SG-50 Series

Sound-proof Central Granulator

Date: Apr. 2013

Version: Ver.B (English)

SHINI

Contents

Table index

Picture index

1. General Description

Please read this manual carefully before using this machine in order to operate correctly against any damage caused due to improper operation.

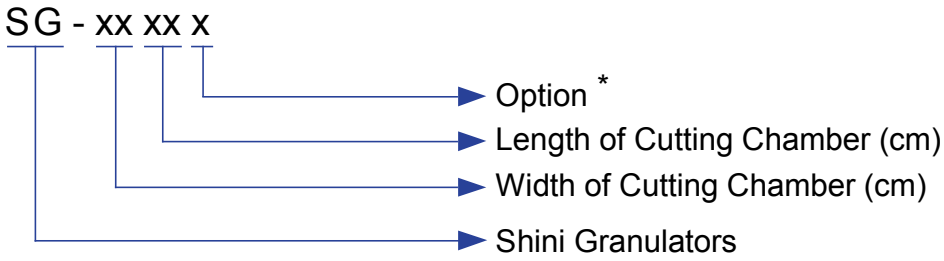
Note!
Always take great care when the knives are within reach, they are very sharp and can cause personal injury.

Forbidden to process flammable or toxic material!

SG-50 series granulators are applicable to granulate various kinds of plastic materials from injection moulding, blow moulding or extrusion moulding. This series feature compact design, easy operation and quick blade replacment. 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-5090

1.1 Coding Principle



Note：*

H=Higher Motor Power FAD=Full-receiver Alarm Device
R=For Stainless Steel Made Feed Port and Storage Tank
F=Fiber-added CE=CE Conformity

1.2 Feature

Standard configuration

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) The cutters are made of imported high quality steel featuring wearability, high rigidity, long service life and reusable after sharpening.
3) Equipped presetting knife jig, simple cutter installation adjusting technology makes the rotating blades be adjusted within clamps outside machine, no longer needs to be adjusted from inside of machine as before.
4) 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.
5) Optimized structure and hermetic double sound-proof layers keep noise level low.
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) Feeding box which is opened by electrical handspike with self-lock function ensures safely operation.
9) Cooling pipe at rear plate of cutting chamber can effectively cool down and prevent the inside material from melting up.

Accessory option

1) Cyclone dust separator is available for choose and the height of its floor stand can be adjusted on different requirements.
2) For granulating thick or heavy material, extra fixed knives are available to increase the granulating capacity.
3) For fibre-added material, increase SG-50 fibre-added model for choose, Adopt surface-hardening treatment on the material contacting components blade material is V-4E joint with S50C.
4) Separate blower, conveyor and material side feed pipe are optional.

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 have 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 Technical Specifications

Table 1-1: Technical Specifications

Model	SG-5060	SG-5090
Motor Power (kW, 50 / 60Hz)	37 / 41.5	45 / 51
Rotating Speed (r.p.m. 50/60Hz)	525 / 630	525 / 630
Loading Blower Power (kW, 50 / 60Hz)	3.0 / 3.6	4.0 / 4.8
Electrical Handspike Motor Power (kW, 50/60Hz)	0.25 / 0.3	0.25 / 0.3
Cutter Material	SKD11	SKD11
Number of Fixed Blades (Optional)	2(3)	2(3)
Number of Rotating Blades (Optional)	3(5)	3(5)
Cutting Chamber Size (mm)	500×600	500×900
Max. Granulating Capacity (kg / hr)	1000	1800
Noise Level (dB max)	110~115	110~115
Grinded Material Conveying Device	✓	✓
Cooling pipes	✓	✓
Mesh Hole Dia. (Φ12mm)	✓	✓
Flywheel	✓	✓
Full-receiver Alarming Device	○	○
Dust Separator (DS-50)	○	○
Dia. Of Screen Mesh (Φ8,Φ10,Φ17, Φ25mm)	○	○
Dimensions		
H (mm)	3153	3153
H1 (mm)	2850	2850
H2 (mm)	675	675
H3 (mm)	2115	2115
D (mm)	1725	1725
D1(mm)	5500	5450
W1 (mm)	2300	2600
W2 (mm)	730	1030
W3(mm)	2120	2120
Weight (kg)	3600(3625)	3960(3985)

Note: 1) " ✓ " stands for standard, " ○ " stands for optional.

2) Modified into stainless steel made feed hopper cover plate and storage tank. Add "R" at model behind.

3) SKD11 is material code number of Japanese JIS standard.

4) According to different shapes of materials, the two-row or three-row blade can collocate with three-row or five-row rotate blade so that these blade combinations can adapt to the shape requirements of materials.

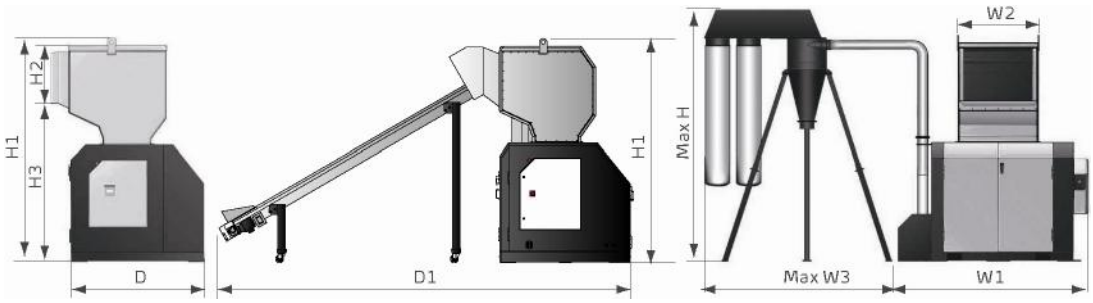
5) When granulating materials with fibers or similar to fibers (like CPVC etc.), it is suitable to select granulators with special quenching process in for cutting chamber and blades, and also add “F” behind the model.

6) Maximum throughput of granulator is subject to the diameter and matreial of screen mesh. For granulating frame and shell materials, maximum throughout will be reduced about half.

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

8) Noise level refers to the following conditions: 1 meter around and 1.6 meter above the machine.
9) For avoiding plastic to adhibit the blade, all materials should be crushed at normal temperature.
10) Standard configuration is two rows of fixed blades with high cutting pointmodel and low cutting point model. Upon no request of users, low cutting point model will be provided.

1.3.2 Dimensions



Picture 1-1: Dimensions

1.4 Safety Regulations

Follow the instructions in this manual to avoid personal injury and damage to machine components.

The following safety measures shall be followed when operating the granulator.

1.4.1 Safety Signs and Labels

 Electrical installation must only be done by a competent electrician!

 Before the granulator is opened for servicing and maintenance, always disconnect the power with both the main switch and the control switch on the granulator.

 Never put any part of your body through the granulator openings, unless both the main switch and the control switch on the granulator are in "OFF" position.

 High voltage! Danger!

This sign is attached on the control box and the wiring box.

 Be careful with the rotating knives, they are very sharp and can cause personal injury!

 If the rotor must be turned manually-do this with great care!

 The granulator should not be able to start before the hopper and screen bracket are properly closed.

 Attention please!

Ear protection is used during granulating of plastic materials.

 When open feed 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.

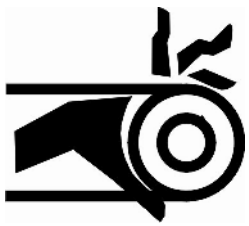
Air inlet dust clean.

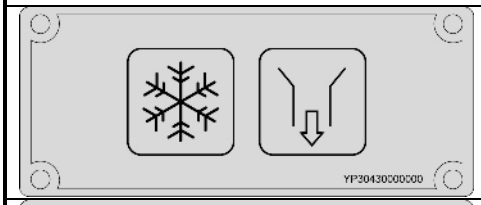
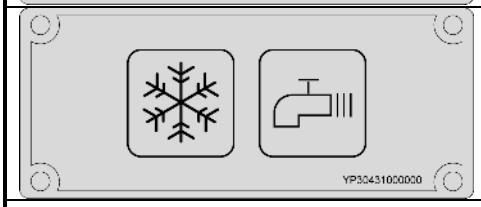
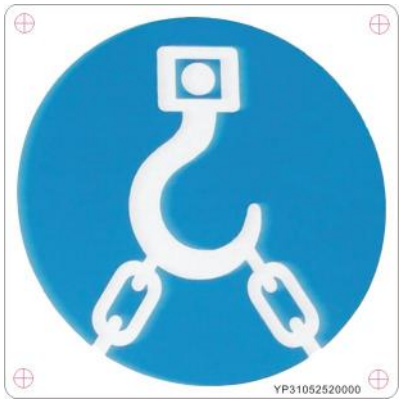
Concerning SG-50 the cutting chamber should be heat-processed and the blades must be changed before the granulators deal with fibre added material.

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

	Hazard High voltage! May lead to casualty or other serious danger. Please cut off the power before repairing. Circuit diagram should only be changed by professionals. Grounding is necessary
	Warning Pinch risk when moving belt. Take out or open protective cover is not allowed when it is running.

	⚠ Warning There is a pinch risk for this protective cover keep some distance away from that.
	⚠ Warning The cutter are very sharp, can cause injury take out or open protective cover is not allowed when it is running keep some distance away from the cutters.
	⚠ Notice Read the instruction manual carefully before operating before start, do the safety device test according to the instruction. It is not allowed to change the design of the machine unless it is approved from the manufacture.
	Water outlet: drainage outlet.
	Water inlet: inlet for replenishing water and cooling water.
	Lifting hole: used for lifting machine

1.4.2 Transportation and Storage of the Machine

Transportation

1) SG-50 series of granulators are packed in plywood cases with wooden pallet at the bottom, suitable for quick positioning by fork lift.
2) Do not rotate the machine and avoid collision with other objects during transportation to prevent improper functioning.
3) The structure of the machine is well-balanced, although it should also be handled with care when lifting the machine for fear of falling down.
4) The machine and its attached parts can be kept at a temperature from -25℃ to +55℃ for long distance transportation and for a short distance, it can be transported with temperature under +70℃.

Storage

1) SG-50 series should be stored indoors with temperature kept from 5℃to 40℃ and humidity below 80%.
2) Disconnect all power supply and turn off main switch and exigency stop switch
3) Keep the whole machine, especially the electrical components away from water to avoid potential troubles caused by the water.
4) Use plastic film to cover the machine tightly to prevent the machine from dust and rains.

Working environment

The machine should be operated:

1) Indoors in a dry environment with max. temperature +45℃ and humidity no more than 80%.

Do not use the machine:

1) If it is with a damaged cord.
2) On a wet floor or when it is exposed to rain to avoid electric shock.
3) If it has been dropped or damaged until it is checked or fixed by a qualified serviceman.
4) This equipment works normally in the environment with altitude over 3000m.

5) At least 1m surrounding space is requested when this equipment is running. Keep this equipment away from flammable sources at least two meters.
6) In the work area of vibration and strong magnetic force.

Rejected parts disposal

When the equipment has run out its life time and can not be used any more, unplug the power supply and dispose of it properly according to local code.

Fire hazard!

In case of fire, CO_2 dry powder fire extinguisher should be applied.

Flammable materials or materials which are contaminated by flammable substances/liquid may not be processed in the granulator. Serious risk of fire or explosion may cause personnel injury.

It is very important to tighten the screw as required torque.

When process item is longer than feed port, please cut long items into half until the length is shorter before processing.

Please don’t put materials into the granulator if they are thinner than 2 mm and are soft and flexible, like rubber.

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.

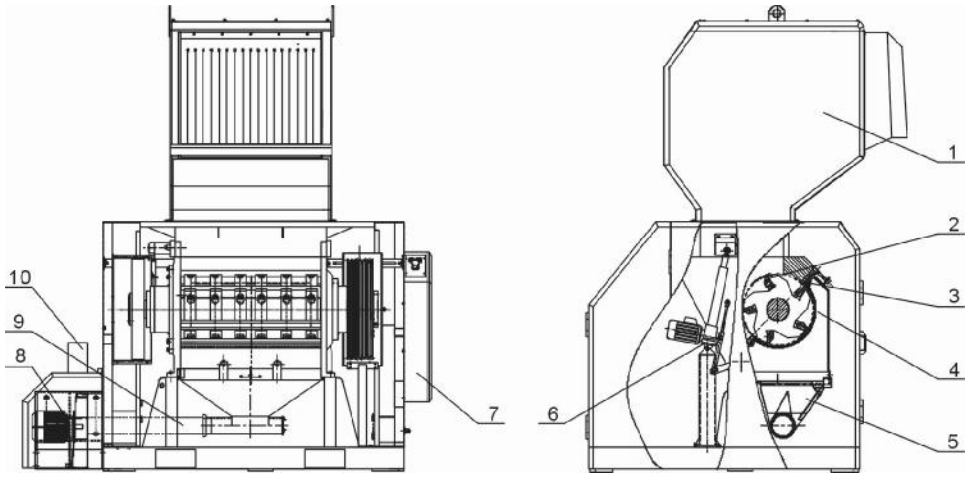
3. Any operational actions that are not authorized by Shini upon machine, including adding or replacing accessories, dismantling, delivering or repairing.
4. Employing consumables or oil media that are not appointed by Shini.

2. Structural Features and Working Principle

2.1 General Description

SG-50 series are suitable for granulating various plastic wastes, including injection moulding and blow moulding and extruding moulding. Before granulating, you need to clean metal scraps and contaminations.

2.1.1 Working Principle



Parts name:

1. Feed in box	2. Rotating blades	3. Fixed blades
D. Screen	4. Storage box	5. Material outlet pipe
6. Electrical handspike motor		7. Electrical control cabinet
8. Feeding blower		9. Feed delivery pipe
10. Material outlet pipe		

Picture 2-1: Working Principle

Feed the material into the cutting chamber from the feed port (1). The rotating blades (2) and fixed blades (3) work together to granulate the materials. The size of granule varies according to the hole diameter of screen (4). The screen is fixed under the cutting chamber, and is easy to replace screens of different diameters. The regrinds will fall into storage box (5) through the screen，then conveying via feed delivery pipe (9); The outfit blower (8) will convey regrinds through discharge pipe (10) into cyclone dust separator to separate dust and air. After granulated, material granule can be recycled or stored for reserve.

SG-50 has a foldable feed in box and motor-driven handspike (6) can open feed in box. Maintenance and cleaning of cutting chamber are easy because machine operation is manipulated through electrical control cabinet (7).

Open the two front doors of the granulator first before opening feed-in box with electrical handspike.

The granulator is controlled by main power switch, safety switch, start/stop button and emergency stop button.

Main power switch

Start/stop button and emergency stop button

Electrical handspike "start/stop" switch

Picture 2-2: Button

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 fullfil 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.

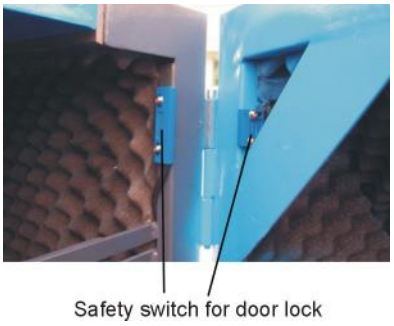
Picture 2-3: Emergency Stop Button

2.2.2 Safety Switch

Safety switches with breaker are fixed on the granulator. Either position of the door or feed box is moved or itself is loose, the breaker will cut off the power supply.

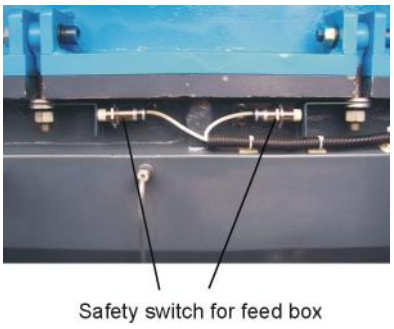
Picture 2-4: Safety Switch

There are four safety switches on the granulator: one is between feeding box and cutting chamber; two are placed on the front or back doors. The last one is place between storage box and the machine.



Picture 2-5: Safety Switch for Door Lock

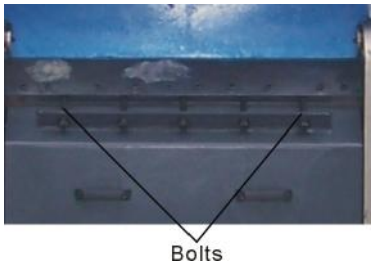
If the machine's back door is opened or the feed-in box and storage box are moved under running condition, the machine will stop at once. Pay an attention to ensuring the operator's security.



