



QE GRANULATORS LIMITED

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QE20/30/35/40/50
Quiet Efficient Granulator



Operation Instruction

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Thank you for making use of QE Series strong granulator!

For safe operation and get the best efficiency of our products, it is insisted that this Operation Instruction be carefully read by the people assigned to the running and maintenance of the machine, as well as by the people who shall carry out the transportation and installation. Please comply with the notes as following. Incorrect operation may cause serious accident, such as death injuries and equipment damages.

Explanations for Note Title:



The note described in DANGER aims to avoid incorrect operations on this part which may cause serious accidents such as death and equipment damages.



The note described in WARNING aims to avoid incorrect operations on this part that may cause slight injuries to the operators and damages to the products.



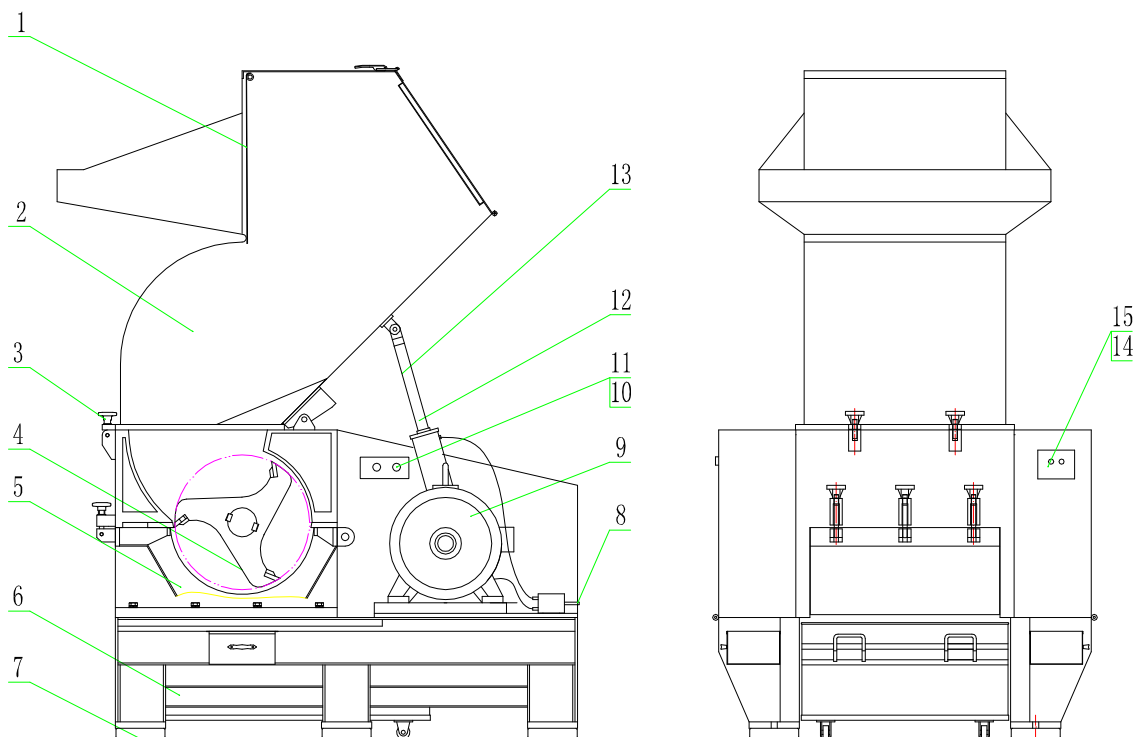
The note described in CAUTION aims to avoid incorrect operations on this part which may cause product damages and slight injuries to operators.

型号 Model	刀片 Blades		粉碎室口径 (mm) Crushing Chamber dimension	功率(kw) Power	粉碎能力(kg/hr) output	转速 (r/min)	筛网孔径 (mm) Mesh-sieve r	机械尺寸(mm) Dimension	重量(kg) Weight
	固定 Fixed	转动 Rotating							
QE2025	3x4	2x1 -A-	240x180	3	100-250	650	φ6	960x678x1260	370
QE2030	3x5	2x1 -A-	300x190	3	125-275	650	φ6	960x742x1260	395
QE2036	3x6	2x1 -A-	360x190	5	150-300	650	φ6	960x810x1260	430
QE3036	3x6	2x2 -B-	360x262	7.5	220-420	650	φ8	1100x788x1442	610
QE3042	3x7	2x2 -B-	420x262	11	300-500	650	φ8	1100x850x1442	920
QE4050	3x8	2x2 -B-	480x360	15	320-540	530	φ10	1550x960x1828	1150
QE4060	3x11	2x2 -B-	600x360	22	360-560	530	φ10	1560x1025x1828	1580
QE4080	3x11	2x2 -B-	660x420	30	500-800	530	φ10	1700x1200x1920	1950
QE5080	3x12	2x2 -B-	720x520	37	800-1200	410	φ12	1980x1420x2535	3200
QE50100	3x16	2x3 -B-	900x510	45	900-1300	410	φ12	1980x1700x2535	4200
QE70105	3x15	2x3 -B-	1050x820	55	1000-1400	340	φ12	2960x2100x3150	6560
QE70120	3x18	2x4 -B-	1260x820	75	1300-1800	340	φ12	2960x2300x3750	10300
QE70150	3x21	2x4 -B-	1470x820	112	1500-2000	275	φ14	2960x2510x3750	10900

