93 10- Longzine	YW65010000000	YW65010000000
42	Inner hexagon flat end locking screw GB/T77 M12x40-8.	YW61124000100	YW61124000100
43	Inner hexagon flat end locking screw GB/T5783 M10x40-10.9-Longzine	YW60104000000	YW60104000000
44	Hexagon bolt GB/T6170 M10-Longzine	YW64001000100	YW64001000100
45	Inner hexagon cylindrical screw GB/T70.1 M16x70-12.9 (length 50) Longzine	YW61167000000	YW61167000000
46	Flat gasket A Grade GB/T97.1 16- Longzine	YW66163000100	YW66163000100
47	Spring washer 16	YW65016000000	YW65016000000
48	Belt wheel taper sleeve baffle	BH10701202010	BH10701202010

No.	Name	Parts No.	
		SG-7090(B)	SG-70120(B)
49	Bearing cover	BH10701600010	BH10701600010
50	Right block	BH11701206110 BH11701208210 (5 rotating blade)	BH11701206110 BH11701208210 (5 rotating blade)
51	Left and right material feeder	BH10701202342	BH10701202342
52	Left bearing base	BH10701290010	BH10701290010
53	Left block	BH11701206010 BH11701208110 (5 rotating blade)	BH11701206010 BH11701208110 (5 rotating blade)
54	Flywheel taper sleeve	BW30509002910	BW30509002910
55	Flywheel	BW30509003010	BW30509003010
56	Flywheel taper sleeve	BH10701202610	BH10701202610
57	Inner hexagon cylindrical screw GB/T70.1 M16x70-12.9(length 50)- Longzine	YW61167000000	YW61167000000
58	Inner hexagon cylindrical screw GB/T70.1 M20x50-12.9- Longzine	YW61205000000	YW61205000000
59	Single round head common flat key	--	--
60	Inner framework rotary shaft lip seals	YR20140100000	YR20140100000
61	Small round nut GB/T810 M145x2-45 steel	YW64145200000	YW64145200000
62	Round nut lock washer GB/T858 140	YW65014500000	YW65014500000
63	Inner hexagon cylindrical screw GB/T70.1 M10x35-12.9- Longzine	YW61103500000	YW61103500000
64	NSK self-aligning roller bearing 24130CCK30/W33	YW11241300000	YW11241300000
65	Inner hexagon cylindrical screw GB/T70.1 M12x45-12.9- Longzine	YW61124500000	YW61124500000
66	Inner framework rotary shaft lip seals	YR20161901500	YR20161901500
67	Inner hexagonal sunk screw GB/T70.3 M12x30-10.9- Longzine	YW61123000100	YW61123000100
68	Dismantling sleeve AH24130 for rolling bearing	YW19241300000	YW19241300000
69	Belt pulley taper sleeve 5050 ⌀125	YW30505012500	YW30505012500
70	Belt pulley SPC800x8	YW30800800000	YW30800800000
71	Single round head common flat key C32x126	BH10704550010	BH10704550010
72	Feeding box limiting plate	BL55701203540	BL55701203540
73	Flat gasket A Grade GB/T97.1 12(13.5x24x2.5)- Longzine	YW66122400000	YW66122400000
74	Standard spring washer GB/T93 12- Longzine	YW65012000000	YW65012000000
75	Feeding box limiting plate fixed base	BH10701215410	BH10701215410

No.	Name	Parts No.	
		SG-7090(B)	SG-70120(B)
76	Large washer A Grade GB/T96 10(10.5x30x2.5)- Longzine	YW66103200000	YW66103200000
77	Standard spring washer GB/T93 10- Longzine	YW65010000000	YW65010000000
78	Screen bracket rotating arm	BH10701204010	BH10701204010
79	Single round head common flat key	BH10070122010	BH10070122010
80	Screen bracket shaft pin	BH11790500110	BH10701205010
81	Female column pin	--	--
82	Inner hexagon cylindrical screw GB/T70.1 M16x70-12.9 (length 50) - Longzine	YW61167000000	YW61167000000
83	Connector forced filling oil cup 45° M10x1	YW04010100000	YW04010100000

* means possible broken parts.** means easy broken part. and spare backup is suggested.
Please confirm the version of manual before placing the purchase order to guarantee that the item number of the spare part is in accordance with the real object.

2.3.8 Lifting Device Assembly

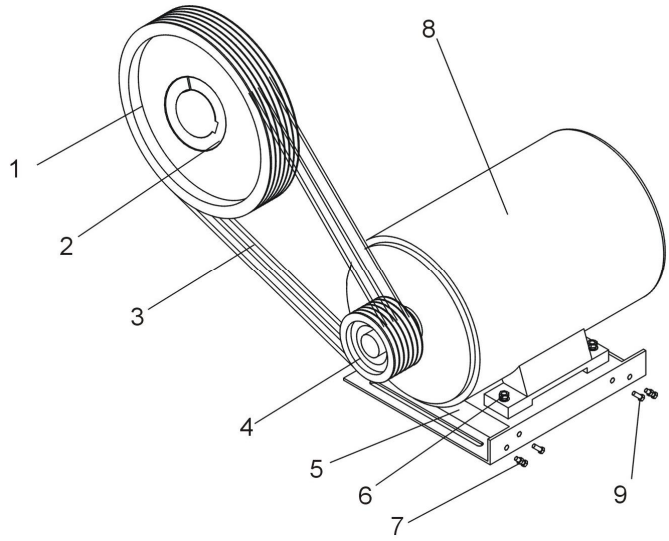


Picture: 2-10 Lifting Device Assembly

Table 2-4: Parts List of Lifting Device

No.	Name	Parts No.
1	Oil cylinder lower base	--
2	Oil cylinder hinge pin	--
3	Hydraulic system	--
4	Lower limit switch fixed plate	--
5	Electronic handspike hinge pin	--
6	Inner hexagon cylindrical screw GB/T70.1 M6x16-12.9- Longzine	YW61061601200
7	Flat gasket A Grade GB/T97.1 6 (6.6x12x1.6)- Longzine	YW66061300000
8	Standard spring washer GB/T93 6	YW65060000000
9	Upper limit switch fixed plate	
10	Inner hexagon screw M10x35/12.9 Grade	YW60135900000
11	Flat gasket A Grade GB/T97.1 10 (11x20x2)- Longzine	YW66102000100
12	Standard spring washer GB/T93 10- Longzine	YW65010000000
13	Inner hexagon cylindrical screw GB/T70.1 M8x30-12.9-- Longzine	YW61083000000
14	Flat gasket A Grade GB/T97.1 8- Longzine	YW66081600000
15	Standard spring washer GB/T93 8- Longzine	YW65008000100
16	Flat gasket GB/T 96 8(8.4x24x2)-A2-70(SUS)	YW68240200000

2.3.9 Transmission Gear Assembly

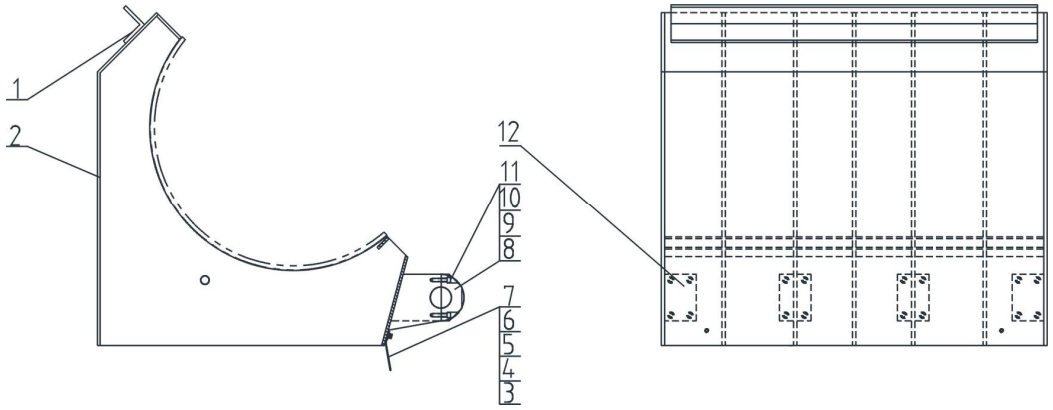


Picture 2-10: Transmission Gear Assembly

Table 2-5: Parts List of Assembly

No.	Name	Parts No.	
		SG-7090(B)	SG-70120(B)
1	Belt pulley SPC800*8	YW30800800000	YW30800800000
2	Belt taper sleeve 5050 Ø125	YW30505012500	YW30505012500
3	Narrow V belt SPC L=4250	YR00425000000	YR00425000000
4	Belt pulley SPC224x8	YW30224800000	YW30224800000
5	Motor base	--	--
6	Hexagon nut GB/T5782 M20x100-8.8- Longzine	YW60201000000	YW60201000000
7	C Grade hexagon nut GB/T41 M20x2.5- Longzine	YW64200200000	YW64200200000
8	Motor 1LE0001-2DB03-4AA4(75KW)	YM10000107600	YM10000107700
9	Hexagon bolt GB/T5783 M20x160-12.9- Longzine (full thread)	YW61201600000	YW61201600000

2.3.10 Screen Bracket Assembly

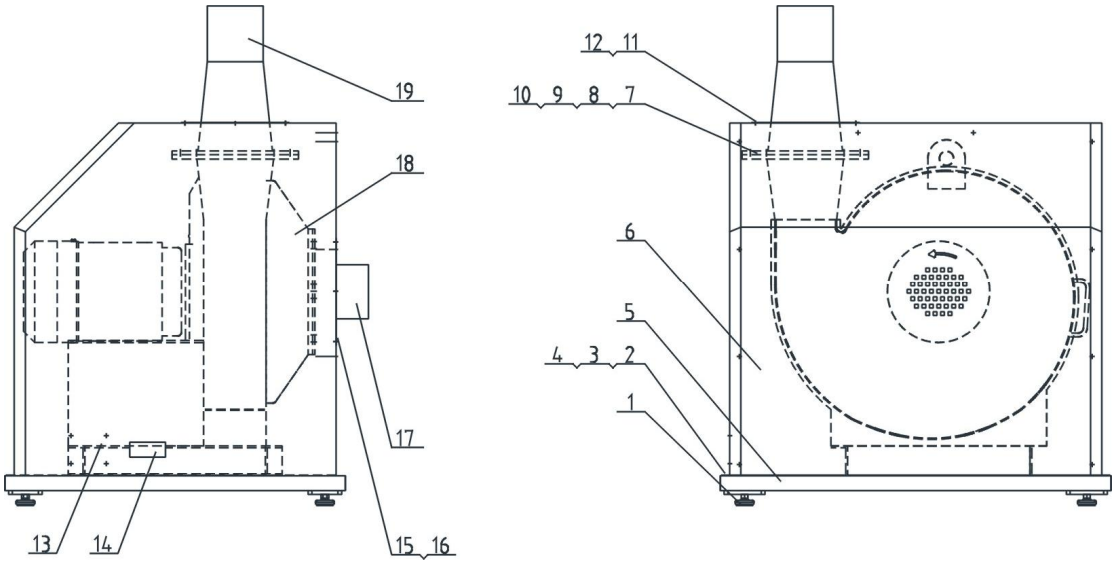


Picture 2-11: Screen Bracket Assembly

Table 2-6: Parts List of Screen Bracket Assembly

No.	Name	Parts No.	
		SG-7090(B)	SG-70120(B)
1	Screen bracket locking support plate	--	--
2	Screen bracket main body		
3	Inner hexagon cylindrical screw GB/T70.1 M6x16-12.9- Longzine	YW61061601200	YW61061601200
4	Standard spring washer GB/T93 6	YW65060000000	YW65060000000
5	Flat gasket Grade A GB/T97.1 6- Longzine	YW66641216000	YW66641216000
6	Screen bracket rear buffer plate	--	--
7	Screen bracket rear press plate	--	--
8	Hinge pin hole-seat pressing plate of screen bracket	BH11701206610	BH11701206610
9	Inner hexagon cylindrical screw GB/T70.1 M8x30-12.9- Longzine	YW61083000000	YW61083000000
10	Standard spring washer GB/T93 8- Longzine	YW65008000100	YW65008000100
11	Flat gasket A Grade GB/T97.1 8- Longzine	YW66081600000	YW66081600000
12	Hinge pin hole seat of screen bracket	BH11701206710	BH11701206710

2.3.11 Conveyor Assembly

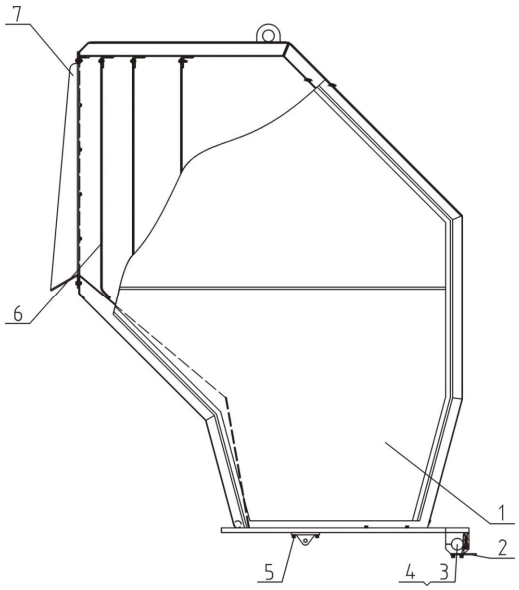


Picture 2-12: Conveyor Assembly

Table 2-6: Parts List of Conveyor Assembly

No.	Name	Parts No.	No.	Name	Parts No.
1	Anti-vibration pad ⌀50	YW03005000000	11	Inner hexagon cylindrical screw GB/T70.1M5 x 10- Longzine	YW61051000000
2	Inner hexagon cylindrical screw GB/T70.1 M6x20-12.9-Longzine	YW61062000300	12	Top cover plate	--
3	Standard spring washer GB/T93 6- Longzine	YW65006000100	13	Clamp fixed plate	--
4	Flat washer Grade A GB/T97.16 (6.6 x 12 x 1.6)- Longzine	YW66061300000	14	Embedded handle 3NL-5213	YR90521300000
5	Base	--	15	Side cover plate	--
6	Blower cover	--	16	Side plate	--
7	Inner hexagon cylindrical screw GB/T70.1 M12 x45 -12.9- Longzine	YW61124500000	17	Blower inlet pipe connector	--
8	Standard spring washer GB/T93 12- Longzine	YW65012000000	18	High pressure Centrifugal blower (7.5KW)	BM30005500050
9	Flat gasket A Grade GB/T97.1 12(13.5 x 24 x 2.5)- Longzine	YW66122400000	19	Blower outlet pipe connector	--
10	Hexagon nut GB/T6170 M12- Longzine	YW64012100000			

2.3.12 Feeding box Assembly

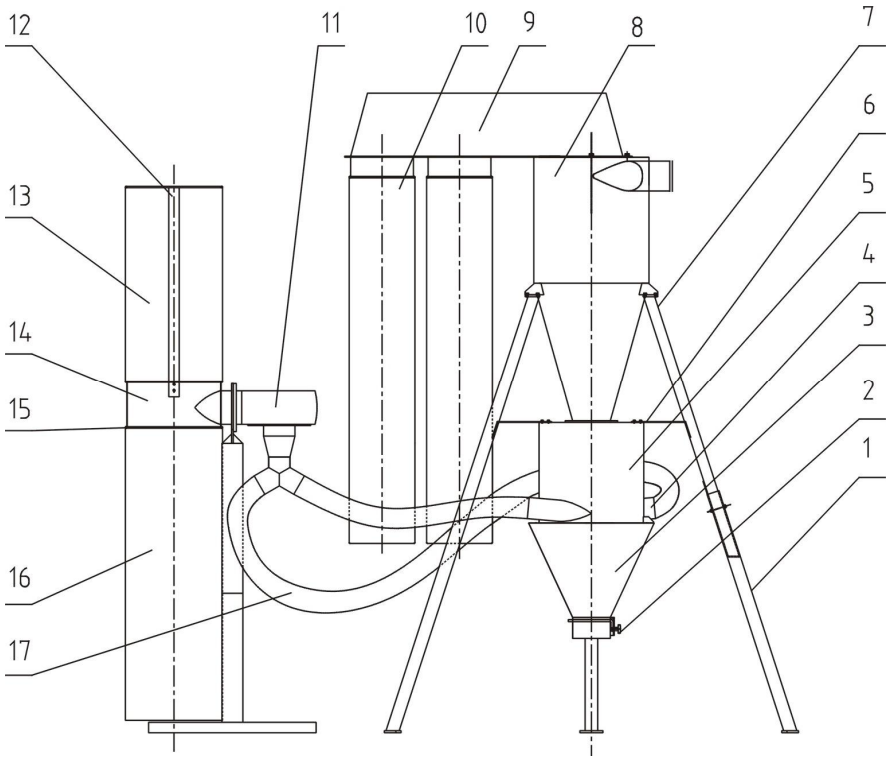


Picture 2-13: Feeding Box Assembly

Table 2-7: Parts List of Feeding Box Assembly

No.	Name	Parts No.	
		SG-7090(B)	SG-70120(B)
1	Feeding box main body	--	--
2	Switch spacing board	BH10702200040	BH10702200040
3	Feeding box rotation shaft base cover plate	BH10701900010	BH10701900010
4	Feeding box rotation shaft	BH10790700010	BH10701225010
5	Electrical handspike upper base	--	--
6	Plastic curtain	--	--
7	Feeding box	--	--

2.3.13 Cyclone and Dust Separator Assembly



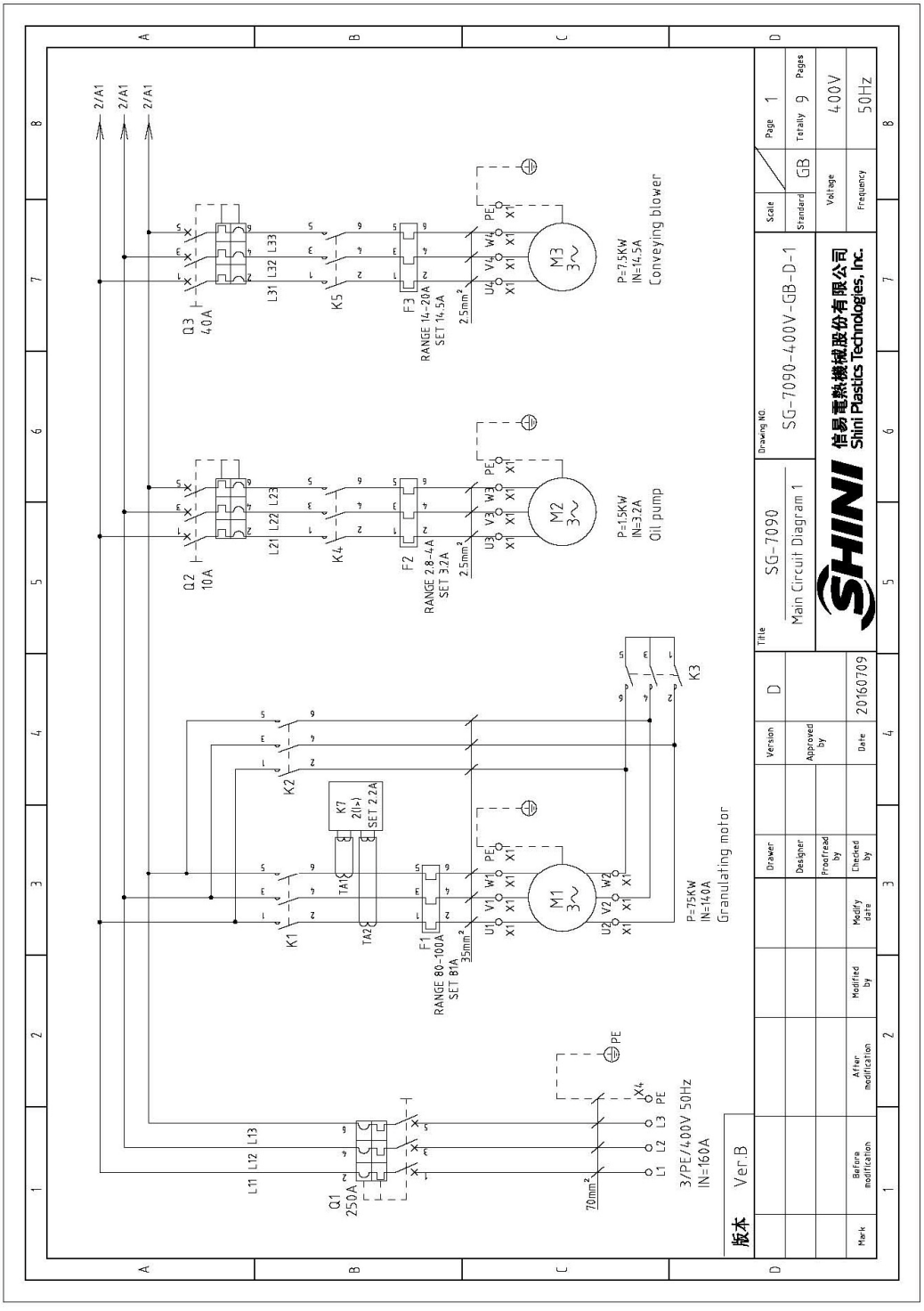
Picture 2-14: Cyclone and Dust Separator Assembly

Table 2-8: Parts List of Cyclone and Dust Separator Assembly

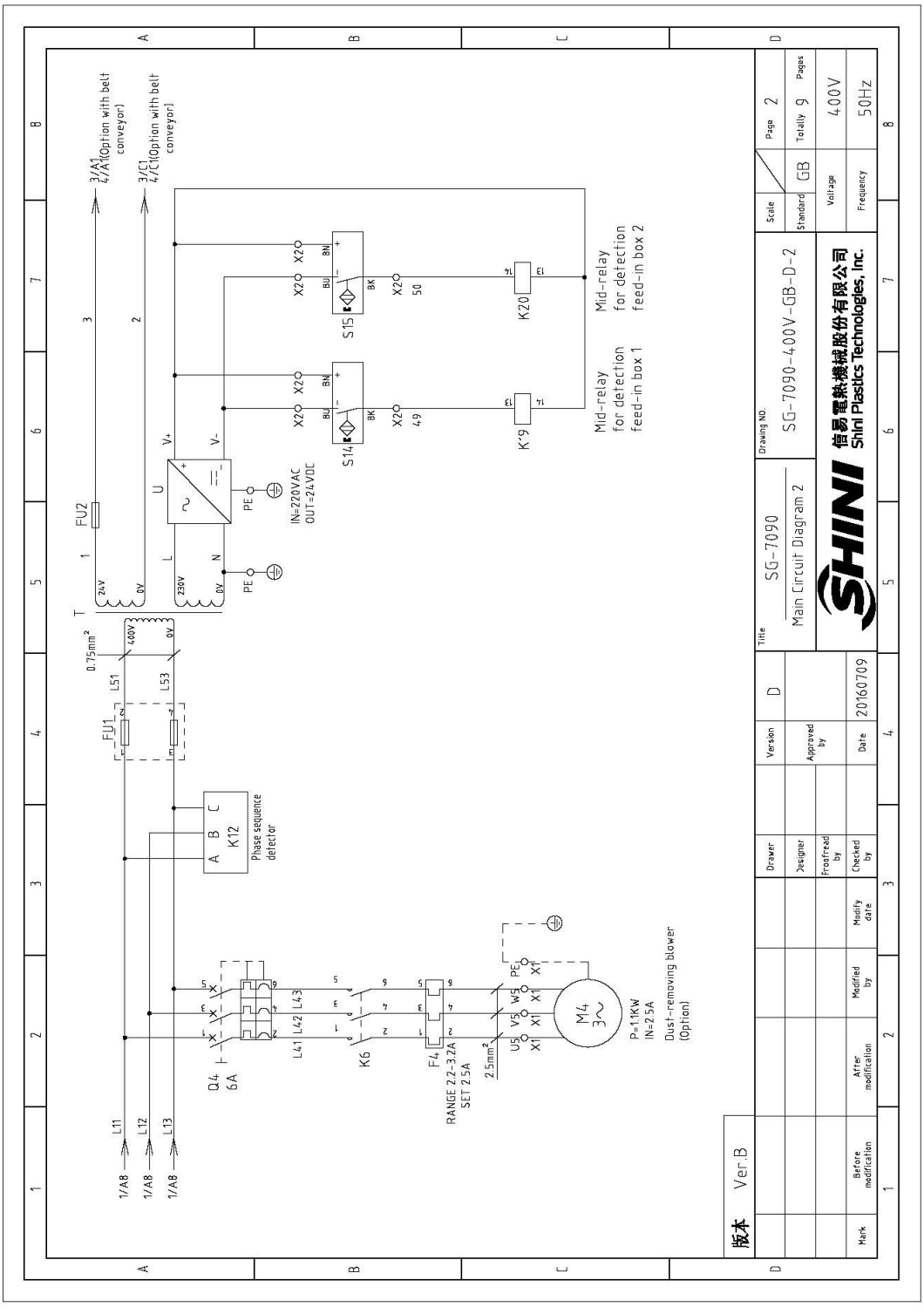
No.	Name	Parts No.
1	Lower bracket	--
2	Start nut 5/16	YW09051600000
3	Lower hopper	--
4	Stainless steel pipe clamp 5''	YW02000500000
5	Large hopper	--
6	Tensioning strip	--
7	Upper bracket	--
8	Cyclone dust separator main body	--
9	Cyclone dust separator outlet	--
10	Cloth bag ⌀314x1800	BP82313100044
11	Blower 1.1kw(for SG)	BM30112230050
12	Cloth bag bracket	--
13	Filter bag 2	--
14	Blower and cloth bag support （1.1kw）	--
15	Filter cloth bag pipe clamp	--
16	Filter bag 2	--
17	Steer wire plastic pipe 4'' x3m	YR60000400100

