SAL-UG

Separate-vacuum Hopper Loaders

Date: Sep, 2010

Version: V4.0 (English)

SHINI®
plastics technologies

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1. General Description

Read this manual carefully before operation to prevent damage of the machine or personal injuries.

SAL - UG series separate-vacuum hopper loaders are based on the established design and now feature more attractive appearance, better performance, and improved ease of operation. The whole range comprises of seven models equipped with vacuum blower from 1 to 15 HP. Economy models can be offered on request.

Model: SAL-1HP-UG&SHR-6U

Model: SAL-3.5HP-UG&SHR-12U-S

1.1 Feature

1) Data backed up on EPROM in case of power failure and does not require back up battery.
2) It consists of a cyclone dust separator and a dust collective bin to effectively reduce the load of filter.
3) Function for setting regrind mix ratio via optional SPV - U.
4) Stainless mesh filter as standard. Optional filter cleaning device (model denotes "C") and air accumulator (model denotes "A ") available for automatic filter cleaning.
5) Economy models can be offered on request. (Cloth filter as standard, second filter is removed).
6) Optionally provide multi - functional installation frame HMB - 900 with 900 mm largest dia.adjusting range for selection.
7) Provide both standard and optional heat - insulative Euro collective hopper SCH - 6U / 12U / 24U for selection.
8) Optional cyclone dust separator is available for SAL - 1HP / 2HP - UG.
9) 14-hole stainless steel mesh is an option when regind is of more than 30% of the whole conveying material.
10) Upon request, it can be built to comply with worldwide electrical safety standards (For example: CE, UL, CSA, JIS etc.).

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.

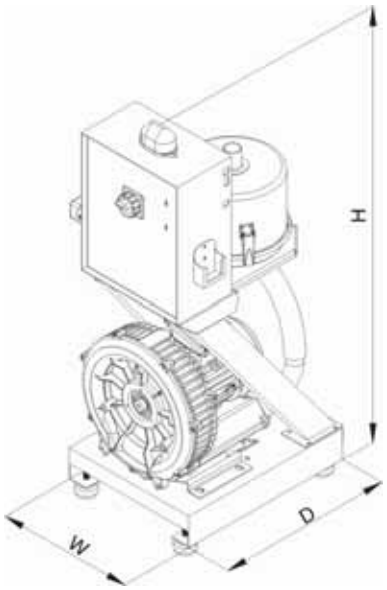
Any modifications of the machine must be approved by SHINI in order to avoid personal injury and damage to machine. We shall not be liable for any damage caused by unauthorized change of the machine.

Our company provides excellent after-sales service. Should you have any problem during using the machine, please contact the company or the local vendor.

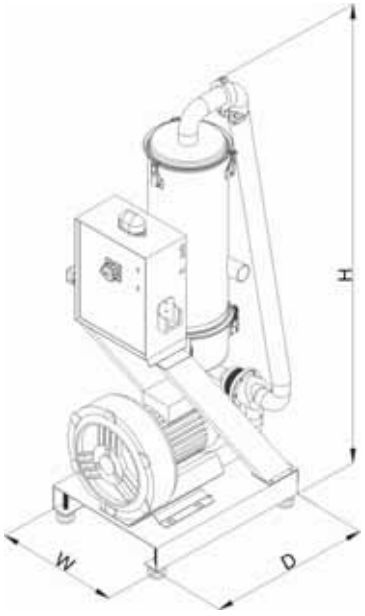
Headquarter and Taipei factory： Hot service line on Mainland：
Tel: (886) 2 2680 9119 Tel: 800 999 3222