-A: CLAW BLADE type -B: PADDLE BLADE type

2 Structural Illustration and Features

2.1 Structure Diagram, please see the diagram2-1 and diagram2-2.



2-1 Structural illustration for Material-stored A type

1,Material blocking board

2,Feeding bin

3, Hand wheel or screw nut

4, Hob head

5, Mesh screen shelf

6, Store bin

7, Level pad

8,Air supply port

9, Main motor

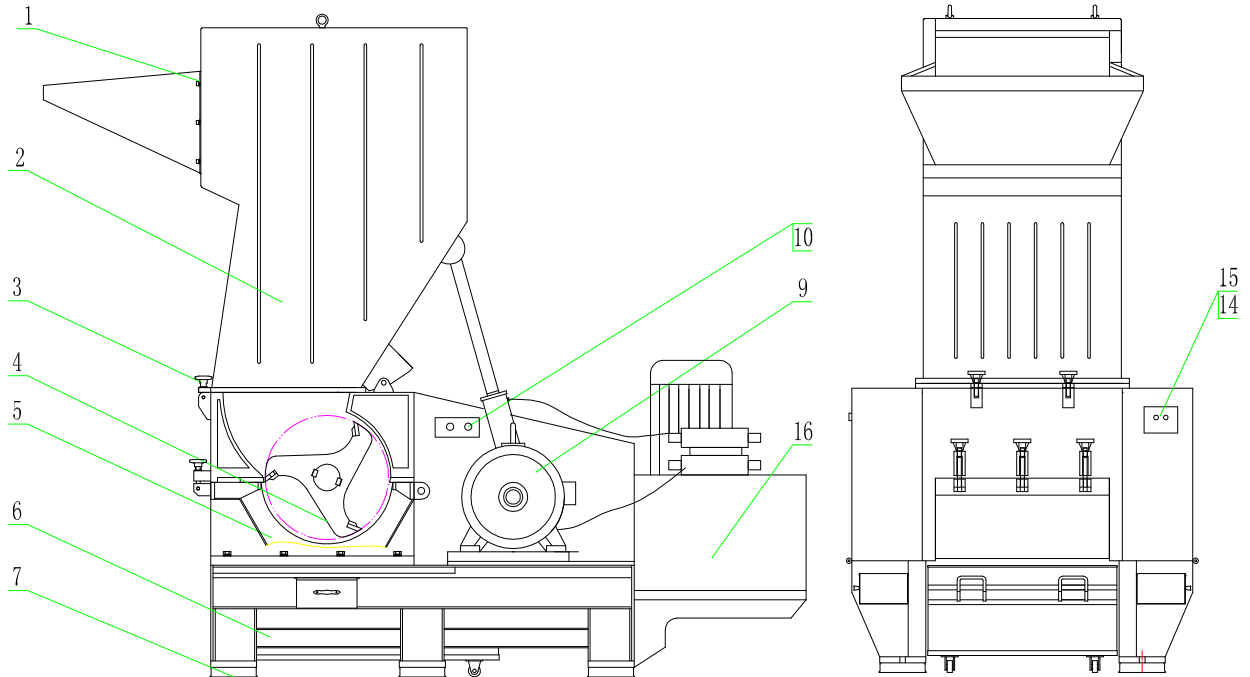
10, Hopper opening

11, Hopper closure

12, Cylinder control switch

13, Pneumatic spring or pneumatic cylinder 14 Start button

15, Stop button (Hydrocylinder.)



2-2 Structural illustration for Material-stored B type

1,Material blocking board

2,Feeding bin

3, Hand wheel or screw nut

4, Hob head

5, Mesh screen shelf

6, Store bin

7, Level pad

8,Air supply port

9, Main motor

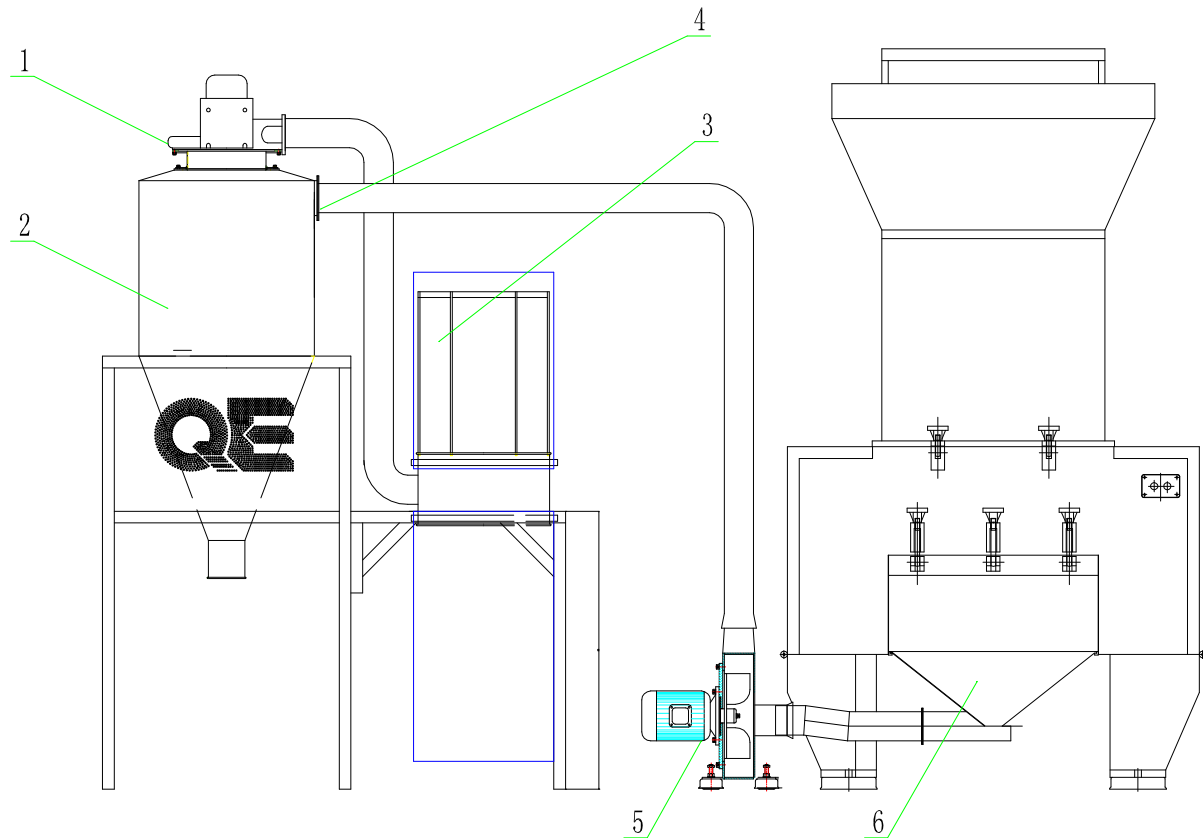
10, Hopper opening

11, Hopper closure

12, Cylinder control switch

13, Pneumatic spring or pneumatic cylinder 14 Start button

15, Stop button (Hydrocylinder.)



2-3 Structural illustration for Auto-feeding type

1, Dust filter bag

2, Screening barrel

3, Dust filter motor

4, Tube hoop

5, Feeding blower

6, Grinding material tank

2.2 Features

2.2.1 This series have two different type: material-stored and auto feeding are respectively showed in diagram2-1 and diagram2-2 and 2-3.