2.4 Circuit Diagram

2.4.1 Main Circuit Diagram (SG-7090)

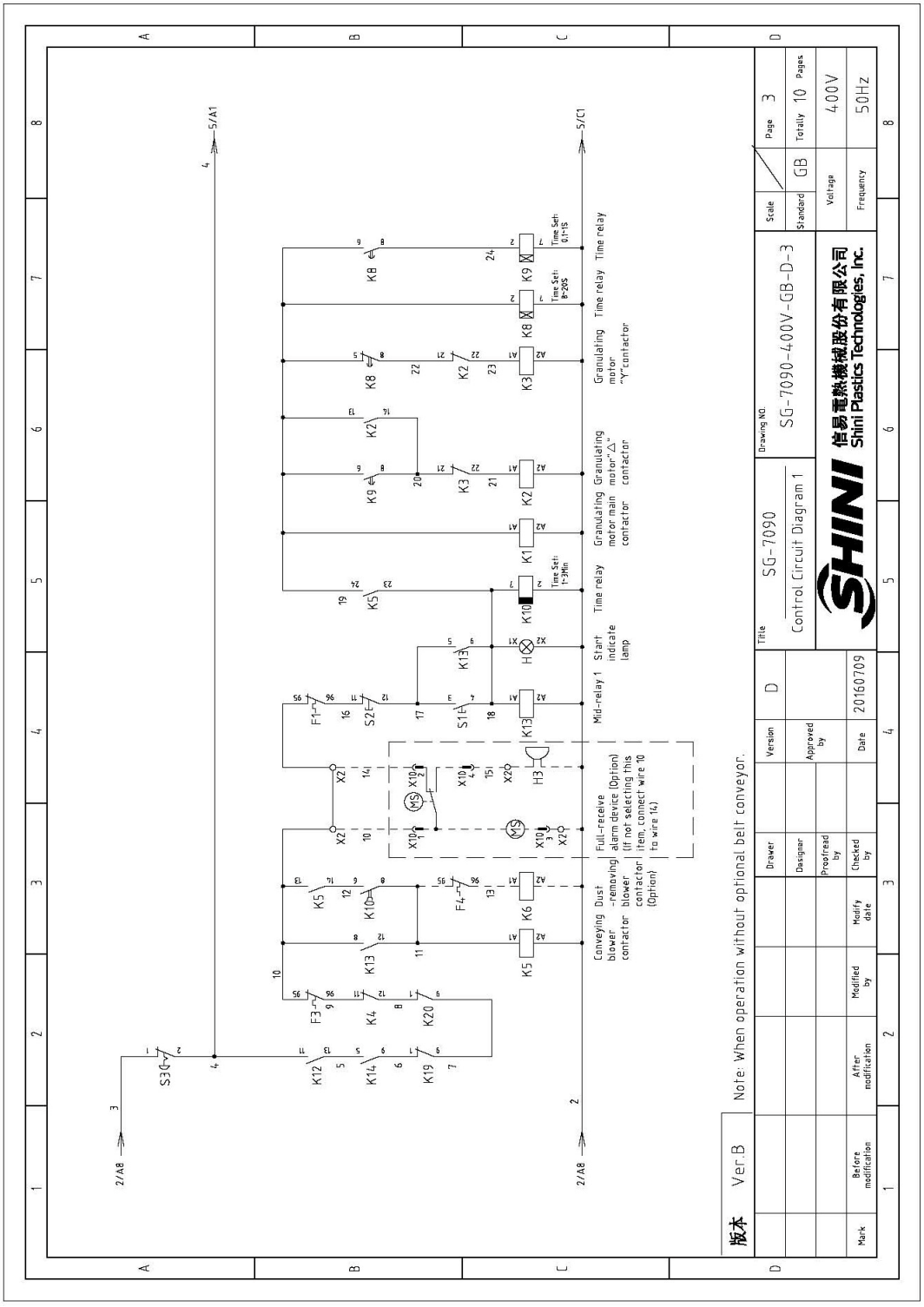


Picture 2-13: Main Circuit Diagram 1(SG-7090)

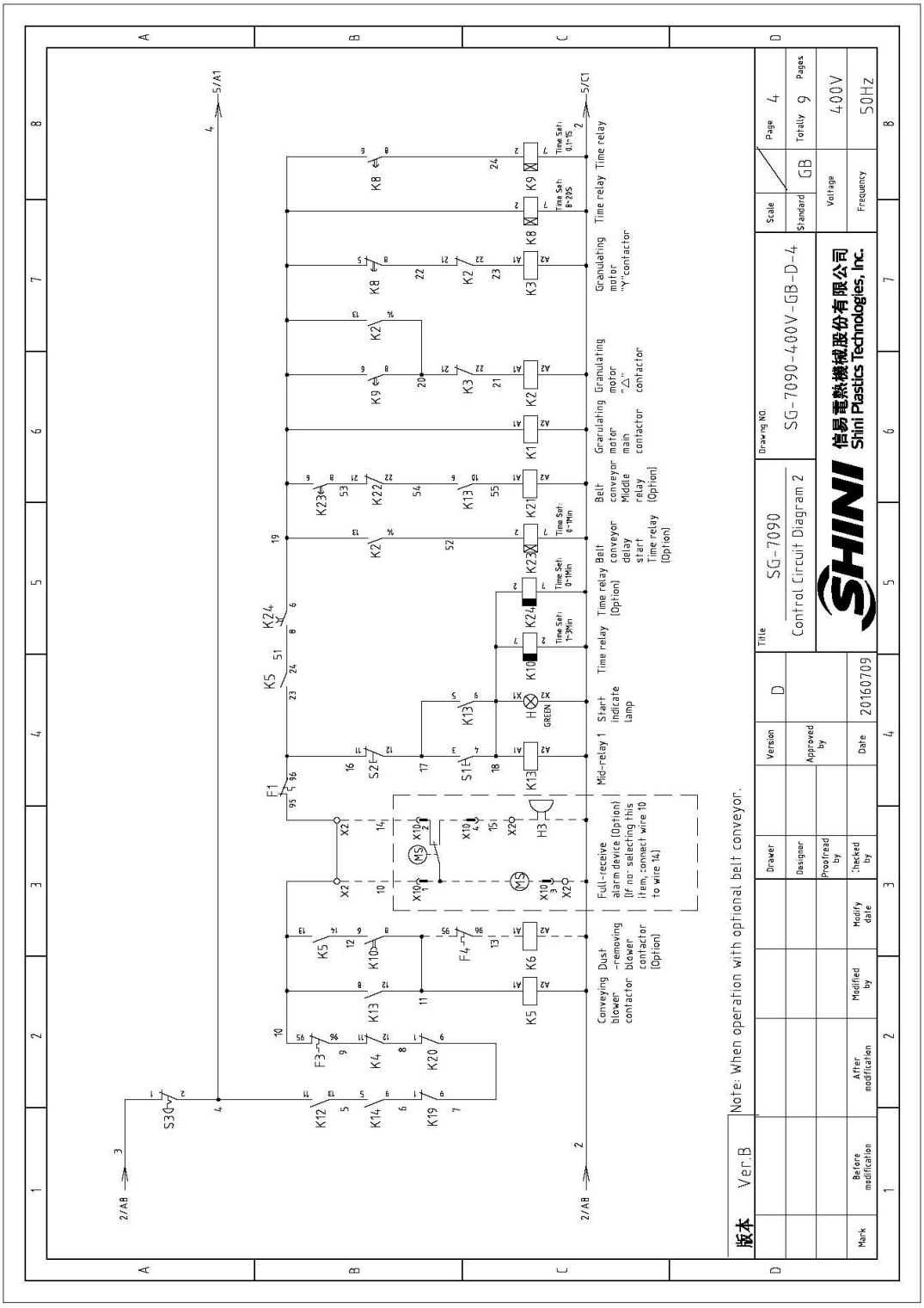


Picture 2-14: Main Circuit Diagram 2(SG-7090)

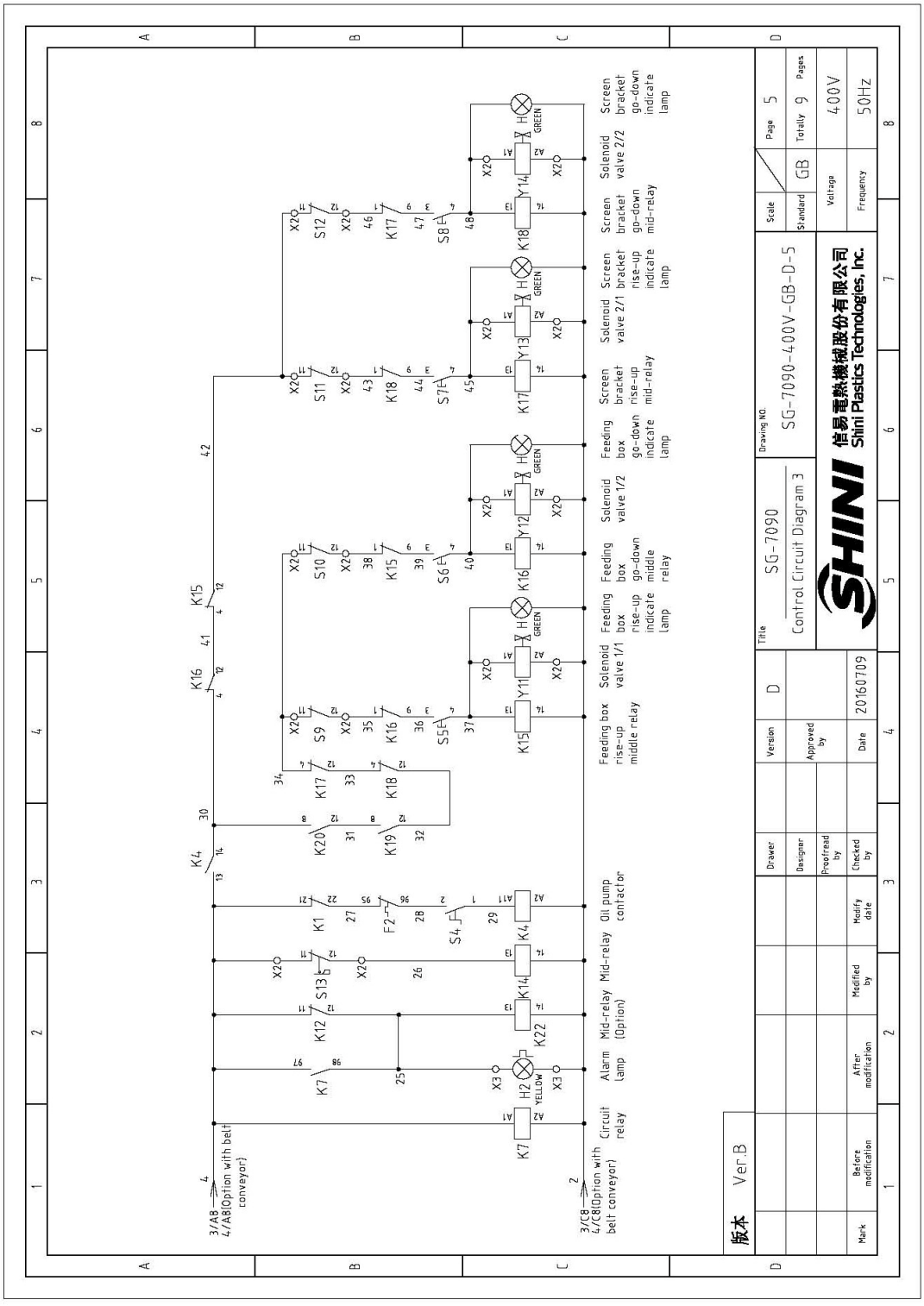
2.4.2 Control Circuit Diagram (SG-7090)



Picture 2-15: Control Circuit Diagram 1(SG-7090)

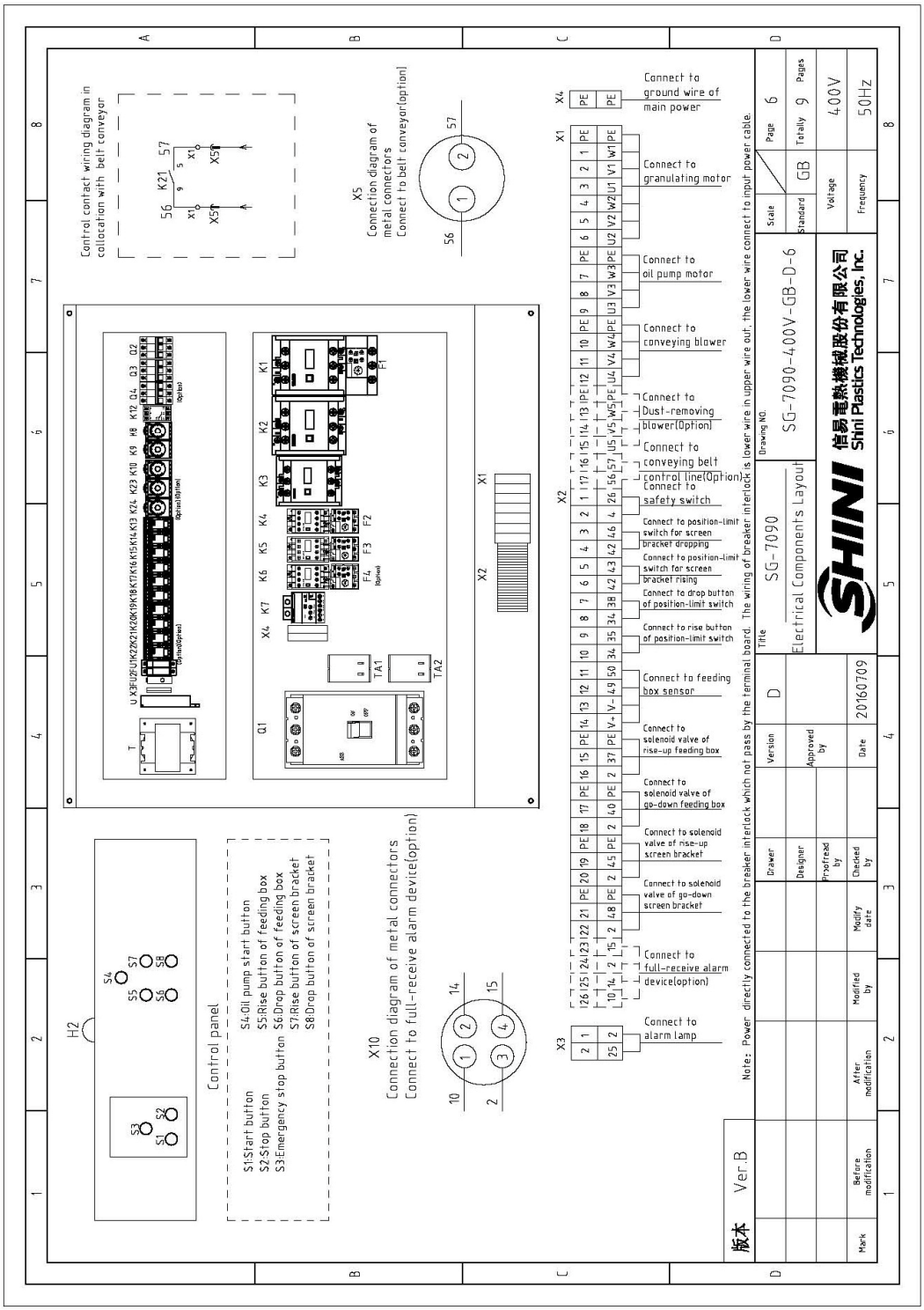


Picture 2-16: Control Circuit Diagram 2(SG-7090)



Picture 2-17: Control Circuit Diagram 3(SG-7090)

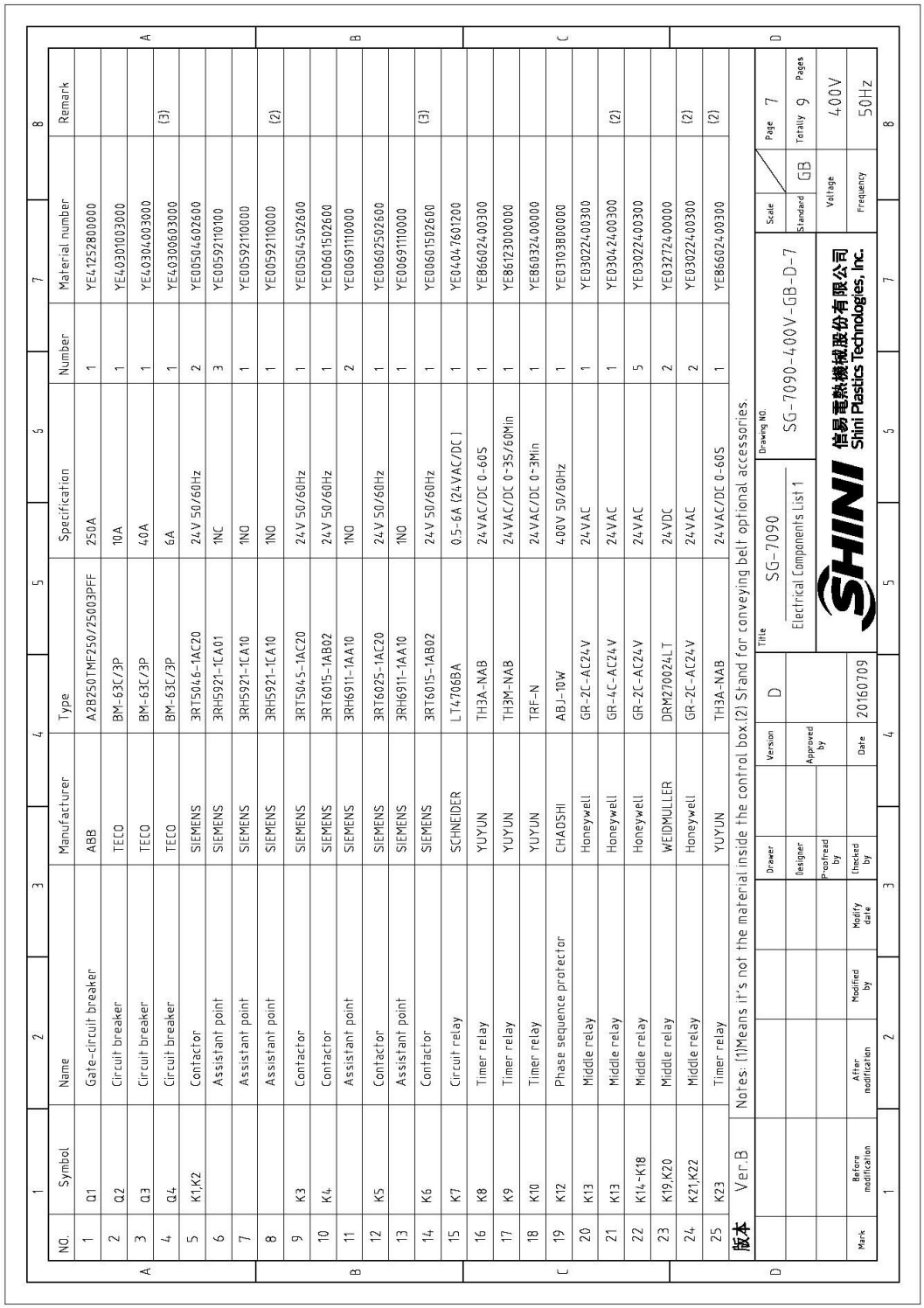
2.4.3 Electrical Components Layout (SG-7090)



Picture 2-18: Electrical Components Layout (SG-7090)

2.4.4 Electrical Components List(SG-7090)

Table 2-8: SG-7090 Electrical Components List 1



NO.	Symbol	Name	Manufacturer	Type	Specification	Number	Material number	Remark
1	Q1	Gate-circuit breaker	ABB	A2B250TMF250/2S003PFF	250A	1	YE412528000000	
2	Q2	Circuit breaker	TECO	BM-63C/3P	10A	1	YE403010030000	
3	Q3	Circuit breaker	TECO	BM-63C/3P	40A	1	YE403040030000	
4	Q4	Circuit breaker	TECO	BM-63C/3P	6A	1	YE403006030000	(3)
5	K1,K2	Contactor	SIEMENS	3RT5046-1AC20	24V 50/60Hz	2	YE005046026000	
6		Assistant point	SIEMENS	3RH5921-1CA01	1NC	3	YE005921101000	
7		Assistant point	SIEMENS	3RH5921-1CA10	1NO	1	YE005921100000	
8		Assistant point	SIEMENS	3RH5921-1CA10	1NO	1	YE005921100000	(2)
9	K3	Contactor	SIEMENS	3RT5045-1AC20	24V 50/60Hz	1	YE005045026000	
10	K4	Contactor	SIEMENS	3RT6015-1AB02	24V 50/60Hz	1	YE006015026000	
11		Assistant point	SIEMENS	3RH6911-1AA10	1NO	2	YE006911100000	
12	K5	Contactor	SIEMENS	3RT6025-1AC20	24V 50/60Hz	1	YE006025026000	
13		Assistant point	SIEMENS	3RH6911-1AA10	1NO	1	YE006911100000	
14	K6	Contactor	SIEMENS	3RT6015-1AB02	24V 50/60Hz	1	YE006015026000	(3)
15	K7	Circuit relay	SCHNEIDER	LT4T06BA	0.5-6A (24VAC/DC)	1	YE004476017200	
16	K8	Timer relay	YUYUN	TH3A-NAB	24VAC/DC 0-60S	1	YE866024400300	
17	K9	Timer relay	YUYUN	TH3M-NAB	24VAC/DC 0-3S/60Min	1	YE861230000000	
18	K10	Timer relay	YUYUN	TRF-N	24VAC/DC 0-3Min	1	YE866324400000	
19	K12	Phase sequence protector	CHAOSHI	ABJ-10W	400V 50/60Hz	1	YE031038000000	
20	K13	Middle relay	Honeywell	GR-2C-AC24V	24VAC	1	YE030224400300	
21	K13	Middle relay	Honeywell	GR-4C-AC24V	24VAC	1	YE030424400300	(2)
22	K14-K18	Middle relay	Honeywell	GR-2C-AC24V	24VAC	5	YE030224400300	
23	K19,K20	Middle relay	WEIDMULLER	DRM270024LT	24VDC	2	YE032724400000	
24	K21,K22	Middle relay	Honeywell	GR-2C-AC24V	24VAC	2	YE030224400300	(2)
25	K23	Timer relay	YUYUN	TH3A-NAB	24VAC/DC 0-60S	1	YE866024400300	(2)

版本 Ver.B

Notes: (1)Means it's not the material inside the control box.(2) Stand for conveying belt optional accessories.

Mark	Before modification	After modification	Modified by	Modify date	Drawer	Version	D
					Designer		
					Proofread by	Approved by	
					Checked by	Date	20160709

Title: SG-7090 Electrical Components List 1

Drawing NO.: SG-7090-400V-GB-D-7

信易電熱機械股份有限公司 Shini Plastics Technologies, Inc.

Scale | Page 7

Standard GB | Totally 9 Pages

Voltage 400V

Frequency 50Hz

Table 2-9: SG-7090 Electrical Components List 2

NO.	Symbol	Name	Manufacturer	Type	Specification	Number	Material number	Remark
26	K24	Timer relay	YUYUN	TRF-N	24VAC/DC 0~3Min	1	YE86032400000	(2)
27	F1	Overload relay	SIEMENS	3RU5146-4MB0	80-100A	1	YE01514680000	
28	F2	Overload relay	SIEMENS	3RU6116-1EB0	2.8-4A	1	YE01160280000	
29	F3	Overload relay	SIEMENS	3RU6126-4BB0	14-20A	1	YE01260140000	
30	F4	Overload relay	SIEMENS	3RU6116-1DB0	2.2-3.2A	1	YE01160220000	(3)
31	FU1	Fuse	CHNT	RT28-32	2P	1	YE41032200000	
32		Fuse core	MRO	10×38 500V	2A	2	YE46002000100	
33	FU2	Fuse	YINDA	FS-10	----	1	YE41001000000	
34		Fuse core	----	6×30	10A	1	YE46631040000	
35	TA1,TA2	Current mutual inductance	RATIO	RCT-35	150/5A	2	YE04150500000	
36	T	Transfarmer	BAIYUN	IN=400V OUT=24V/ 230V	24V 350VA / 230V 350mA	1	YE70040005800	
37	H2	Alarm lamp	SHINI	LED-3051	24VAC	1	YE83305100900	(1)
38	U	DC power	MEANWELL	EPR-35-24 1.5A	IN100-240V OUT24V	1	YE71352400100	
39	S1, S5~S8(H)	Start button	SCHNEIDER	XB2BW33M1C	400VAC	5	YE11233100000	
40	S2	Stop botton	SCHNEIDER	XB2BA22C	400VAC	1	YE11222000000	
41	S3	Emergency stop button	SCHNEIDER	XB2BS542C	400VAC	1	YE11254200000	
42	S4	Selector switches	ABB	C2SS2-10B-10	Ui=300V Ith=5A	1	YE12210100000	
43	S9,S10,S11,S12	Position limit switch	SCHMERSAL	TS236-11Z-M20	500V	4	YE10361200000	(1)
44	S13	Safety switch	SCHMERSAL	AZ17-11ZK	AZ-17	1	YE16171100000	(1)
45	S14,S15	Sensor	DELIN	DL-12	24VDC	2	YE15122400000	(1)
46	X1	Terminal board	PHOENIX	SAK-35	--	6	YE61350040000	
47			PHOENIX	TB35 PE I	--	1	YE61353500000	
48			--	TB2.5B I	32A	6	YE61250040000	
49			--	TB2.5 PE I	--	2	YE61253500000	
50			--	TB2.5B I	32A	3	YE61250040000	(3)

版本 Ver.B

(3)Means optional accessories of dedusting blower; (4) Means optional accessories of full-receive alarm device.

Mark	Before modification	After modification	Modified by	Modify date

Drawer | Designer | Proofread by | Checked by | Version D | Approved by | Date 20160709

Title: SG-7090 Electrical Components List 2

Drawing NO.: SG-7090-400V-GB-D-8

Scale | Standard GB | Page 8 | Totally 9 Pages | Voltage 400V | Frequency 50Hz

SHINI 信易電熱機械股份有限公司 Shini Plastics Technologies, Inc.