Picture 2-6: Safety Switch for Feed Box

Pay attention to following items when start the machine:

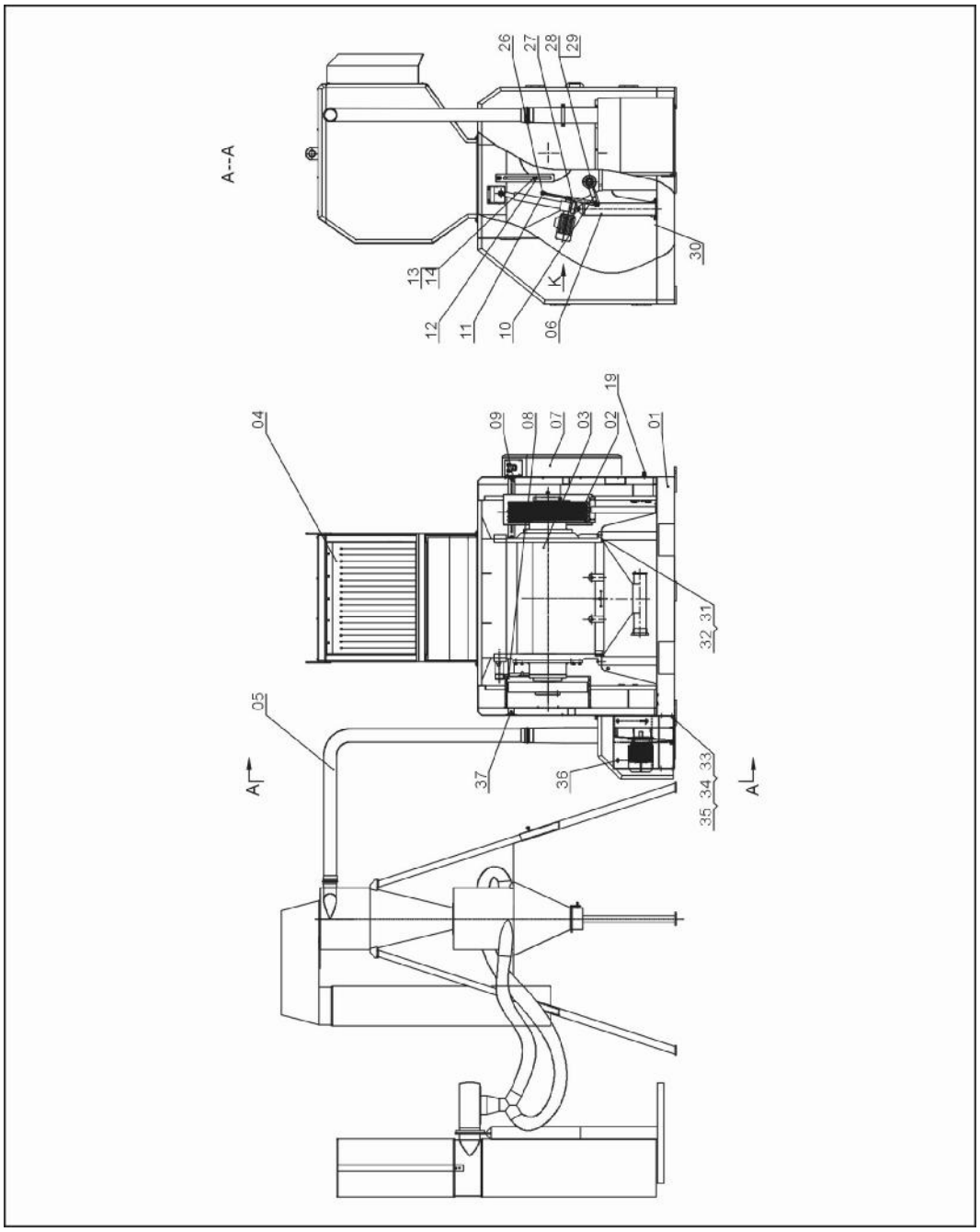
1) Check if the feed-in box has been locked up.
2) Check if the screen housing and storage box has been installed.
3) Close the door and fasten the spring lock.



Picture 2-7: Bolts

2.3 Assembly Drawing

2.3.1 Assembly Drawing



Note: Please refer to 2.3.2 material list about the parts code.

Picture 2-8: Assembly Drawing

2.3.2 Parts List

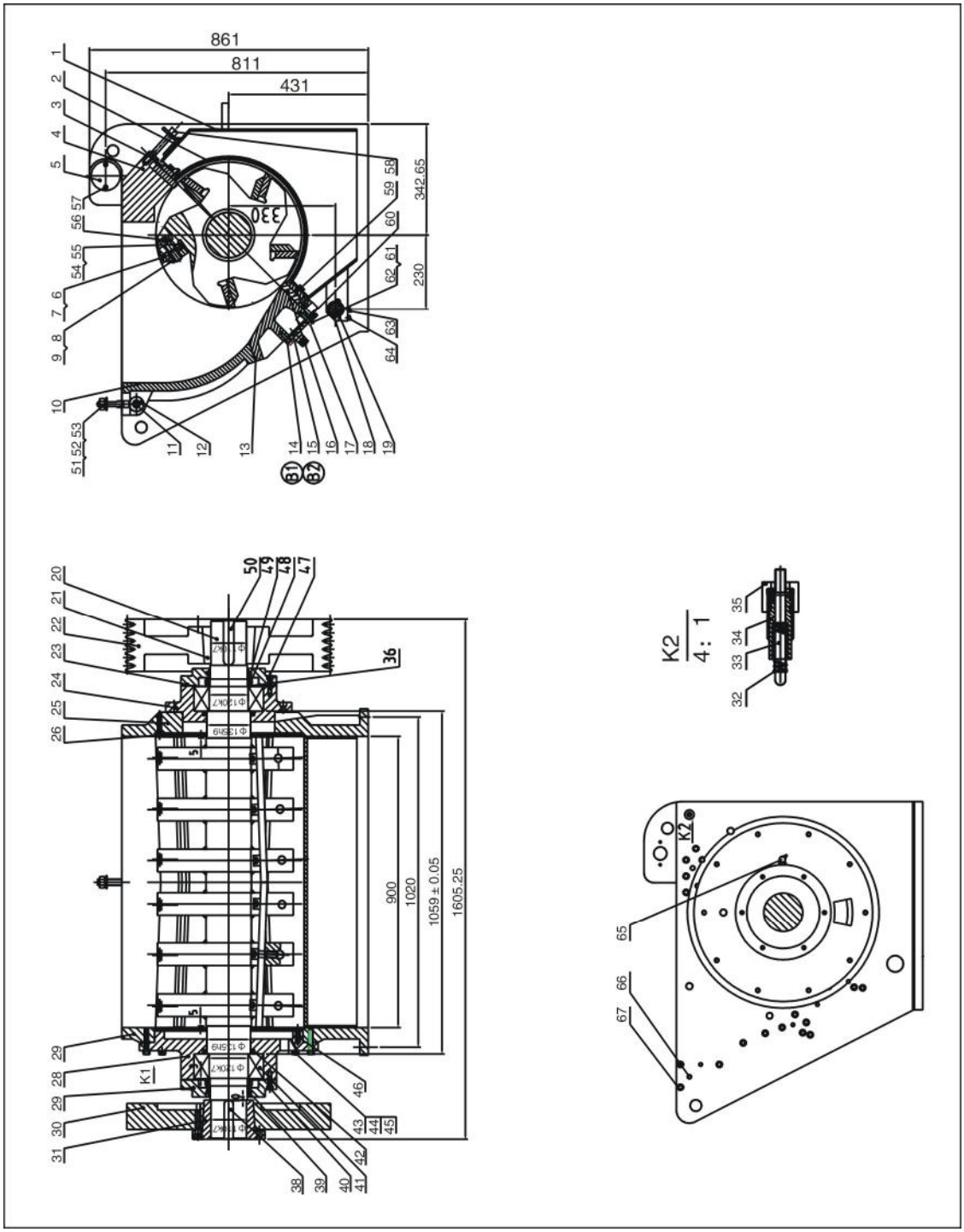
Table 2-1: Parts List

No.	Name	Part No.	
		SG-5060	SG-5090
1	Machine assembly	-	-
2	Main drive unit	YM90503000000	YM90503000000
3	Granulating chamber assembly	BH85506000010	BH85509000010
4	Feed-in box assembly	-	-
5	Feeding assembly	YM30304000000	YM30304000000
6	Electric handspike motor	YM90503000000	YM90503000000
7	Power distribution unit	-	-
8	Flywheel guard	-	-
9	Fixed board of outer shell	BL55509000040	BL55509000040
10	Pneumatic spring swing arm	BH10509000210	BH10509000210
11	Pneumatic spring dowel	BH10509001210	BH10509001210
12	Machine side connecting plate	BL55509000420	BL55509000420
13	Low hinge pin of connecting plate	BH10509000510	BH10509000510
14	Connecting plate washer	BL55509000620	BL55509000620
15	Small junction box	-	-
16	Small junction box cover	-	-
17	Conection board of control box	-	-
18	Control box of electromotoin handspike	-	-
19	Water pipe connector	-	-
20	Cross socket head cap screw M5 × 10	YW63051000000	YW63051000000
21	Flat gasket 2-5	YW66051300000	YW66051300000
22	Hexagon head screw M8 × 30	YW60082000200	YW60082000200
23	Falt gasket 2-8	YW66081600000	YW66081600000
24	Cross socket head cap screw M4 × 10	-	-
25	Flat gasket 2-4	YW66041200000	YW66041200000
26	Cotter pin 3 × 25	-	-
27	Compressed pneumatic spring	YW01441600000	YW01441600000
28	Hexagon head screw M12 × 55	YW61125500000	YW61125500000
29	Falt gasket 2-12	YW66123200100	YW66123200100
30	Hexagon nut M12	YW64012100000	YW64012100000
31	Hexagon head screw M12 × 40	YW61124000000	YW61124000000
32	Elastic washer 12	YW65012000000	YW65012000000
33	Hexagon head screw M16 × 55	YW60165500000	YW60165500000
34	Flat gasket 2-16	YW66164000000	YW66164000000
35	Elastic washer 16	YW65016000000	YW65016000000

No.	Name	Part No.	
		SG-5060	SG-5090
36	Hexagon nut M16	YW64001600000	YW64001600000
37	Hexagon head screw M12 × 30	-	-
38	Blade adjuster	-	-

* 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.

2.3.3 Cutting Chamber and Knives Rest



Picture 2-9: Cutting Chamber and Knives Rest

2.3.4 Cutting Chamber and Knives Rest Parts List

Table 2-2: Cutting Chamber and Knives Rest Parts List

No.	Name	Quantity	
		SG-5060	SG-5090
1	Assembly of screen bracket	BL55506000120	BL55509000120
2	Screen**	BL55506000020	BL55509000020
3	Press plate for fixed blade 1	BH10506000310	BH10509000310
4	Front block	BW30506000210	BW30509000210
5	Hinge shaft	BH10509001410	BH10509001410
6	Rotating blade 1	YW42506000000	YW42509000000
7	Rotating blade 2	YW42506000000	YW42509000200
8	Press plate for rotating blade 1	BH10506000610	BH10509007110
9	Press plate for rotating blade 2	BH10506001310	BH10509007210
10	Rear top plate	BW30506000710	BW30509001110
11	Hinge pin	BH10506000810	BH10509001610
12	Locking bolt of feed box	BH10509000010	BH10509000010
13	Rear lower plate	BW30506000910	BW30509001410
14	Circulation water cover	-	-
15	Washer for circulation water cover	-	-
16	Fixed blade	YW42506001200	YW42509000300
17	Press plate for fixed blade 2	BH10506001310	BH10509001510
18	Installation shaft sleeve of screen bracket	BH12509001610	BH12509001610
19	Installation shaft of screen bracket	BH10509001710	BH10509001710
20	Shaft sleeve	BH11506000142	BH11509000042
21	Taper sleeve for pulley	YW30454500000	YW30501100000
22	Big belt pulley	YW30630400000	YW30224600000
23	Right bearing cover	BW30509002110	BW30509002110
24	Right bearing cover	BW30509002210	BW30509002210
25	Right block	BW30509000310	BW30509000310
26	Right and left material fender	YW45509002400	YW45509002400
27	Left block	BW30509002510	BW30509002510
28	Left bearing block	BW30509002710	BW30509002710
29	Left bearing block	BW30509002810	BW30509002810
30	Flywheel	BW30509003010	BW30509003010
31	Taper sleeve for flywheel	BW30509002910	BW30509002910
32	Position fixation spring	YW01509003100	YW01509003100
33	Position fixation spring dowel 3 for	BH10509003210	BH10509003210
34	Position fixation spring dowel 2 for	BH10509003410	BH10509003410
35	Position fixation spring dowel 1 for	BH10509003310	BH10509003310
36	Bearing guard	BL55509003520	BL55509003520

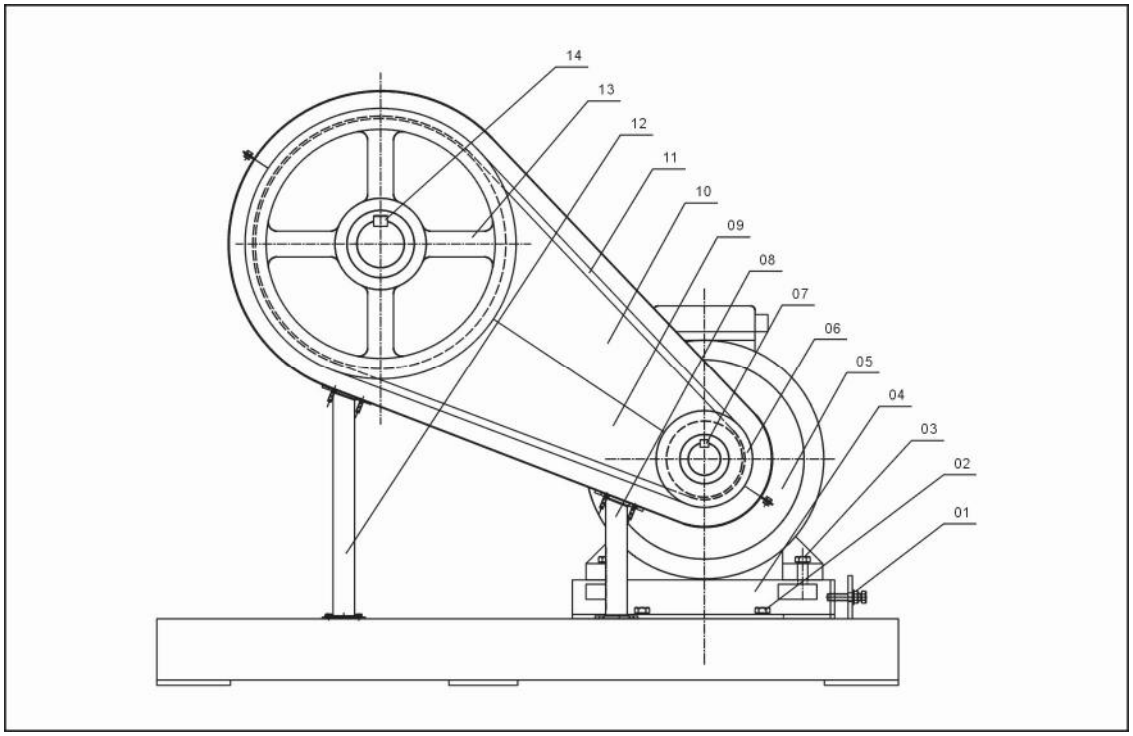
No.	Name	Quantity	
		SG-5060	SG-5090
37	-	-	-
38	Plain parallel keys C3×118	YW69281100000	YW69281100000
39	Felt ring120	-	-
40	Hexagon socket head cap screws M10×40	YW61104000000	YW61104000000
41	Self－aligning roller bearing 23224CE4	YW11232200000	YW11232200000
42	Self adjusting lip rubber sealed bearing	YR20161300000	YR20161300000
43	Hexagon screw bolt M12×60	YW60126000100	YW60126000100
44	Flat washer12*	YW66123200100	YW66123200100
45	Spring washer12	YW65012000000	YW65012000000
46	Slotted countersunk head screws M12×30	YW61123000000	YW61123000000
47	Hexagon socket head cap screws M12×45	YW61124500000	YW61124500000
48	Tab washers for round nut 120	YW09120000000	YW09120000000
49	Small round nuts M120×2	YW64120200000	YW64120200000
50	Plain parallel keys C32×138	YW69281300000	YW69281300000
51	Hexagon nut M20	YW64200200000	YW64200200000
52	Flat washer 20*	YW66102000000	YW66102000000
53	Spring washer 20	YW65020000000	YW65020000000
54	Hexagon headed bolt M10×35	YW60103500200	YW60103500200
55	Hexagon nut M10	YW64001000300	YW64001000300
56	Hexagon socket head cap screws M20×65	YW61206500000	YW61206500000
57	Hexagon socket head cap screws M6×30	YW61063000200	YW61063000200
58	Hexagon socket head cap screws M16×120	YW61069000100	YW61069000100
59	Hexagon headed bolt M12×50	YW60125000000	YW60125000000
60	Hexagon headed bolt M10×50	YW60105000000	YW60105000000
61	Hexagon socket head cap screws M8×40	YW61084000000	YW61084000000
62	Flat washer 8*	YW66081900000	YW66081900000
63	Hexagon socket head cap screws M12×30	YW61123000000	YW61123000000
64	Hexagon socket head cap screws M8×50	YW61085000000	YW61085000000
65	Oil cup with connector	YW04010100000	YW04010100000
66	Parallel pin 10×50	YW09105000000	YW09105000000
67	Hexagon socket head cap screws M12×50	YW61125000000	YW61125000000

* 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.