2.2.2 The main frame of this unit mainly consists of feeding bin, body, hob head, mesh screen shelf;

2.2.3 Stainless steel structure, compact design with durable and reliable performance;



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- 2.2.4 The heavy burden bearing with oil-sealed device and soundproof can keep the unit from shocking and noise, and the material from pollution;
- 2.2.5 Equipped with motor overload protective device and chained power-off system to guarantee safe operation, especially for blade-cleaning;
- 2.2.6 The units which are stronger than QE30 Series are equipped with auto cooling system to emit the heat produced by friction while crushing, so as to improve the efficiency and prolong life of the unit;
- 2.2.7 Paddle-blade or claw-blade structure,. Patented rotating blade, imported high-chromium blade can be adjustable and be re-sharpened. It can make our blade durable.
- 2.2.8 The feeding bin is designed being driven by the pneumatic cylinder that ensures that stability and reliability of your working, so as to bring convenience to your operation and maintenance.(QE50 Series)

3. Safety rules

3.1 Danger of personal injury

Before starting the granulator.

- (1) The grinding material tank is part of the granulator's safety equipment. The grinding material tank must always be installed during operation.
- (2) The granulator can not be started before hopper and material tank are securely closed.

When working while the granulator is operating

- (1) The door for the electrical cabinet and left, right cover must always be securely installed, closed and locked when the granulator is operating. The door and the cover must not be opened when the granulator is opening.
- (2) Use ear defenders during all granulation work. Loud noise occurs, which can cause hearing damage.
- (3) Use protective goggles during all granulation work.

When working on opening/ closing the granulator

- (1) Never work alone beside the granulator to avoid personal injury.
- (2) Stop the granulator before the granulator is opened for service or maintenance. Move the main switch to position Off and remove the granulator's main plug from electrical outlet.
- (3) There is a pinch risk when the hopper, granule bin and screen box are opened and closed. Be careful.
- (4) The machine contains rotating knives. They are sharp and can cause injury, even when they are not rotating.
- (5) If the rotor has to be turned manually, do this with the greatest care.
- (6) Use protective goggles and gloves when cleaning the granulator

Working with electricity

- (1) The machine's electrical cabinet contains dangerous high voltage.
- (2) Electrical installation, all electrical maintenance and service must be done by personnel with the appropriate competence.
- (3) The electrical cabinet door must always be securely closed and locked when the granulator is operating! Never start the granulator if the cabinet door is open.

During knife changes

- (1) Knife changes must only be done by trained personnel.
- (2) Use protective gloves when changing knives.
- (3) Be careful, the knives are very sharp.
- (4) Turn the rotor manually with great care.
- (5) The granulator cutter will want to rotate by itself when rotating knives are removed or installed. For this reason, always lock the cutter against the cutter housing with a piece of wood to avoid self-rotation.

3.2 Danger of machinery damage



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- (1) If incorrect material is granulated in the granulator.
- (2) If belt tension is incorrect or if the belts are worn.
- (3) If the screen in the screen box is worn or wrongly installed.
- (4) If the knife retaining screws are tightened with the wrong torque.
- (5) If the knives are blunt.

4 Installation and Adjustment

- 4.1 The machine must be installed by trained personnel. All instructions must be observed in the correct order to avoid damage and personal injury. Read through all of this chapter before installing the machine.
- 4.2 Set the unit on an even and solid ground, level it through adjusting the screw of the level pad avoiding inclination and vibration. (See “19. Level pad installation instructions”);
- 4.3 Please check whether all the screws are fixed firmly (esp. the ones on blades), and whether all electric connecting screws are well connected in the electric control box before the operation;
- 4.4 Assemble the mechanic parts according to the Structure Illustration and connect the cooling water supply . A water pressure gauge is recommended;
- 4.5 Open the power control box and connect the current line according to the circuit diagram, (check whether the power voltage and the capacity matches the unit or not, A separate overheat switch is recommended;;
- 4.6 Start the motor and check the direction of rotation is as indicated. If the direction of rotation is wrong, change any two of the power wires.
- 4.7 The feeding bin can be opened and closed by the pneumatic cylinder; connection between the working air supply (Higher than 5kgf/cm²) and electric-magnetic valve is needed, the diameter of the air tube is 10mm; rotate the front control switch to the left before the start-up of the unit, the feeding bin will be opened, the feeding bin will be closed by rotating the control switch to the right. You can control the speed of this movement by adjusting the flow controller of the pneumatic cylinder. (QE50 Series)

5 Operation

Before starting the machine to crush, make sure that the clamping screws for feeding bin and mesh screen shelf are tightened up (for the auto feeding type you should make sure the air filter and dust separator are installed correctly as well) , press the green button to start crushing. Make sure that the feeding speed matches the output of the unit, feeding homogeneously; don't feed too much one time. Press the red button to stop the unit.



It is required that operator should wear the earplug and goggles considering the noise and sprays produced by the working unit.

Safety equipment

The knives rotate at high speed inside the granulator. For this reason, there is safety equipment which is intended to prevent access to hazardous components during operation. The safety equipment consists of: main switch, emergency stop button, safety system with safety switches, hopper and grinding material tank.



All these components must be securely installed before the granulator may be started

The safety equipment must not be changed or modified under any circumstances. If any of the granulator's safety equipment is changed or modified, the machine can be dangerous to use, entailing a risk of serious personal injury. If any of the granulator's safety equipment is changed, we'll have no responsibility for it.

Emergency stop

An emergency stop button is located on the control panel. The granulator may also be equipped with more emergency stop buttons.

Activate the emergency stop by pressing the button in. reset by pulling the button out again.

Hopper, grinding material tank and screen box

The hopper grinding material tank and screen box are safety components and must be securely closed, to allow the granulator to

start.

During operation, the door for the electrical cabinet and left, right cover must be Securely installed, closed and locked.

Starting the granulator



Never stop the granulator before all material in the hopper and cutter housing has been fully granulated.

The granulator can not be started if there is material left in the hopper and cutter housing. The granulator cutter will then be braked on starting, the motor will be overloaded, and the overload protection will trip. Before the granulator can be started it must first be cleaned.

- (1) Connect the mains plug to the mains outlet.
- (2) Move the main switch to position “On” .
- (3) Check that the emergency stop button is not depressed.
- (4) Press the start button.

Stopping the granulator

- (1) Stop feeding material into the granulator and wait until all material has been fully granulated in the granulator.
- (2) Stop the granulator with the stop button.
- (3) Move the main switch to position “Off”.
- (4) Press the emergency stop button in.
- (5) Pull the granulator’s mains plug out of the electrical outlet.

6 Maintenance and precautions

6.1 Inspections before start-up

6.1.1 Check whether the mesh-screen shelf is locked and the sieve is fixed

smoothly or not.

6.1.2 Check the pressure of the cooling water. Check whether the valve is unlocked with the cooling water flowing or not.

6.1.3 Check the lubrication in the nozzle of bearing race of the main shaft. It is strictly prohibited to work in lack of lubrication; add oil for lubrication every 3 months is advised.