NO.	Symbol	Name	Manufacturer	Type	Specification	Number	Material number	Remark
51			--	TB2.5 PE I	--	1	YE61253500000	(3)
52			--	TB2.5B I	32A	2	YE61250040000	(2)
53	X2 X3	Terminal board	PHOENIX	TB2.5B I	32A	24	YE61250040000	
54			PHOENIX	TB2.5 PE I	--	1	YE61253500000	
55			--	TB2.5B I	32A	4	YE61250040000	(4)
56	X4	Terminal board	--	NCT-70PE	--	1	YE61070000000	
57	Y11 Y12 Y13 Y14	Solenoid valve	----	----	24VAC 50/60Hz	4	-----	(1)
58	X5	Metal tie in	SHINI	PLT-162-RR(公)	2P	1	YE68016200100	(1)(2)
59	H3	Buzzer	TEND	EA-2	24VAC	1	YE84240200000	(1)(4)
60	MS	Material level switch	SIPAI	SR-80	24VAC	1	YE15802400100	(1)(4)
61	X10	Metal tie in	APEX	PLT-254-PM	4P	1	YE68025400000	(1)(4)
62			APEX	PLT-254-RF	4P	1	YE68025400100	(1)(4)
63	M1	Motor	--	75KW	400V 50Hz	1	-----	(1)
64	M2	Oil pump motor	--	1.5KW	400V 50Hz	1	-----	(1)
65	M3	Blower	--	7.5KW	400V 50Hz	1	-----	(1)
66	M4	Blower	--	1.1KW	400V 50Hz	1	-----	(1)(3)

版本 Ver.B

Mark	Before modification	After modification	Modified by	Modify date

Drawer | Designer | Proofread by | Checked by

Version D | Approved by | Date 20160709

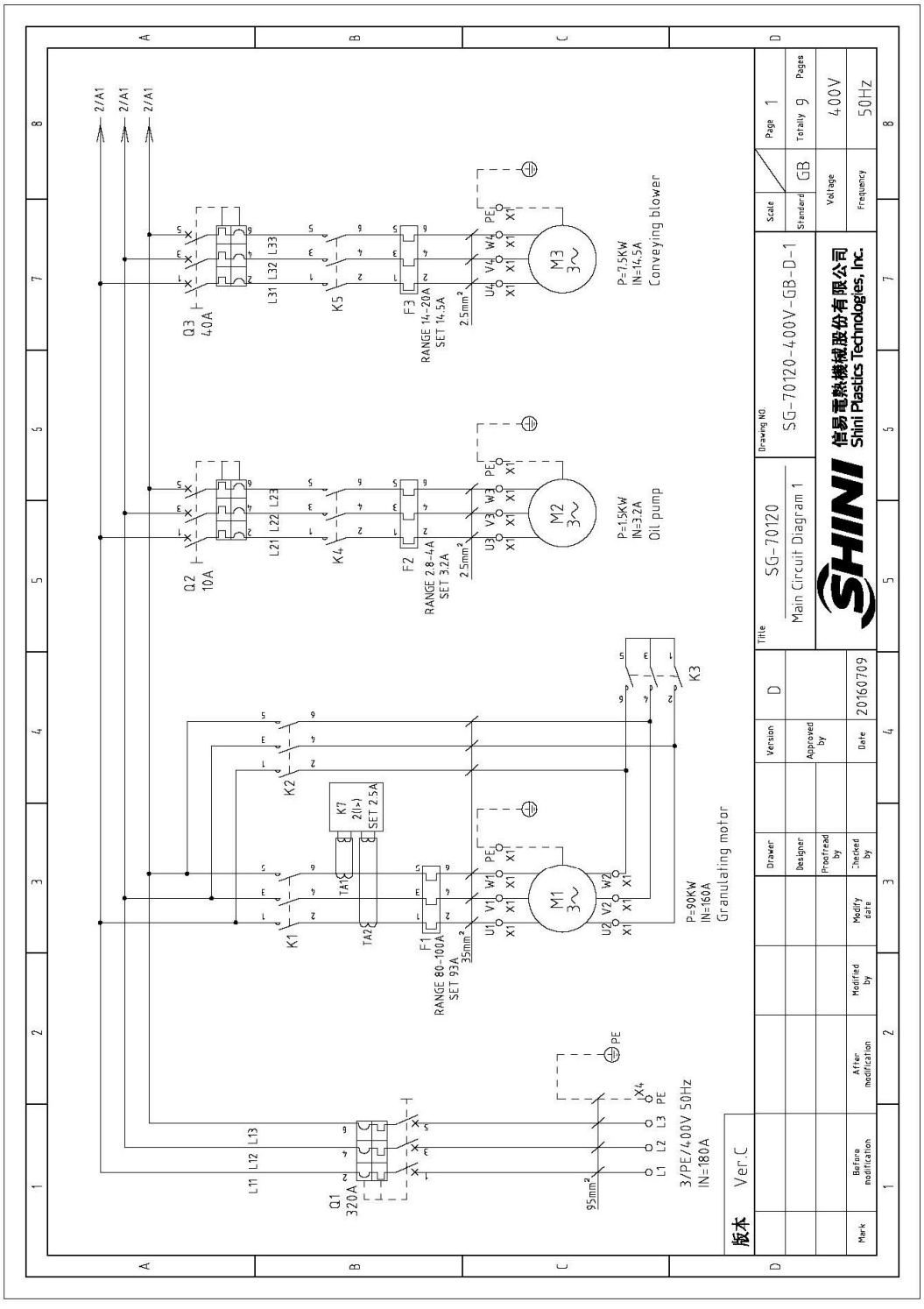
Title: SG-7090 Electrical Components List 3

Drawing NO.: SG-7090-400V-GB-D-9

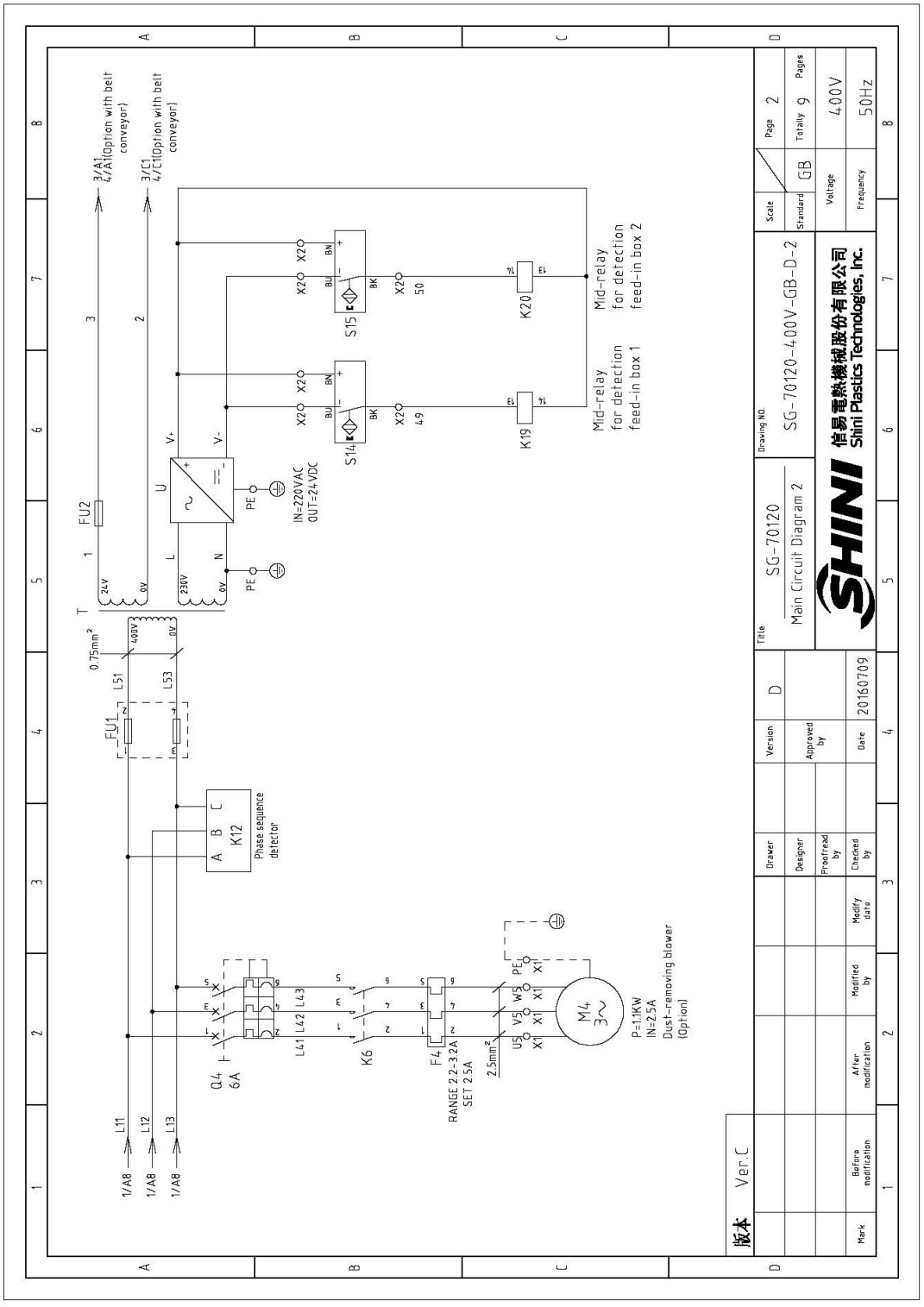
SHINI 信易電熱機械股份有限公司 Shini Plastics Technologies, Inc.

Scale | Standard GB | Page 9 | Totally 9 Pages | Voltage 400V | Frequency 50Hz

2.4.5 Main Circuit Diagram (SG-70120)

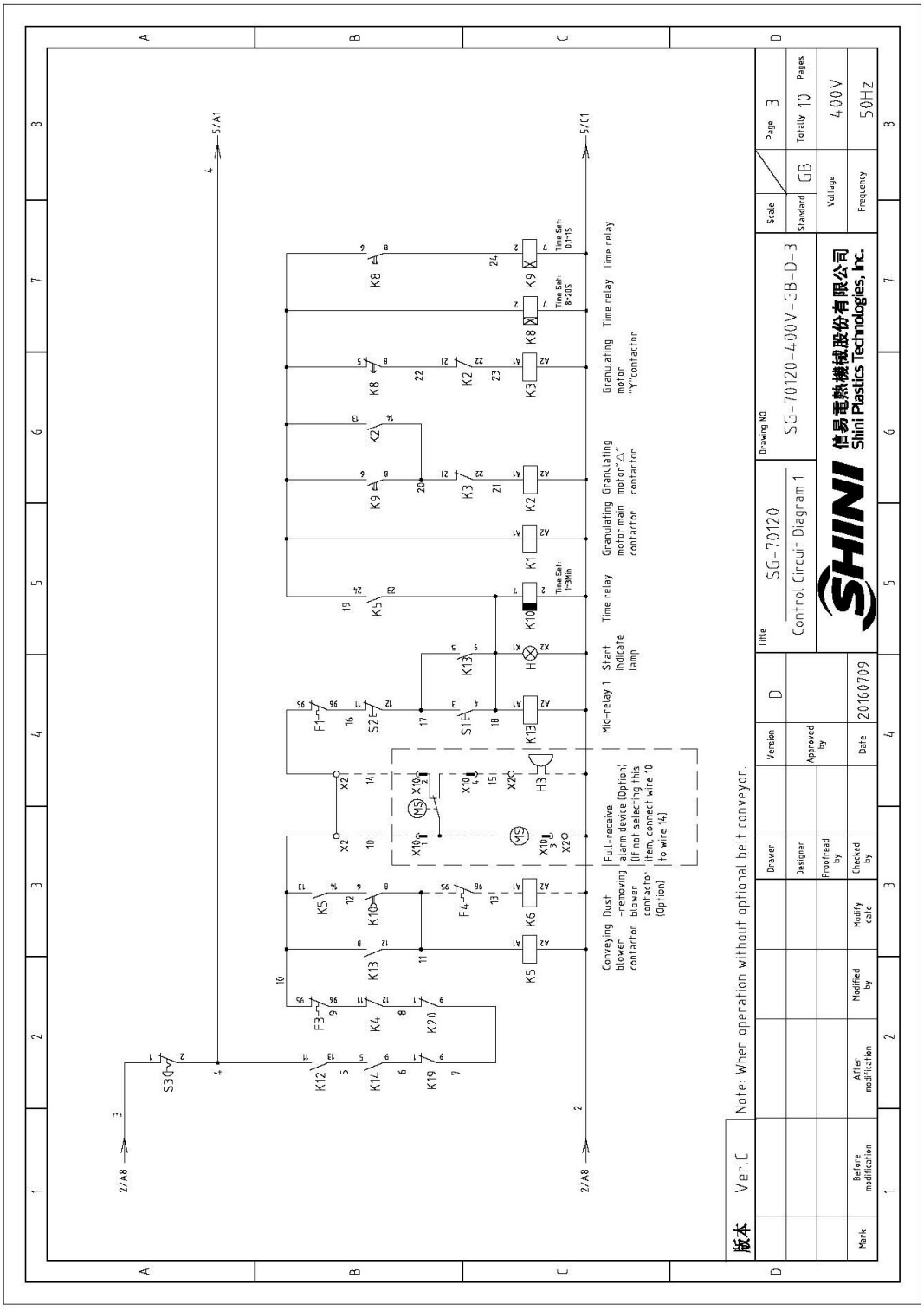


Picture 2-19: Main Circuit Diagram 1(SG-70120)

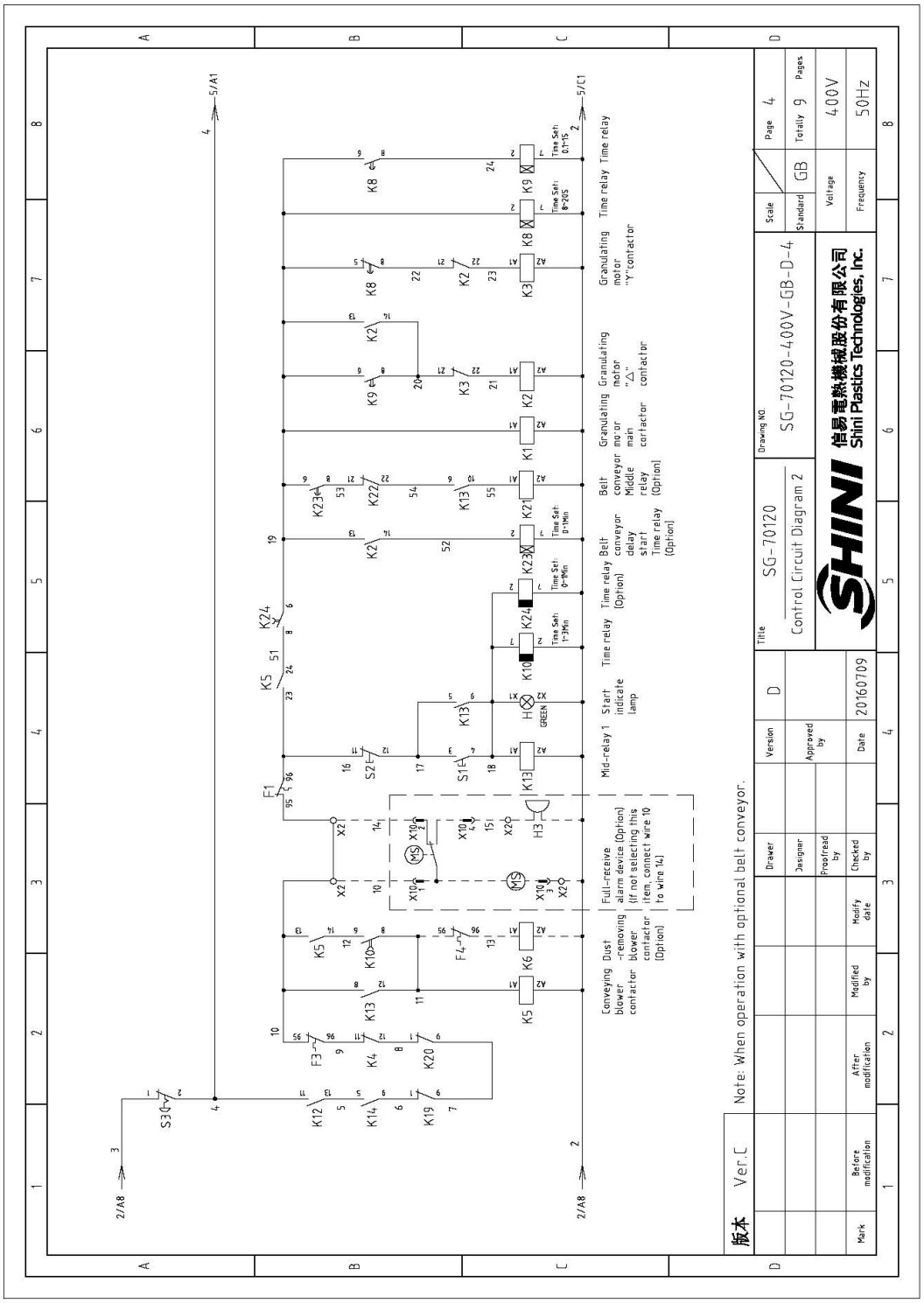


Picture 2-20: Main Circuit Diagram 2(SG-70120)

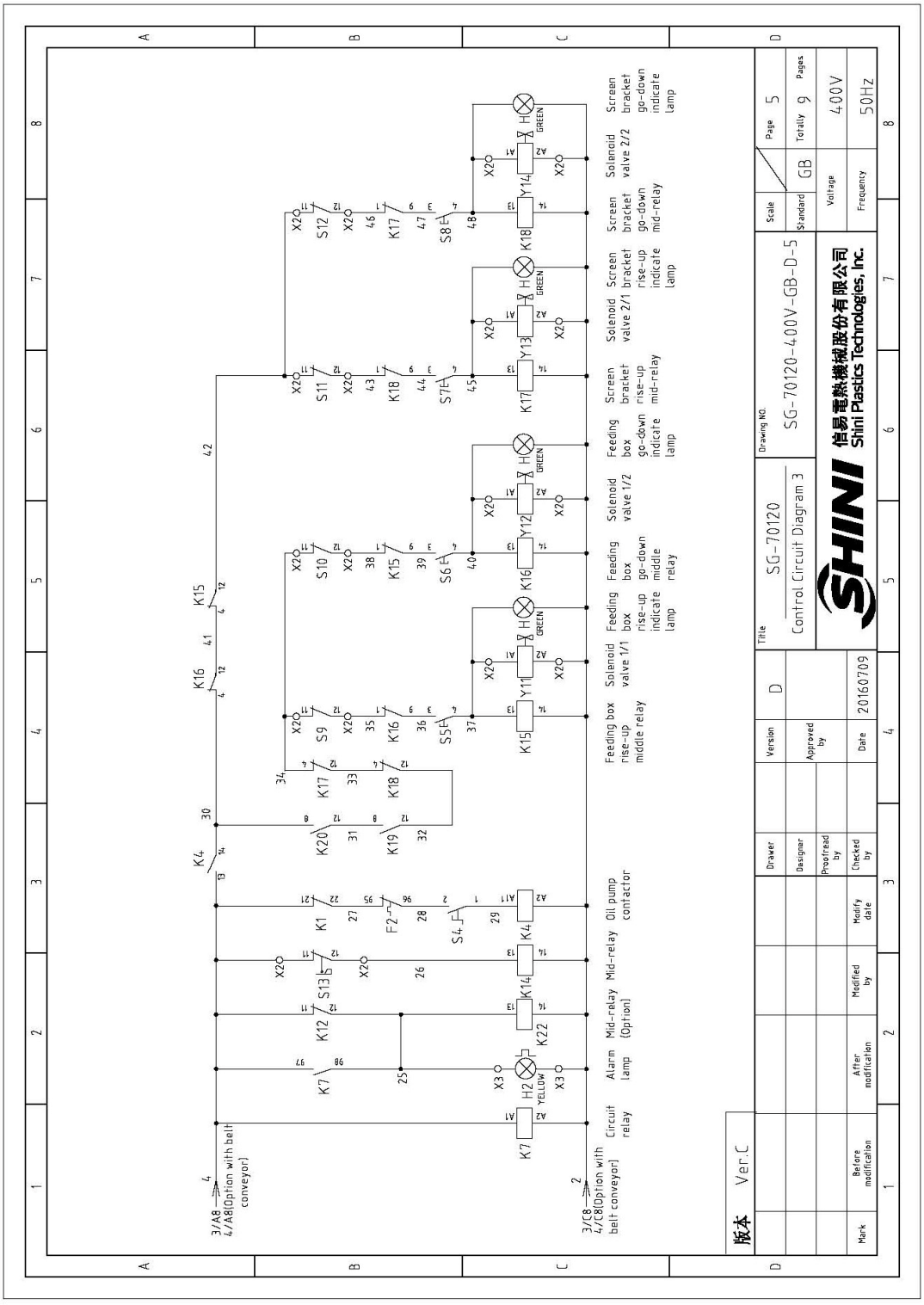
2.4.6 Control Circuit Diagram (SG-70120)



Picture 2-21: Control Circuit Diagram 1(SG-70120)

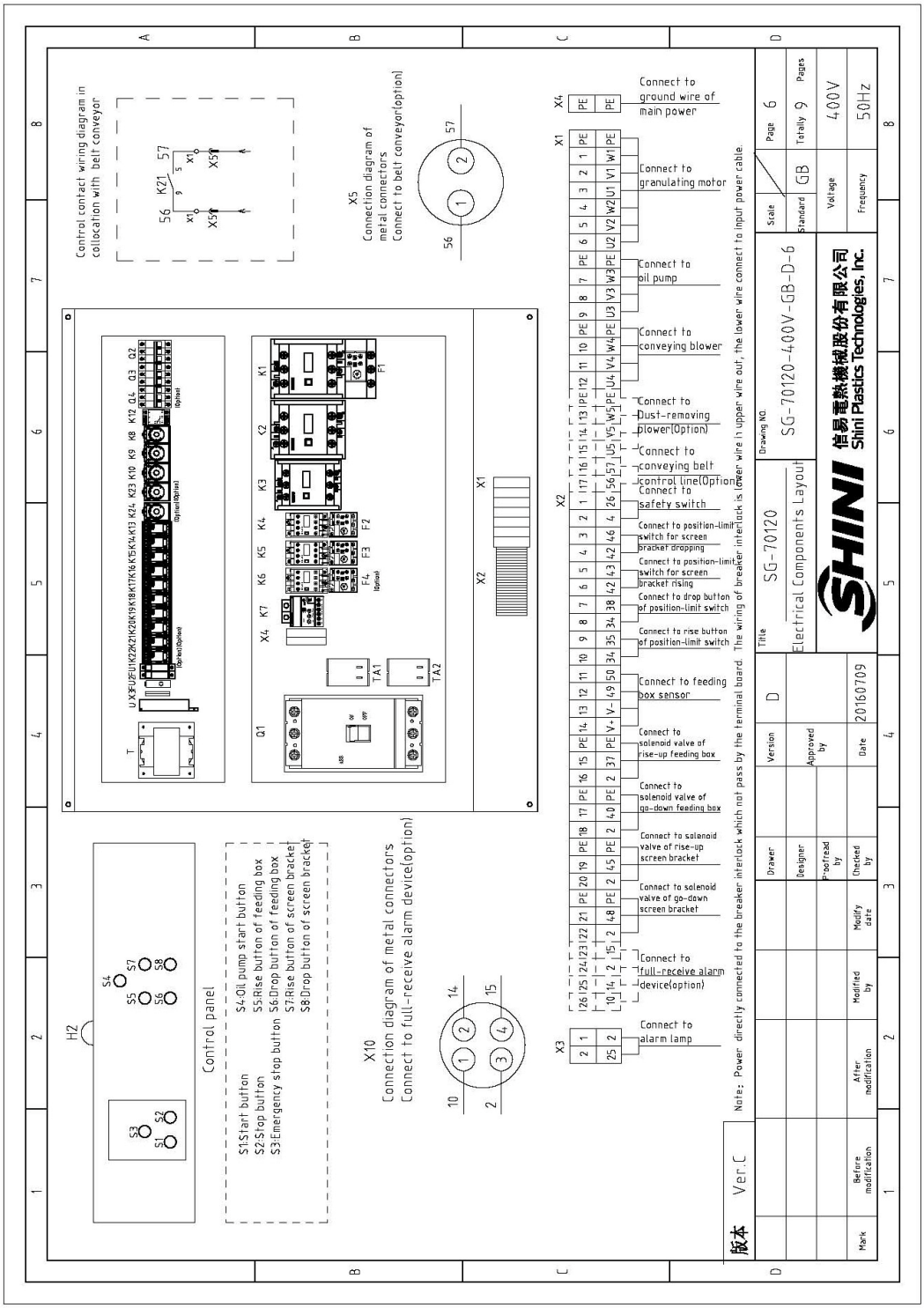


Picture 2-22: Control Circuit Diagram 2(SG-70120)



Picture 2-23: Control Circuit Diagram 3(SG-70120)

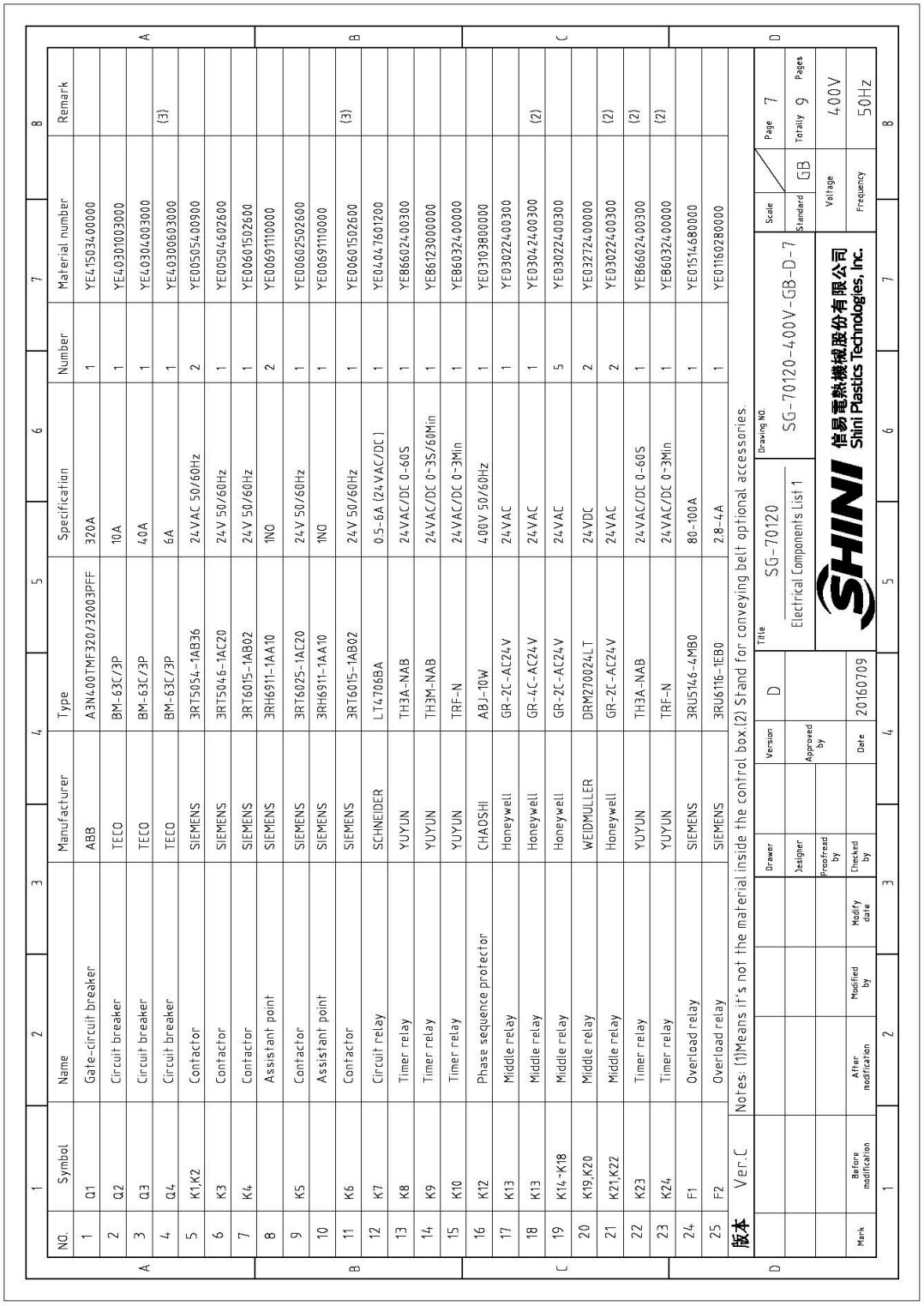
2.4.7 Electrical Components Layout (SG-70120)



Picture 2-24: Electrical Components Layout (SG-70120)

2.4.8 Electrical Components List (SG-70120)

Table 2-11: SG-70120 Electrical Components List 1



NO.	Symbol	Name	Manufacturer	Type	Specification	Number	Material number	Remark
1	Q1	Gate-circuit breaker	ABB	A3N400TMF320/32003PFF	320A	1	YE4150340000	
2	Q2	Circuit breaker	TECO	BM-63C/3P	10A	1	YE4030100300	
3	Q3	Circuit breaker	TECO	BM-63C/3P	40A	1	YE4030400300	(3)
4	Q4	Circuit breaker	TECO	BM-63C/3P	6A	1	YE4030060300	(3)
5	K1,K2	Contactor	SIEMENS	3RT5054-1AB36	24VAC 50/60Hz	2	YE0050540900	
6	K3	Contactor	SIEMENS	3RT5046-1AC20	24V 50/60Hz	1	YE0050460200	
7	K4	Contactor	SIEMENS	3RT6015-1AB02	24V 50/60Hz	1	YE0060150200	
8		Assistant point	SIEMENS	3RH6911-1AA10	1NO	2	YE0069110000	
9	K5	Contactor	SIEMENS	3RT6025-1AC20	24V 50/60Hz	1	YE0060250200	
10		Assistant point	SIEMENS	3RH6911-1AA10	1NO	1	YE0069110000	
11	K6	Contactor	SIEMENS	3RT6015-1AB02	24V 50/60Hz	1	YE0060150200	(3)
12	K7	Circuit relay	SCHNEIDER	LT4706BA	0.5-6A (24VAC/DC)	1	YE0404760120	
13	K8	Timer relay	YUYUN	TH3A-NAB	24VAC/DC 0-60S	1	YE8660240300	
14	K9	Timer relay	YUYUN	TH3M-NAB	24VAC/DC 0-3S/60Min	1	YE8612300000	
15	K10	Timer relay	YUYUN	TRF-N	24VAC/DC 0-3Min	1	YE8603240000	
16	K12	Phase sequence protector	CHAOSHI	ABJ-10W	400V 50/60Hz	1	YE0310380000	
17	K13	Middle relay	Honeywell	GR-2C-AC24V	24VAC	1	YE0302240300	
18	K13	Middle relay	Honeywell	GR-4C-AC24V	24VAC	1	YE0304240300	(2)
19	K14~K18	Middle relay	Honeywell	GR-2C-AC24V	24VAC	5	YE0302240300	
20	K19,K20	Middle relay	WEIDMULLER	DRM270024LT	24VDC	2	YE0327240000	
21	K21,K22	Middle relay	Honeywell	GR-2C-AC24V	24VAC	2	YE0302240300	(2)
22	K23	Timer relay	YUYUN	TH3A-NAB	24VAC/DC 0-60S	1	YE8660240300	(2)
23	K24	Timer relay	YUYUN	TRF-N	24VAC/DC 0-3Min	1	YE8603240000	(2)
24	F1	Overload relay	SIEMENS	3RU5146-4MB0	80-100A	1	YE0151460800	
25	F2	Overload relay	SIEMENS	3RU6116-1EB0	2.8-4A	1	YE0116028000	

版本 Ver.C

Notes: (1)Means it's not the material inside the control box.(2) Stand for conveying belt optional accessories.