2.3.5 Transmission Parts



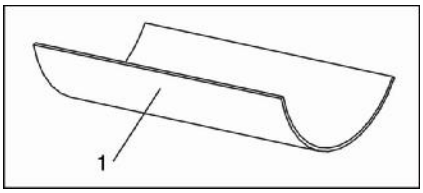
Picture 2-10: Transmission Parts

2.3.6 Transmission Parts List

Table 2-3: Transmission Parts List

No.	Name	Quantity	No.	Name	Quantity
1	Adjusting nut	4	8	Short stand of belt pulley shield	1
2	Motor installation base screw	4	9	Underpart of belt pulley shield	1
3	Motor fixing screw	4	10	Upperpart of belt pulley shield	1
4	Motor installation base	1	11	Narrow V belt	4-6
5	Motor	1	12	Long stand of belt pulleyshield	1
6	Small belt pulley	1	13	Small belt pulley	1
7	Flat key	1	14	Flat key	1

2.3.7 Screen



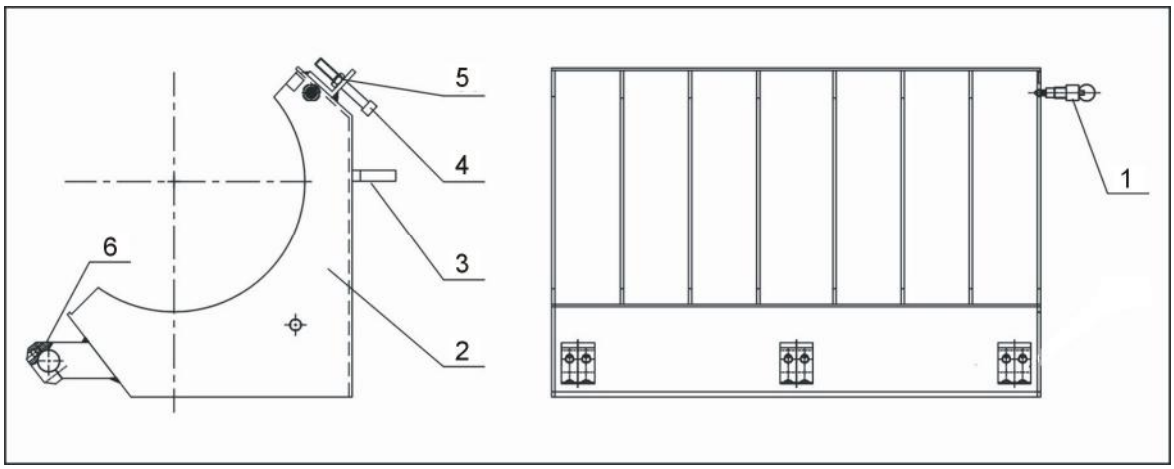
Picture 2-11: Screen

2.3.8 Screen Parts List

Table 2-4: Screen Parts List

No.	Name	Quantity
1	Screen	1

2.3.9 Screen Bracket



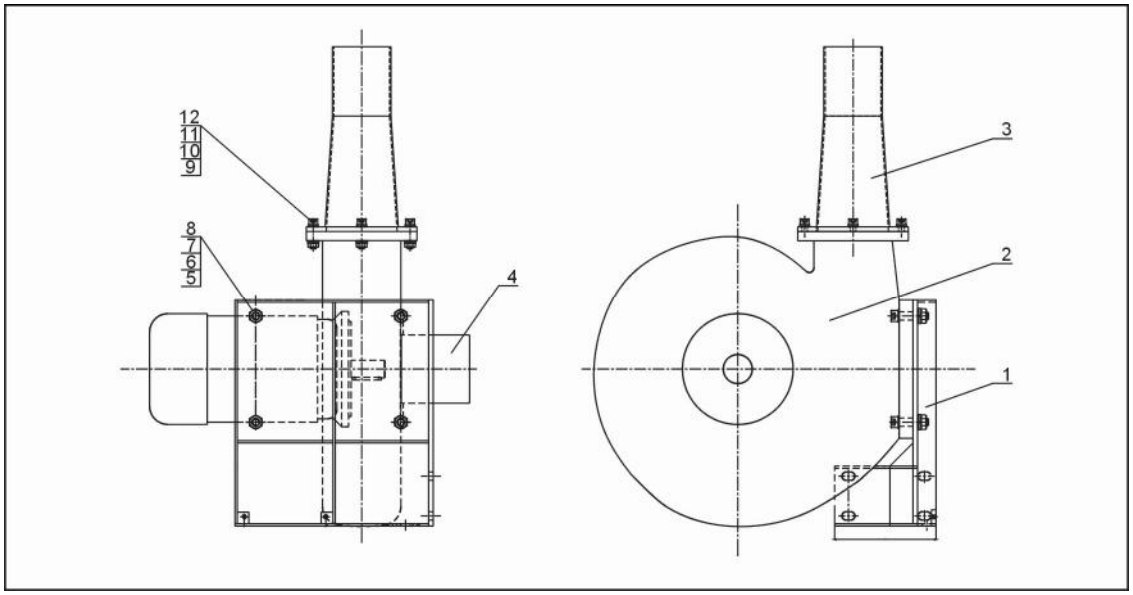
Picture 2-12: Screen Bracket

2.3.10 Screen Bracket Parts List

Table 2-5: Screen Bracket Parts List

No.	Name	Quantity
1	storage box	1
2	Knob	1
3	Knob	1
4	Inner hexagonal circular head screw	5
5	Hexnut	5
6	Inner hexagonal circular head screw	12

2.3.11 Blower



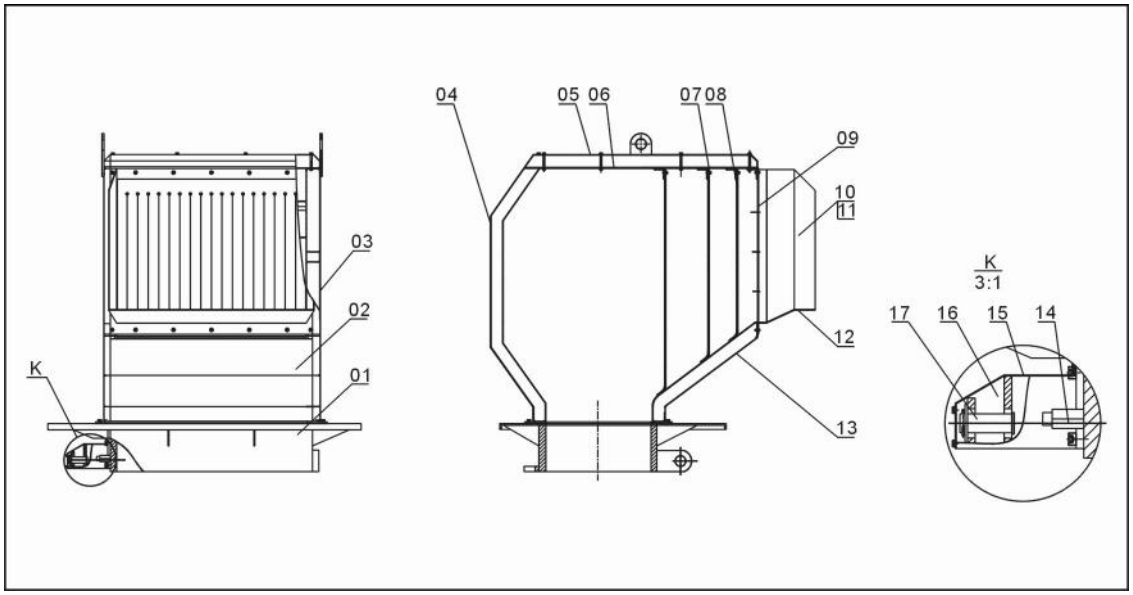
Picture 2-13: Blower

2.3.12 Blower Parts List

Table 2-6: Blower Parts List

No.	Name	Quantity
1	Feeding blower base	1
2	High pressure blower 4kW	1
3	Blower outlet pipe connection	1
4	Blower intlet pipe connection	1
5	Inner hexagon screw M16×70	4
6	Flat washer 16	4
7	Elastic washer 16	4
8	Hexnut M16	4
9	Inner hexagon screw M12×30	4
10	Flat washer 12	4
11	Elastic washer 12	4
12	Hexnut M12	4

2.3.13 Feed-in Box, Material Check Board Inlet



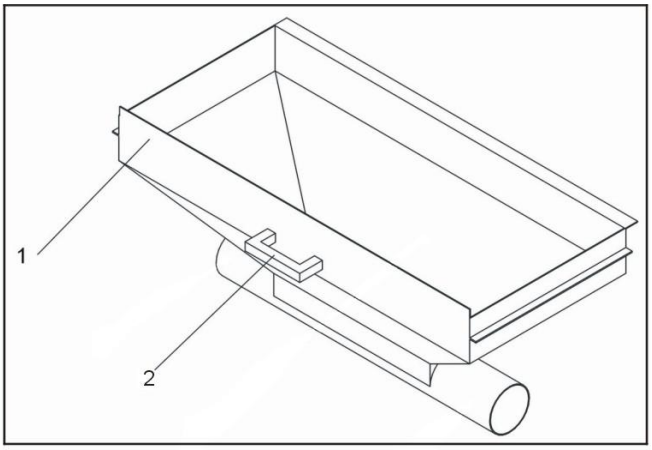
Picture 2-14: Feed-in Box, Material Check Board Inlet

2.3.14 Feed-in Box, Material Check Board Inlet Parts List

Table 2-7: Feed-in Box, Material Check Board Inlet Parts List

No.	Name	Quantity	No.	Name	Quantity
1	Cervical parts of cuttingchamber	1	10	Left side plate of feed port	1
2	Feed-in box body	1	11	Right side plate of feed port	1
3	Left and right side plate	2	12	Bottom plate of feed port	1
4	Back outside plate	1	13	Front outside plate	1
5	Upper head plate	1	14	Plank pin shaft	1
6	Inner upper head plate	1	15	Pin shaft cover of electromotion handspike	1
7	Layering	3	16	Pin shaft frame of electromotion handspike	1
8	Rubberized strip	3	17	Pin shaft of electromotion handspike	1
9	Feed port frame	1			

2.3.15 Storage Box



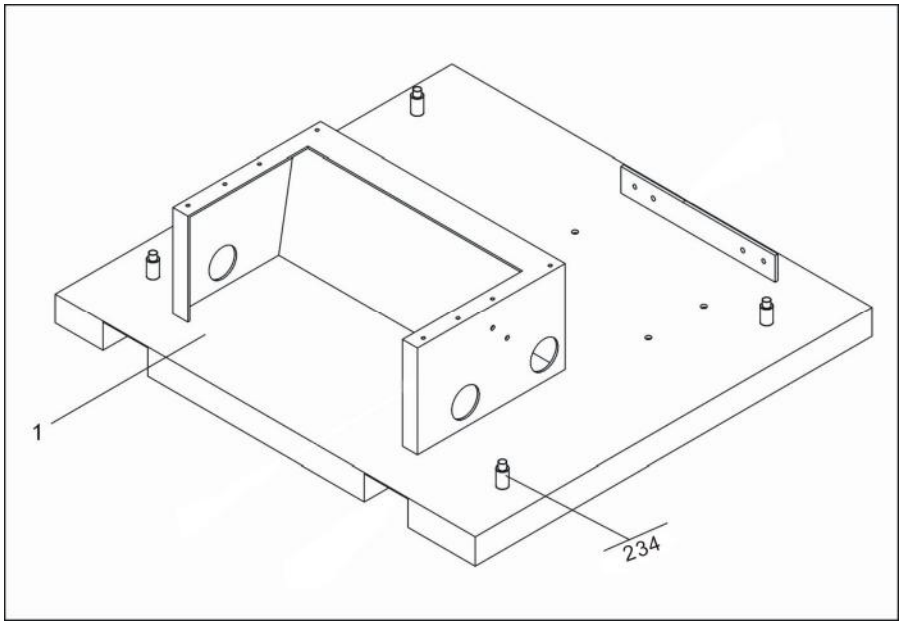
Picture 2-15: Storage Box

2.3.16 Storage Box Parts List

Table 2-8: Storage Box Parts List

No.	Name	Quantity
1	Storage box	1
2	Knob	1

2.3.17 Mainbody



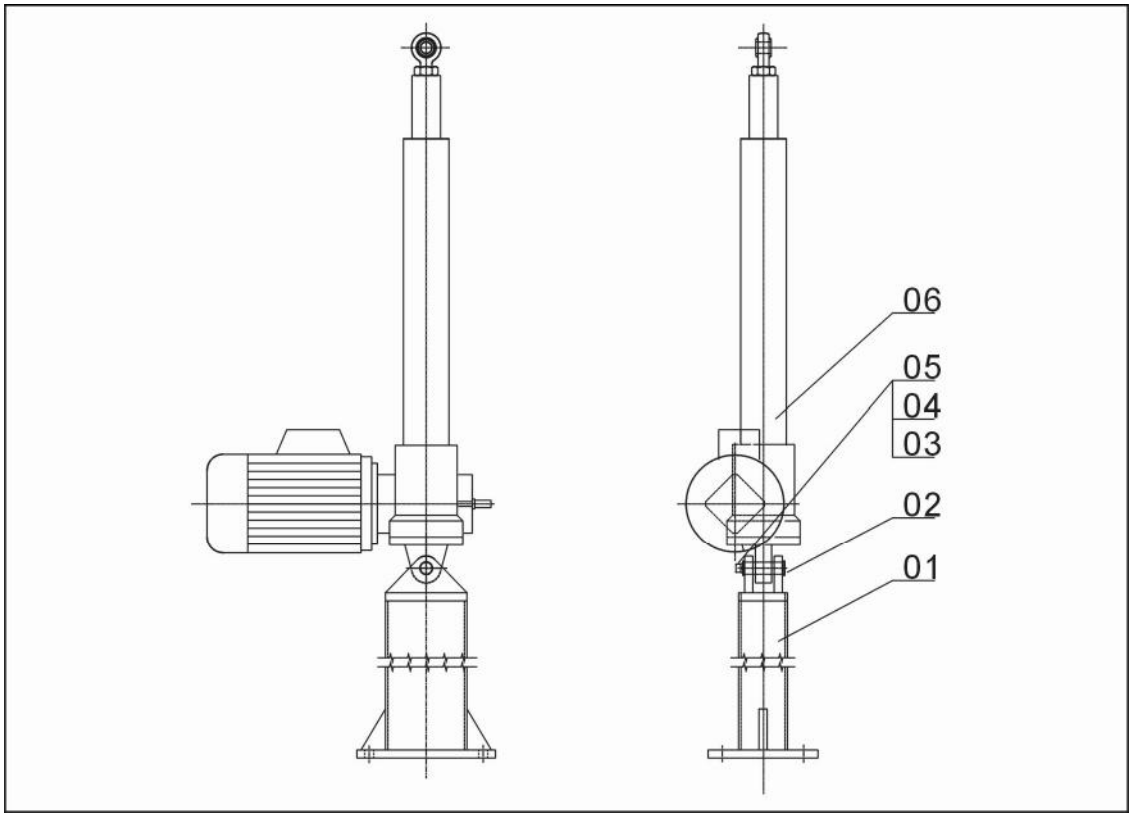
Picture 2-16: Mainbody

2.3.18 Mainbody Parts List

Table 2-9: Mainbody Parts List

No.	Name	Quantity
1	Base	1
2	Sleeve	4
3	Washer	4
4	Bottom mat	4

2.3.19 Electrical Handspike



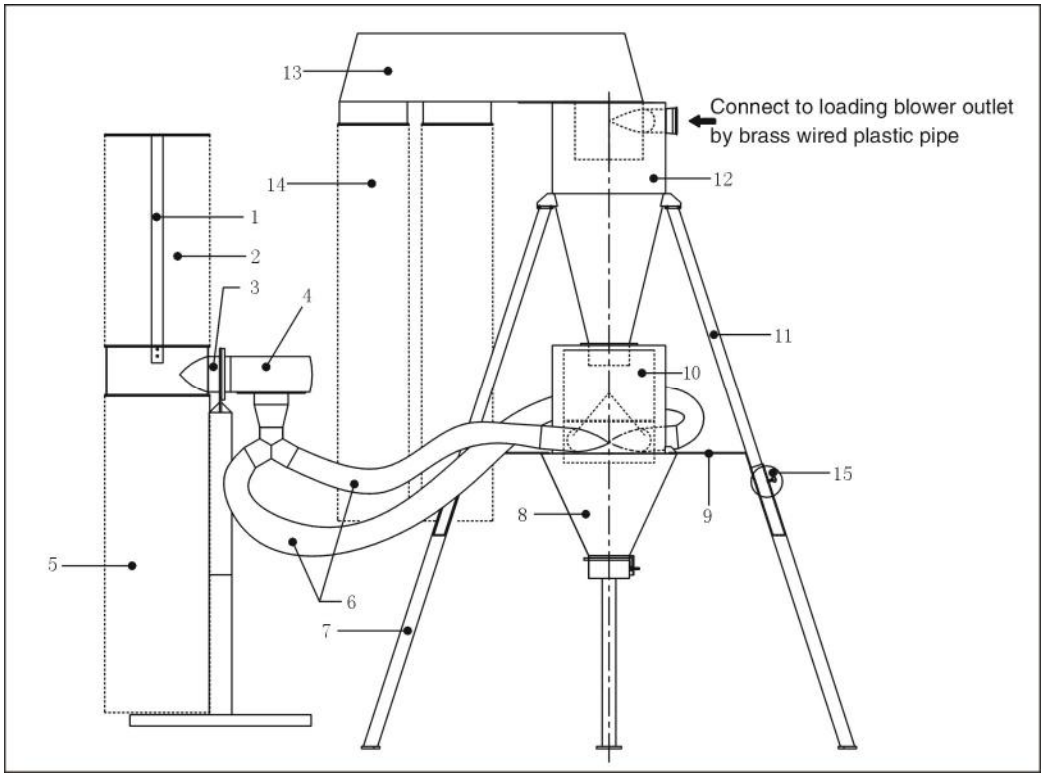
Picture 2-17: Electrical Handspike

2.3.20 Electrical Handspike Parts List

Table 2-10: Electrical Handspike Parts List

No.	Name	Quantity
1	Installation base	1
2	Electromotion handspike lower pin shaft	1
3	Inner hexagonal circular head screw M6×15	1
4	Big washer Φ18/Φ6	1
5	Standard elastic washer 6	1
6	Electromotion handspike	1