6.1.4 Start the unit and run it for 3-5 minutes, and there should be no strange sound.

6.2 Daily maintenance and precaution

6.2.1 Sharpen and replace the blunt blades right for every time before using it adjust the distance between the fixed blade and rotating blade. See the range showed in the table below:

NO	Model	The distance between the fixed blade and rotating blade	Remark
1	QE20 Series	0.2~0.4mm	If the blade clearance is more than the variation range, adjust it to avoid it becoming damaged.
2	QE30 Series	0.25~0.5mm	
3	QE35 Series	0.35~0.6mm	
4	QE40 Series	0.45~0.7mm	
5	QE50 Series	0.6~1.2mm	
6	QE70 Series	0.7~1.4mm	

Note: The distance is also related to the type of the materials:

For plastic sheets, select the minimum value when adjusting;

For soft material, select the medium value when adjusting;

For hard material, select the maximum value when adjusting;

(1) When replacing all the blades, adjust the rotating blades according to fixed blades;

- (2) When replacing fixed blades, adjust them according to rotating blades;
- (3) When replacing rotating blades, adjust them according to fixed blades;
- (4) The relative distance between the rotating blades and the mesh-screen board should be 5-7mm.

Knife change



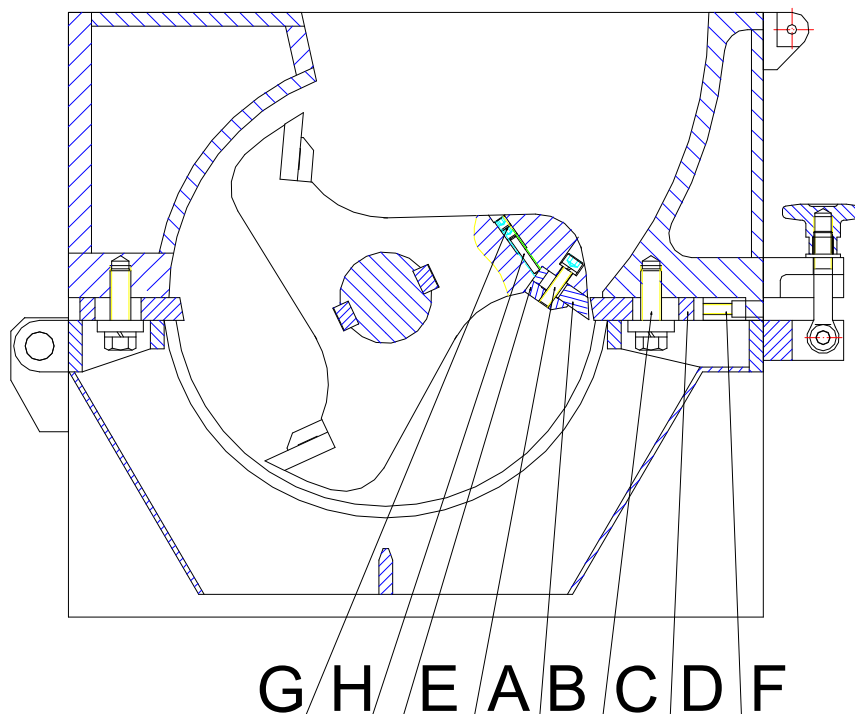
Knife changes must be done by trained personnel, to avoid personal injury and machinery damage!



The granulator cutter will want to rotate by itself when rotating knives are removed or installed. Always lock the cutter against the cutter housing with a piece of wood, to avoid self-rotation.



Check screen wear at the same time as the knives are changed. Change the screen when the holes begin to assume a teardrop shape.



Disassembling rotating knives

- (1) Make sure that the hopper and grinding material tank are empty. Open the screen box.
- (2) Undo screw A.
- (3) Remove support rules E.
- (4) Remove the rotating knives B.

Disassembling fixed knives

- (5) Undo and remove screws C.
- (6) Remove knives D.

Installing fixed knives

- (1) Clean the fixed knives D thoroughly.
- (2) Press the fixed knives D. Install screws C loosely.

Installing rotating knives

- (3) Clean the rotating knives B thoroughly.
- (4) Clean the knife seats for the rotating knives.
- (5) Install rotating knife B and the knife seats E.
- (6) Install screws A and fix the rotating knife loosely.
- (7) Check the knife clearance (distance between fixed and rotating knives) with a feeler gauge.
- (8) Adjust screw H and F, don't adjust them until the clearance is ok.
- (9) Fix the rotating knife with tightening the screw A.
- (10) Tighten the screw C and G thoroughly.

(11) Install the remaining knives in the same way.

(12) Re-check the knife clearance.



Rotate the cutter carefully and check that the rotating knife can freely pass both the fixed knives.

6.2.2 Never put any foreign objects like metals into the charging bin to avoid damaging the blades. If there are any foreign objects in the charging bin, immediately press the button “STOP” and open the charging bin and mesh screen shelf to remove it. Carefully check and replace the blades before restart the unit.



Never open the charging bin without taking any precaution step to check and replace the blades. Correct operation: press the emergency button and lift the charging bin from falling down caused by accidental operation and avoid fatal accidents.

6.2.3 Regularly check the electric system whether the electric components work well and the binding wire is tightened well or not, if not, replace them immediately to ensure safety.

6.3 Cleaning



Be careful when the hopper, grinding material tank and screen box are open. The knives are then accessible, they are sharp and can cause personal injury.



Be careful when you rotate the cutter manually! The knives are sharp and can cause personal injury.



Pinch risk during cleaning.



Use protective goggles and gloves!



Granulate and plastics residue on the floor can make the floor slippery.

- (1) Check the hopper is empty.
- (2) Open the cutter housing, clean the hopper, the grinding material tank, screen box and S creen with compressed air, both inside and outside.
- (3) Clean the cutter housing with compressed air, both inside and outside.
- (4) Reinststate, re=install all components in inverse orderm closing the cutter housing.



Make sure that all plastics material has been removed from the cutter housing before re-starting, or motor will be easily stuck to make motor and electrical appliances damage.

Move away the left and right cover. there is a hole on the bearing stand at this position. then the customer can clean the gap inside by comp ressed air.