Mark | Before modification | After modification | Modified by | Modify date | Designer | Proofread by | Checked by | Approved by | Version D | Date 20160709

Title: SG-70120 Electrical Components List 1

Drawing NO.: SG-70120-400V-GB-D-7

信易電熱機械股份有限公司 Shini Plastics Technologies, Inc.

Scale | Page 7

Standard GB | Totally 9 Pages

Voltage 400V

Frequency 50Hz

NO.	Symbol	Name	Manufacturer	Type	Specification	Number	Material number	Remark
26	F3	Overload relay	SIEMENS	3RU6126-4BB0	14-20A	1	YE01260140000	
27	F4	Overload relay	SIEMENS	3RU6116-1DB0	2.2-3.2A	1	YE01160220000	(3)
28	FU1	Fuse	CHNT	RT28-32	2P	1	YE41032200000	
29		Fuse core	MRO	10×38 500V	2A	2	YE46002000100	
30	FU2	Fuse	YINDA	FS-10	----	1	YE41001000000	
31		Fuse core	----	6×30	10A	1	YE46631040000	
32	TA1,TA2	Current mutual inductance	RATIO	RCT-35	150/5A	2	YE04150500000	
33	T	Transfarmer	BAIYUN	IN=400V OUT=24V/ 230V	24V 350VA / 230V 350mA	1	YE70040005800	
34	H2	Alarm lamp	SHINI	LED-3051	24VAC	1	YE83305100900	(1)
35	U	DC power	MEANWELL	EPR-35-24 1.5A	IN100-240V OUT24V	1	YE71352400100	
36	S1, S5~S8(H)	Start button	SCHNEIDER	XB2BW33M1C	400VAC	5	YE11233100000	
37	S2	Stop botton	SCHNEIDER	XB2BA22C	400VAC	1	YE11222000000	
38	S3	Emergency stop button	SCHNEIDER	XB2BS542C	400VAC	1	YE11254200000	
39	S4	Selector switches	ABB	C2SS2-10B-10	Ui=300V Ith=5A	1	YE12210100000	
40	S9,S10,S11,S12	Position limit switch	SCHMERSAL	TS236-11Z-M20	500V	4	YE10361200000	(1)
41	S13	Safety switch	SCHMERSAL	AZ17-11ZK	AZ-17	1	YE16171100000	(1)
42	S14,S15	Sensor	DELIN	DL-12	24VDC	2	YE15122400000	(1)
43	X1	Terminal board	PHOENIX	SAK-35	--	6	YE61350040000	
44			PHOENIX	TB35 PE I	--	1	YE61353500000	
45			--	TB2.5B I	32A	6	YE61250040000	
46			--	TB2.5 PE I	--	2	YE61253500000	
47			--	TB2.5B I	32A	3	YE61250040000	(3)
48			--	TB2.5 PE I	--	1	YE61253500000	(3)
49			--	TB2.5B I	32A	2	YE61250040000	(2)
50	X2 X3	Terminal board	PHOENIX	TB2.5B I	32A	24	YE61250040000	

版本 Ver.C

(3)Means optional accessories of dedusting blower; (4) Means optional accessories of full-receive alarm device.

Mark	Before modification	After modification	Modified by	Modify date

Drawer | Version D
Designer | Approved by
Proofread by
Checked by | Date 20160709

Title: SG-70120 Electrical Components List 2
Drawing NO.: SG-70120-400V-GB-D-8
Scale
Standard GB
Page 8
Totally 9 Pages
Voltage 400V
Frequency 50Hz

SHINI 信易電熱機械股份有限公司 Shini Plastics Technologies, Inc.

NO.	Symbol	Name	Manufacturer	Type	Specification	Number	Material number	Remark
51			PHOENIX	TB2.5 PE I	--	1	YE61253500000	
52			--	TB2.5B I	32A	4	YE61250040000	(4)
53	X4	Terminal board	--	NCT-70PE	--	1	YE61070000000	
54	Y11 Y12 Y13 Y14	Solenoid valve	----	----	24VAC 50/60Hz	4	-----	(1)
55	X5	Metal tie in	SHINI	PLT-162-RR(公)	2P	1	YE68016200100	(1)(2)
56	H3	Buzzer	TEND	EA-2	24VAC	1	YE84240200000	(1)(4)
57	MS	Material level switch	SIPAI	SR-80	24VAC	1	YE15802400100	(1)(4)
58	X10	Metal tie in	APEX	PLT-254-PM	4P	1	YE68025400000	(1)(4)
59			APEX	PLT-254-RF	4P	1	YE68025400100	(1)(4)
60	M1	Motor	--	90KW	400V 50Hz	1	-----	(1)
61	M2	Oil pump motor	--	1.5KW	400V 50Hz	1	-----	(1)
62	M3	Blower	--	7.5KW	400V 50Hz	1	-----	(1)
63	M4	Blower	--	1.1KW	400V 50Hz	1	-----	(1)(3)

版本 Ver.C

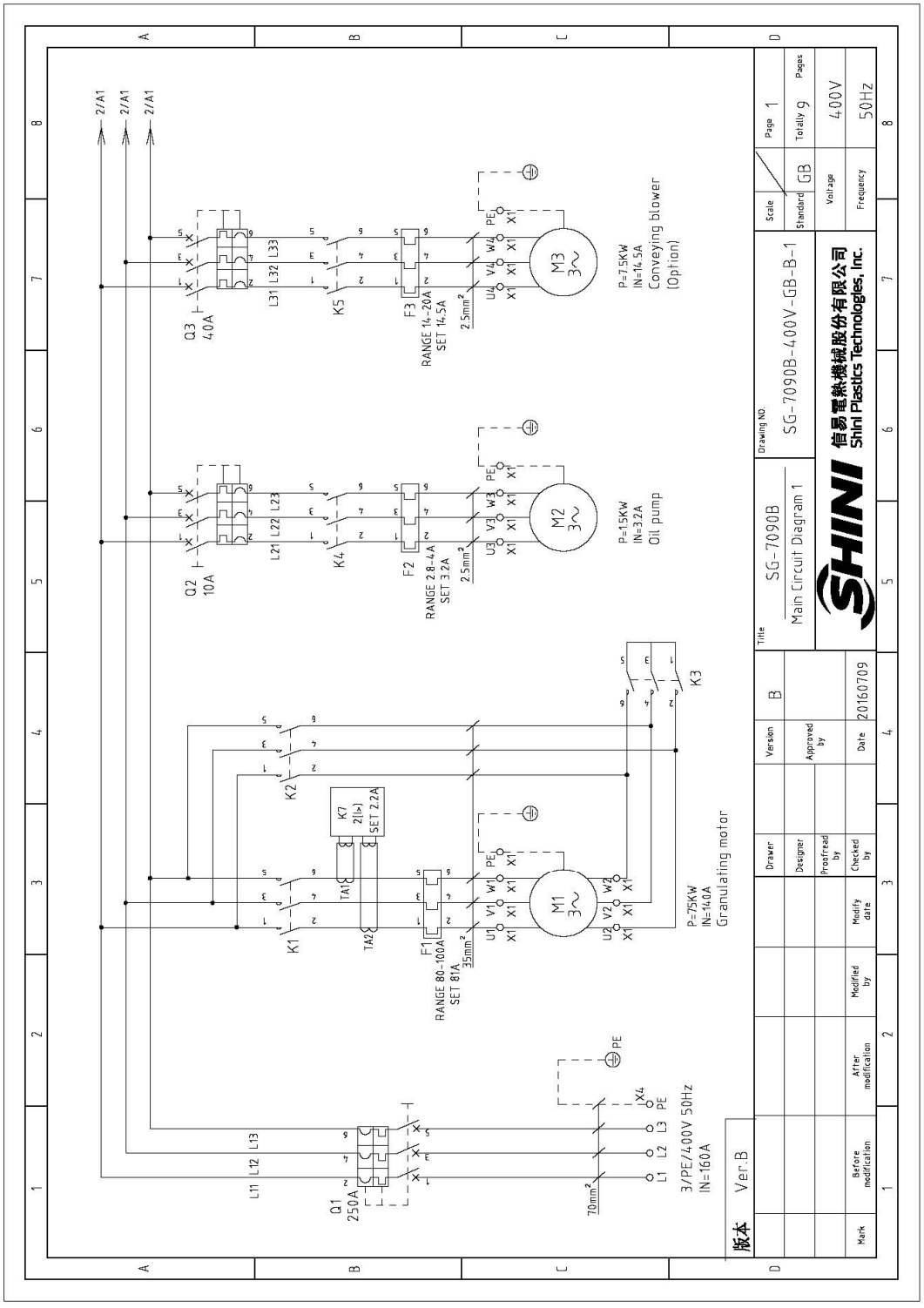
Mark	Before modification	After modification	Modified by	Modify date

Drawer | Version D
Designer | Approved by
Proofread by
Checked by | Date 20160709

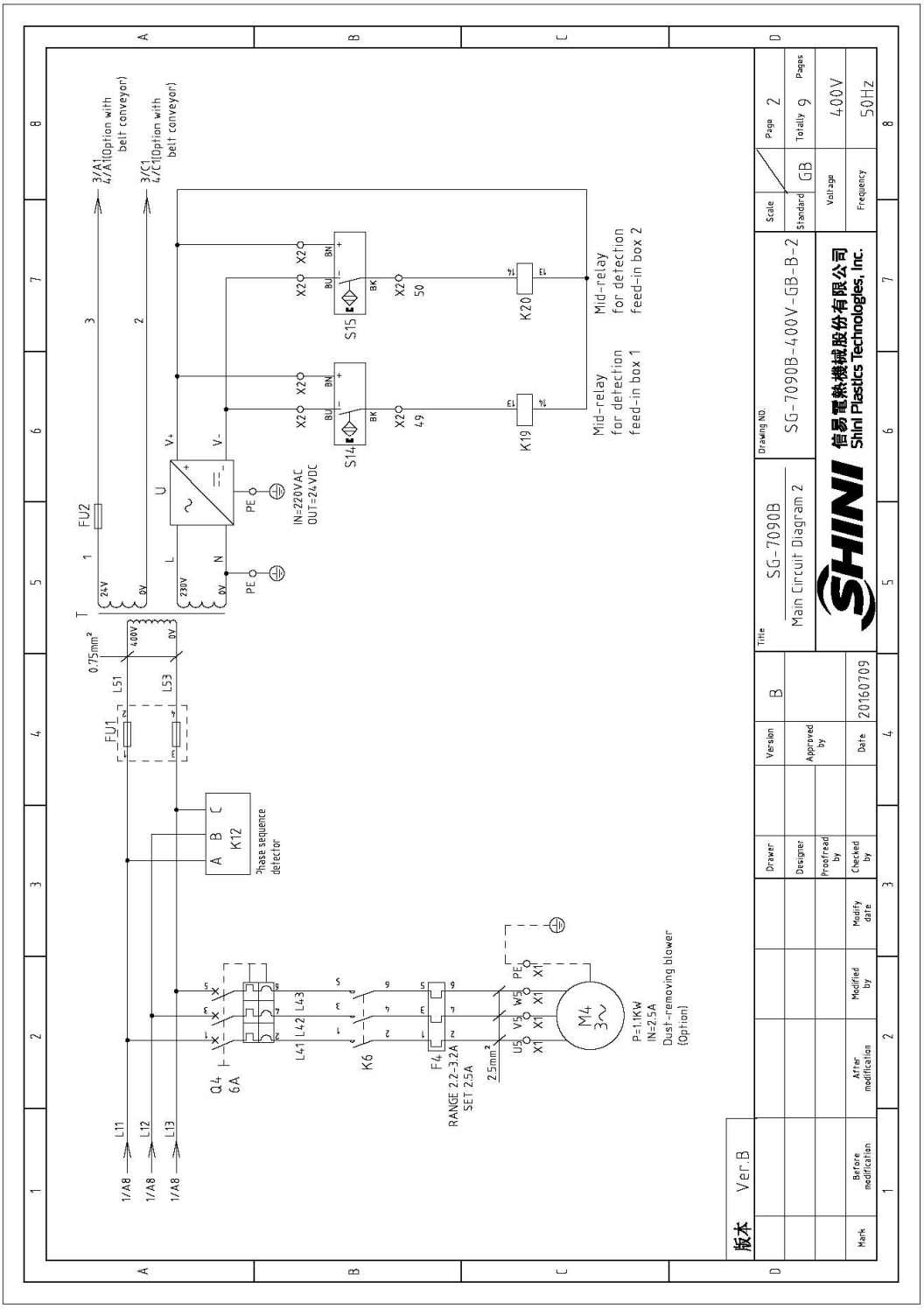
Title: SG-70120 Electrical Components List 3
Drawing NO.: SG-70120-400V-GB-D-9
Scale
Standard GB
Page 9
Totally 9 Pages
Voltage 400V
Frequency 50Hz

SHINI 信昌電熱機械股份有限公司 Shini Plastics Technologies, Inc.

2.4.9 Main Circuit Diagram (SG-7090B)

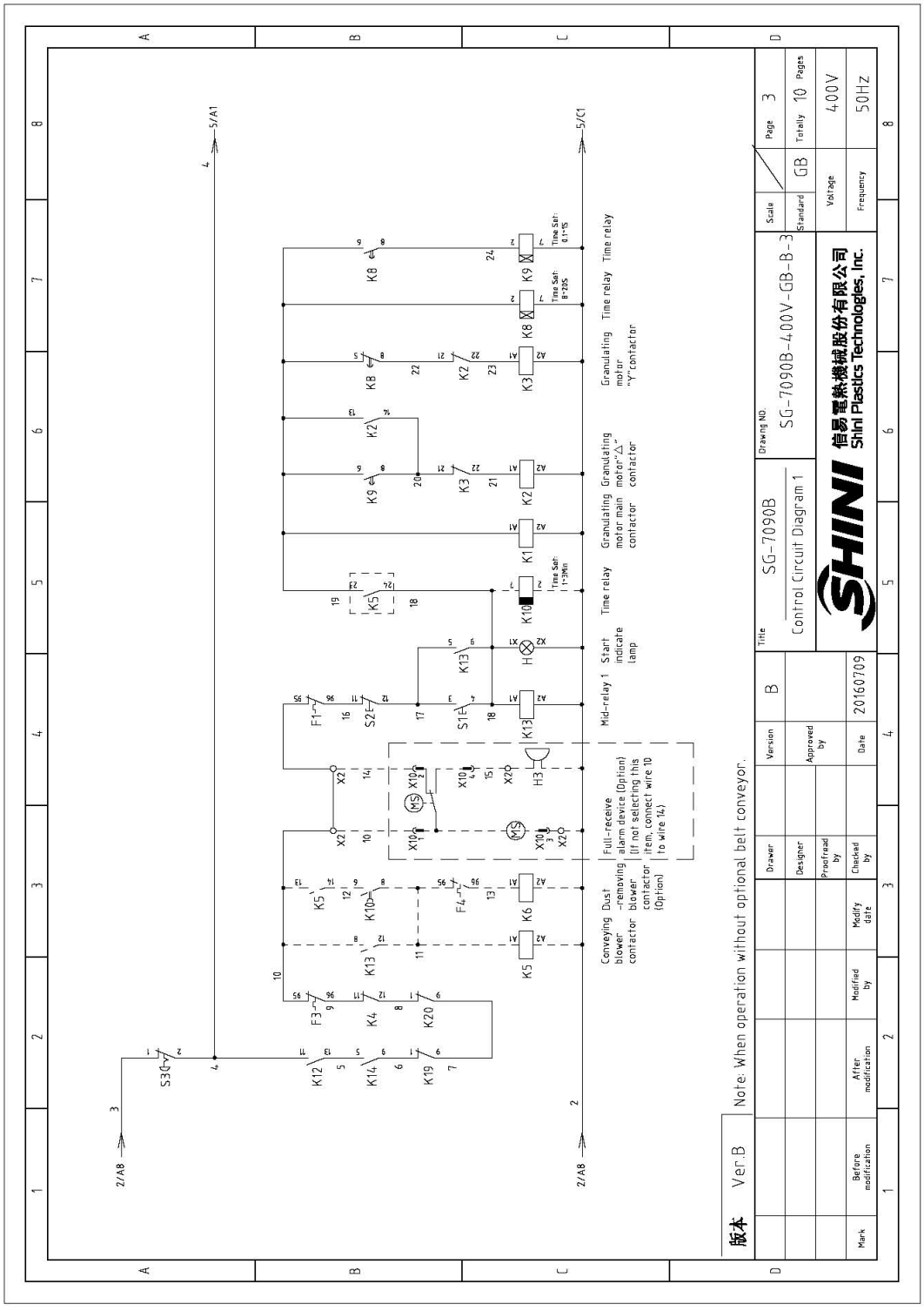


Picture 2-25: Main Circuit Diagram 1(SG-7090B)

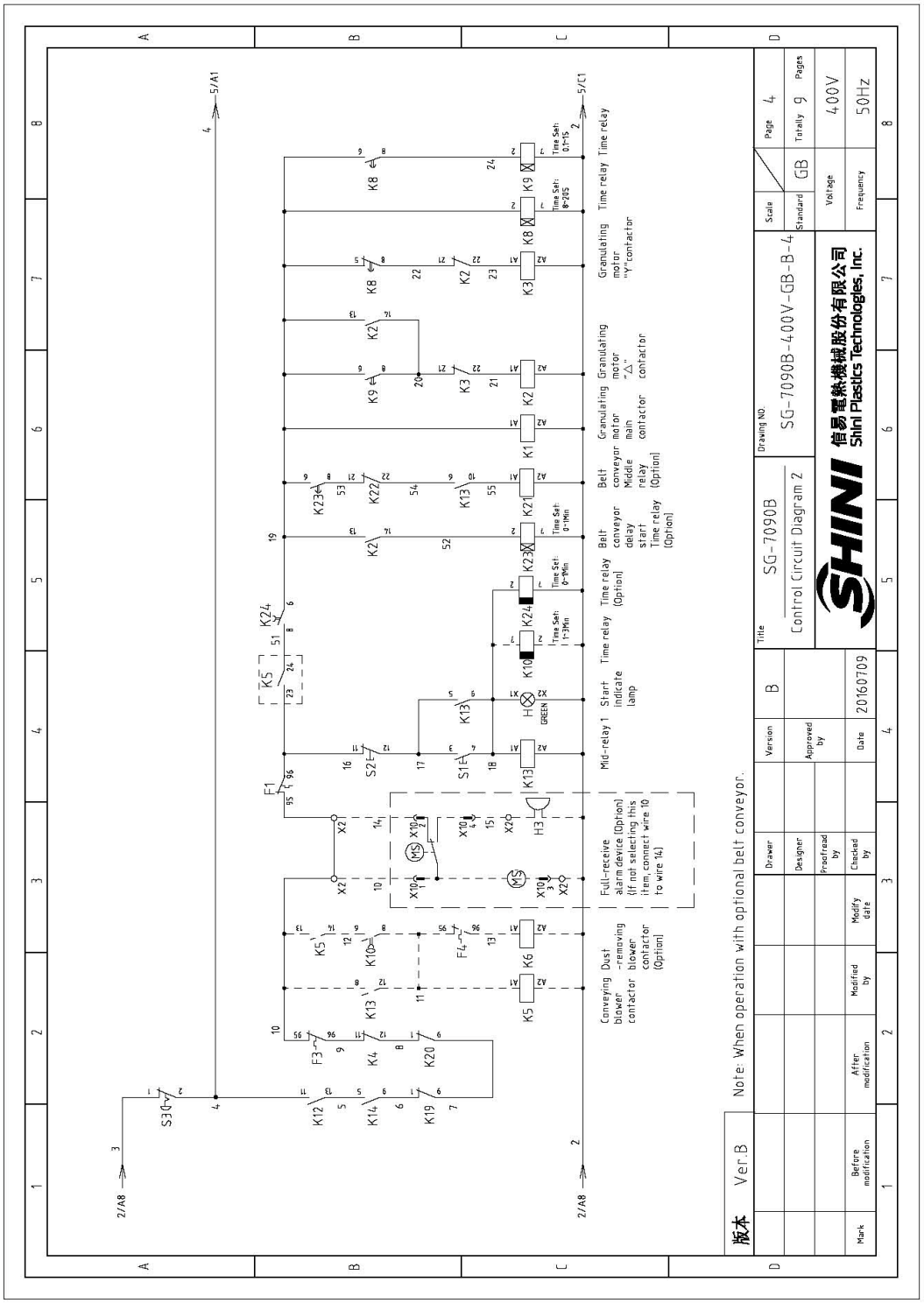


Picture 2-26: Main Circuit Diagram 2(SG-7090B)

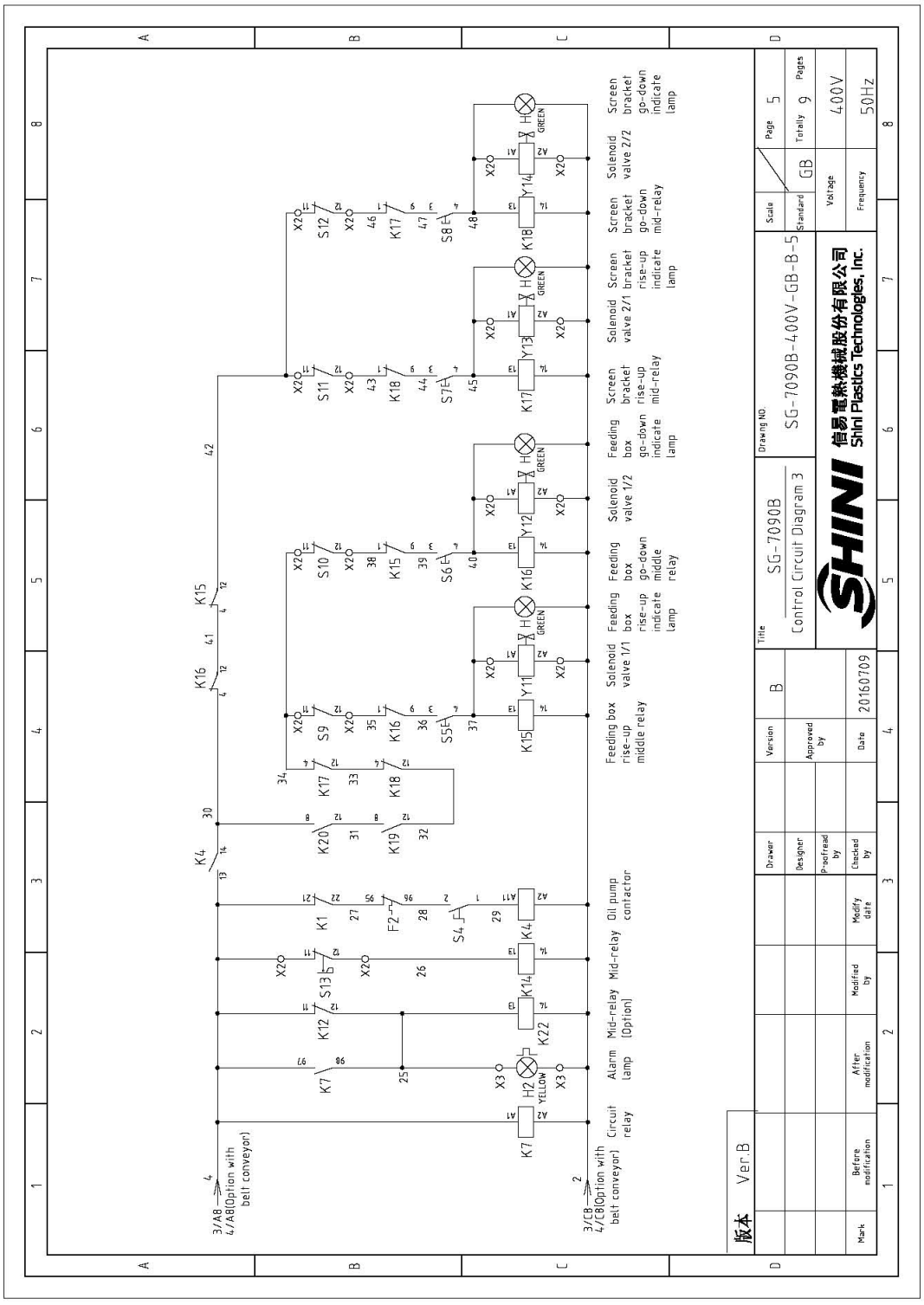
2.4.10 Control Circuit Diagram (SG-7090B)



Picture 2-27: Control Circuit Diagram 1(SG-7090B)