2.3.21 Cyclone and Dust Remove Device



Picture 2-18: Cyclone and Dust Remove Device

2.3.22 Cyclone and Dust Remove Device Parts List

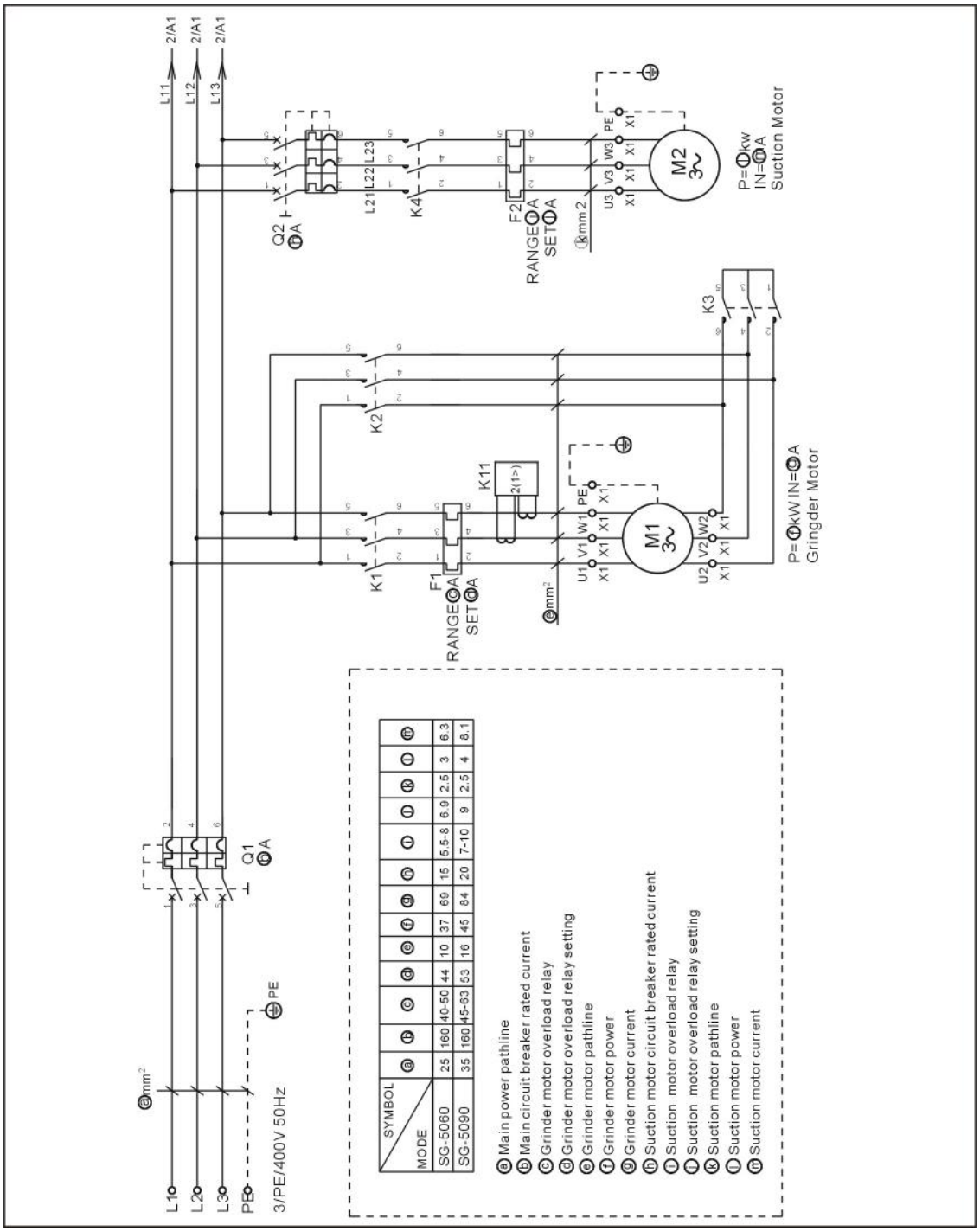
Table 2-11: Cyclone and Dust Remove Device Parts List

No.	Name	Quantity
1	Cloth bag support1	1
2	Dust collective bag3(gauze 450)	1
3	(6-inch)blower and cloth bag support	1
4	6-inch blower(750W)	1
5	Dust collective bag2(thick cotton fabric)	1
6	6-inch steel wired soft pipe	2
7	Cyclone separator bottom support	3
8	Dust separator and bottom hopper	1
9	Tightener	3
10	Big and small barrels of dust separator	1
11	Upper support of Cyclone separator	3
12	Mainbody of cyclone separator	1

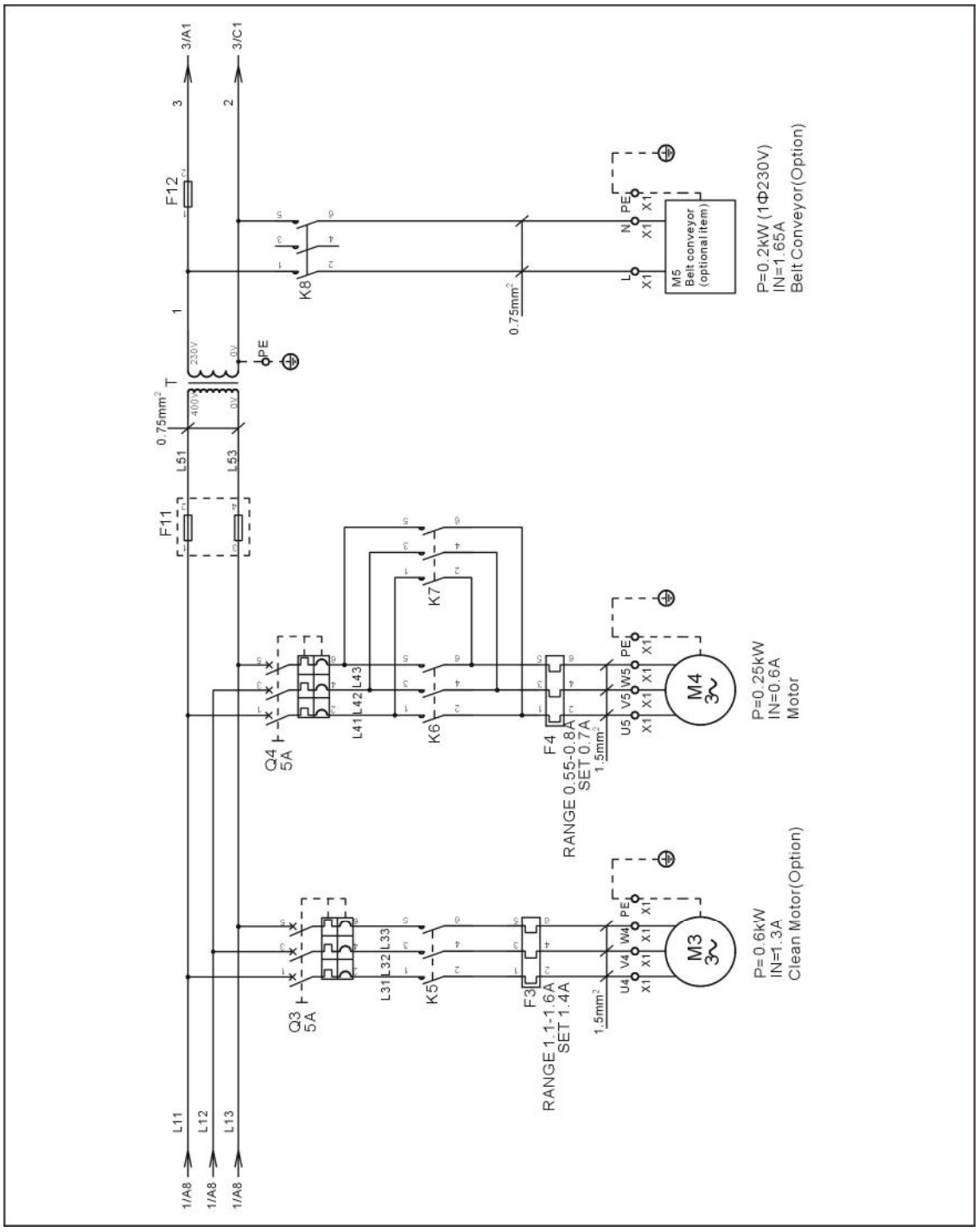
No.	Name	Quantity
13	Air outlet pipe of cyclone separator	1
14	Dust collective bag1(gauze450)	2
15	Upper and bottom support pins for cyclone separator	3

2.4 Wiring Diagram

2.4.1 Main Circuit (SG-50) (400V)

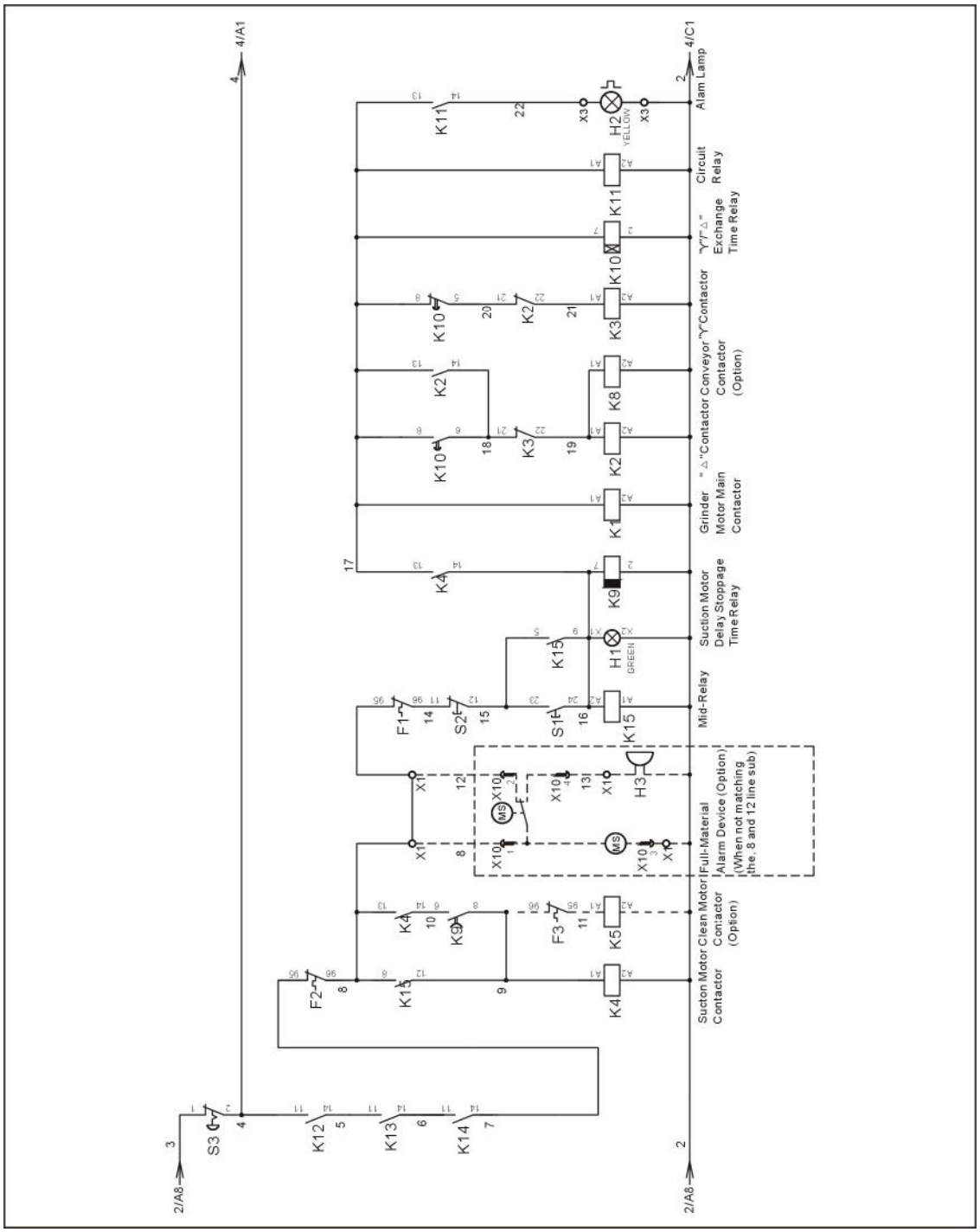


Picture 2-19: Main Circuit 1(SG-50) (400V)

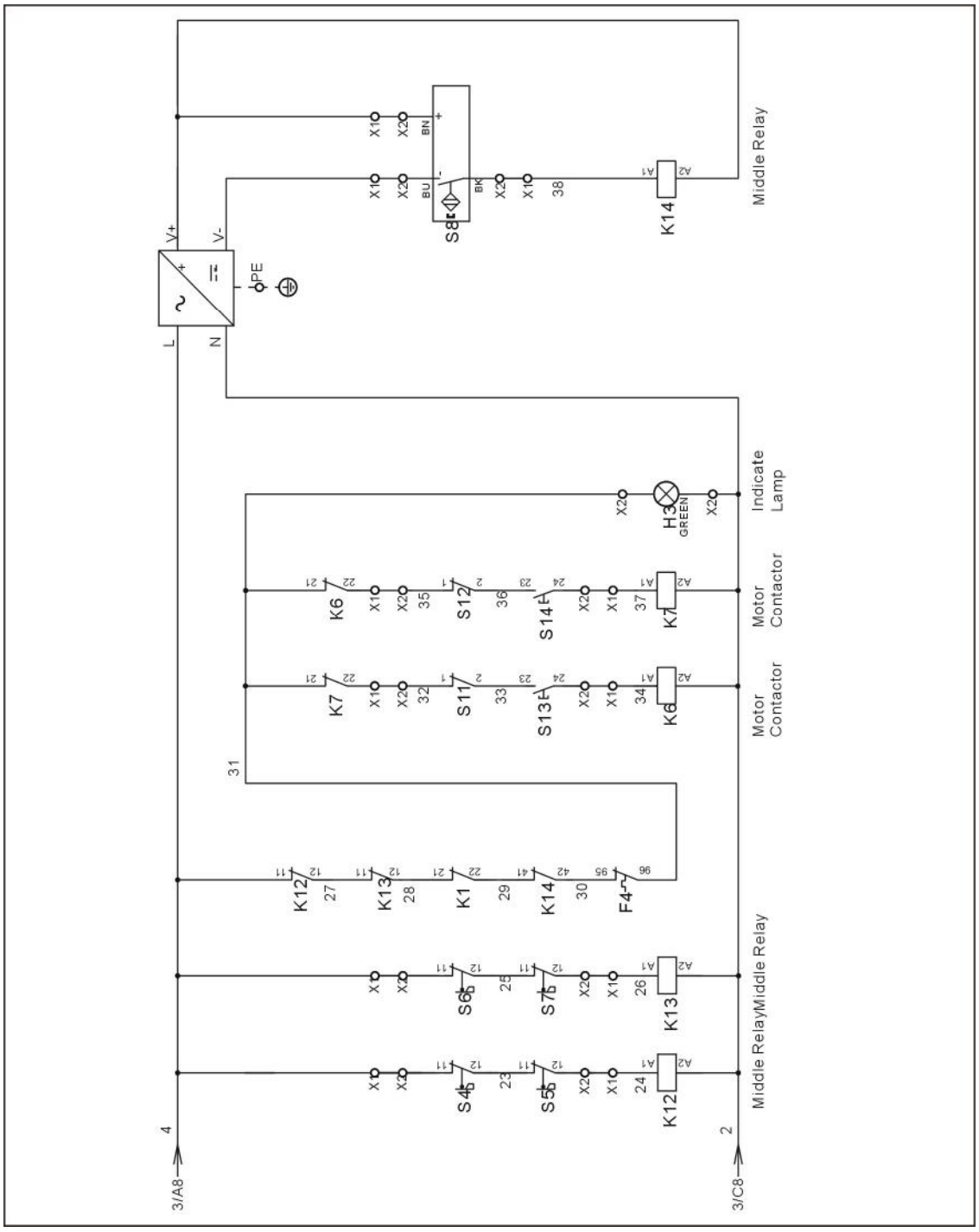


Picture 2-20: Main Circuit 2 (SG-50) (400V)