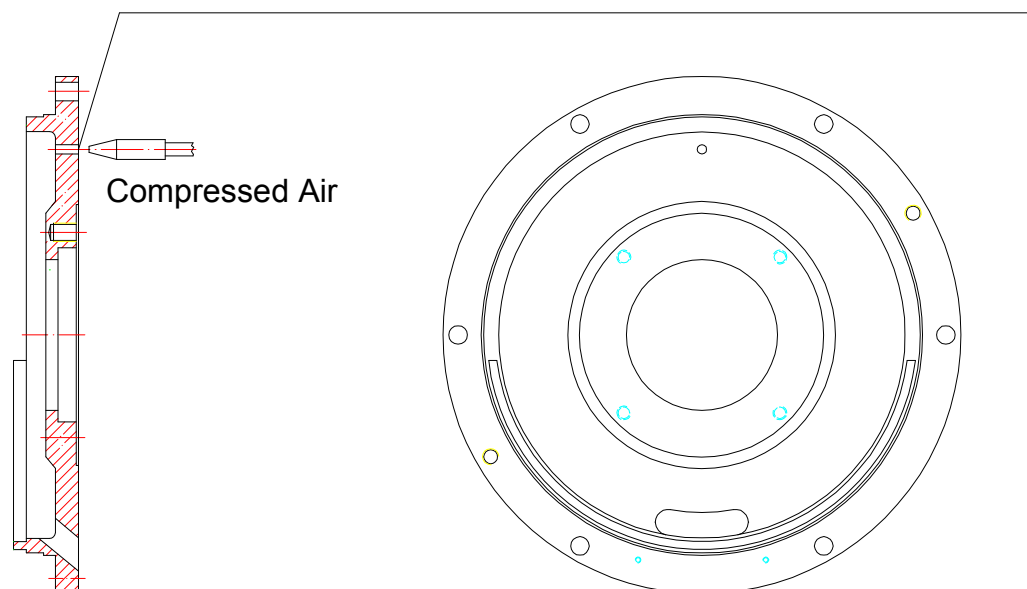


Diagram of cleaning powder in the bearing stand

7 Troubles and trouble-shooting

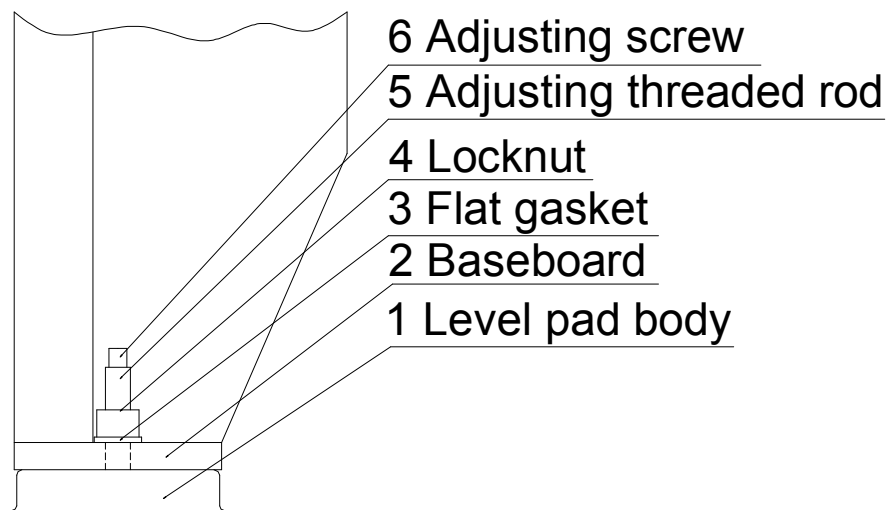
Problem	Possible Cause	Corrective Action
The unit can not be started	1,The circuit is faulty 2,The blades are damaged 3,The fixing screws of the blades are loosen. 4,The crushing chamber is blocked by foreign objects 5,The motor overload 6,Input voltage is low 7,The winding of motor is open circuit(measure with multimeter, if the resistance of the winding is infinite) 8,The winding of motor is short circuit 9,The Y- Δ timer is damaged. 10,The contact of the contactor is flet.	1,Check or change the circuit 2,Replace the button/switch 3,Close them tightly. 4,Remove the foreign objects. 5,Press the reset button of the overload relay. 6,Check the input voltage, put right. 7,Connect the disconnect point and fold insulative materials, cover insulative pipe spray-paint and dry. 8,Change the winding or motor. 9,Change new timer. 10,Change new contactor.
The unit vibrates violently while working. Big noise and abnormal sound happen while the unit	1,The unit is not installed flatly. 2,The button/switch does not work. 3,The charging bin or sieve shelf is not closed tightly. 4,There are foreign objects in the crushing chamber	1,Adjust the screws of the level pads. 2,Replace or sharpen the blades. 3,Tighten the screws. 4,Stop the unit and remove the foreign objects.

works	5,The screws are loosing. 6,The bearing is damaged.	5,Tighten the screws. 6,Replace the bearing.
The unit automatically stops while working	1,There are metals in the crushing chamber. 2,Size of plastic material is too big. 3,Feeding speed is too high. 4,The thermal relay works by error. 5,The travel switch works by error.	1,Stop the unit and remove the metals. 2,Decrease the bulk of the plastic material. 3,Feed plastic material homogeneously. 4,Adjust the thermal relay and check. 5,Adjust the location of the travel switch.
The temperature of the crushing chamber is increased too highly	1,Feeding speed is to high. 2,No or less cooling water is supplied. 3,The blades are damaged.	1,Decrease the bolume of the material and feed homogeneously. 2,Connect and smooth the water supply or increase the water volume. 3,Replace or sharpen the blades.
The unit decelerates while working	1,The motor belt is loosing. 2,The voltage of the power is too low. 3,The distance between blades are too big or blades are fred.	1,Adjust or replace the belt. 2,Check the power supply. 3,Adjust the distance between blades or grind the blades.
Contact point of contactor is damaged	1,Feeding speed is too high. 2,Restart when there are regrinding materials in crushing chamber.	1,Decrease the volume of the material and feed homogeneously. 2,Clean machine, then start it.