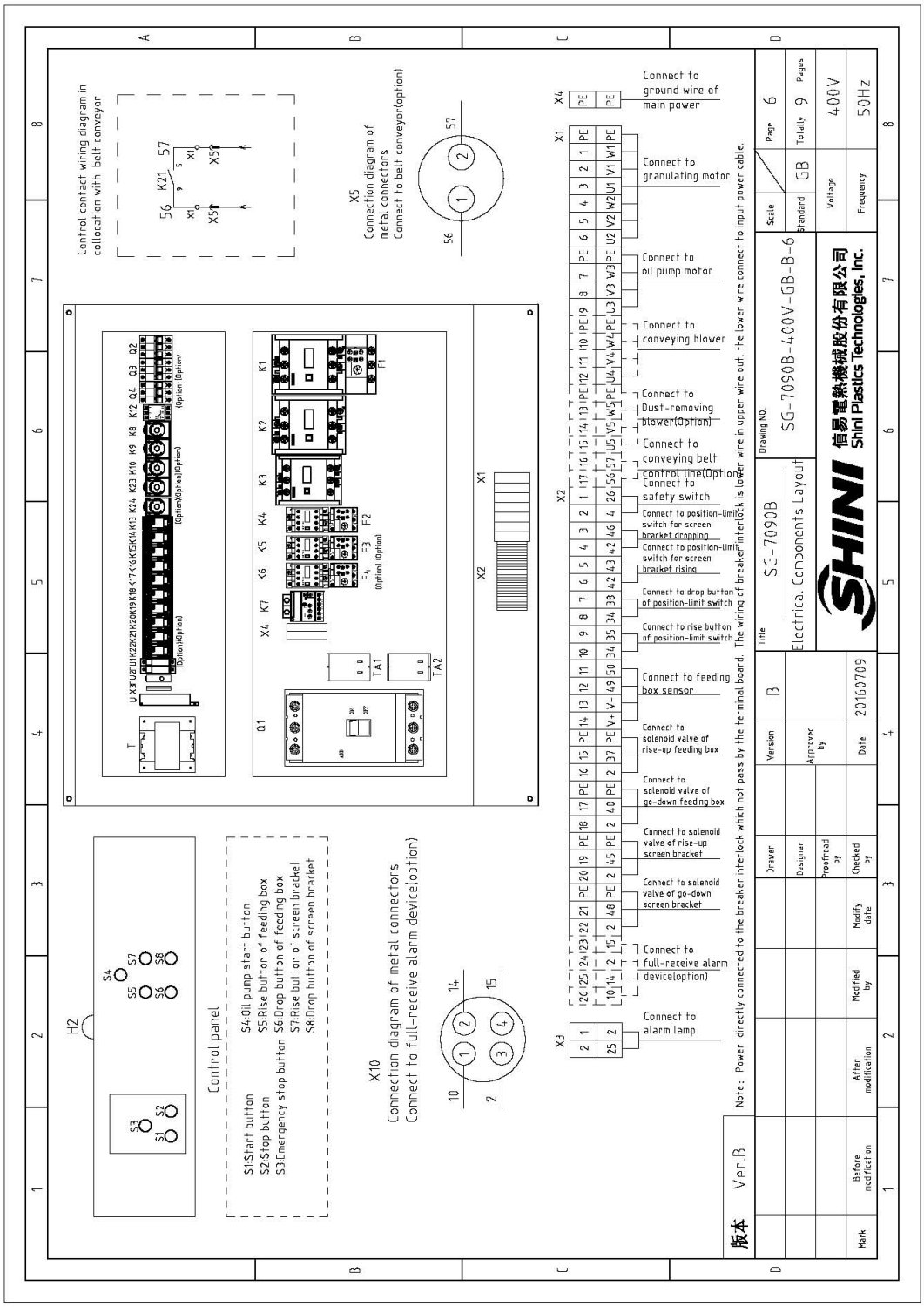


Picture 2-28: Control Circuit Diagram 2(SG-7090B)



Picture 2-29: Control Circuit Diagram 3(SG-7090B)

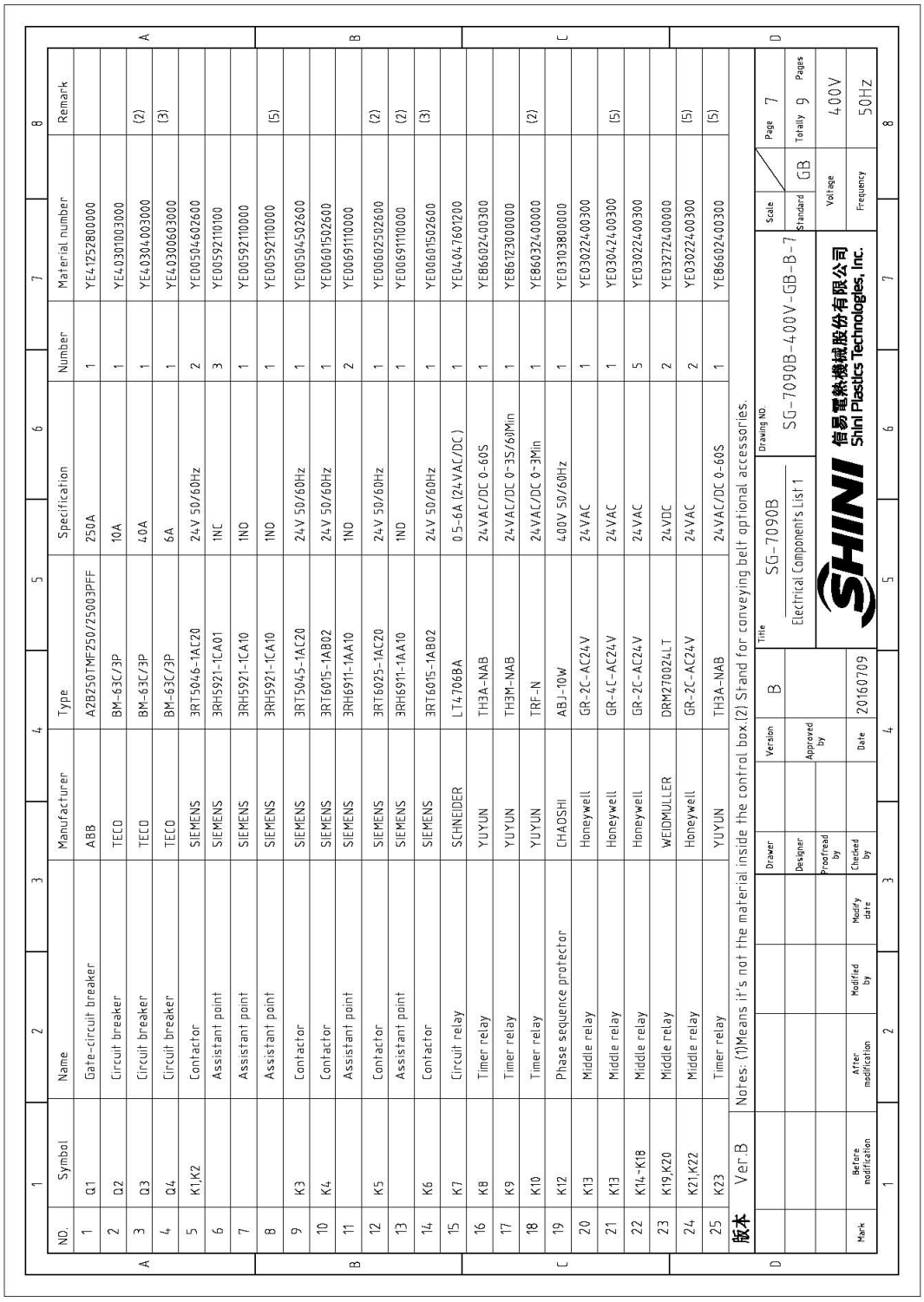
2.4.11 Electrical Components Layout (SG-7090B)



Picture 2-30: Electrical Components Layout (SG-7090B)

2.4.12 Electrical Components List(SG-7090B)

Table 2-14: SG-7090B Electrical Components List 1



NO.	Symbol	Name	Manufacturer	Type	Specification	Number	Material number	Remark
1	Q1	Gate-circuit breaker	ABB	A2B250TMF250/250D3PFF	250A	1	YE41252800000	
2	Q2	Circuit breaker	TECO	BM-63C/3P	10A	1	YE40301003000	
3	Q3	Circuit breaker	TECO	BM-63C/3P	40A	1	YE40304003000	(2)
4	Q4	Circuit breaker	TECO	BM-63C/3P	6A	1	YE40300603000	(3)
5	K1,K2	Contactor	SIEMENS	3RT5046-1AC20	24V 50/60Hz	2	YE00504602600	
6		Assistant point	SIEMENS	3RH5921-1CA01	1NC	3	YE00592110100	
7		Assistant point	SIEMENS	3RH5921-1CA10	1NO	1	YE00592110000	
8		Assistant point	SIEMENS	3RH5921-1CA10	1NO	1	YE00592110000	(5)
9	K3	Contactor	SIEMENS	3RT5045-1AC20	24V 50/60Hz	1	YE00504502600	
10	K4	Contactor	SIEMENS	3RT6015-1AB02	24V 50/60Hz	1	YE00601502600	
11		Assistant point	SIEMENS	3RH6911-1AA10	1NO	2	YE00691110000	
12	K5	Contactor	SIEMENS	3RT6025-1AC20	24V 50/60Hz	1	YE00602502600	(2)
13		Assistant point	SIEMENS	3RH6911-1AA10	1ND	1	YE00691110000	(2)
14	K6	Contactor	SIEMENS	3RT6015-1AB02	24V 50/60Hz	1	YE00601502600	(3)
15	K7	Circuit relay	SCHNEIDER	LT4706BA	0.5-6A (24VAC/DC)	1	YE04047602200	
16	K8	Timer relay	YUYUN	TH3A-NAB	24VAC/DC 0-60S	1	YE86602400300	
17	K9	Timer relay	YUYUN	TH3M-NAB	24VAC/DC 0-3S/60Min	1	YE86123000000	
18	K10	Timer relay	YUYUN	TRF-N	24VAC/DC 0-3Min	1	YE86032400000	(2)
19	K12	Phase sequence protector	CHAOSHI	ABJ-10W	400V 50/60Hz	1	YE03103800000	
20	K13	Middle relay	Honeywell	GR-2C-AC24V	24VAC	1	YE03022400300	
21	K13	Middle relay	Honeywell	GR-4C-AC24V	24VAC	1	YE03042400300	(5)
22	K14-K18	Middle relay	Honeywell	GR-2C-AC24V	24VAC	5	YE03022400300	
23	K19,K20	Middle relay	WEIDMULLER	DRM270024LT	24VDC	2	YE03272400000	
24	K21,K22	Middle relay	Honeywell	GR-2C-AC24V	24VAC	2	YE03022400300	(5)
25	K23	Timer relay	YUYUN	TH3A-NAB	24VAC/DC 0-60S	1	YE86602400300	(5)

版本 Ver.B

Notes: (1)Means it's not the material inside the control box.(2) Stand for conveying belt optional accessories.

Mark	Before modification	After modification	Modified by	Modify date	Drawer	Designer	Proofread by	Checked by	Approved by	Version	Date
										B	20160709

Title: SG-7090B Electrical Components List1

SHINI 信易電熱機械股份有限公司 Shini Plastics Technologies, Inc.

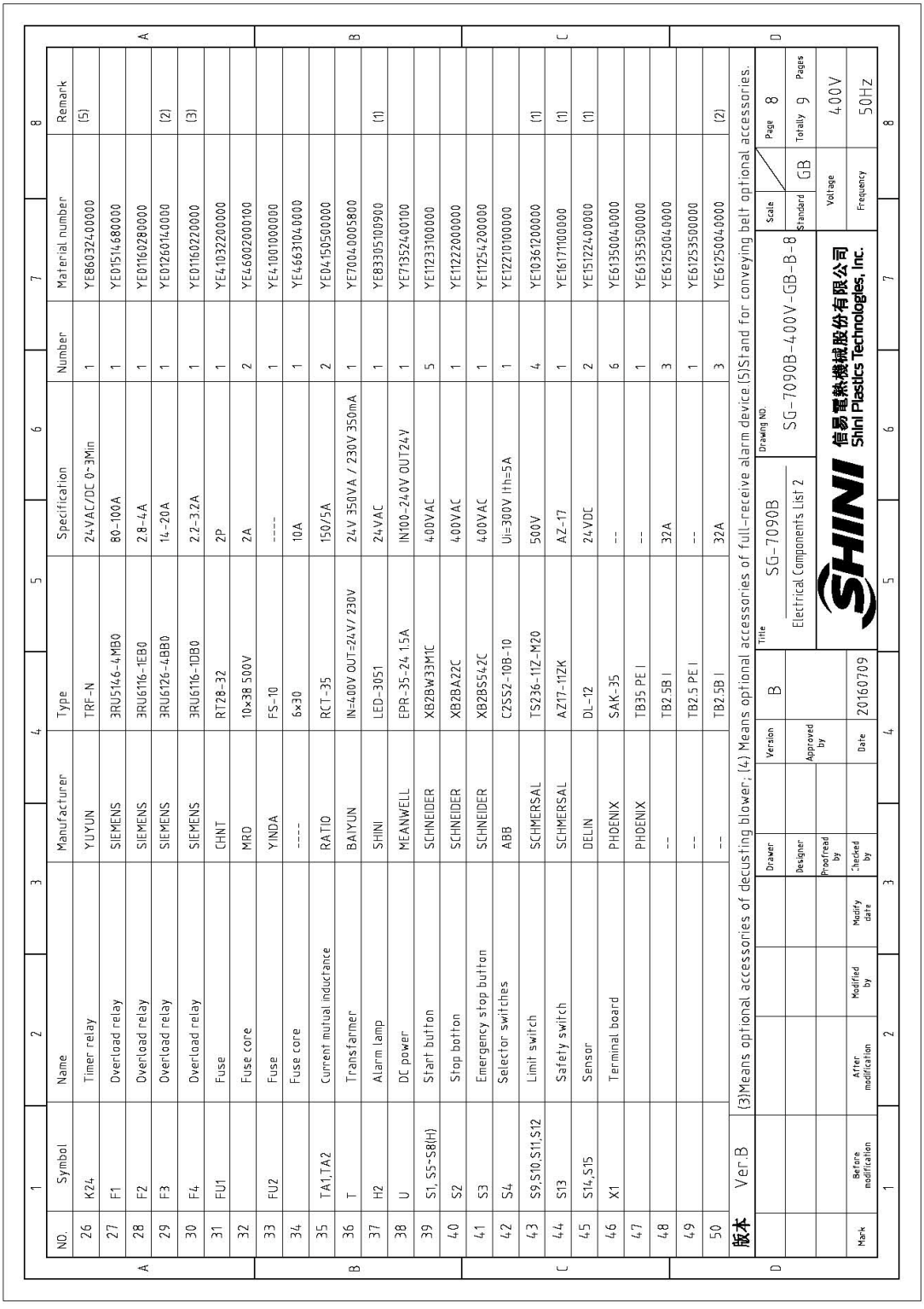
Drawing NO.: SG-7090B-400V-GB-B-7

Scale | Standard: GB | Page 7 | Totally 9 Pages

Voltage: 400V

Frequency: 50Hz

Table 2-15: SG-7090B Electrical Components List 2



NO.	Symbol	Name	Manufacturer	Type	Specification	Number	Material number	Remark
26	K24	Timer relay	YUYUN	TRF-N	24VAC/DC 0~3Min	1	YE8603240000	(5)
27	F1	Overload relay	SIEMENS	3RU5146-4MB0	80-100A	1	YE0151468000	
28	F2	Overload relay	SIEMENS	3RU6116-1EB0	2.8-4A	1	YE0116028000	
29	F3	Overload relay	SIEMENS	3RU6126-4BB0	14-20A	1	YE0126014000	(2)
30	F4	Overload relay	SIEMENS	3RU6116-1DB0	2.2-3.2A	1	YE0116022000	(3)
31	FU1	Fuse	CHNT	RT28-32	2P	1	YE4103220000	
32		Fuse core	MRO	10×38 500V	2A	2	YE4600200100	
33	FU2	Fuse	YINDA	FS-10	----	1	YE4100100000	
34		Fuse core	----	6×30	10A	1	YE4663104000	
35	TA1,TA2	Current mutual inductance	RATIO	RCT-35	150/5A	2	YE0415050000	
36	T	Transformer	BAIYUN	IN=400V OUT=24V/ 230V	24V 350VA / 230V 350mA	1	YE7004000580	
37	H2	Alarm lamp	SHINI	LED-3051	24VAC	1	YE8330510090	(1)
38	U	DC power	MEANWELL	EPR-35-24 1.5A	IN100-240V OUT24V	1	YE7135240100	
39	S1, S5~S8(H)	Start button	SCHNEIDER	XB2BW33M1C	400VAC	5	YE1123310000	
40	S2	Stop botton	SCHNEIDER	XB2BA22C	400VAC	1	YE1122000000	
41	S3	Emergency stop button	SCHNEIDER	XB2BS542C	400VAC	1	YE1125420000	
42	S4	Selector switches	ABB	C2SS2-10B-10	Ui=300V Ith=5A	1	YE1221010000	
43	S9,S10,S11,S12	Limit switch	SCHMERSAL	TS236-11Z-M20	500V	4	YE1036120000	(1)
44	S13	Safety switch	SCHMERSAL	AZ17-11ZK	AZ-17	1	YE1617100000	(1)
45	S14,S15	Sensor	DELIN	DL-12	24VDC	2	YE1512240000	(1)
46	X1	Terminal board	PHOENIX	SAK-35	--	6	YE6135004 0000	
47			PHOENIX	TB35 PE I	--	1	YE6135350000	
48			--	TB2.5B I	32A	3	YE6125004 0000	
49			--	TB2.5 PE I	--	1	YE6125035 00000	
50			--	TB2.5B I	32A	3	YE6125004 0000	(2)

版本 Ver.B (3)Means optional accessories of decusting blower; (4) Means optional accessories of full-receive alarm device (5)Stand for conveying belt optional accessories.

Mark	Before modification	After modification	Modified by	Modify date

Drawer | Designer | Proofread by | Checked by | Approved by | Date 20160709 | Version B

Title: SG-7090B Electrical Components List 2

SHINI 信易電熱機械股份有限公司 Shini Plastics Technologies, Inc.

Drawing NO.: SG-7090B-400V-GB-B-8

Scale | Standard GB | Page 8 | Totally 9 Pages | Voltage 400V | Frequency 50Hz

Table 2-16: SG-7090B Electrical Components List 3

NO.	Symbol	Name	Manufacturer	Type	Specification	Number	Material number	Remark
51			--	TB2.5 PE I	--	1	YE61253500000	(2)
52			--	TB2.5B I	32A	3	YE61250040000	(3)
53			--	TB2.5 PE I	--	1	YE61253500000	(3)
54			--	TB2.5B I	32A	2	YE61250040000	(5)
55	X2 X3	Terminal board	PHOENIX	TB2.5B I	32A	24	YE61250040000	
56			PHOENIX	TB2.5 PE I	--	1	YE61253500000	
57			--	TB2.5B I	32A	4	YE61250040000	(4)
58	X4	Terminal board	--	NCT-70PE	--	1	YE61070000000	
59	Y11 Y12 Y13 Y14	Solenoid valve	----	----	24VAC 50/60Hz	4	-----	(1)
60	X5	Metal tie in	SHINI	PLT-162-RR(A)	2P	1	YE68016200100	(1)(5)
61	H3	Buzzer	TEND	EA-2	24VAC	1	YE84240200000	(1)(4)
62	MS	Material level switch	SIPAI	SR-80	24VAC	1	YE15802400100	(1)(4)
63	X10	Metal tie in	APEX	PLT-254-PM	4P	1	YE68025400000	(1)(4)
64			APEX	PLT-254-RF	4P	1	YE68025400100	(1)(4)
65	M1	Motor	--	75KW	400V 50Hz	1	-----	(1)
66	M2	Oil pump motor	--	1.5KW	400V 50Hz	1	-----	(1)
67	M3	Blower	--	7.5KW	400V 50Hz	1	-----	(1)(2)
68	M4	Blower	--	1.1KW	400V 50Hz	1	-----	(1)(3)

版本 Ver.B

Mark	Before modification	After modification	Modified by	Modify date	Drawer	Designer	P-oofread by	Checked by	Version	B	Approved by	Date	20160709

Title: SG-7090B Electrical Components List 3

信易電熱機械股份有限公司 Shini Plastics Technologies, Inc.