2.4.2 Control Wiring Diagram (SG-50) (400V)

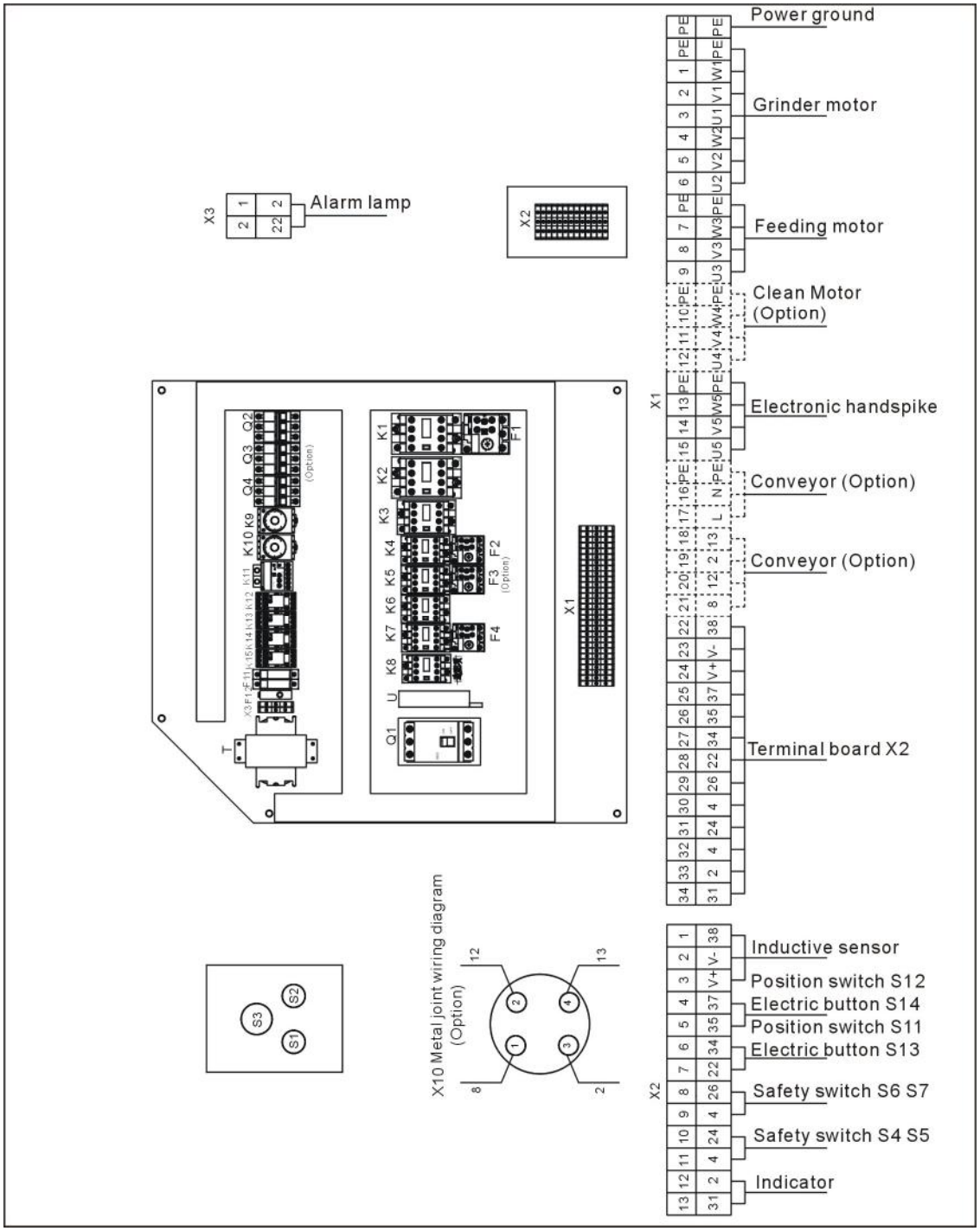


Picture 2-21: Control Wiring Diagram 1(SG-50) (400V)



Picture 2-22: Control Wiring Diagram 2 (SG-50) (400V)

2.4.3 Electrical Components Layout (SG-50) (400V)



Picture 2-23: Electrical Components Layout (SG-50) (400V)

2.4.4 Electrical Components List (SG-50) (400V)

Table 2-12: Electrical Components List SG-5060 400V

No.	Symbol	Name	Specification	Part No.
1	Q1	Gate circuit breakers*	160A	YE41161600000
2	Q2	Circuit breakers*	15A	YE40601500000
3	Q3	Circuit breakers*	5A	YE40603000000
4	Q4	Circuit breakers*	5A	YE40603000000
5	K1 K2	Contactor**	220V 50/60Hz	YE00503600000
6	K3	Contactor**	220V 50/60Hz	YE00503500000
7	-	Subsidiary contactor	1NO	YE00592110000
8	-	Subsidiary contactor	1NC	YE00592110100
9	K4	Contactor**	220V 50/60Hz	YE00601521000
10	-	Subsidiary contactor	1NO	YE00691110000
11	K5	Contactor**	220V 50/60Hz	YE00601521000
12	K6 K7	Contactor**	220V 50/60Hz	YE00601522000
13	K8	Contactor**	220V 50/60Hz	YE00601521000
14	K9	Timer	220VAC	YE86322000000
15	K10	Timer	220VAC	YE86300600000
16	K12 K13 K15	Middle realy	220VAC	YE03270700000
17	K14	Middle realy	24VDC	YE03272400000
18	K11	Current relay	220AC 5~60A	YE04047600000
19	F1	Overload realy**	40~50A	YE01513600900
20	F2	Overload realy**	5.5~8A	YE01160550000
21	F3	Overload realy**	1.1~1.6A	YE01160110000
22	F4	Overload realy**	0.55~0.8A	YE01161550000
23	F11	Fuse**	32A/2P	YE41032200000
24	-	Fuse core**	2A	YE46002000100
25	F12	Fuse**	2A	YE41001000000
26	H2	Alarm indicate lamp	230VAC	YE83305100200
27	H4	Indicate lamp	CREEY	YE83052300200
28	S1(H1) S13 S14	Start button*	400V	YE11100100000
29	S2	Stop botton*	400V	YE11113100000
30	S3	Emerency stop botton**	400V	YE11411000000
31	H3	Buzzer	220VAC	YE84222000000
32	MS	Feed position motor	220VAC	YE15000200100
33	S4~S7	Sadety switch*	AC-15	YE16147600100
34	S8	Sensor*	24VDC	YE15122400000
35	S11 S12	Limit switch*	230VAC	-
36	T	Transformer*	400V/230V 800mA	YE70402300900
37	T	Transformer*	400V/230V 2500mA	YE70402300400
38	U	DC power*	OUT=24VDC 1.5A	YE71352400100

No.	Symbol	Name	Specification	Part No.
39	X1	Terminal board	-	YE61353500000
40	-	-	-	YE61100000000
41	-	-	-	YE61103500000
42	-	-	-	YE61250040000
43	-	-	-	YE61253500000
44	-	-	-	YE61250040000
45	-	-	-	YE61253500000
46	-	-	-	YE61250040000
47	-	-	-	YE61253500000
48	-	-	-	YE61250040000
49	X2	Terminal board	-	YE61250040000
50	X3	Terminal board	-	YE61250040000
51	X10	Metal tie in	4P	YE68025400000
52	-	-	4P	YE68025400100
53	M1	Motor	400V 50Hz 37kW	-
54	M2	Blowerr	400V 50Hz 3.0kW	-
55	M3	Blowerr	400V 50Hz 0.6kW	-
56	M4	Motor	400V 50Hz 0.25kW	-
57	M5	Belt conveyor	1Φ 230V 50Hz 0.2kW	-

* 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.

Table 2-13: Electrical Components List SG-5090 400V

No.	Symbol	Name	Specification	Part No.
1	Q1	Gate circuit breakers*	160A	YE41161600000
2	Q2	Circuit breakers*	20A	YE40601500000
3	Q3	Circuit breakers*	5A	YE40603000000
4	Q4	Circuit breakers*	5A	YE40603000000
5	K1 K2	Contactor**	220V 50/60Hz	YE00504400000
6	K3	Contactor**	220V 50/60Hz	YE00503600000
7	-	Subsidiary contactor	1NO	YE00592110000
8	-	Subsidiary contactor	1NC	YE00592110100
9	K4	Contactor**	220V 50/60Hz	YE00601521000
10	-	Subsidiary contactor	1NO	YE00691110000
11	K5	Contactor**	220V 50/60Hz	YE00601521000
12	K6 K7	Contactor**	220V 50/60Hz	YE00601522000
13	K8	Contactor**	220V 50/60Hz	YE00601521000
14	K9	Timer	220VAC	YE86322000000
15	K10	Timer	220VAC	YE86300600000
16	K12 K13 K15	Middle realy	220VAC	YE03270700000
17	K14	Middle realy	24VDC	YE03272400000
18	K11	Current relay	220AC 5~60A	YE04047600000
19	F1	Overload realy**	45~63A	YE01513600900
20	F2	Overload realy**	7~10A	YE01160550000
21	F3	Overload realy**	1.1~1.6A	YE01160110000
22	F4	Overload realy**	0.55~0.8A	YE01161550000
23	F11	Fuse**	32A/2P	YE41032200000
24	-	Fuse core**	2A	YE46002000100
25	F12	Fuse**	2A	YE41001000000
26	H2	Alarm indicate lamp	230VAC	YE83305100200
27	H4	Indicate lamp	CREEY	YE83052300200
28	S1(H1) S13 S14	Start button*	400V	YE11100100000
29	S2	Stop botton*	400V	YE11113100000
30	S3	Emerency stop botton**	400V	YE11411000000
31	H3	Buzzer	220VAC	YE84222000000
32	MS	Feed position motor	220VAC	YE15000200100
33	S4~S7	Sadety switch*	AC-15	YE16147600100
34	S8	Sensor*	24VDC	YE15122400000
35	S11 S12	Limit switch*	230VAC	-
36	T	Transformer*	400V/230V 800mA	YE70402300900
37	T	Transformer*	400V/230V 2500mA	YE70402300400
38	U	DC power*	OUT=24VDC 1.5A	YE71352400100

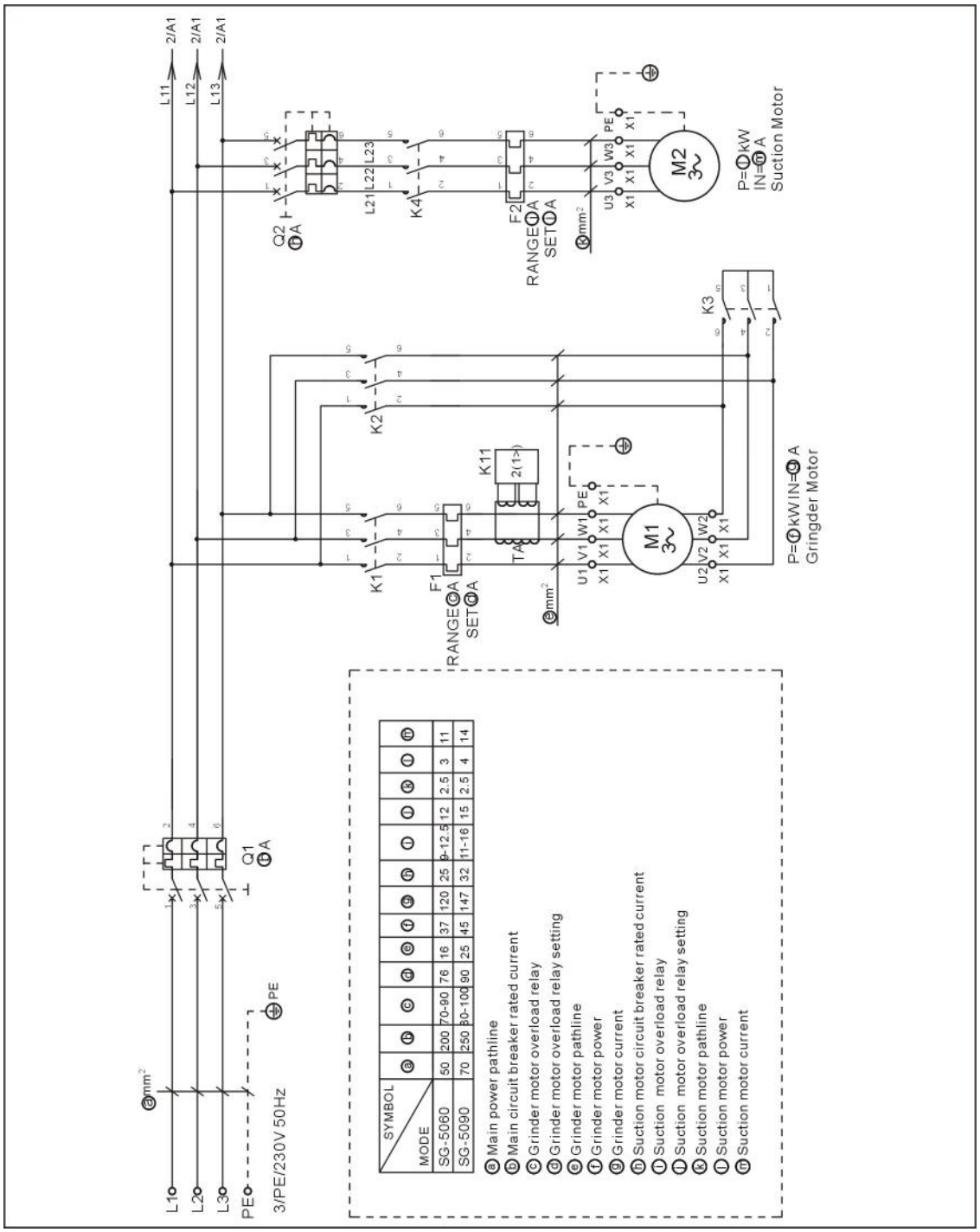
No.	Symbol	Name	Specification	Part No.
39	X1	Terminal board	-	YE61353500000
40	-	-	-	YE61160000000
41	-	-	-	YE61163500000
42	-	-	-	YE61250040000
43	-	-	-	YE61253500000
44	-	-	-	YE61250040000
45	-	-	-	YE61253500000
46	-	-	-	YE61250040000
47	-	-	-	YE61253500000
48	-	-	-	YE61250040000
49	X2	Terminal board	-	YE61250040000
50	X3	Terminal board	-	YE61250040000
51	X10	Metal tie in	4P	YE68025400000
52	-	-	4P	YE68025400100
53	M1	Motor	400V 50Hz 45kW	-
54	M2	Blowerr	400V 50Hz 4.0kW	-
55	M3	Blowerr	400V 50Hz 0.6kW	-
56	M4	Motor	400V 50Hz 0.25kW	-
57	M5	Belt conveyor	1Φ 230V 50Hz 0.2kW	-

* means possible broken parts.

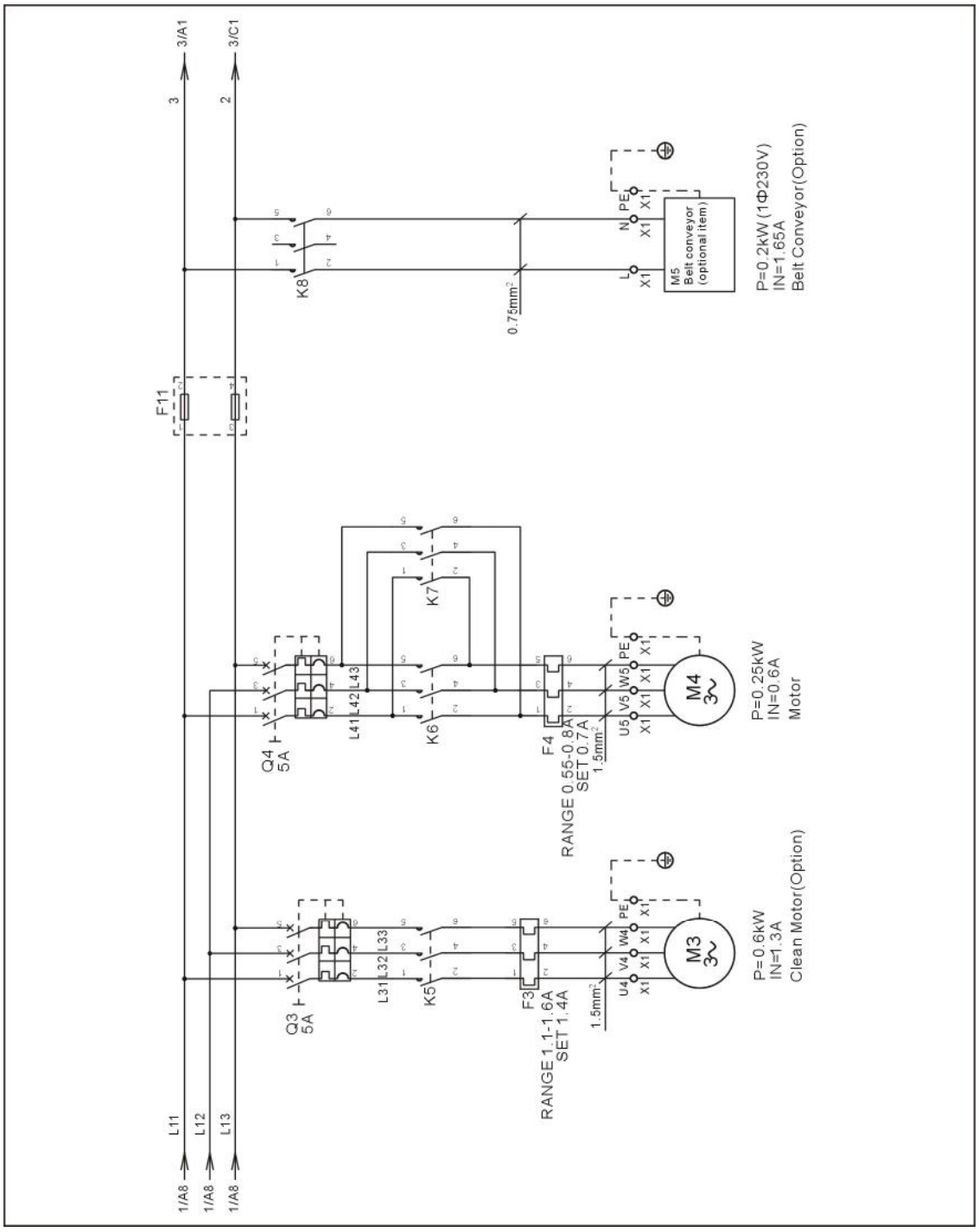
** means easy broken part. and spare backup is suggested.