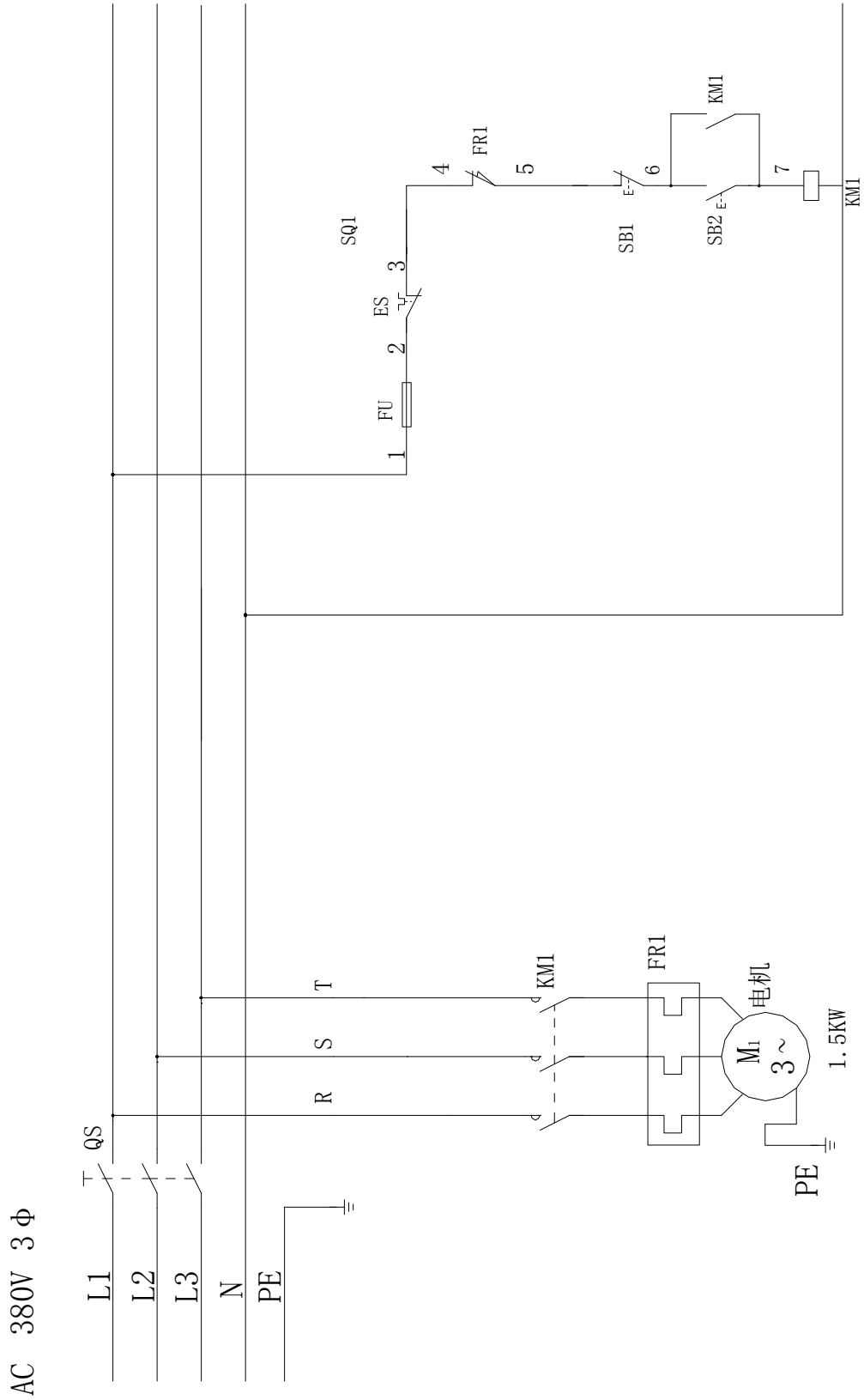
8 The level pad installation

The QE Series strong granulator is supplied with four high quality QE-LP level pads, use a chain block to raise the granulator up from the ground, then put it into the baseboard 2, slip the adjusting screw into the aperture in the baseboard 2, put down the granulator aiming at the screw-in aperture, cover the adjusting nut 6, adjust the height of the base in order to screw the locknut tightly after the whole unit is settled down smoothly (make sure the height is not higher than any in the height range displayed below).

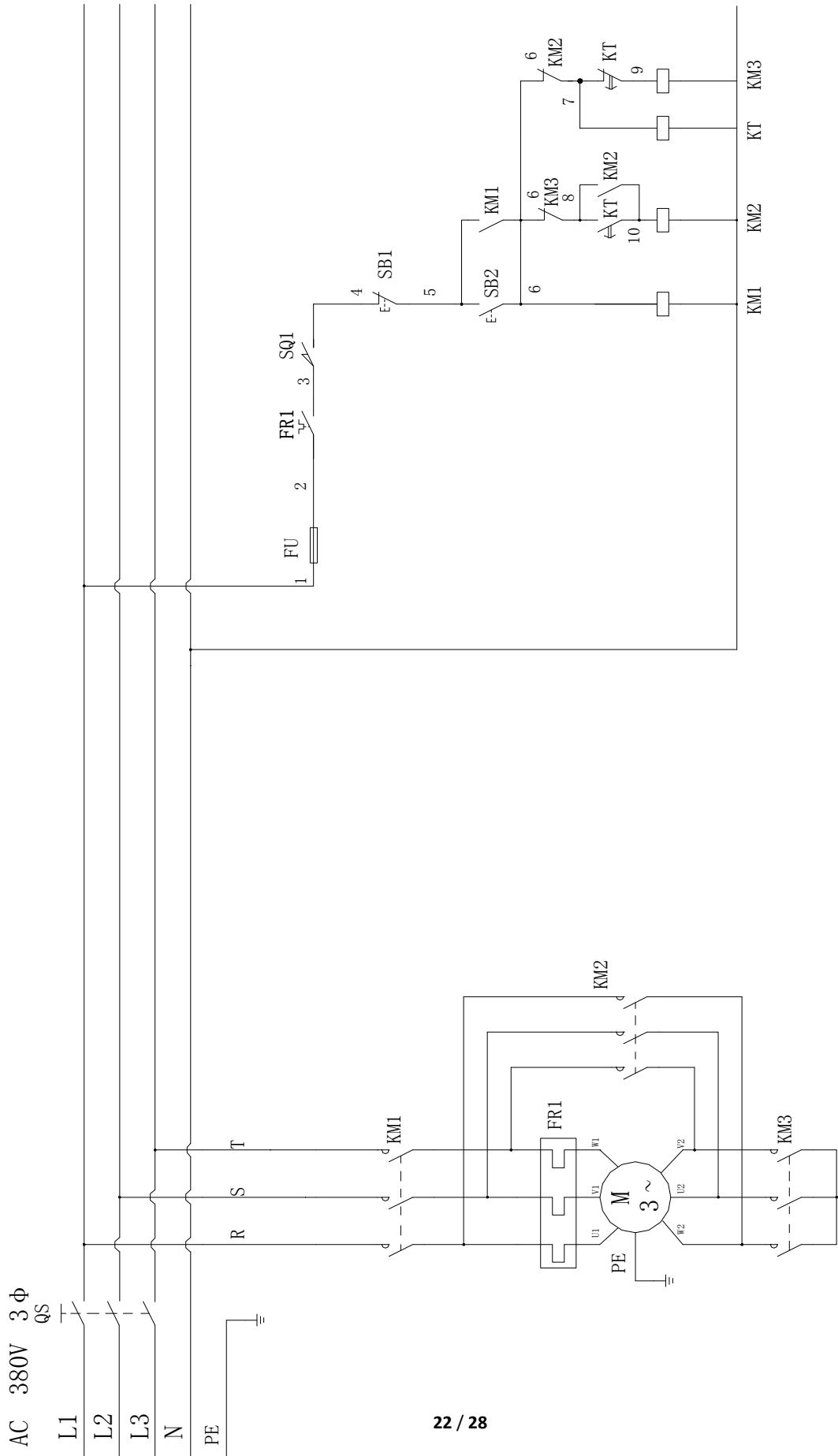
Diagram as follows:



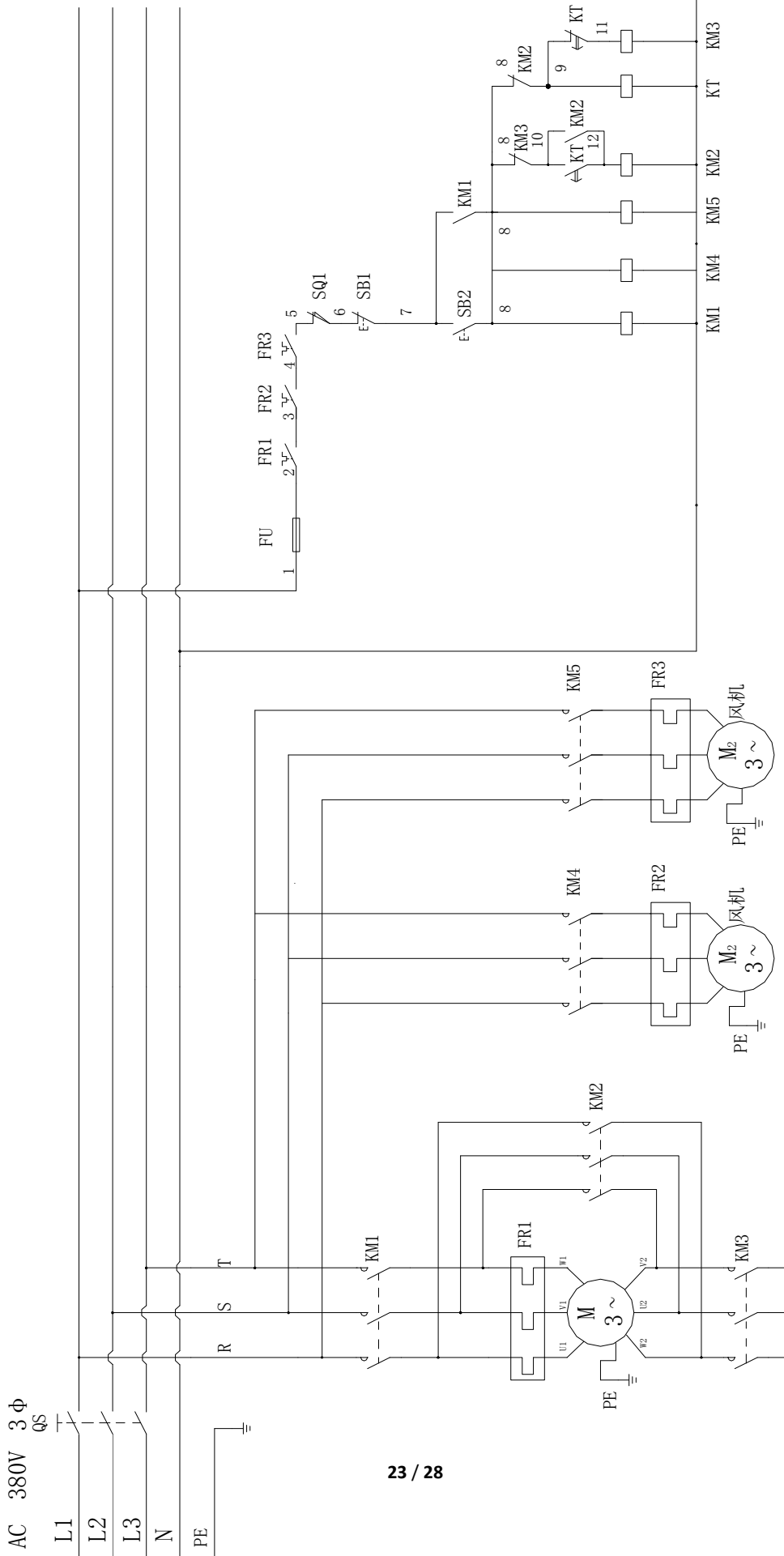
9 Electric Schematic Diagram



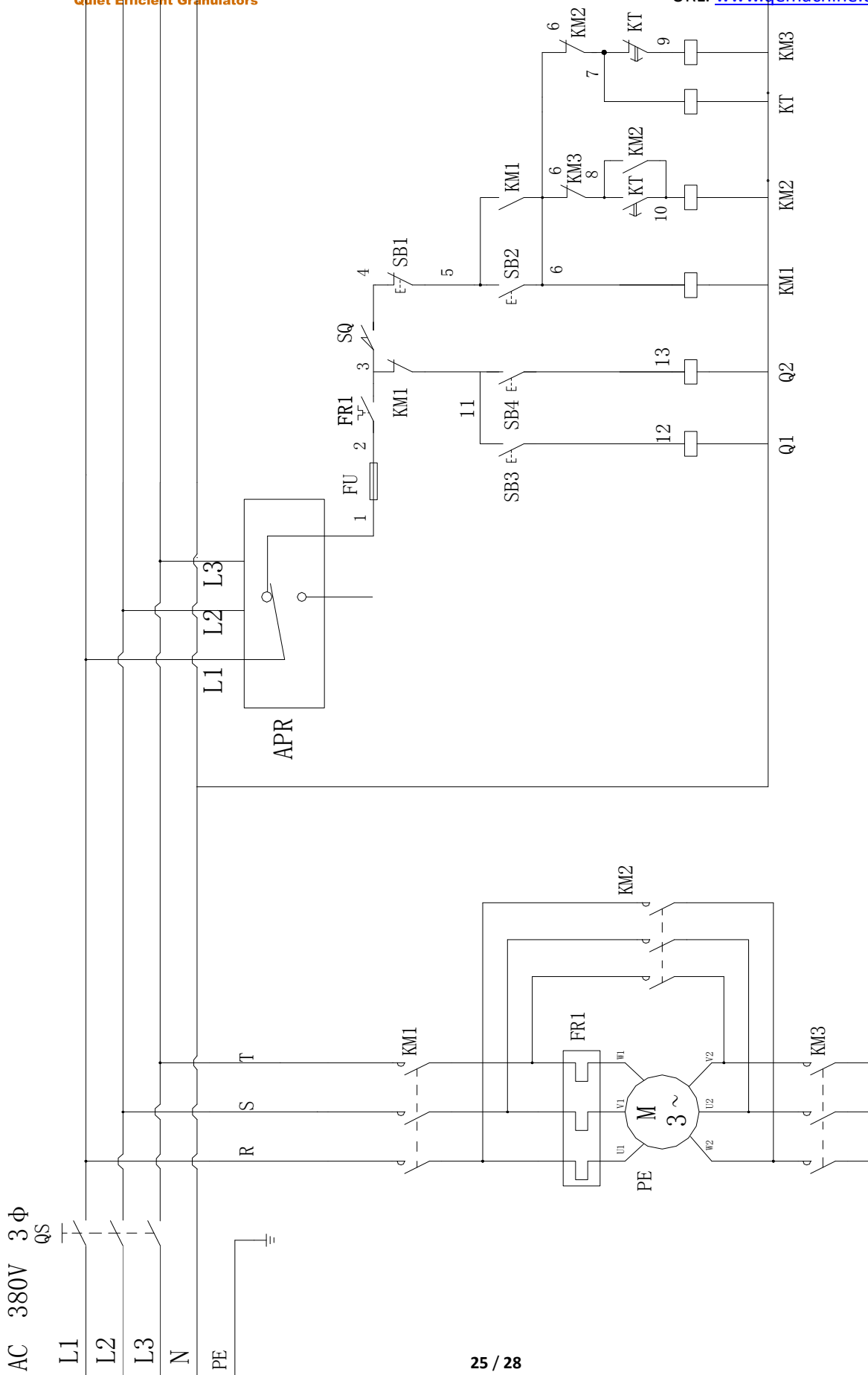
QE30 Series Electric Schematic Diagram



QE4050/4060 Electric Schematic Diagram

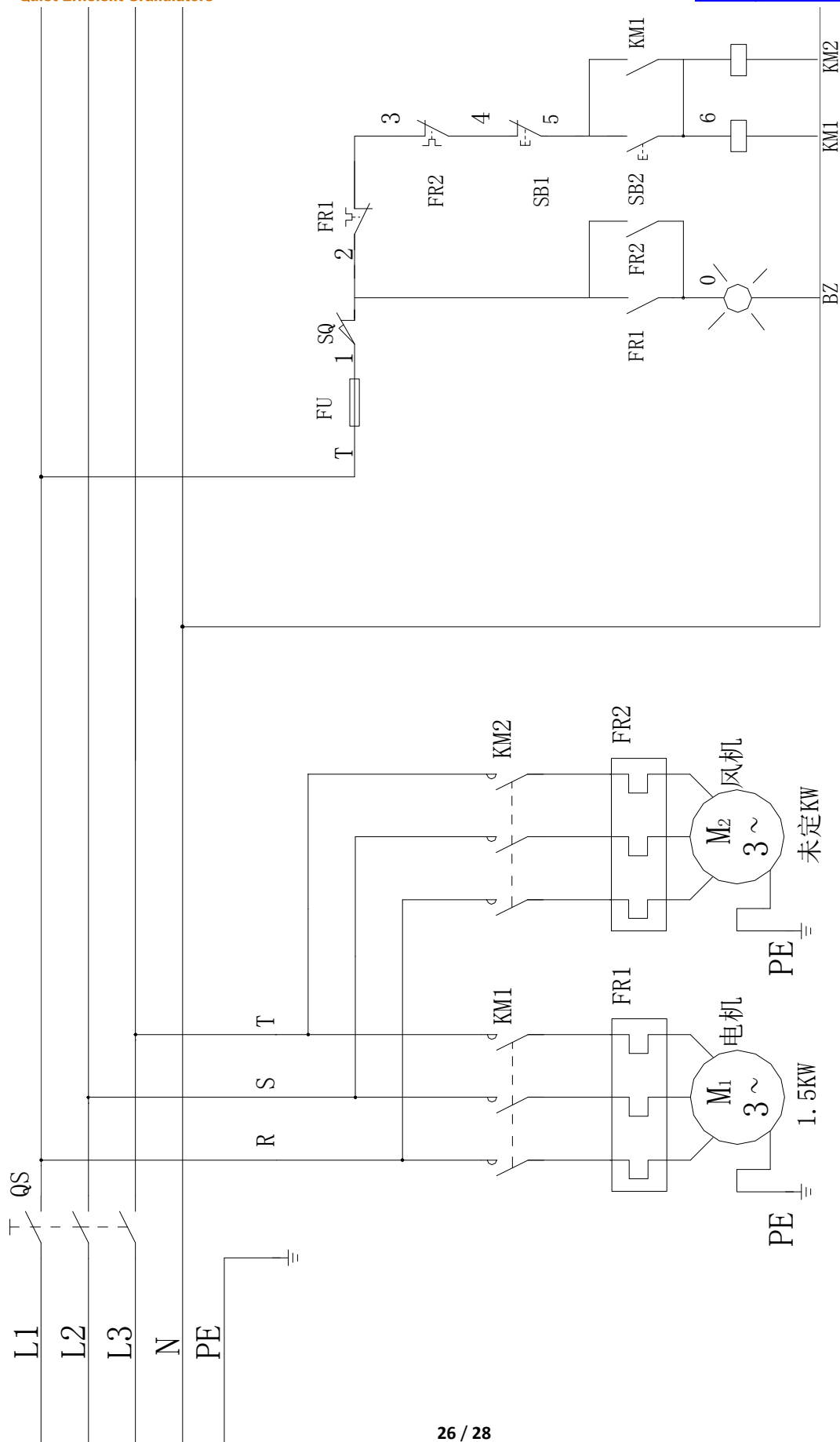


QE4050/4060 Electric Schematic Diagram(Auto feeding)



QE50 Series Electric Schematic Diagram
(With Hopper pneumat button)

AC 380V 3Φ



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QM21 Series Electric Schematic Diagram(Auto feeding)



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QE Series Granulators

NO	Symbol	材料名称	Name
1	M	电机	Motor(30kW)
2	QS	负荷开关	Load switch
3	KM	接触器	Contactor
4	FR	热继电器	Thermal relay
5	SB	按钮开关	Button
6	Q1	料斗开	Hopper opening
7	Q2	料斗关	Hopper closure
8	KT	时间继电器	Time relay
9	FU	保险开关	Safety switch
10	SQ	安全开关	Travel switch
11	ES	急停开关	Emergency stop switch
12	HL	指示开关	Indicator switch



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