1.2 Technical Specifications

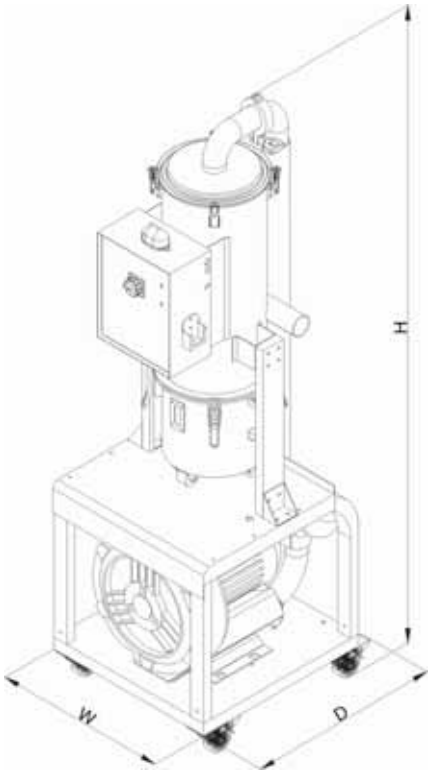
1.2.1 Technical Specifications (Main Unit)



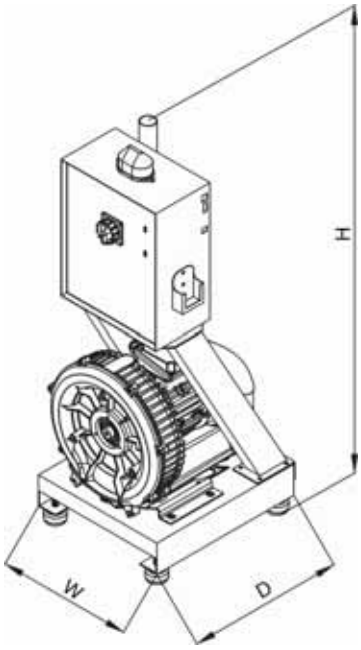
Picture 1-1：SAL-1HP/2HP-UG



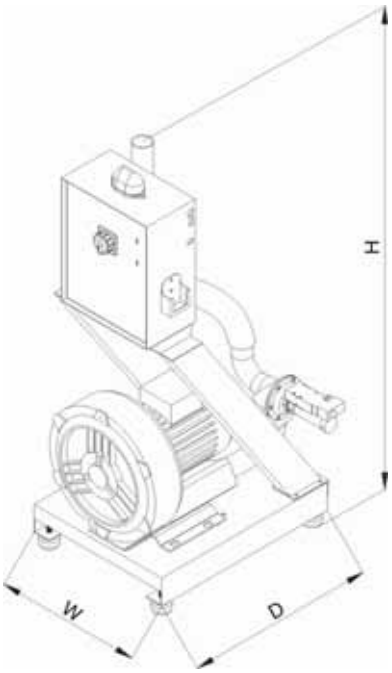
Picture 1-2：SAL-3.5HP/5HP-UG



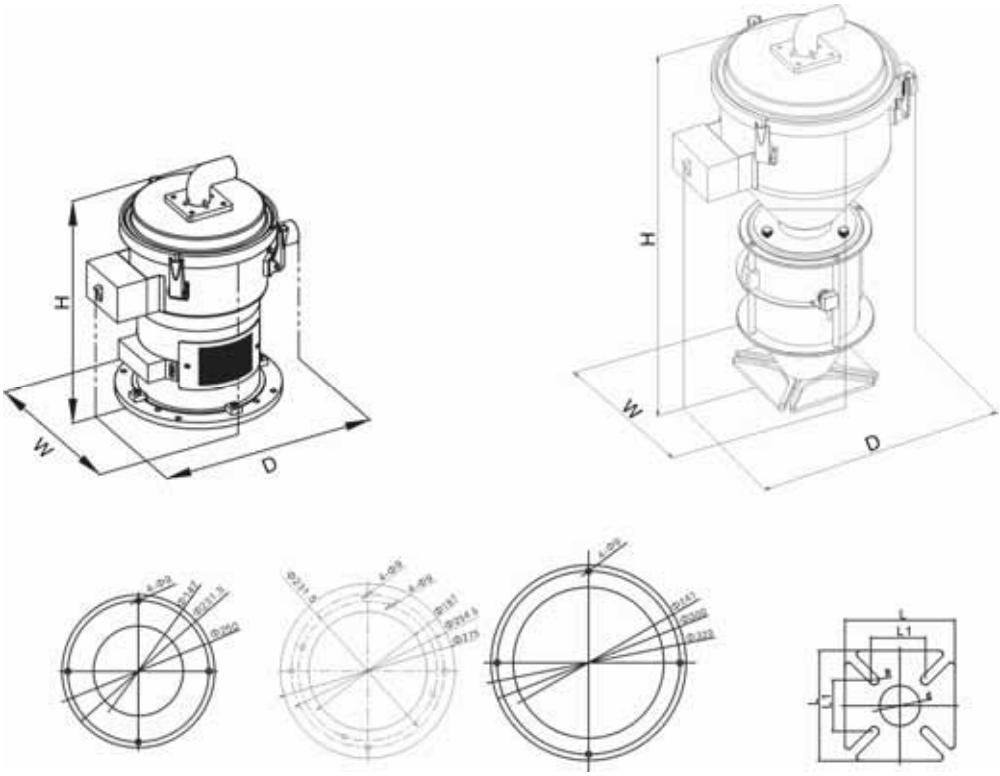
Picture 1-3：SAL-7.5HP/10HP/15HP-UG



Picture 1-4：SAL-1HP/2HP-UGS



Picture 1-5：SAL-3.5HP~15HP-UGS



Picture 1-6：Dimensions of Material Hopper

Chart 1-1：Hopper Base Installation Size Chart

Model	L(mm)	L1(mm)	d(mm)	R(mm)
SHR-3U-E	120	50	40	R6.5
SHR-6U-E	150	70	55	R6.5
SHR-12U-E	180	80	55	R6.5
SHR-24U-E	180	85	80	R6.5

1.2.2 Specifications

Chart 1-2：Specifications

Main Unit				Hopper Receiver				Loading Pipe Dia. (Inch)	Air Suction Pipe Dia. (Inch)	Loading Capacity (kg/hr)
Model	Motor Power (kW) (50 / 60Hz)	Dimensions (mm) H×W×D	Weight (kg)	Recommended Model	Hopper Capacity (L)	Dimensions (mm) H×W×D	Weight (kg)			
SAL-1HP-UG(S)	0.75 / 0.85 (3Φ)	665×370×405 (960×350×405)	46 (39)	SHR-6U×1	6	420×285×360	6	1.5"	1.5"	300
				SHR-6U-E×1		600×270×360	8			
SAL-2HP-UG(S)	1.5 / 1.8 (3Φ)	665×370×405 (960×350×405)	46 (39)	SHR-12U×1	12	470×315×400	7	1.5"	1.5"	550
				SHR-12U-E×1		700×315×400	12			