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.

2.4.5 Main Circuit (SG-50) (230V)

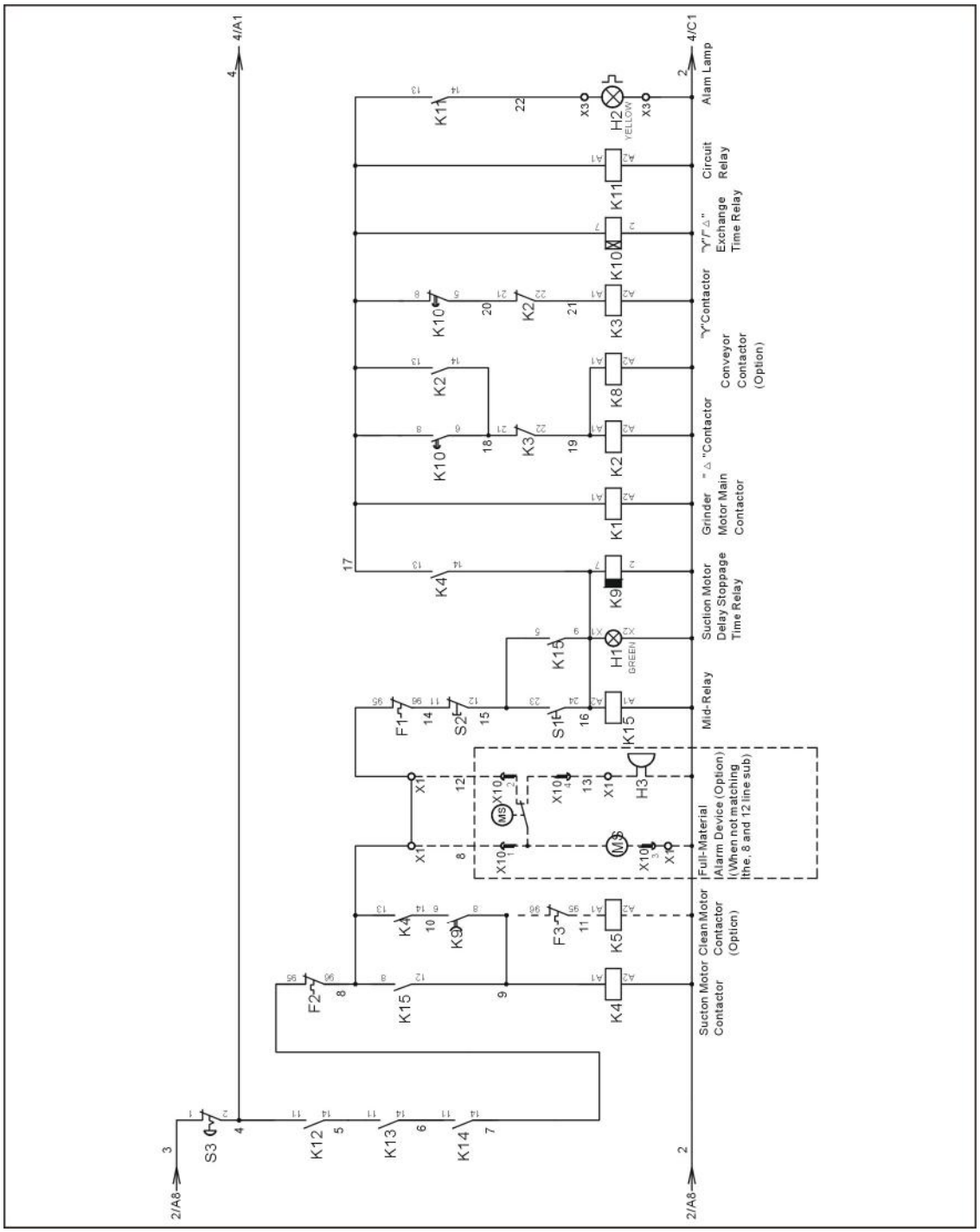


Picture 2-24: Main Circuit 1(SG-50) (230V)

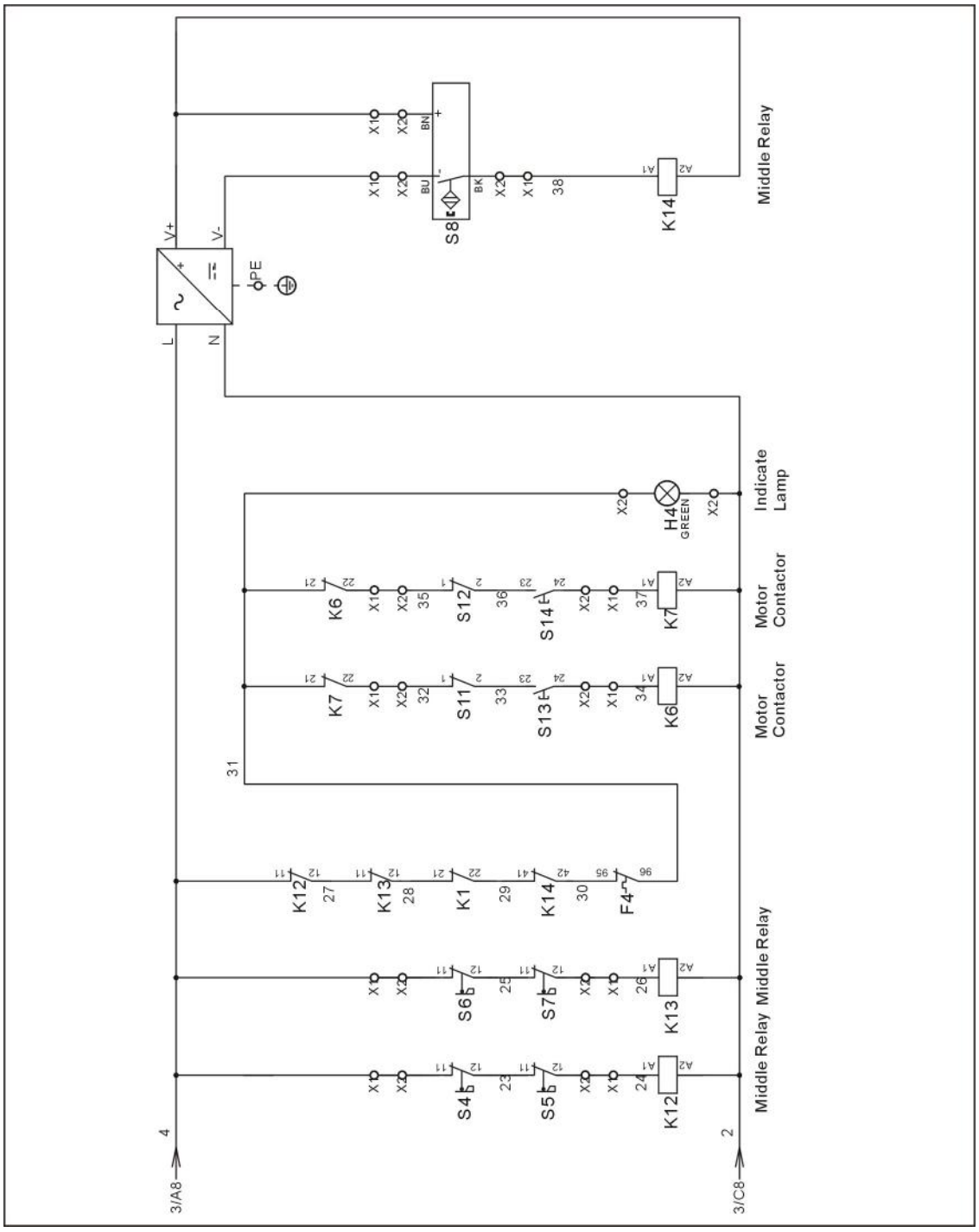


Picture 2-25: Main Circuit 2 (SG-50) (230V)

2.4.6 Control Wiring Diagram (SG-50) (230V)

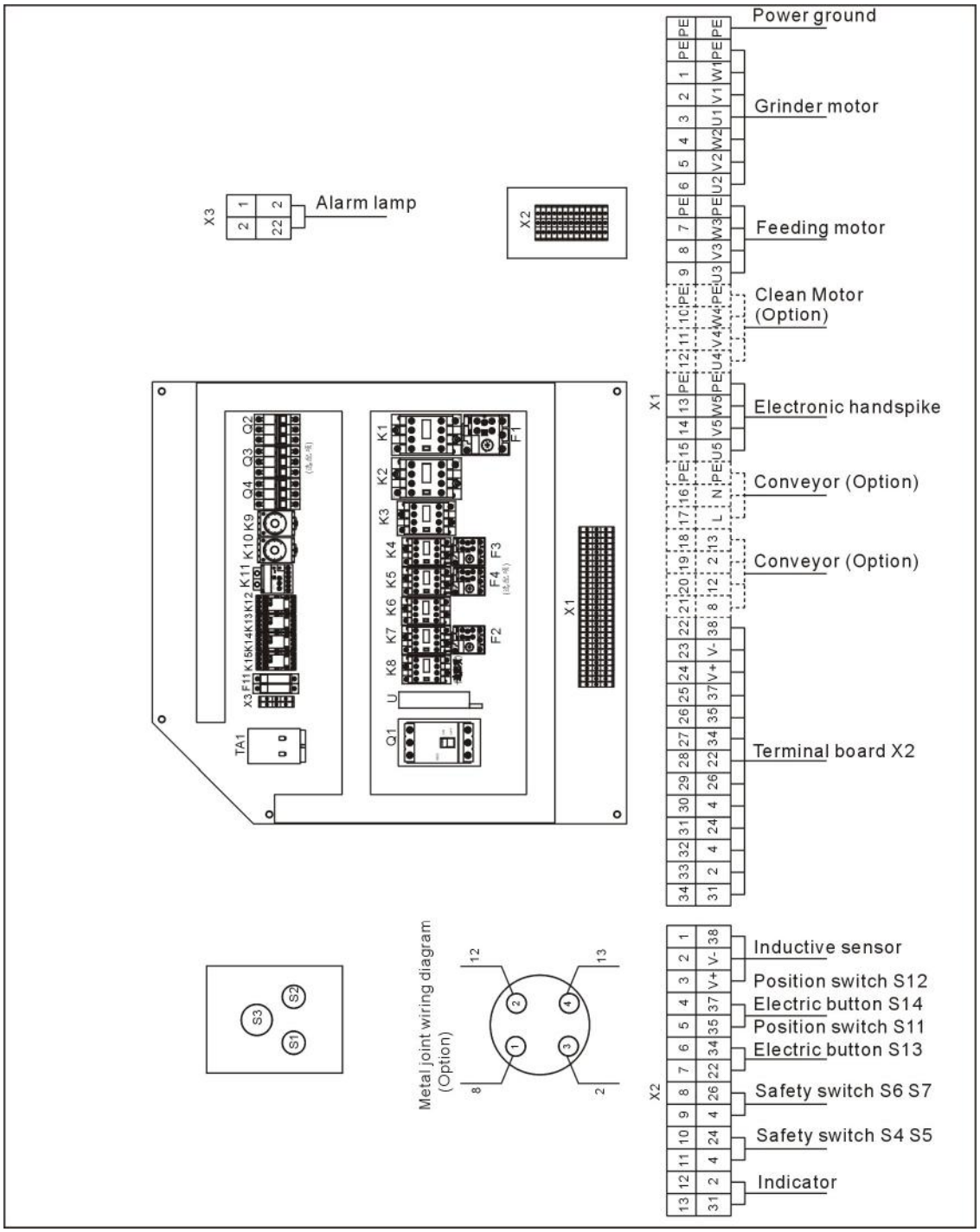


Picture 2-26: Control Wiring Diagram 1(SG-50) (230V)



Picture 2-27: Control Wiring Diagram 2 (SG-50) (230V)

2.4.7 Electrical Components Layout (SG-50) (230V)



Picture 2-28: Electrical Components Layout (SG-50) (230V)

2.4.8 Electrical Components List (SG-50) (230V)

Table 2-14: Electrical Components List SG-5060 230V

No.	Symbol	Name	Specification	Part No.
1	Q1	Gate circuit breakers*	200A	YE41252000000
2	Q2	Circuit breakers*	25A	YE40602500000
3	Q3	Circuit breakers*	5A	YE40603000000
4	Q4	Circuit breakers*	5A	YE40603000000
5	K1 K2	Contactor**	220V 50/60Hz	YE00504500000
6	K3	Contactor**	220V 50/60Hz	YE00504400000
7	-	Subsidiary contactor	1NO	YE00592110000
8	-	Subsidiary contactor	1NC	YE00592110100
9	K4	Contactor**	220V 50/60Hz	YE00601721000
10	-	Subsidiary contactor	1NO	YE00691110000
11	K5	Contactor**	220V 50/60Hz	YE00601521000
12	K6 K7	Contactor**	220V 50/60Hz	YE00601522000
13	K8	Contactor**	220V 50/60Hz	YE00601521000
14	K9	Timer	220VAC	YE86322000000
15	K10	Timer	220VAC	YE86300600000
16	K12 K13 K15	Middle realy	220VAC	YE03270700000
17	K14	Middle realy	24VDC	YE03272400000
18	K11	Current relay	220AC 0.5~6A	YE04470600600
19	TA	Current mutual inductance	100/5A	YE04100500000
20	F1	Overload realy**	70~90A	YE01514670000
21	F2	Overload realy**	9~12.5A	YE01169125000
22	F3	Overload realy**	2.2~3.2A	YE01160220000
23	F4	Overload realy**	0.9~1.25A	YE01160900000
24	F11	Fuse**	32A/2P	YE41032200000
25	-	Fuse core**	2A 熔芯	YE46002000100
26	H3	Buzzer	220VAC	YE84222000000
27	MS	Feed position motor	220VAC	YE15000200100
28	H2	Alarm indicate lamp	230VAC	YE83305100200
29	H4	Indicate lamp	CREEY	YE83052300200
30	U	DC power	OUT=24VDC 1.5A	YE71352400100
31	S1(H1) S13 S14	Start button*	400VAC	YE11100100000
32	S2	Stop botton*	400VAC	YE11113100000
33	S3	Emerency stop botton**	400VAC	YE11411000000
34	S4~S7	Sadety switch*	AC-15	YE16147600100
35	S8	Sensor*	24VDC	YE15122400000
36	S11 S12	Limit switch*	230VAC	-
37	X1	Terminal board	-	YE61353500000

No.	Symbol	Name	Specification	Part No.
38	-	-	-	YE61160000000
39	-	-	-	YE61163500000
40	-	-	-	YE61250040000
41	-	-	-	YE61253500000
42	-	-	-	YE61250040000
43	-	-	-	YE61253500000
44	-	-	-	YE61250040000
45	-	-	-	YE61253500000
46	-	-	-	YE61250040000
47	X2	Terminal board	-	YE61250040000
48	X3	Terminal board	-	YE61250040000
49	X10	Metal tie in	4P	YE68025400000
50	-	-	4P	YE68025400100
51	M1	Motor	400V 50Hz 37kW	-
52	M2	Blowerr	400V 50Hz 3.0kW	-
53	M3	Blowerr	400V 50Hz 0.6kW	-
54	M4	Motor	400V 50Hz 0.25kW	-
55	M5	Belt conveyor	1Φ 230V 50Hz 0.2kW	-

* 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.