Drawing NO.: SG-7090B-400V-GB-B-9

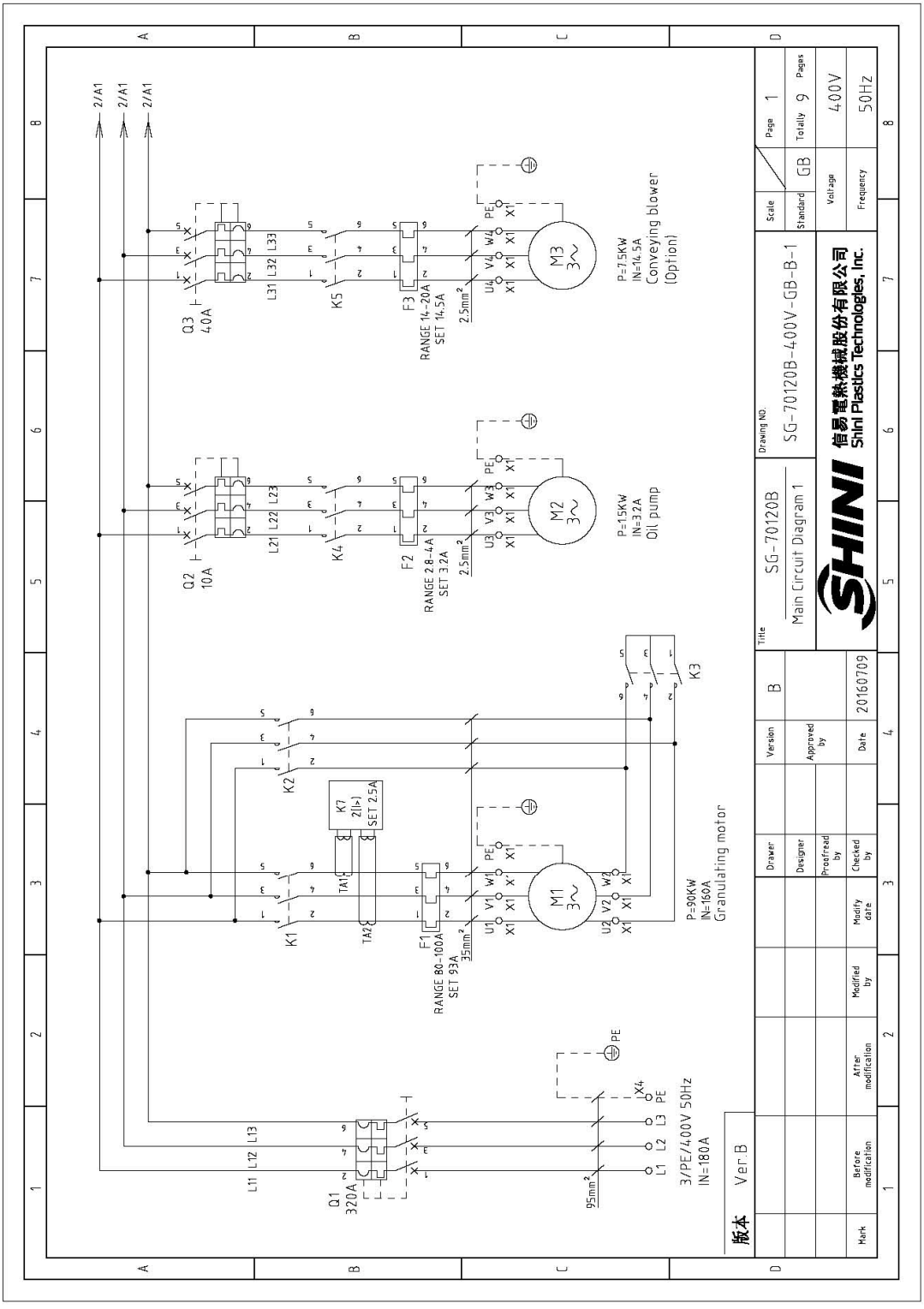
Scale: Standard GB

Page 9 Totally 9 Pages

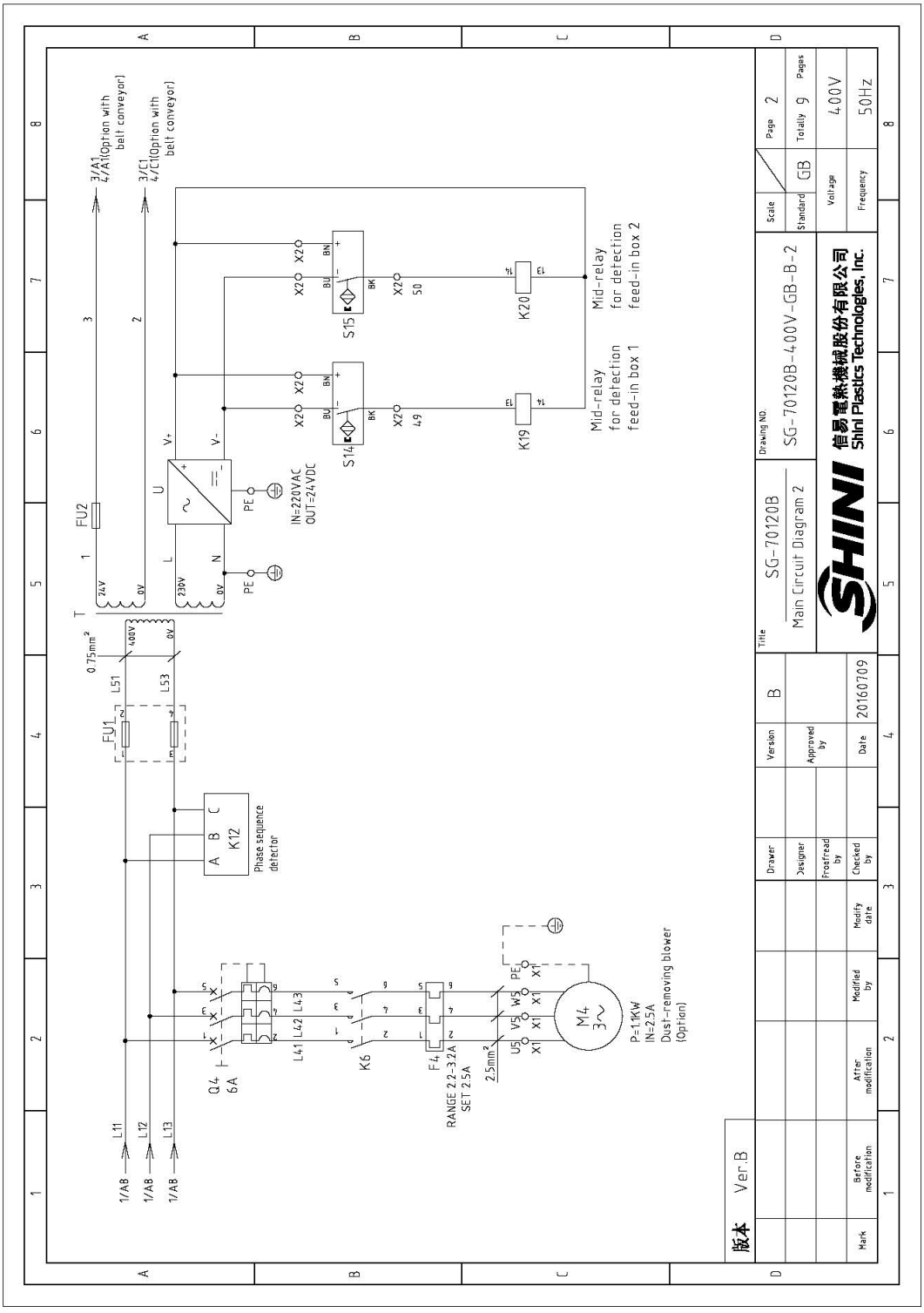
Voltage 400V

Frequency 50Hz

2.4.13 Main Circuit Diagram (SG-70120B)

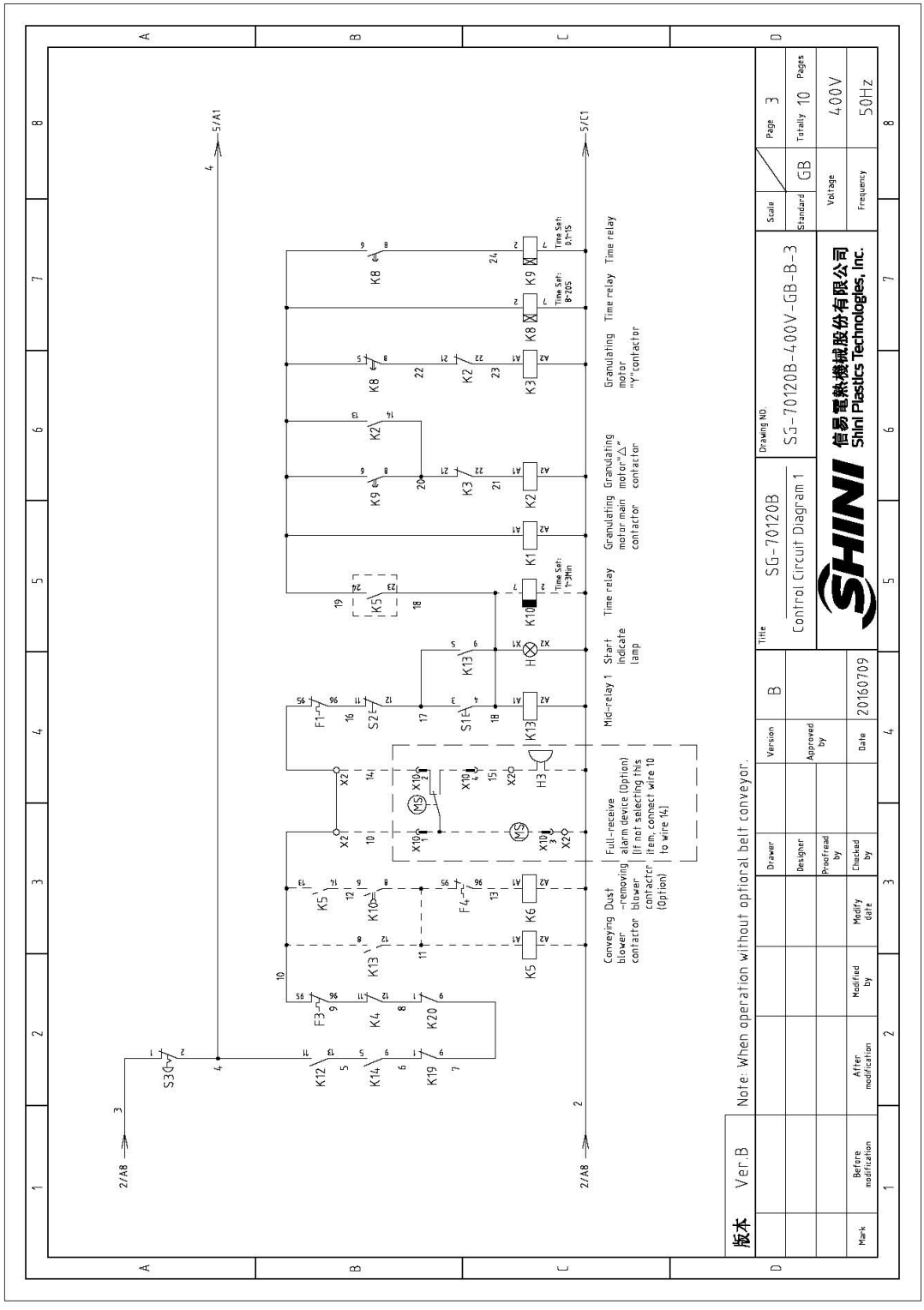


Picture 2-31: Main Circuit Diagram 1(SG-70120B)

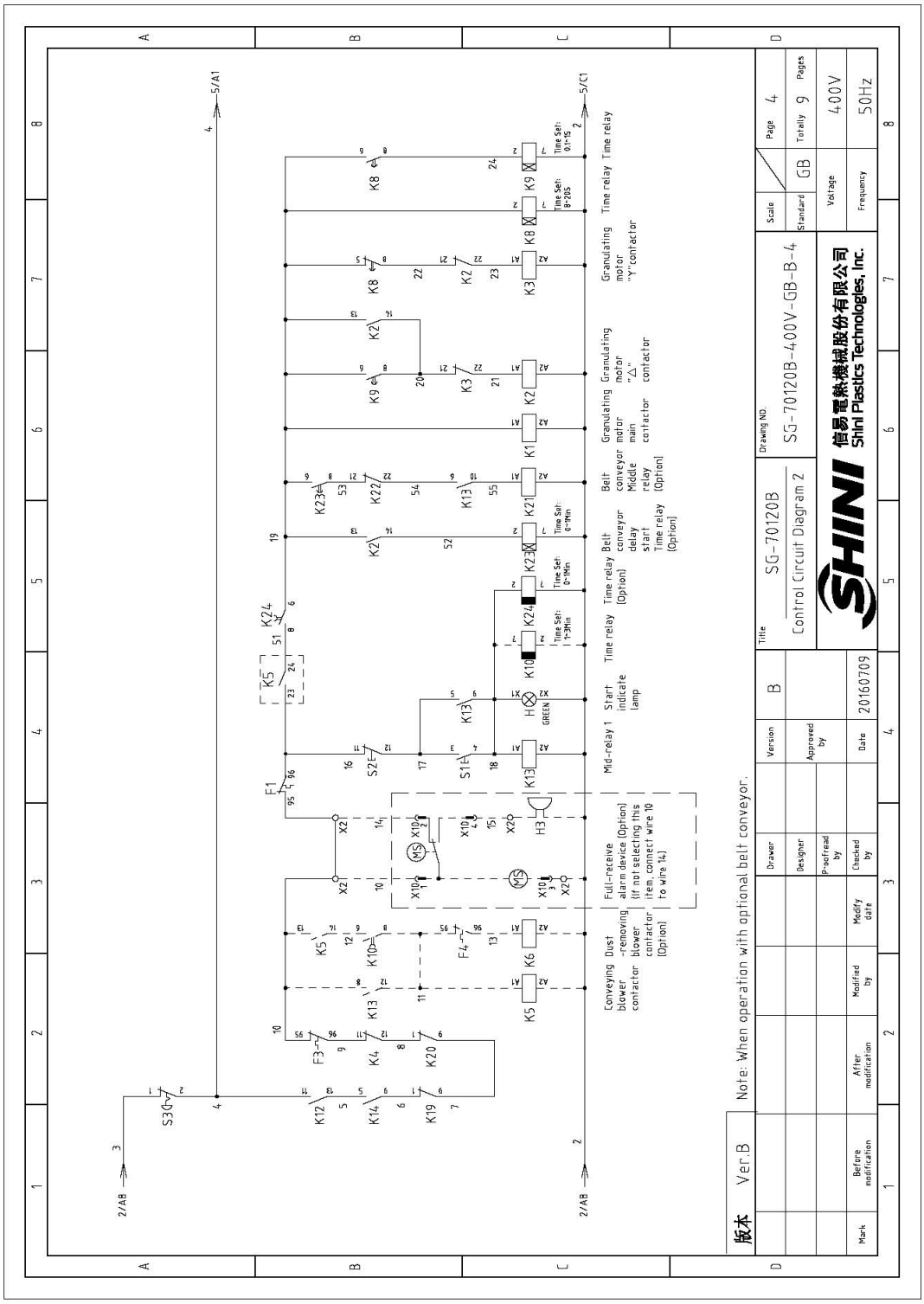


Picture 2-32: Main Circuit Diagram 2(SG-70120B)

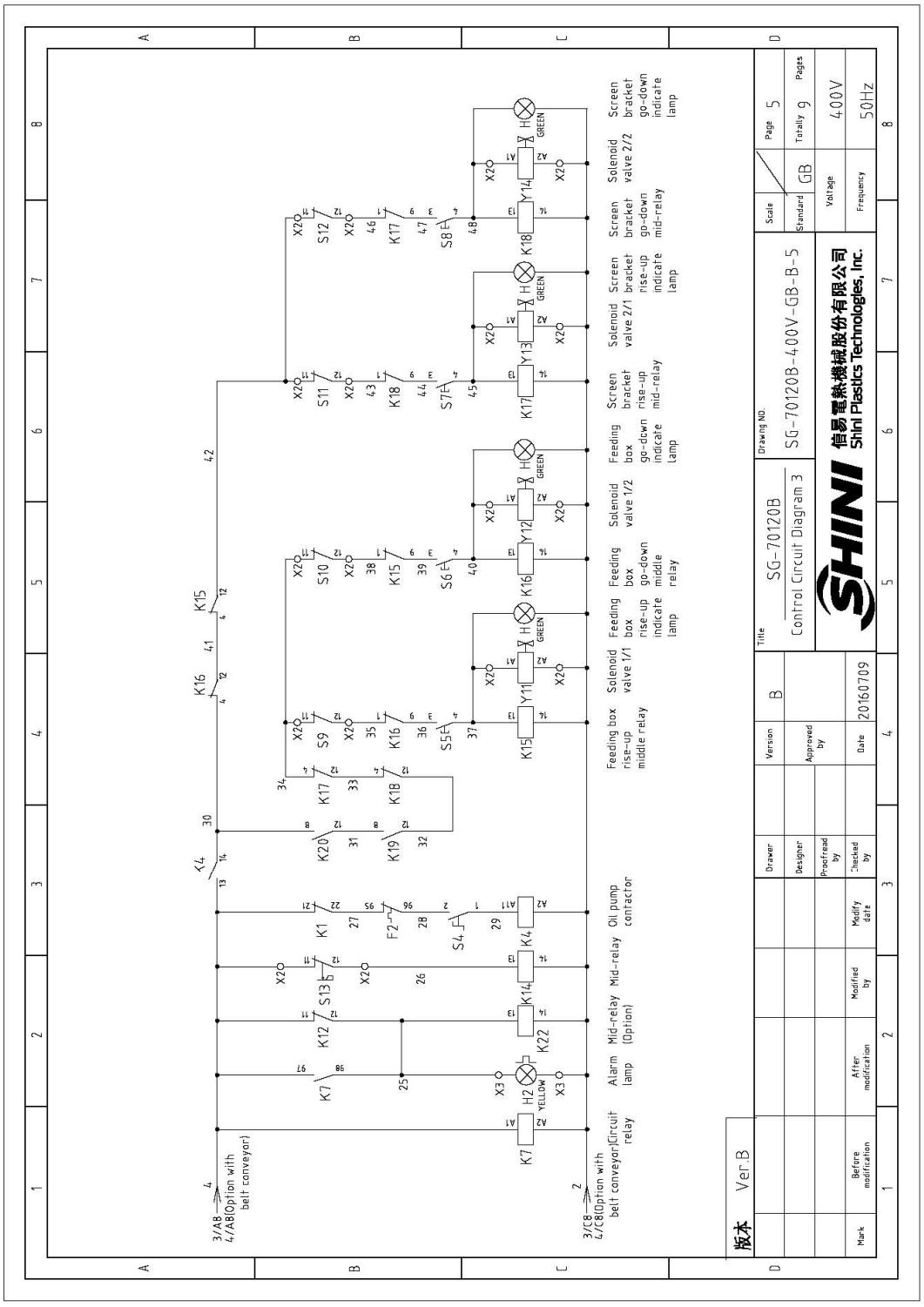
2.4.14 Control Circuit Diagram (SG-70120B)



Picture 2-33: Control Circuit Diagram 1(SG-70120B)

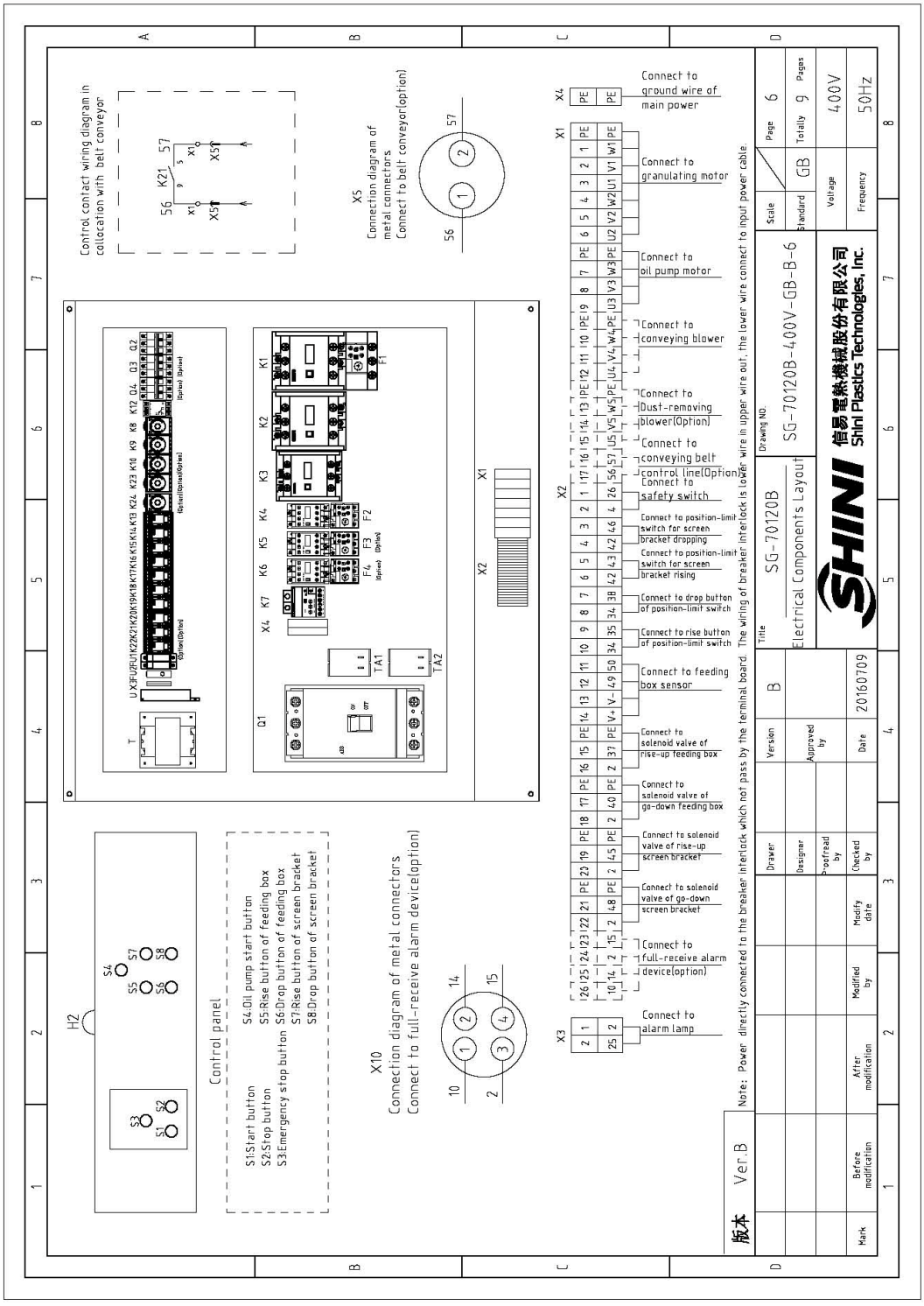


Picture 2-34: Control Circuit Diagram 2(SG-70120B)



Picture 2-35: Control Circuit Diagram 3(SG-70120B)

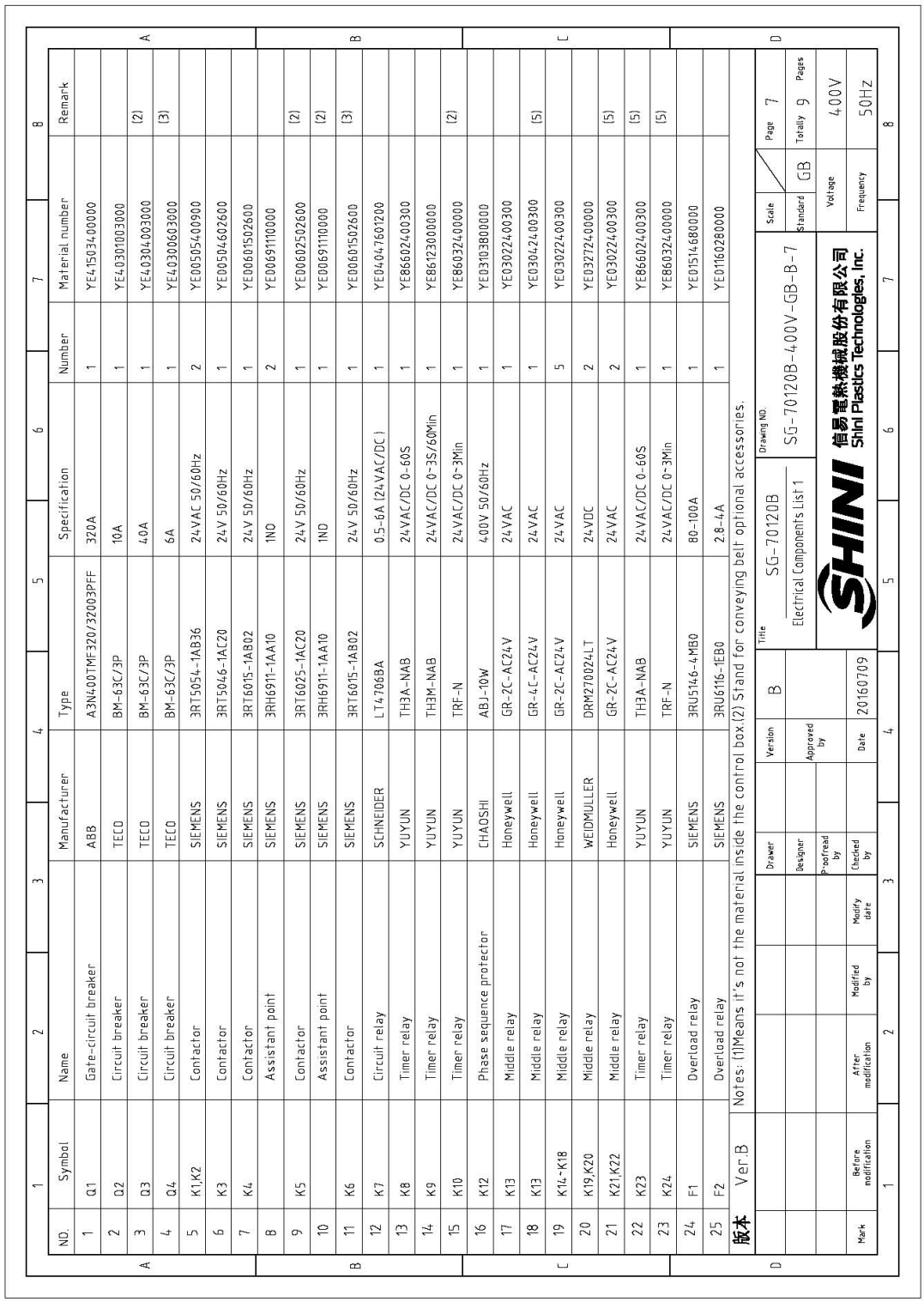
2.4.15 Electrical Components Layout (SG-70120B)



Picture 2-36: Electrical Components Layout (SG-70120B)

2.4.16 Electrical Components List (SG-70120B)

Table 2-17: SG-70120B Electrical Components List 1



NO.	Symbol	Name	Manufacturer	Type	Specification	Number	Material number	Remark
1	Q1	Gate-circuit breaker	ABB	A3N400TMF320/32003PFF	320A	1	YE4150340000	
2	Q2	Circuit breaker	TECO	BM-63C/3P	10A	1	YE4030103000	
3	Q3	Circuit breaker	TECO	BM-63C/3P	40A	1	YE4030403000	(2)
4	Q4	Circuit breaker	TECO	BM-63C/3P	6A	1	YE4030306030000	(3)
5	K1,K2	Contactor	SIEMENS	3RT5054-1AB36	24VAC 50/60Hz	2	YE0050540900	
6	K3	Contactor	SIEMENS	3RT5046-1AC20	24V 50/60Hz	1	YE0050460260O	
7	K4	Contactor	SIEMENS	3RT6015-1AB02	24V 50/60Hz	1	YE0060150260O	
8		Assistant point	SIEMENS	3RH6911-1AA10	1NO	2	YE0069110000	
9	K5	Contactor	SIEMENS	3RT6025-1AC20	24V 50/60Hz	1	YE0060250260O	(2)
10		Assistant point	SIEMENS	3RH6911-1AA10	1NO	1	YE0069110000	(2)
11	K6	Contactor	SIEMENS	3RT6015-1AB02	24V 50/60Hz	1	YE0060150260O	(3)
12	K7	Circuit relay	SCHNEIDER	LT4706BA	0.5-6A (24VAC/DC)	1	YE0404760120O	
13	K8	Timer relay	YUYUN	TH3A-NAB	24VAC/DC 0-60S	1	YE8660240O300	
14	K9	Timer relay	YUYUN	TH3M-NAB	24VAC/DC 0~3S/60Min	1	YE8612300000O	
15	K10	Timer relay	YUYUN	TRF-N	24VAC/DC 0~3Min	1	YE8603240000O	(2)
16	K12	Phase sequence protector	CHAOSHI	ABJ-10W	400V 50/60Hz	1	YE0310380000O	
17	K13	Middle relay	Honeywell	GR-2C-AC24V	24VAC	1	YE0302240O300	
18	K13	Middle relay	Honeywell	GR-4C-AC24V	24VAC	1	YE0304240O300	(5)
19	K14-K18	Middle relay	Honeywell	GR-2C-AC24V	24VAC	5	YE0302240O300	
20	K19,K20	Middle relay	WEIDMULLER	DRM270024LT	24VDC	2	YE0327240000O	
21	K21,K22	Middle relay	Honeywell	GR-2C-AC24V	24VAC	2	YE0302240O300	(5)
22	K23	Timer relay	YUYUN	TH3A-NAB	24VAC/DC 0-60S	1	YE8660240O300	(5)
23	K24	Timer relay	YUYUN	TRF-N	24VAC/DC 0~3Min	1	YE8603240000O	(5)
24	F1	Overload relay	SIEMENS	3RU5146-4MB0	80-100A	1	YE0151468000O	
25	F2	Overload relay	SIEMENS	3RU6116-1EB0	2.8-4A	1	YE0116028000O	

版本 Ver.B

Notes: (1)Means it's not the material inside the control box.(2) Stand for conveying belt optional accessories.

Mark | Before modification | After modification | Modified by | Modify date | Drawer | Designer | Proofread by | Checked by | Approved by | Version B | Date 20160709

Title: SG-70120B Electrical Components List 1

Drawing NO.: SG-70120B-400V-GB-B-7

信易電熱機械股份有限公司 Shini Plastics Technologies, Inc.

Scale | Page 7

Standard GB | Totally 9 Pages

Voltage 400V

Frequency 50Hz

NO.	Symbol	Name	Manufacturer	Type	Specification	Number	Material number	Remark
26	F3	Overload relay	SIEMENS	3RU6126-4BB0	14-20A	1	YE01260140000	(2)
27	F4	Overload relay	SIEMENS	3RU6116-1DB0	2.2-3.2A	1	YE01160220000	(3)
28	FU1	Fuse	CHNT	RT28-32	2P	1	YE41032200000	
29		Fuse core	MRO	10×38 500V	2A	2	YE46002000100	
30	FU2	Fuse	YINDA	FS-10	----	1	YE41001000000	
31		Fuse core	----	6×30	10A	1	YE46631040000	
32	TA1,TA2	Current mutual inductance	RATIO	RCT-35	150/5A	2	YE04150500000	
33	T	Transfarmer	BAIYUN	IN=400V OUT=24V/ 230V	24V 350VA / 230V 350mA	1	YE700400058800	
34	H2	Alarm lamp	SHINI	LED-3051	24VAC	1	YE83305100900	(1)
35	U	DC power	MEANWELL	EPR-35-24 1.5A	IN100-240V OUT24V	1	YE71352400100	
36	S1, S5~S8(H)	Start button	SCHNEIDER	XB2BW33M1C	400VAC	5	YE11233100000	
37	S2	Stop botton	SCHNEIDER	XB2BA22C	400VAC	1	YE11222000000	
38	S3	Emergency stop button	SCHNEIDER	XB2BS542C	400VAC	1	YE11254200000	
39	S4	Selector switches	ABB	C2SS2-10B-10	Ui=300V Ith=5A	1	YE12210100000	
40	S9,S10,S11,S12	Limit switch	SCHMERSAL	TS236-11Z-M20	500V	4	YE10361200000	(1)
41	S13	Safety switch	SCHMERSAL	AZ17-11ZK	AZ-17	1	YE16171100000	(1)
42	S14,S15	Sensor	DELIN	DL-12	24VDC	2	YE15122400000	(1)
43	X1	Terminal board	PHOENIX	SAK-35	--	6	YE61350040000	
44			PHOENIX	TB35 PE I	--	1	YE61353500000	
45			--	TB2.5B I	32A	3	YE61250040000	
46			--	TB2.5 PE I	--	1	YE61253500000	
47			--	TB2.5B I	32A	3	YE61250040000	(2)
48			--	TB2.5 PE I	--	1	YE61253500000	(2)
49			--	TB2.5B I	32A	3	YE61250040000	(3)
50			--	TB2.5 PE I	--	1	YE61253500000	(3)

版本 Ver.B

(3)Means optional accessories of decusting blower; (4) Means optional accessories of full-receive alarm device.(5)Stand for conveying belt optional accessories.

Mark	Before modification	After modification	Modified by	Modify date

Drawer		Version	B		
Designer		Approved by			
Proofread by					
Checked by		Date	20160709		

Title: SG-70120B Electrical Components List 2

Drawing NO.: SG-70120B-400V-GB-B-8

SHINI 信易電熱機械股份有限公司 Shini Plastics Technologies, Inc.

Scale		Page	8
Standard	GB	Totally	9 Pages
Voltage		400V	
Frequency		50Hz	

NO.	Symbol	Name	Manufacturer	Type	Specification	Number	Material number	Remark
51			--	TB2.5B I	32A	2	YE61250040000	(5)
52	X2 X3	Terminal board	PHOENIX	TB2.5B I	32A	24	YE61250040000	
53			PHOENIX	TB2.5 PE I	--	1	YE61253500000	
54			--	TB2.5B I	32A	4	YE61250040000	(4)
55	X4	Terminal board	--	NCT-70PE	--	1	YE61070000000	
56	Y11 Y12 Y13 Y14	Solenoid valve	----	----	24VAC 50/60Hz	4	-----	(1)
57	X5	Metal tie in	SHINI	PLT-162-RR(公)	2P	1	YE68016200100	(1)(5)
58	H3	Buzzer	TEND	EA-2	24VAC	1	YE84240200000	(1)(4)
59	MS	Material level switch	SIPAI	SR-80	24VAC	1	YE15802400100	(1)(4)
60	X10	Metal tie in	APEX	PLT-254-PM	4P	1	YE68025400000	(1)(4)
61			APEX	PLT-254-RF	4P	1	YE68025400100	(1)(4)
62	M1	Motor	--	90KW	400V 50Hz	1	-----	(1)
63	M2	Oil pump switch	--	1.5KW	400V 50Hz	1	-----	(1)
64	M3	Blower	--	7.5KW	400V 50Hz	1	-----	(1)(2)
65	M4	Blower	--	1.1KW	400V 50Hz	1	-----	(1)(3)

版本 Ver.B

Mark	Before modification	After modification	Modified by	Modify date

Drawer | Designer | Proofread by | Checked by

Version: B | Approved by | Date: 20160709

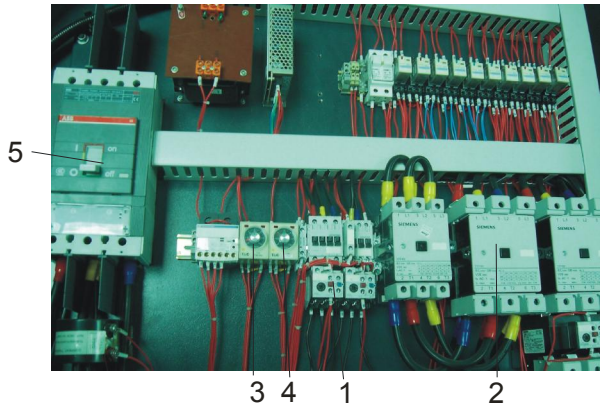
Title: SG-70120B Electrical Components List 3

Drawing NO.: SG-70120B-400V-GB-B-9

信易電熱機械股份有限公司 Shini Plastics Technologies, Inc.

Scale | Standard: GB | Page 9 | Totally 9 Pages | Voltage: 400V | Frequency: 50Hz

2.5 Main Electrical Components Illustration

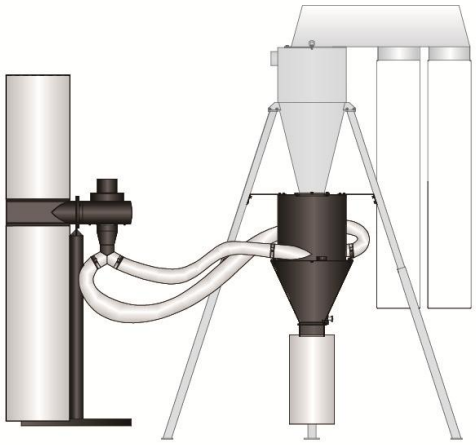


Picture 2-37: Main Electrical Components Illustration

1) Thermo overload relay, which can protect the motor when it is overloading or open phase.
2) Electromagnetic contactor controls the circuit connection and cut off.
3) Electrify delay timer, which can control motor to start from Y to △ with a reduced voltage, by doing this to save the startup current.
4) Power cut off delay timer, which can delay the blower's stop time, and when stop the machine, it can make the machine do a little extra work to suck the material at the bottom of the tube or within the storage box.
5) Breaker interlock, which perform the function of cutting off or connecting to power source.

2.6 Optional Accessories

2.6.1 Dust Separating System



Picture 2-38: Dust Separator System

2.6.2 Screen

Picture 2-39: Screen

According to different requirements to select different screen size，add " SS+ screen dia."at the end of the model code. E.g.: for 17mm screen, add "SS17" at the end of the model code.

Table 2-20: Screen Specification List

Hole Dia. (mm)			
Φ8	Φ10	Φ12	Φ14

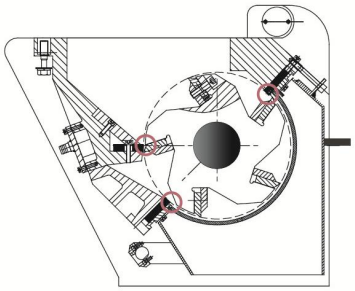
Notes: Φ12 is standard.

2.6.3 Cutter

Table 2-21: Blade List

Material	Relating standard steel ode		
	China	USA	Japan
SKD11	Cr12MoV	D2-	SKD11

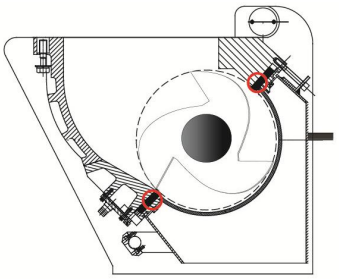
Standard Equipped Cutter(low cutting point)



Picture 2-43: Standard Equipped Cutter (Low Cutting Point)

Low cutting point fixed blades model has big inlet space and initially low cutting point. Material can be easily grabbed and cut thus making this rotor/housing combination ideal for the granulation of hollow objects and frame material.

Optional Cutter (High Cutting Point)



Picture 2-40: Optional Cutter (High Cutting Point)

High cutting point fixed blades model has small inlet space and initially high cutting point. Thus its cutting force is not so strong, which enhances the reliability of cutting solid material. The design is suitable for granulating big solid material with thick wall and sheet. Based on the high cutting point of standard layout, a row of fixed blade is added and makes it 3 rows of fixed blades so that cutting performance is higher than that of 2 rows of fixed blades. But 3 rows have the same design parameter, features and applications as the 2 rows.

2.6.4 Belt Conveyor

Picture 2-41: Belt Conveyor

Material feeding for traditional large granulators is quite a difficult matter. They are generally installed at a lower place or a platform must be built for material feeding. Add “BCF”at the model behind.

2.6.5 Material Side Feed Pipe

The design of feeding hopper of traditional granulators is not suitable for longer pipes and section bars. We have designed material side feed pipe for convenient feeding of long materials. Add “SF”at the model behind.

2.6.6 Flywheel

Increase inertia, thereby increasing the cutting ability. At the same time can result in a more balanced force and longer service life. Add “FW”at the model behind. (Standard equipped in SG-70, option for SG-70B)

2.6.7 Presetting Knife Jig

Equipped with presetting knife jig, rotating blades can be adjusted in the fixture outside the machine instead of machine inside. It makes blades adjustment must easier.Add “KAD”at the model behind. (Standard equipped in SG-70, option for SG-70B)

2.6.8 Sound-proof Box

Adopt overall sound-proof box inside the machine largely reduces the noise level (Standard equipped in SG-70, option for SG-70B).

3. Installation Testing

Read this chapter carefully before installation.

Install as following orders to avoid any accident!

Be careful! Not to be cut by the sharp blade.

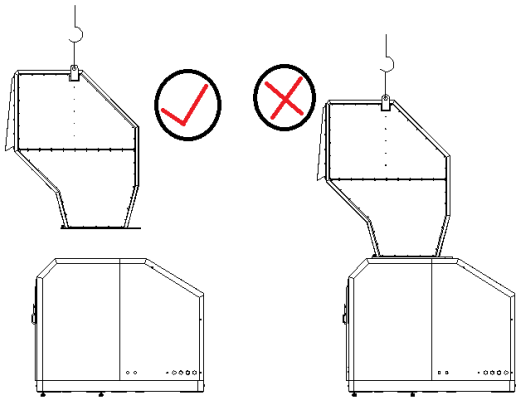
Power connection must be done by the professional electrician.

3.1 Installation Place

Please use the right hoisting way.

The feeding box and mainbody of the granulator is packed separately before leaving the factory. Use a forklift to transport the mainbody to a proper place, then hoist feeding box onto the mainbody, tight the installation screw up.

It is not allowed to install the feeding box onto the main body then hoist them together, because this could damage the machine!

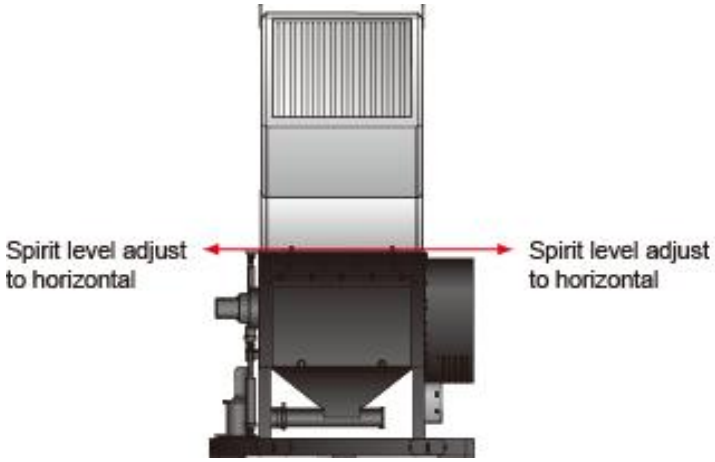


Picture 3-1: Installation Drawing

Please make sure there is enough installation space for easier maintenance and repairing.

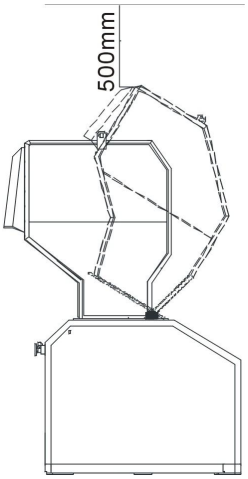
Examine and make sure the installation floor is level and enough intensity when operating.

Use spirit level to adjust the cutting chamber into a level position.



Picture 3-2: Cutting Installation Adjust Drawing

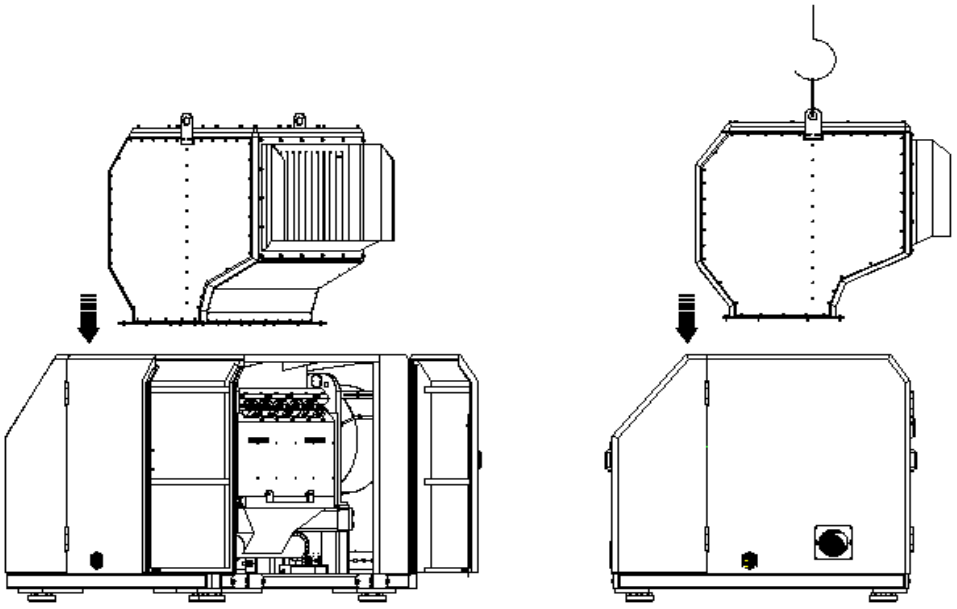
When open the feeding box, there should remain at least 500mm safety space



Picture 3-3: Notice of Opening Feeding Box

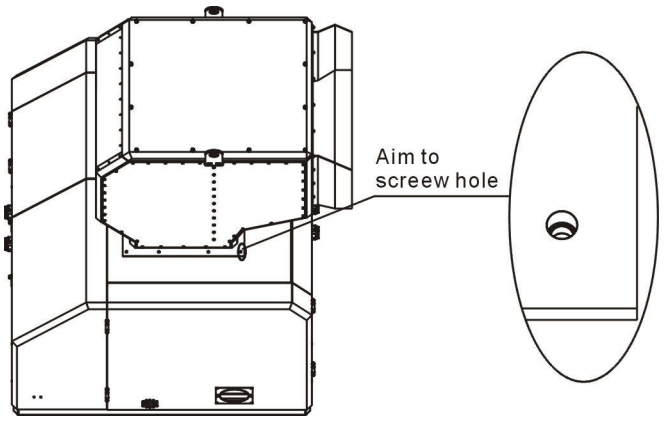
3.2 Install Feeding Box

1) Open the two front doors of the machine.



Picture 3-4: Feeding Box Installation 1

2) Carefully lift the feeding box onto the cutting chamber and aim to the screw holes.

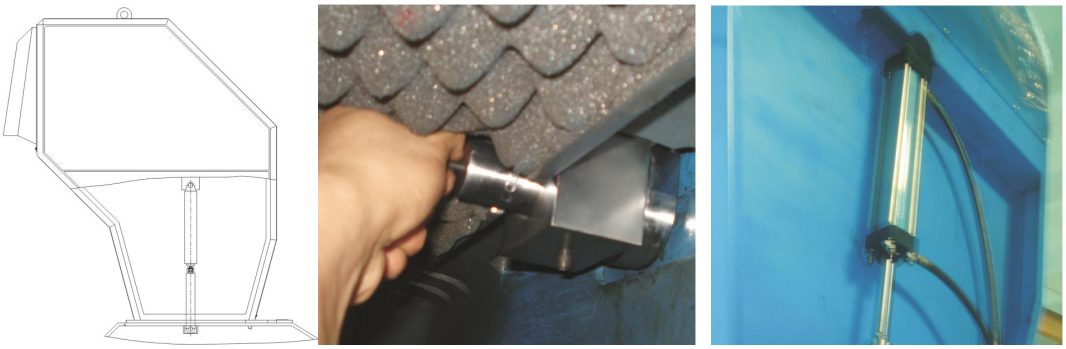


Picture 3-5: Feeding Box Installation 2

3) Lock the screws of the feeding box.

3.3 Connection and Installation of Oil Cylinder

1) The oil cylinder of the collection box has been installation before out factory without treatment for customer.
2) Feeding box and the tank is separate installation, so need to disassembly feeding box first.
3) The oil cylinder support in the right groove of the cover, and then amount the oil cylinder on the right bolt. (Should be tight enough of the oil cylinder and support, and then lock the oil pipes.)
4) Made the bolt into the right fixed block to fixed oil cylinder on the right fixed block.
5) Tighten enough the screw of the oil cylinder.
6) Testing the hydraulic system, no problem and then lock the right cover of the feeding box.



Picture 3-11: Schematic Diagram of the Feeding Box Oil Cylinder Installation

3.4 Connection to Cooling Water

According to machine's label, cooling water should be connected to the machine.

Cooling water level indicator is equipped beside the water tank that behind the back block of the machine and helps check out the water level.

(Note: water level should be lower than 80%)

When discharging the cooling water, first need to open rear door of the machine, insert a water hose into water outlet and drain off the water so to avoid damaging of machine.

3.5 Power Connection

1) Make sure voltage and frequency of the power source comply with those indicated on the manufacture's plate, which is attached to the machine.
2) Power cable and earth connections should conform with local regulations.
3) Use independent power cable and ON/OFF switch. The cable's size should not smaller than those applied in the control box.
4) The power cable connection terminals should be tightened securely.
5) The machine requires a 3-phase 4-wire power source, connect the power lead (L1, L2, L3) to the live wires, and the earth (PE) to the ground.
6) Power supply requirements:
   Main power voltage: +/- 10%
   Main power frequency: +/- 2%
7) Power connection refers to the circuit diagram of each model.

 Power connection must be done by the professional electrician.

3.5.1 Check the running direction of the motor

1) Open the door to check whether the feeding box, screen, or storage box has been installed.
2) Close the door.
3) Ensure the main power switch is in ON position.
4) Check the emergency stop.
5) Start the granulator via pressing the START button and stop the granulator via pressing the STOP button.
6) The granulator needs some time to fully come to a halt. After full stop, check whether the running direction is anti-clockwise.

3.5.2 Check the Running Direction of the Blower

1) Check whether the running direction of the blower is in accordance with the symbol on the shield.
2) Start the blower and stop again to check the blower's running direction.

 CAUTION!

If the blower's running direction is not in accordance with the symbol, the machine's working capability will be reduced by at least 25 percent. Under these circumstances, please disconnect to the main power and transpose any two wires of the three in the blower.

 When equipped with transmission belt: please check the running direction of the transmission belt.

3.6 Installation of Dust-separating System

Read chapter 3 carefully before operating on dust-separating system the circuit connection of the system should be done by professional electrician.

Before first startup

The unpainted parts of the machine are protected with oil prior to delivery and transport. Clean the granulator from rust protection agent before it is used.

1) Place a separator under cyclone device，the diameter is Φ180mm.
2) Connect to conveying pipe, the diameter is 4''×2.
3) Mount dust collection device including air and dust separate bags.
4) Place a container under the separator to help collecting plastic material after dust removing.

Notes!

If use cloth bag to connect the separator, please make sure a good ventilation within the cloth bag.

3.7 Installation of Separating Conveying Device

1) Tighten the cyclone separator body and three upper brackets;
2) Tighten three upper brackets with each lower bracket separately;
3) Lay the cyclone separator on the ground horizontally;
4) Fix the filter bag tightly on the outlet pipe of the cyclone separator.
5) Bind 5'' steel wired plastic pipe on the inlet of cyclone separator and outlet of conveying blower, then tight them up with pipe clamp.
6) Bind 6'' steel wired plastic pipe on the inlet of conveying blower and outlet of storage box, then tight them up with pipe clamp.
7) Connect the power source of conveying blower to the socket of control box.

3.8 Options Installation

3.8.1 Conveying Belt Installation

1) Connect belt main frame to floor stand with hexagon bolt.
2) Put belt top end to feeding box inlet.
3) Insert belt power plug into power socket.
4) Connect metal head of belt control wire to control box socket.

4. Operation

Please wear earplugs when operating machine so to avoid personal injuries!

Please wear gloves when operating machine so to avoid personal injuries!

Please wear goggles when operating machine so to avoid personal injuries!

Because blades or rotors may be loose, before operating the machine, please check the following items:

1) is there any damage to the knives?

2) is there any loose within the surface of the rotors?

If any above situation has been found, please contact local dealer or SHINI company.

4.1 Startup Pretest

Unpainted part of the machine has been covered with anti-rusted oil. Before use, the anti-rusted oil should be cleaned.

1) Clean with a towel.
2) Wash with a towel dipping with amyl acetate.

4.1.1 Before the First Startup

1) Check whether the granulator is in the level state.
   Note: adjust the machine to make its four holders to share the weight and be in a level state.
2) Check the space (0.2~0.3mm) between fixing and rotating blades, confirm if the lockup screws of the blades are tightened (torque is 600 Nm).

4.1.2 After First Startup for 2 Hours

1) Check the space between fixing and rotating blades again; check whether the lockup screws of the blades are loose.
2) Check the position-adjusting screws of the motor and check whether the position-adjusting screws are tightened.

4.1.3 After First Startup for 20~30 Hours

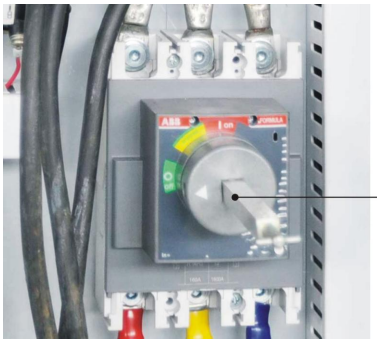
Check and adjust the belt's tension after a 20~30-hour under full-load operation.

4.2 Circuit Connection

SG-50(E) series of granulators via the main power switch, safety switch, “start/stop” button and the “emergency stop button” to control the machine.

Main power switch:

The main power switch of granulator is mounted on control box. The connection of the power is controlled by rotating of the main power switch.



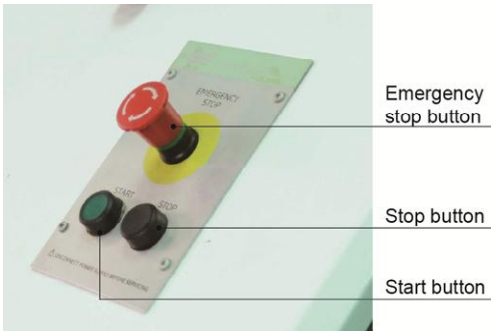
Picture 4-1: Control Box Drawing

Start/Stop Button:

The granulator has start/stop button, which controls machine’s start/stop.

Emergency Stop Button:

Besides, the machine has design of emergency stop button. When accident or emergency happens, press down the emergency stop button to stop the machine.



Picture 4-6: Start/Stop and Emergency Stop Button

Note!

Never stop the granulator before any material in the hopper or cutter chamber is completely granulated.

Residusal material will clog the rotor in the granulator when restart it.

4.3 Open the Feeding box, Screen Bracket and the Storage Box

Before opening the feed hopper, screen bracket and the storage box, turn off the main power switch and the power switch of the granulator.

Be careful!

The blade is very sharp, please take care!

4.3.1 Open the Feeding box

1) At first, loose the locking screw on feeding box's set bolt.
2) Check if the feeding box and cutting chamber is empty.
3) Operate the hydraulic button to forwardly open the feeding box, and then cut off the main power source.

Attention !

The feeding box is supported by hydraulic cylinder, which won't be dropped when opening.

After feeding box contacts the limit switch when dropping, it will stop and won't damage the hydraulic cylinder.

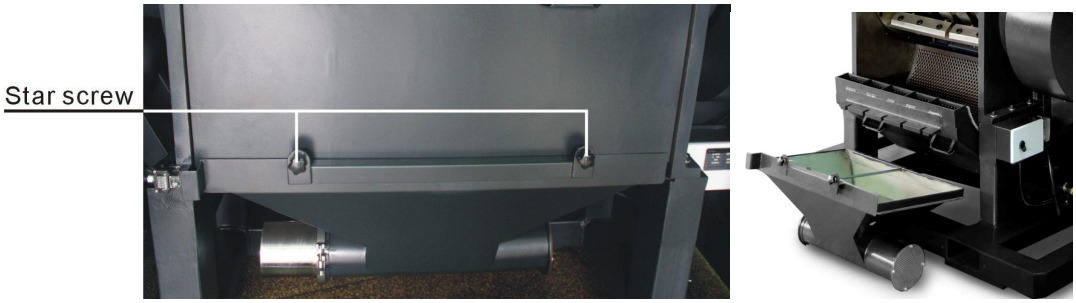
When using the hydraulic cylinder to open the feeding box, please unlock the locking bolt.

4.3.2 Open the Screen Bracket and Screen

1) Power off the granulator.
2) Open the front door.
3) Loosen the fast pipe clamp at the end of outlet pipe and put it aside.

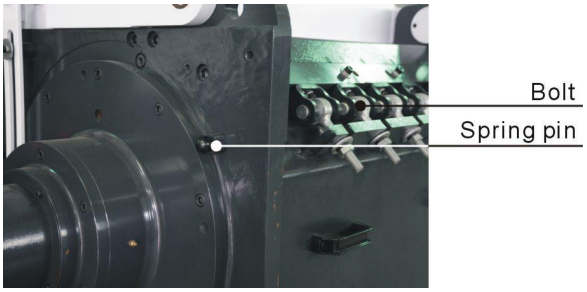
Picture 4-2: Loosen the Fast Pipe Clamp

4) Loosen the two star screws, and draw out the storage box.



Picture 4-3: Draw Out the Storage Box

5) Unscrew the bolt on the screen bracket, turn the spring pin on the left block to left.



Picture 4-4: Spring Bolt

6) Gradually lay down the screen bracket, and take out the screen.

CAUTION!

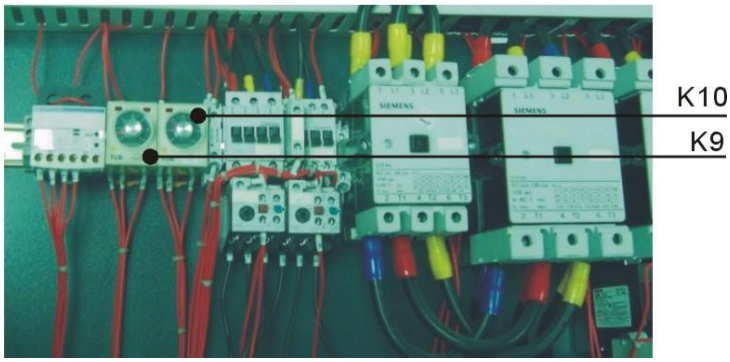
The screen bracket is supported by pneumatic stick to avoid its dropping when opening it.

4.4 Timer (Optional with feeding blower)

Press down the stop button to stop the machine, the feeding blower working time can be prolonged by the timer, which enables the granules in the storage box be fully conveyed. The setting of timer varies with different screen diameters and output capacities.

Timer Setting:

After the granulator stops, via the timer it could prolong the working time of the feeding blower, the granules in the storage box can be sent out completely. The setting of timer varies with different screen diameters and output capacities.



Picture 4-7: Timer

K9: When granulator motor Y is switching with △, △contactor connects with the relay in delay, which avoids motor short circuit when two contactors connecting through the electricity simultaneously during activating (Range: 0.1~1S).

K10: after pressing the stop button, the conveying and dust-removing blowers will continue working for a while, which should ensure the granules could all be conveyed by the granulator (Range: 0~3Min). Note: the setting time of K10 must be larger than K24.

K8: setting the operation time of granulator motor Y (Range: 8~20S) .(Option)

K23: Make the belt conveyor work in delay. After the granulating motor △ is connected through in delay time and motor operates stably, connect the K23

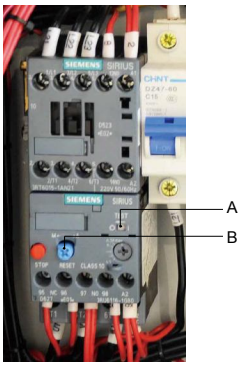
with the belt conveyor (Range: 0~1Min). (Option)

K24: after pressing the stop button, the granulator stops in delay. It makes the un-granulated materials inside the granulator finish the granulating after pressing down the stop button (Range: 0~1Min). Note: the setting time of K10 must be larger than K24. (Option)

5. Trouble-shooting

5.1 The Granulator Can Not Work

1) Check if the emergency stop has been reset. If not, rotate the button anti-clockwise to reset it.
2) Check whether the door is closed. If not, the machine could not be started.
3) Check if the feeding hopper is completely closed. If not, the machine could not be started. Then, check the lockup clip after opening the door.
4) Check the motor's overload protector. The overload protector in the electrical control box will work if the motor overloads. Under that situation, (A) (the green pole) will come out. Press the Reset button B) to reset it. Before startup again, check whether there is any powder in the granulator.
5) Check the overload protector of the feeding blower's motor. If the feeding blower does not run, the granulator can not run neither. Check the motor protector in the electrical control box. If it is closed, the switch will be in 0 positions. Reset it to 1 position. (A) (The green pole) will come out. Press the Reset button (B) to reset it.
6) Check the space between blades stop will happen or the motor overload protector will trigger off if the blade is very blunt or the space between blades is not correct. More details about checking, replacing and readjusting the blades to see chapter 3.6.
7) Check the phase sequence protector, which is inside the control box. If power phase shortage occurs, the phase sequence protector will cut off the control circuit of granulator, and it leads to granulator can't be started.