Table 2-15: Electrical Components List SG-5090 230V

No.	Symbol	Name	Specification	Part No.
1	Q1	Gate circuit breakers*	250A	YE41252500000
2	Q2	Circuit breakers*	32A	YE40603200000
3	Q3	Circuit breakers*	5A	YE40603000000
4	Q4	Circuit breakers*	5A	YE40603000000
5	K1 K2	Contactor**	220V 50/60Hz	YE00504600000
6	K3	Contactor**	220V 50/60Hz	YE00504500000
7	-	Subsidiary contactor	1NO	YE00592110000
8	-	Subsidiary contactor	1NC	YE00592110100
9	K4	Contactor**	220V 50/60Hz	YE00601800000
10	-	Subsidiary contactor	1NO	YE00691110000
11	K5	Contactor**	220V 50/60Hz	YE00601521000
12	K6 K7	Contactor**	220V 50/60Hz	YE00601522000
13	K8	Contactor**	220V 50/60Hz	YE00601521000
14	K9	Timer	220VAC	YE86322000000
15	K10	Timer	220VAC	YE86300600000
16	K12 K13 K15	Middle realy	220VAC	YE03270700000
17	K14	Middle realy	24VDC	YE03272400000
18	K11	Current relay	220AC 0.5~6A	YE04470600600
19	TA	Current mutual inductance	100/5A	YE04100500000
20	F1	Overload realy**	80~100A	YE01514680000
21	F2	Overload realy**	11~16A	YE01611640000
22	F3	Overload realy**	2.2~3.2A	YE01160220000
23	F4	Overload realy**	0.9~1.25A	YE01160900000
24	F11	Fuse**	32A/2P	YE41032200000
25	-	Fuse core**	2A 熔芯	YE46002000100
26	H3	Buzzer	220VAC	YE84222000000
27	MS	Feed position motor	220VAC	YE15000200100
28	H2	Alarm indicate lamp	230VAC	YE83305100200
29	H4	Indicate lamp	CREEY	YE83052300200
30	U	DC power	OUT=24VDC 1.5A	YE71352400100
31	S1(H1) S13 S14	Start button*	400VAC	YE11100100000
32	S2	Stop botton*	400VAC	YE11113100000
33	S3	Emerency stop botton**	400VAC	YE11411000000
34	S4~S7	Sadety switch*	AC-15	YE16147600100
35	S8	Sensor*	24VDC	YE15122400000
36	S11 S12	Limit switch*	230VAC	-
37	X1	Terminal board	-	YE61353500000
38	-	-	-	YE61350040000

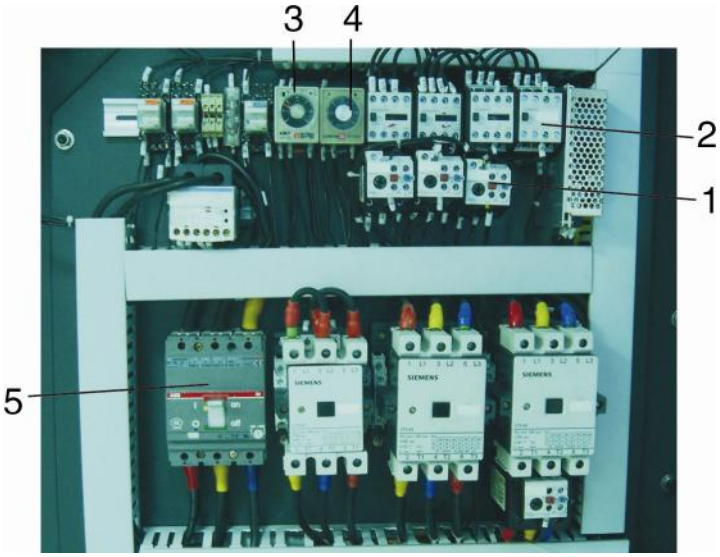
No.	Symbol	Name	Specification	Part No.
39	-	-	-	YE61250040000
40	-	-	-	YE61253500000
41	-	-	-	YE61250040000
42	-	-	-	YE61253500000
43	-	-	-	YE61250040000
44	-	-	-	YE61253500000
45	-	-	-	YE61250040000
46	X2	Terminal board	-	YE61250040000
47	X3	Terminal board	-	YE61250040000
48	X10	Metal tie in	4P	YE68025400000
49	-	-	4P	YE68025400100
50	M1	Motor	400V 50Hz 45kW	-
51	M2	Blowerr	400V 50Hz 4.0kW	-
52	M3	Blowerr	400V 50Hz 0.6kW	-
53	M4	Motor	400V 50Hz 0.25kW	-
54	M5	Belt conveyor	1Φ 230V 50Hz 0.2kW	-

* 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.

2.5 Electrical Components Instruction



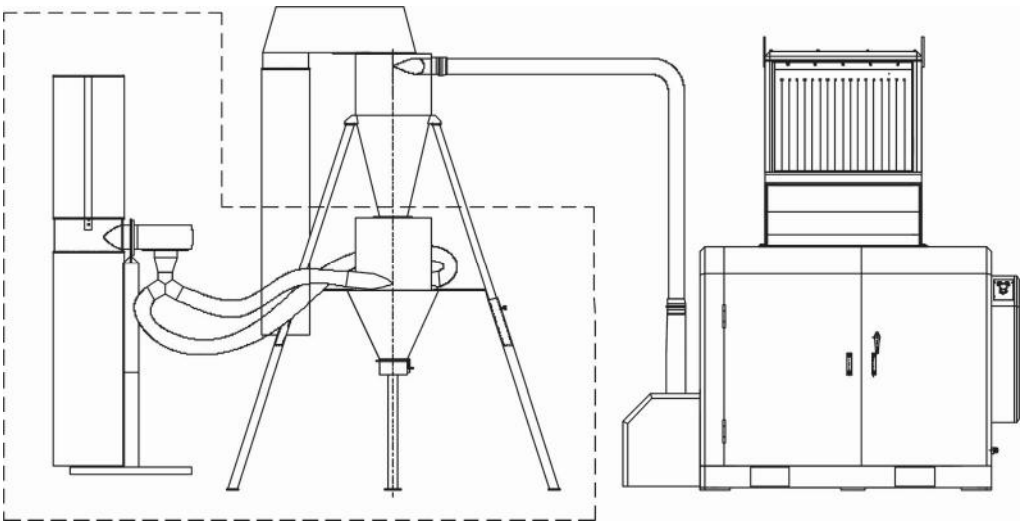
Picture 2-29: Electrical Components Description

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

2.6 Optional Accessories

2.6.1 DS-50 Dust separate System

2.6.1.1 Installation Show



Picture 2-30: Installation Show

2.6.1.2 Outline Dimensions

Cyclone (Φ×h)…… 500×1160mm

2.6.1.3 Installation

Read chapter 3 carefully before operating on dust separate 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.

Connection

1) Install a separator under cyclone device, the diameter is Φ180mm.
2) Connect to conveying pipe, the diameter is 4 inches × 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

Note!

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

2.6.1.4 Operation and Maintenance

Start and stop of the machine

Start and stop of the machine is controlled by main power switch

2.6.1.5 Check

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 check 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.

2.6.1.6 Clean

Note!

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

1) First clean the inner side of the cleaning facilitates.
2) It is necessary to check and clean dust separator.
3) Move away separator, use high pressure air to blow away its interior granules.
4) Clean out the storage hopper and clean its interior.

5) Shake the air bag to drop the dust down.

6) Assembly the disassemblied parts according to reversed order.

2.6.2 Screen

Picture 2-31: Screen

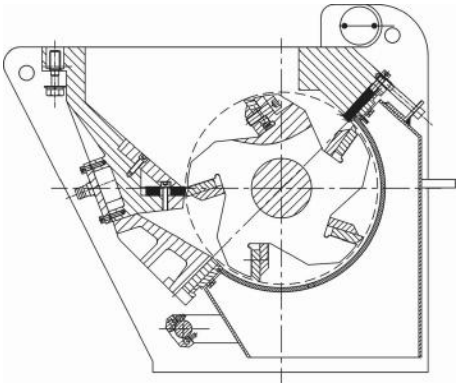
Model	Hole dia. (mm)			
	Φ8	Φ10	Φ12	Φ14

Notes: Φ12 is standard

2.6.3 Cutter

Material	Comparative standard steel code		
	China GB	USA ASTM	Japan JIS
SKD11	Cr12MoV	D2	SKD11

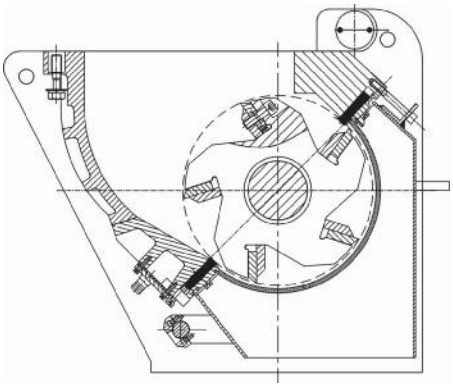
Standard configuration



Picture 2-32: Standard Configuration (High Cutting Point)

This kind of design has a high starting point of fixed blade, making a small feeding space of chamber, and these characteristics make cutting function not

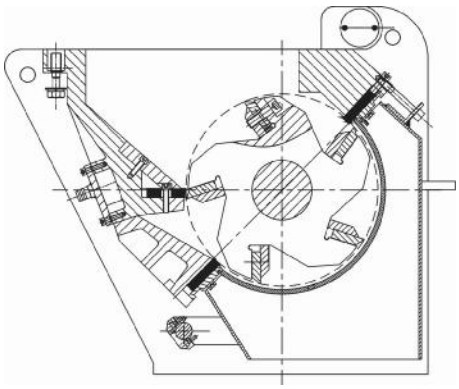
overpower. Thus even in the most demanding environment, rotor will be free from obstruction or appears to be a stall. The design is usually suitable for granulating rubber heads of injection molding, thick wall stuff and thick plate.



Picture 2-33: Standard Configuration (Low Cutting Point)

This kind of design has a low starting point of fixed blade, making a large feeding space of chamber, where materials would be held quickly and granulated. The design is usually suitable for granulating large hollow shells and frames.

Optional (Three Rows of Fixed Blade)



Picture 2-34: Three Rows of Fixed Blade

Three Rows of Fixed blade is installed based on the high cutting point with one row fixed blade. Granulating throughput is higher than that of two rows. And its design parameters, performance and application are the same as that of high cutting point.

3. Installation and Debugging

 Read through this chapter 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 to avoid electrical shock.

Table 3-1: Attached Form, Knives and Other Fixed 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	16	18
	M8	16500	24300	28400	25	36	43
	M10	26300	38700	45200	49	72	84
	M12	38400	56500	66000	86	126	145
	M14	62500	77500	90500	135	200	236
	M16	72500	10700	12500	210	310	365
	M18	91000	129000	152000	300	430	600
	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

3.1 Installation Notice

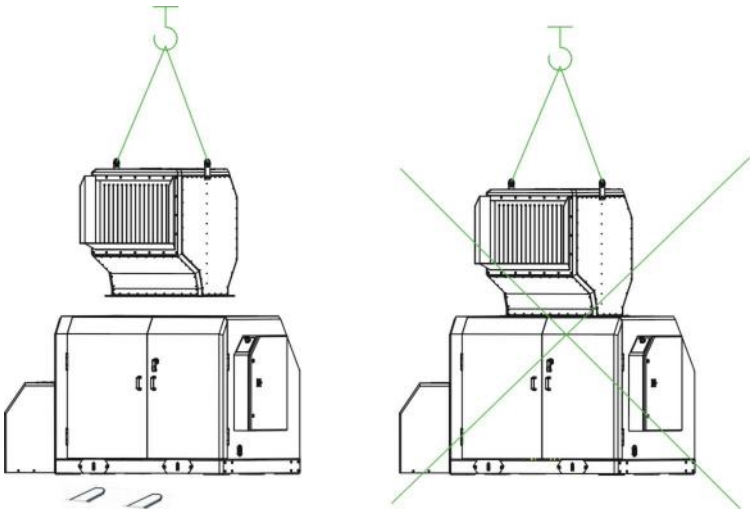
1) Make sure voltage and frequency of the power source comply with those indicated on the manufacture's plate, which is attached to the machine.
2) Power cable and earth connections should conform with local regulations.
3) Use independent power cable and ON / OFF switch. The cable's dia. Should not 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%

3.2 Installation Place

Please use the right hoisting way!

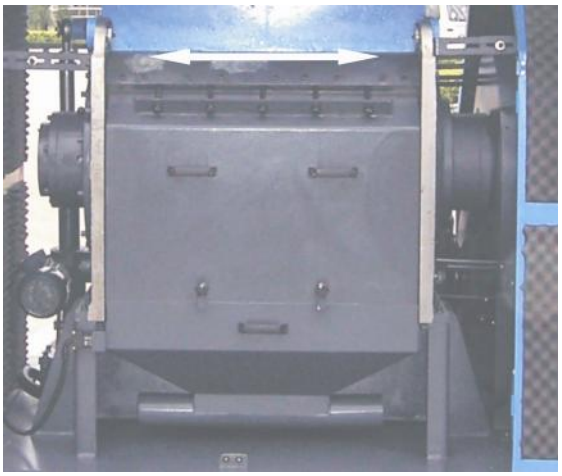
The feed-in box and mainbody of the granulator is packed separately before leaving the factory. Use a forklift to transport the mainbody to a proper place, then hoist feed-in box onto the mainbody, tight the installation screw up.

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



Picture 3-1: Installation Place 1

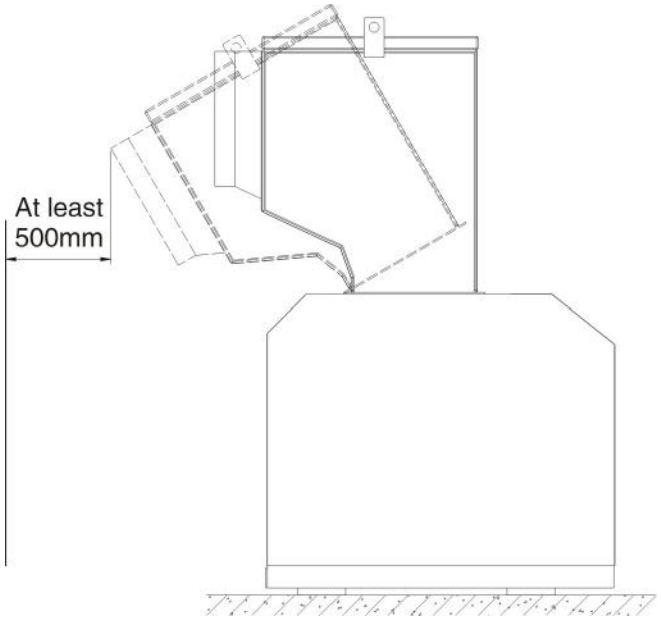
Please make sure there is enough installation space for easier maintenance and repairing.



Picture 3-2: Installation Place 2

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

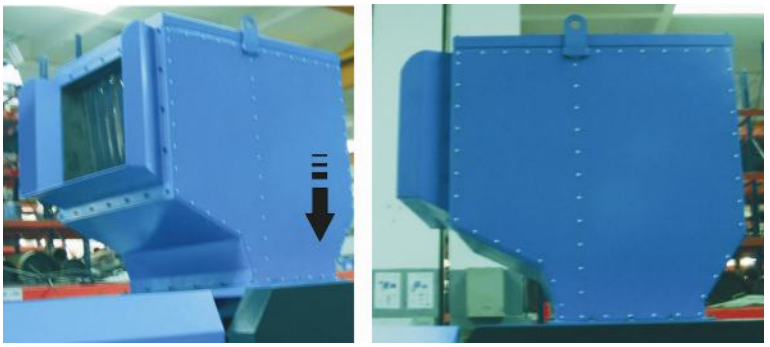
When open the feed box, there should remain at least 500mm safety space.



Picture 3-3: Installation Place 3

3.3 Install Feed-in Box

1) Open the two front doors of the machine.
2) Hoist the feed-in box and carefully put it onto cutting chamber and match the chamber with its fixed screw holes.
3) Lock up feed-in box screw (torque: 220Nm).



Picture 3-4: Install Feed-in Box

3.4 Install Feed-in Inlet

Install feed-in inlet after installation of feed box

1) Open the two front doors of the machine.
2) Hoist the feed-in inlet and carefully put it in front of feed-in box and match the feed box with its fixed screw holes.
3) Lock up feed-in box screw (torque: 45Nm).

Picture 3-5: Install Feed-in Inlet

3.5 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 baffle on the left bearing block, then penetrate the shaft of blade rest, and lock it to the left box block.
4) Install seal rings on the left and right bearing blocks, and press rings into the bearing. At the same time, use round-nut and round-nut locking washer 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 3-6: Installation of Bearing and Blade Rest

3.6 Installation of Fixed Blades and Rotating

 Take care when installing and wear gloves so not to be cut by the sharp knives.

Installation steps

1) Lay the rotating blades into the blade groove in the blade rest to make them match and then cover the pressing block. Finally, screw the screws down to make the blade not sway.(so to facilitate the space adjusting between fixed blade and rotating blade).
2) Install the front and back pressing blocks on the front and back boxes and

leave some space to insert fixed blades. Screw screws down to make the fixed blades not sway.

3) Measure the space between the fixed blade and the rotating blade using a insertive ruler. The normal space ranges from 0.2~0.3 mm. Adjust if the space is not in this range. Screw down the fixing screws between the fixed blades and the rotating blades.

Picture 3-7: Installation of Fixed Blades and Rotating

Caution!

Fixed screws must be tightened to avoid cutting and doing harm to machine.

Caution!

The space between the fixed blade and the rotating blade cannot be too narrow to avoid damaging the cutting tool.

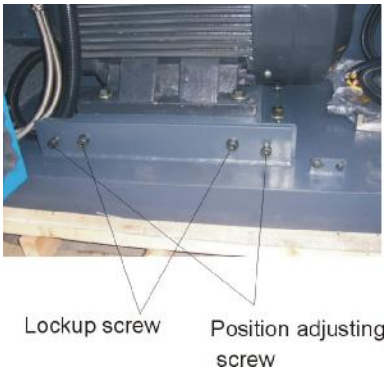
3.7 Installation of Belt Pulley Wheel and Motor

1) Interpose the key to the key groove and then install the driven wheel.
2) Lay lockup ring in the hole of the driven wheel and make both positions of the hole to match each other then screw the hexagon socket cap screw. (M20mm×50).
3) Adjust the balance of the driven wheel with dial gauge. Stick the dial gauge to the driven wheel and rotate the driven wheel to see whether the value of the indicator drops within 0~0.1 mm.
4) After balance screw tightly the 3 hexagon socket cap screws. (Torque: 710Nm)
5) Install the driving wheel on the bearing of the motor.

6) Lay lockup ring in the hole of the driving wheel and make both positions of the hole to match each other then screw the hexagon socket cap screw. (M10mm×40) torque: 145Nm. Finally install upper and bottom protection covers for the wheel pulleys.

Picture 3-8: Installation of Belt Pulley Wheel and Motor 1

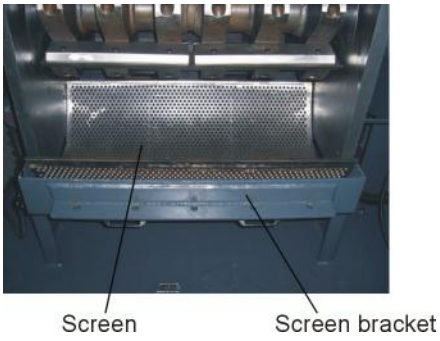
7) Lay the motor on the motor fixing plate and push forward to shorten the space between the driving wheel and the driven wheel.
8) Adjust the balance of the large and small belt wheels: place a level ruler between the large and small belt wheels to observe whether they are aligned. If not, it need to adjust the small belt wheel (Note: the large belt cannot be adjusted any more) to make them balanced.
9) Install the belt, push the motor backward, screw tightly the positioning screw to make the 6 belts to be stressed by equal forces. Tighten the belts and tight up the positioning screw.
10) At last, install the up and low shields of the belt wheel.



Picture 3-9: Installation of Belt Pulley Wheel and Motor 2

3.8 Installation of Screen, Screen Bracket and Storage Box

1) Insert the spindle of screen bracket into the holes of left and right boxes, and make right end of spindle and outboard side of right box stay parallelly.

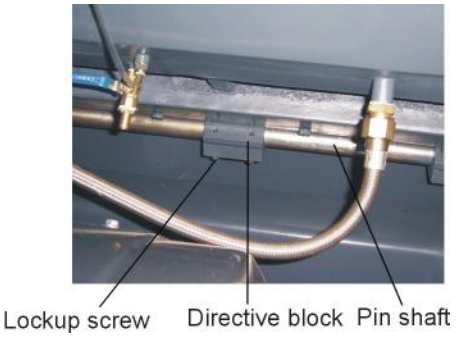


Picture 3-10: Installation of Screen, Screen Bracket and Storage Box 1

2) Put pneumatic break iron rod (illustrated in figure 2) along installation holes on both sides of the sideboard to insert the rod into directive block on the screen bracket and lock up the screws on the directive block.

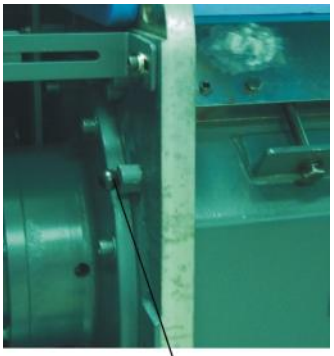
Picture 3-11: Installation of Screen, Screen Bracket and Storage Box 2

3) Place screen into screen bracket, then lift left side of bracket so that spring bolt can be inserted into bracket. Lastly fix the screen bracket with five bolts. Install pneumatic break on its base and lock up the fixing screw. (M16x120 torque: 365Nm).



Picture 3-12: Installation of Screen, Screen Bracket and Storage Box 3

4) Then mount tensioning cover to the swing arm hole of pneumatic spring, then insert the spring into left side of spindle end.
5) Adjust the angle of swing arm on the pneumatic spring, after confirming the angle is right, fix the tresioning cover.



Picture 3-13: Installation of Screen, Screen Bracket and Storage Box 4

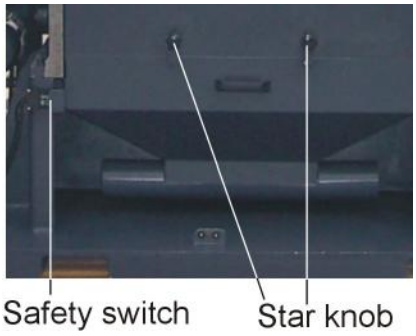
Note!

You must tight up the screw in this step or it will lead to the deformation of the screen bracket and broken of the screw.

6) Raise up the storage box, insert storage box into support board and insert safety switch.

Picture 3-14: Installation of Screen, Screen Bracket and Storage Box 5

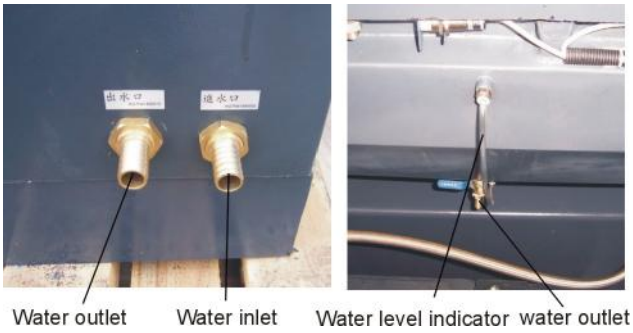
7) Lock up the two star knobs in front of the screen bracket.



Picture 3-15: Installation of Screen, Screen Bracket and Storage Box 6

3.9 Connection to Cooling Water

The back block of machine water tank is equipped with cooling water unit. Pipe connector of back block and pipe connector of machine shell are connected with water tube, which is tightly clamped with restrain to avoid leakage.



Picture 3-16: Connection to Cooling Water

3.10 Power Connection

Power connection must be done by the professional electrician.

Notes:

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%.

3.10.1 Check the Running Direction of the Motor

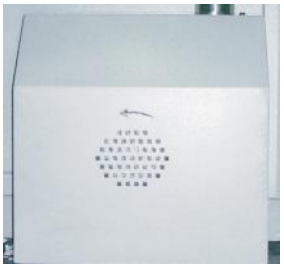
1) Open the door to check whether the feeding box, screen, or storage box has been installed.
2) Close the door.
3) Ensure the main power switch is in ON position.
4) Check the emergency stop.
5) Start the granulator via pressing the START button and stop the granulator via pressing the STOP button.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

CAUTION!

The cutting tools may be damaged and the granulating capability will be reduced if there is a wrong motor running direction. Please disconnect the power and switch any two wires of the three in the main power.

3.10.2 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.



Picture 3-17: Check the Running Direction of the Blower

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.

4. Operation Guide

 Wear earplugs during operating to avoid personal injury!

 Wear gloves during operating to avoid personal injury!

 Wear goggles during operating to avoid personal injury!

Because the blades and rotor may be loosen, check the following items before operating:

1) If the blades has any damage;
2) If the surface of the rotor is loosen;
3) Push or pull the rotor and blades to see if there is any loose connection.

If any of the above situation is found, please contact local representative or SHINI company for help.

4.1 Startup Pretest

Unpainted part of the machine has been covered with stainless oil. Before use, the stainless 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 keeps in a horizontal level.

Note!

Adjust the machine to make its eights holders to share the weight and be in a horizontal level.

2) Check the space of the cutting tools (0.2~0.3mm) to see whether the lockup screws of the blades are tightened (fixed blade M16x50, rotating M16x60).

4.1.2 After first startup for 2 hours

1) Check the space of the cutting tools of the fixed blades 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.

Picture 4-1: Position-adjusting Screws

4.1.3 After First Startup for 20~30 Hours

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

4.2 Circuit Connection

The installation of the granulator's circuit must be conducted by the professional electricians.

1) Connect granulator to the power.
2) Connect the transmission belt clockwise.

Picture 4-2: Circuit Connection

CAUTION!

The blade may be damaged and the granulating capability will be reduced if there is a wrong running direction. Please disconnect the

power and transpose any two wires of the three in the main power.

CAUTION!

When check the running direction of the motor, be careful not to let your hands be crushed by belt!

4.3 Open the Feed-in box, Screen Bracket and The Storage Box

Before opening the feed-in box, 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 Feed-in box

1) Check if the feed-in box has been emptied. If so, turn off the main power switch.
2) Loosen the spring lock and open the front door, then the back door.
3) Open the feed box by pressing on the electrical handspike button.

CAUTION!

The feed box is held by electrical handspike to avoid its dropping when opening it.

Picture 4-3: Electrical handspike operational button

4.3.2 Open the Storage Box and Screen

1) Turn off the power switch of the granulator.
2) Loosen the spring lock and open the front door.
3) Loosen the quick coupling clip at the end of the outlet pipe and transfer it to one side.
4) Open the 2 star handles and take out the storage box.
5) Screw off the bolts on the screen, and leftward open the spring dowels on the left side board.
6) Take out the screen bracket and withdraw the screen.

CAUTION!

The feeding hopper is held by pneumatic stick to avoid its dropping when opening it.

4.4 Turn Off and Stop the Granulator

The granulator is controlled by main power switch, safety switch, START/STOP button and emergency stop.

Main power switch:

It is located in the control box. Through the main power switch to control the startup and stop of the machine.

Picture 4-4: Main Power Switch

START button and STOP button:

These two buttons control the startup and stop of the machine.

Emergency stop:

When an accident happens, this button can do a favor.

Picture 4-5: Button

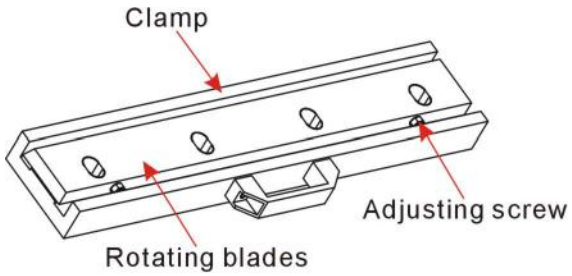
CAUTION!

If there are also ungrinded source materials, the granulator shall NOT be stopped, otherwise the source materials will blockade the rotator and the motor will be overloaded next time you start the machine up.

4.5 Blades Installation Adjusting

All the cutters, including rotating blades and fixed knives, can be adjusted within clamp outside the machine.

Put all the cutters including rotating knives and fixed knives into clamp，adjusting its adjusting screw until the screw reach the clamp.



Picture 4-6: Blades Installation Adjusting

4.6 Timer (configured with loading blower)

After the granulator stops, use timer to prolong the working time of the loading

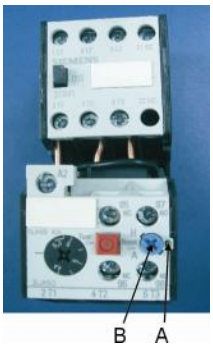
blower to make all the regrind in the storage box get loaded.

The time set up varies according to the dia. of the screen mesh hole and the throughput.

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 start. Then, open back door and check if lock bolt has been locked up.
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 rotated blade and fixed blade, and whether the cutting edge is sharp. An improper width of space or blunt edge may lead to machine halt and motor overload protector will make a trip.



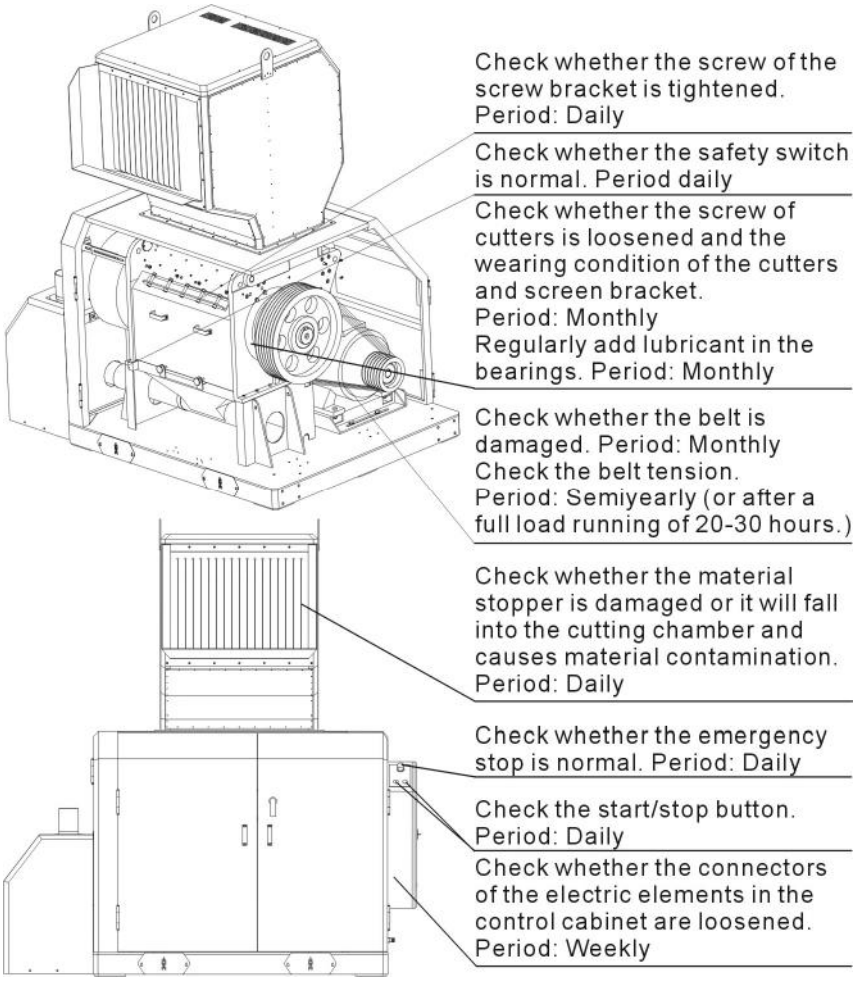
5.2 Stop Due to Other Reasons

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. Maintenance and Repair



6.1 Repair

All the repair must be done by professionals to avoid damage to machine and harm to human body.

6.1.1 Replace the Blades

CAUTION!

Self-rotation exists due to non-balanced forces or unstable barycenter.

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

More details about replacing or maintaining the blades to see chapter 3.5.
Inject screw thread fixing glue (blue LOCTITE 243 recommended) tighten all fixing screws to fix the screws.

CAUTION!

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

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

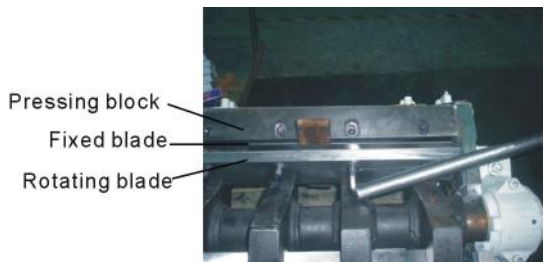
After replacement, check whether the screen is damaged. If so, replace the screen. Each time to replace the blade, the screw and insulation ring must be replaced also. Before replacing the blades, open the door and feed box, remove the regrind storage bin, screen and screen bracket.

1) Remove the rotating blades

CAUTION!

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

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



Picture 6-1: Remove the Rotating Blades

2) Remove the fixed blades

1. Revolve the screw of the front fixed blade.
2. Loosen and remove the hexagon socket cap screw.

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 again, remove the pressing block and blade. Clean the supporter box.

3) Install the blades

Clean carefully the fixed blades and rotating blades and then install them.

 CAUTION!

Each time to replace the blade, the screw and insulation ring must be replaced also. More details about replacing or maintaining the blades to see chapter 3.6.

6.2 Transferring

 Maintenance or repair the transmission belts after pressing down the emergency stop button or main power switch!

6.2.1 Daily Maintenance of V Belts

There are 4~6 V belts according to motor power.

1) Check the V belts

Check V belts' tensility after a full-load operation for 20-30 hours. And then check its abrasion condition.

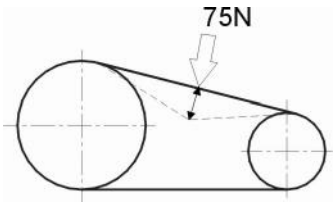
2) Check V belts' tensility every 6 months. Refer to attched list for deviation.

Remove the upper panel in the back end of the granulator. Rotate the V belts for several circles to see if there is any damage.

 CAUTION!

Pinch risk! Do not place your hands between wheels and the belts.

If it is necessary, check the belt's tensility via enforce extra force (75N) and measure its excursion. This extra force is determined by power and frequency of the motor. More Details to see the following table.



Picture 6-2: Daily maintenance of V Belts

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)	23mm	23mm	20mm

6.2.2 Adjustments of V Belts

1) Loosen four fixed bolts (C) on the motor installation base (A).
2) Adjust the V belt's tensility by pulling or pressing motor installation base via four adjusting bolts (B).
3) Lock up the moving bolts (B).
4) Lock up the fixed bolts (C).

Remember recheck the V belts' tensility after 20~30 hours' full load operation.

Picture 6-3: Adjustments of V Belts

Notice!

Four fixing screws'(c) torque are 400Nm.

6.3 Lubrication

6.3.1 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

6.3.2 Please Grease the Bearing with Lubricating Oils Periodically

1) Open the front door of the machine.
2) Inject lubricating oil via oil inlet with a grease gun.

If the granulator is not used for a long time, please grease anti-rust oil in blade rest, fixed blades, rotating blades, cutting chamber and screws to avoid rusting.

Picture 6-4: Oil Inlet

6.4 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.

6.4.1 Daily Check

1) There is rubber shutter in the feed-in box. If the rubber shutter is damaged, replace it immediately. Otherwise the fragment of the shutter will damage the blades in the cutting chamber.
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.

6.4.2 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 feed box.

6.4.3 Monthly Check

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

6.5 Cleaning

CAUTION!

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

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

Note!

The feed-in box is held by electrical handspike, therefore it cannot fall down.

6) Clean the interior surface of the feeding hopper.
7) Remove the quick coupling clip from one end of the pipe.
8) Uninstall the storage box.
9) Unscrew the screws in the screen bracket, and take it out.

10) Take out the screen.

11) Hold to the screen and take it out outwardly.

12) Clean the storage box, screen bracket and the screen.

13) Clean both surfaces of the cutting chamber.

14) Clean every loading pipe, blower, and cyclone dust separator.

15) Clean the wheels with bright dust-precipitator.

Reinstall after cleaning

 CAUTION!

Take care not to be squeezed when closing the door!

6.6 Maintenance Schedule

6.6.1 About the Machine

Model _____ SN _____ Manufacture date _____

Voltage_____Φ_____V Frequency _____ Hz Power _____ kW

6.6.2 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.

6.6.3 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.

6.6.4 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

6.6.5 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.
- ☐ Chech the pneumatic stick
- ☐ Check start/stop delay function of the conveying motor
- ☐ Check whether clamp ring of pulley is fastened.
- ☐ Check belt tension.

6.6.6 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

6.6.7 3 year Checking

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