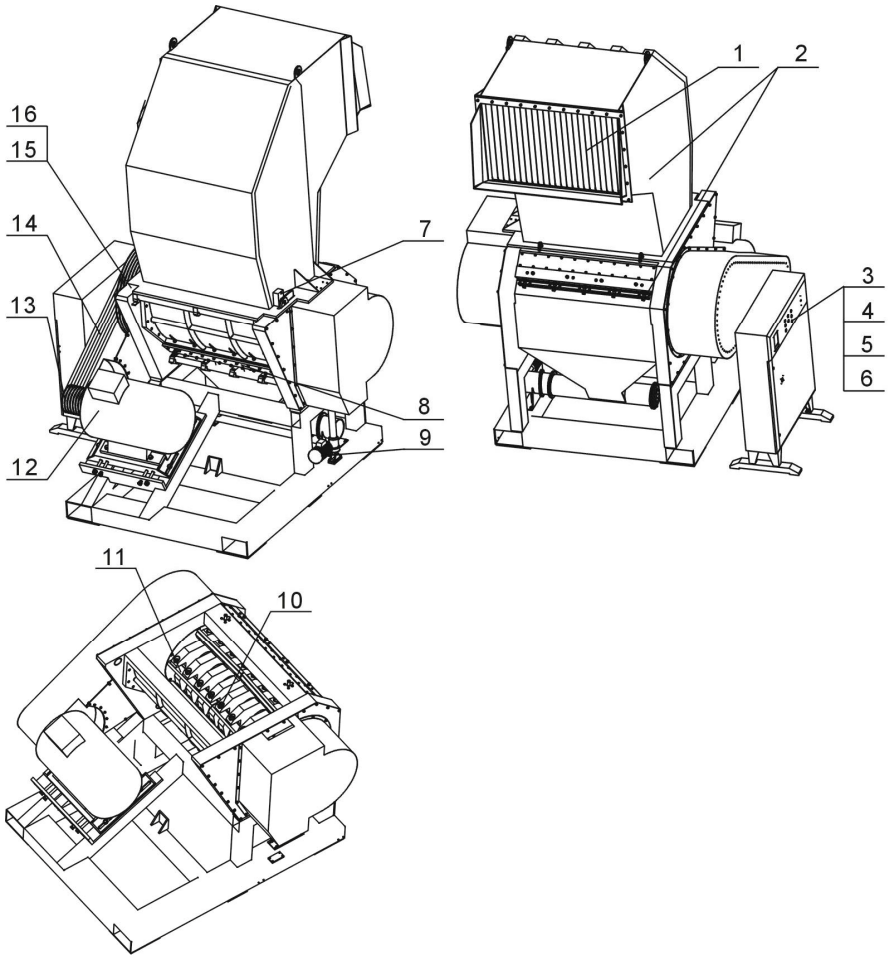


5.2 Stop Due to Other Reasons

Connection failure or looseness of safety switch or limit switch can also result in operational failure.

 Note: Do not disconnect to safety switch or control switch.

6. Repair and Maintenance



1. Check the material defender.
2. Clean the screen and feeding chamber. Period: Daily.
3. Check the start/stop button and the main power switch. Period: Daily.
4. Check the emergency stop button. Period: Daily.
5. Check all the cables. Period: Weekly.
6. Check the electrical components joints. Period: Weekly.
7. Check the safety switch. Period: Weekly.
8. Check the cooling system function of the cutting chamber. Period: Weekly.
9. Check the hydraulic cylinder. Period: Weekly.
10. Check the screws between the fixed blades and therotating blades. Period: Weekly.
11. Check the service condition of the blades. Period: Weekly.

12. Check the gear motor. Period: Weekly.
13. Check the locking ring of the pulley. Period: Monthly.
14. Check the belt tension. Period: Semiyearly or every 1000 working hour.
15. Check the shaft, motor and the lubrication. Period: Semiyearly or every 1000 working hour.
16. Check the bearing holders. Period: Semiyearly or every 1000 working hour.

6.1 Repair

All the repair work should be done by professionals in order to prevent personal injuries and damage of the machine.

6.1.1 Operation and Maintenance of Dust-separating System

Daily check

- Air and dust bags, check if these bags are damaged, if there is any damage, please replace them.
- Check if the conveying pipe is damaged, if it is, please replace it.
- Check if the connecting joint had been fixed and sealed.
- Check if the dust collection bag is full, if it is, please dump it checks if the collection barrel is placed right under the dust separator, if there has any deviation, please adjust it.
- Check the collection barrel, if it is full, take out the dust removed plastic in timely.

Weekly check

- Check to see if the wire has any damage and the condition of the wire, if it has any problem, please fix it.

6.1.2 Dust-separating System Cleaning

Clean the machine when the processing material is changed or after every 300-hour running time. Before cleaning, please cut off the power.

- First clean the inner side of the cleaning facilitates.
- It is necessary to check and clean dust separator.
- Move away separator, use high pressure air to blow away its interior granules.

- Clean out the storage hopper and clean its interior.
- Shake the air bag to drop the dust down.
- Assembly the disassembled parts according to reversed order.

6.1.3 Replace the Blades

CAUTION!

Warning: rotating blades need balanced force. Self rotation exists due to non-balanced forces or unstable barycenter.

Press emergency stop button and turn off main power switch before blades changing.

Wear grooves to avoid being cut and be careful of the sharp blades!

Inject fixing glue (blue LOCTITE 243 recommended) on all tighten screws to protect these screws from loosing.

Picture 6-1: Blade Maintenance Drawing

CAUTION!

To decrease the possibility of harm to other people, the replacement action must be conducted by oneself.

CAUTION!

To avoid self rotation, block the rotating blade with a thick wood block. Cutters are very sharp, attention should be paid when block them. After replacement, check whether the screen is damaged. If so, replace the screen.

CAUTION!

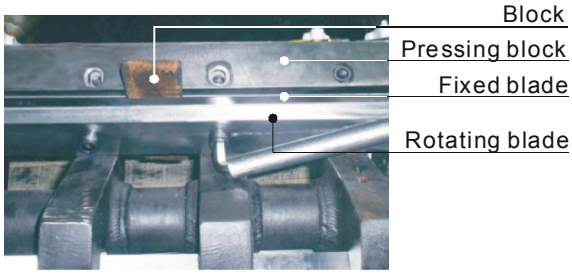
Each time to replace the blade, the screw and washer must be replaced Before replacing the blades, open the door and feeding box remove the storage box, screen and screen bracket.

1) Remove the rotating blades

CAUTION!

To avoid self rotation, block the rotating blade with a thick wood block.

1. Remove the screws and washers.
2. Remove the blades.
3. Clean the installation surface of the blades.



Picture 6-2: Change Blade Drawing

2) Remove the Fixed Blades

1. Revolve the screw of the front fixed blade.
2. Loosen and remove the hexagon socket cap screws from the front pressing block.
3. Remove pressing block and blade, clean the blade rest.
4. Loosen and remove the screws of the back blades.
5. Loosen and remove the hexagon socket cap screw from the pressing block again, remove the pressing block and blade. Clean the supporter box.

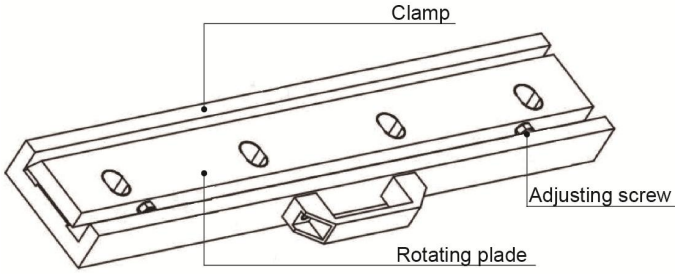
CAUTION!

Press the pressing block and blade when you remove the last screw to avoid the personal injuries.

3) Install the blades

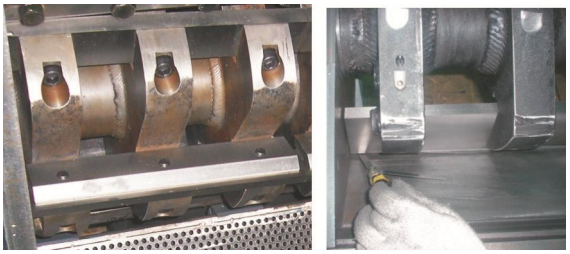
A: The installation steps with presetting knife jig:

1) All blades, including rotating blade and fixed blade, could be adjusted inside the presetting knife jig outside the machine. Put the blade into the presetting knife jig. Regulate the adjusting screw till it touches the presetting knife jig.



Picture 6-3: Blades Installation Adjusting

2) After the rotating and fixed blade adjusted well on the presetting knife jig, put the rotating blade inside the groove of the milled blade rest. Aim the holes on the blade rest, put down the pressing plate and fix the screws till the blade without any shaking (in order to adjust the clearance between the rotating and fixed blade).
3) Mount front / back pressing block of the rotating and fixed blade on front /back block, fasten the screw till the blade without any shaking.
4) Use the feeler gauge to check the clearance between rotating and fixed blade, the distance is 0.2~0.3mm; Adjust the rotating and fixed blade if it is not within this distance. At last, lock the fixing screw of rotating and fixed blade with torque spanner, for the torque please refer to Table 6-1.



Picture 6-4: Installation of Rotating and Fixed Blade

B: Without presetting knife jig:

1) When presetting knife jig is not adopted, firstly adjust the length of one adjusting screw on rotating blade as its total width with blade to 114 ± 0.07mm (3 rotating bades width, 5 rotating blades width is 90 ± 0.07mm); Then adjust another screw length to the same value, at last lock the nuts and screws.
2) Same as the installation with presetting knife jig.

CAUTION!

In order to avoid human injury and machine damage, it must lock up the blade screw tightly.

CAUTION!

The blade clearance can't be too close to avoid blade damage!

CAUTION!

Every time to replace the cutters, the blade, pressing block, screw, blade rest and main shaft should be inspected carefully, to check if there is any damage.

Table 6-1: Attached Form,Cutters and other Fixing Screw Torque

Threading Type	Threading Specification	Stretching Force Fv(N)			Tightening Torque Ma (N.M)		
		Grade -8.8	Grade -10.9	Grade -12.9	Grade -8.8	Grade -10.9	Grade -12.9
Coarse Thread	M4	3900	5750	6700	3.0	4.4	5.1
	M5	6400	9400	11000	5.9	8.7	10
	M6	9000	1320	15500	10	15	18
	M8	16500	24300	28400	25	36	43
	M10	26300	38700	45200	49	72	84
	M12	38400	56500	66000	85	125	145
	M14	52500	77500	90500	135	200	235
	M16	72500	107000	125000	210	310	365
	M18	91000	129000	152000	300	430	500
	M20	117000	166000	195000	425	610	710
	M22	146000	208000	244000	580	820	960
	M24	168000	240000	281000	730	1050	1220
	M27	222000	316000	369000	1100	1550	1800
	M30	269000	384000	449000	1450	2100	2450
Fine Thread	M8×1	18100	26600	31200	27	39	46
	M10×1.25	28300	41600	48700	52	76	90
	M12×1.25	43300	63500	74600	93	135	160
	M12×1.5	40800	60000	70000	89	130	155
	M14×1.5	58600	86000	100000	145	215	255
	M16×1.5	79500	116000	136000	226	330	390
	M18×1.5	108000	152000	177000	340	485	570
	M20×1.5	134000	191000	224000	475	680	790
	M22×1.5	166000	236000	276000	630	900	1050
	M24×2	189000	270000	316000	800	1150	1350
	M27×2	246000	350000	409000	1150	1650	1950
	M30×2	309000	440000	515000	1650	2350	2750

6.2 Transmission

CAUTION!

Press emergency stop button and turn off the main power switch before repairing and maintenance of the transmission belt.

6.2.1 Daily Maintenance of Transmission Belts

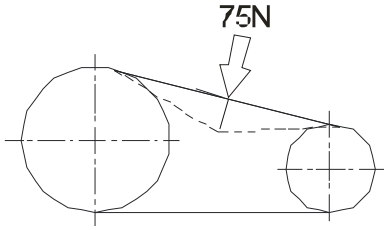
According to granulator's motor power, it equipped with 4~8 belts.

1) Check the transmission belts Check transmission belts' tensility after a full-load operation for 20-30 hours. Then check its abrasion condition.
2) Check transmission belts' tensility every 6 months. Remove the right sideboard and transmission belt cover. Rotate the transmission belts for several circles to see if there is any damage or abrasion.

CAUTION!

Do not place your hands between wheels and the belts. to avoid being pinched.

If it is necessary, check the belt's tension via extra force and measure its excursion. Inflict extra force (75N) in the middle of the belt and this force is determined by power and frequency of the motor.



Picture 6-5: Conveying Belt Maintenance Drawing

Table 6-2: Conveying Belt Maintenance Standard List

Motor 50Hz	18.5/22kW	30/37kW	45-55kW
New belt	15mm	14mm	15mm
Old belt (Six - month later)	19mm	19mm	19mm
Motor 60Hz	18.5/22kW	30/37kW	45-55kW
New belt	18mm	17mm	16mm
Old belt (Six - month later)	22mm	23mm	20mm

6.2.2 Adjustment of Transmission Belts

1) Loose the 4 fixing screws on mounting base of the motor.
2) Adjust the V belt tension by pulling and pushing up the motor mounting base via the adjustment of the 4 screws.
3) Lock up the moving bolts.
4) Lock up the fixed bolts. Recheck the belt tension after a full-load operation of 20-30 hours.

6.3 Installation of Bearing and Blade Rest

1) Lock the right bearing housing to the right box block of the granulating chamber; then, continue to install the right flap.
2) Align the shaft of blade rest with the slot of right bearing housing, and insert the blade rest into the housing.
3) Insert the flap and left bearing housing matching to the shaft of blade rest, and lock it to the left box block.
4) Install sealing ring on the right and left bearing housing, and press the ring into the bearing. At the same time, use round-nut to fix the inner ring of bearing.

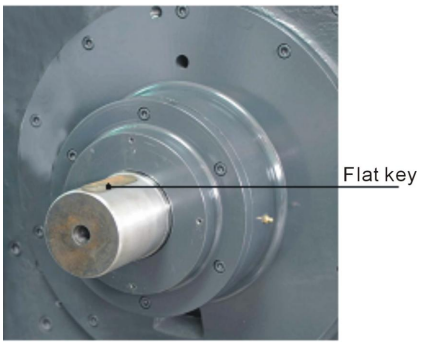
 Note: Add some lubricating oil to both bearing and bearing base.

5) Adjust the right and left clearness of the blade rest shaft, finally install the bearing cover and lock it tightly. The right bearing cover firmly presses the outer ring of bearing to make the right bearing cannot be moved or turned direction.

Picture 6-6: Bearing and Blade Rest Installation Drawing

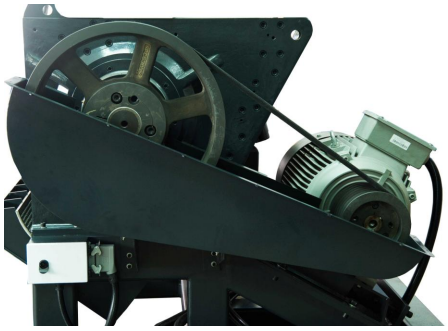
6.4 Installation of Belt Pulley and Motor

1) Put the flat key on the key groove of the shaft.



Picture 6-7: Installation of Belt Pulley and Motor 1

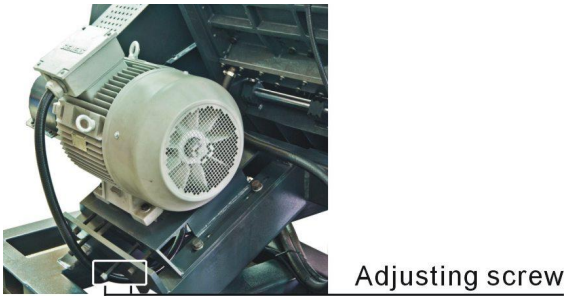
2) Put the taper sleeve inside the hole of large pulley and aim the hole to the big pulley. Then lock up the inner hexagon screw (M20mm×50).
3) Adjust the balance of the large pulleywith dial gauge. Stick the dial gauge to the large pulley and rotate the large pulleyto see whether the value of gauge is within 0~0.1 mm.
4) After balance, screw tightly the 3 inner hexagon screws (Torque: 710 Nm)
5) Install the small pulley on the shaft of the motor.
6) Put the taper sleeve into the hole of small pulley and aim the hole to large pulley, then lock it up with inner hexagon screw (M12mm×50).



Picture 6-8: Installation of Belt Pulley and Motor 2

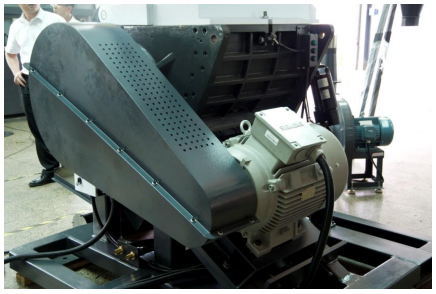
7) Put the motor on the motor fixed board, and move it forward to reduce the distance between small and large pulley.
8) Adjust the balance of the small and large pulley: put spirit level between the big pulley and the small pulley to observe whether the mercury column is in the middle. If not, adjust the small pulley (Note: NOT to adjust the big pulley) to make the two pulley in balance.

9) Install the belt, push the motor backward and screw tightly the position adjusting screw. Make the 6 belts be stressed by equal forces. Tighten the belts and lock up the position adjusting screw.



Picture 6-9: Installation of Belt Pulley and Motor 3

10) Finally mount the upper and lower protective cover for the pulley.



Picture 6-10: Installation of Belt Pulley and Motor 4

6.5 Installation of Screen, Screen Bracket and Storage Box

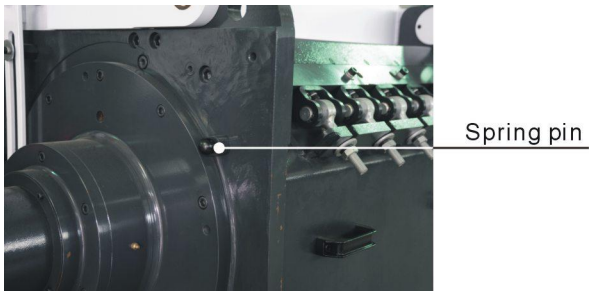
1) Insert the rotary shaft of screen bracket in left / right block hole. Make the right end of rotary shaft and right block outside in a line.

Picture 6-11: Installation of Storage Box, Screen and Screen Bracket 1

2) Mount the screen bracket on the rotary shaft under the cutting chamber, fix the pin hole cover with serew tightening.

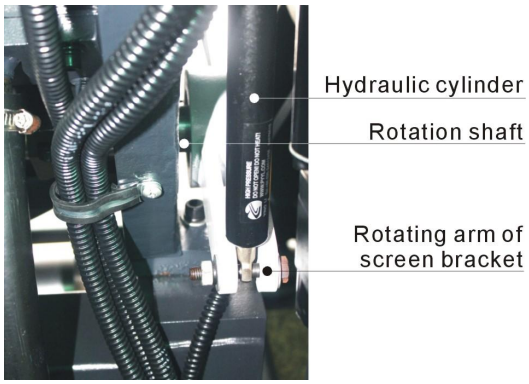
Picture 6-12: Installation of Storage Box, Screen and Screen Bracket 2

3) Put the screen into the screen bracket. Lift up the screen bracket to left spring pin and insert in the screen bracket, lock it up with 5 screws for fixing.



Picture 6-13: Installation of Storage Box, Screen and Screen Bracket 3

4) After flat key is mounted inside the rotating arm of screen bracket, put it through the rotating shaft end at left.
5) Mount the hydraulic cylinder and adjust the angle of screen bracket's rotating arm to correct angle, and then fasten the hydraulic cylinder.



Picture 6-14: Installation of Storage Box, Screen and Screen Bracket 4

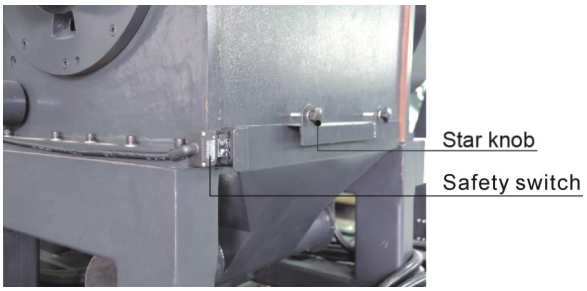
Note!

Make sure the fixing screw of pneumatic spring is fastened. Otherwise, the screen bracket would be deformed with screw fracture.

4) Lift up the storage box, insert the storage box on the support plate and mount the safety switch.

Picture 6-15: Installation of Storage Box, Screen and Screen Bracket 5

5) Lock the two star bolts in front of the screen bracket tightly.



Picture 6-16: Installation of Storage Box, Screen and Screen Bracket 6

6.6 Lubrication

6.6.1 Lubricating oils

- Xin Chang Long: FX-00

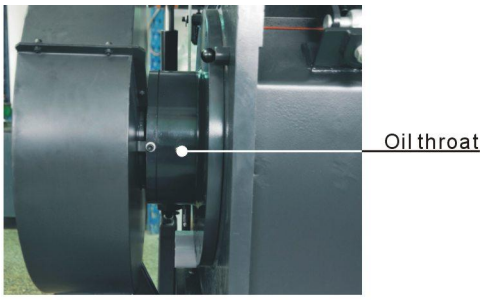
  FX-000

- Bp: BP Grease LGEP 2
- ESSO: Beacon Ep2, Beacon EP2
- Mobil: Mobilux EP2

- Shell: Shell Alvania EP2
- Texaco: Multifak Ep2, Novotex Grease EP2

6.6.2 Please Grease the Bearing with Lubricating Oil Periodically

1) Open the front door of the machine.
2) Inject lubricating oil via throat with an oil greaser.



Picture 6-17: Oil Throat

6.7 Maintenance

When carrying out maintenance, ensure that there is no material left in the granulator.

CAUTION!

All stuff concerning repair must be conducted by professionals to avoid damage or harm to human body.

6.7.1 Daily Check

1) There is rubber shutter in the feeding box. If the rubber shutter is damaged, replace it immediately.
2) Check whether the Emergency Stop works properly. Start the machine and then stop it via Emergency Stop. Rotate the button anti-clockwise to reset the Emergency Stop.

6.7.2 Weekly Check

1) Check the power wire to see whether there is any damage. If so, replace it immediately.
2) Check the safety switch.
3) Check the function of the electrical handspike which is used to open the feeding box.

6.7.3 Monthly Check

1) Check the belt to see whether there is some damage. Check the belt's tension every 6 months. More details to see chapter 6.2 Transmission.
2) Check the blades and screws to see if they get loose.

6.8 Cleaning

CAUTION!

The blade may do harm to human body when opening the feeding hopper!

1) Check whether the feeding box is emptied before stopping the machine.
2) Clean the exterior surface of the feeding box.
3) Open the front door first, then the back door, push forward to open the feeding box.
4) Turn off the main power switch.
5) Clean the check board of the feeding box with dust separator.

Note!

The feeding box is held by electrical handspike, therefore it cannot fall down.

6) Clean the interior surface of the feeding hopper.
7) Remove the connecting pipe.
8) Loosen the fixing screw of screen bracket and open the screen bracket.
9) Take out the screen.
10) Loosen the hole base of screen bracket and remove the screen bracket.
11) Clean screen bracket and screen.
12) Clean both surfaces of the cutting chamber.
13) Clean every loading pipe, blower, and cyclone dust separator.
14) Clean the wheels with bright dust-precipitator.

Reinstall after cleaning

CAUTION!

Take care not to be squeezed when closing the door!

1) Install screen into screen bracket and put screen bracket under the cutting chamber.
2) Put pneumatic break iron rod along installation holes on both sides of the side board to insert the rod into directive block on the screen bracket and lock up the screws.
3) Install pneumatic break on its base and lock up the fixing screw. (M12x17 torque: 35Nm)
4) Mount the pneumatic break iron rod on the pneumatic break.
5) Turn the spring dowel on both ends of the storage box to fix the storage box.
6) Install quick coupling clip at the end of the outlet pipe.
7) Shut off the feeding box

Note!

Before closing the feeding box, the door must be open; check if there is any residual powder left in the interface and edges; close and fix the feeding box with pothook.

8) Install the plastic shutter of the feeding box.
9) Close the door.
10) Check if the feeding box is emptied.
11) Open the main power switch.
12) Start the machine.

6.9 Repair and Maintenance Record

6.9.1 About the Machine

Model _____ SN _____ Manufacture date _____

Voltage_____Φ_____V Frequency _____ Hz Power _____ kW

6.9.2 Check After Installation

☐ Check if pipe connections are firmed locked by clips.

☐ Check the gap between fixed blade and rotating blade. (0.2~0.3mm).

☐ Check the rotating balance of the belt wheel.

Electrical Installation

☐ Voltage: _____V _____ Hz

☐ Specs of the fuse: 1 Phase _____ A 3 Phase _____ A

☐ Check phase sequence of the power supply.

☐ Check the rotating direction of the conveying blower.

6.9.3 Daily Check

☐ Check main power switch.
☐ Check emergency stop button.
☐ Check start / stop button.
☐ Check material check plate (strip) is perfect or not.
☐ Check whether emergency stop and safety switch works normally.
☐ Clean screen and feeding hooper.
☐ Check whether start, stop and power switches are normal.

6.9.4 Weekly Check

☐ Check all the electrical cables.
☐ Check if there are loose connections of electrical components.
☐ Check the start and stop function of the electrical handspike
☐ Check function of all the safety switch
☐ Check the cooling system of the cutting chamber
☐ Check blade condition.
☐ Check whether set screws in fixed and rotate blades are under looseness.
☐ Check if there is abnormal noise, vibration and heat in reduction gear.
☐ Check the cracking window

6.9.5 Monthly Check

- ☐ Check the status of the belt.
- ☐ Check the overload protection function of the motor.
- ☐ Check motor reversed running function.
- ☐ Check the tightness of the blades.
- ☐ Check the pneumatic stick
- ☐ Check start/stop delay function of the conveying motor
- ☐ Check whether clamp ring of pulley is fastened.
- ☐ Check belt tension.

6.9.6 Check Half-yearly or Every 1000 Running Hours

- ☐ Check belt tension
- ☐ Check the bearings, motor and shaft lubrication
- ☐ Check the shaft holder
- ☐ Valuation of machine performance

6.9.7 3 year Checking

- ☐ PC board renewal.
- ☐ No fuse breaker renewal.