SAL-3.5HP-UG(S)	2.4 / 2.6 (3Φ)	1380×490×570 (1110×420×545)	73 (62)	SHR-24U×1	24	690×315×400	9	2"	2"	750
				SHR-24U-E×1		690×315×400	13			
SAL-5HP-UG(S)	3.75 / 4.2 (3Φ)	1380×490×570 (1110×420×545)	74 (65)	SHR-24U×1	24	1120×360×400	9	2"	2"	900
				SHR-24U-E×1		1120×360×400	13			
SAL-7.5HP-UG(S)	5.5 / 6.3 (3Φ)	1830×585×675 (1200×460×580)	156 (112)	SHR-36U×1	36	930×315×400	11	2"	2.5"	1100
SAL-10HP-UG(S)	7.5 / 8.6 (3Φ)	1830×585×675 (1200×460×580)	160 (116)	SHR-36U×1	36	930×315×400	11	2"	2.5"	1500
SAL-15HP-UG(S)	11 / 13 (3Φ)	2100×680×800 (1260×560×800)	226 (210)	SHR-48U×1	48	975×350×485	15	2.5"	3"	2000

Note: 1) "G" refers to separate design of main unit and hopper receiver (S).
2) "S" refers to economical model without dust separating barrel.
3) "SHR - U - E" refers to glass - tube hopper receiver, "SHR - U" refers to vacuum hopper receiver.
4) For hopper inside polished ones, plus "P" at model behind.
5) It is available to select ACF - 1 cyclone dust separator (Additonally mount at back of SAL - 1HP - UG or SAL - 2HP - UG main unit).
6) SAL - 3.5HP - UG and above models has vacuum breaking valve to increase conveying capacity.
7) Test condition of conveying capacity: Plastic materrial of bulk density 0.65, dia. 3 ~ 5 mm, ventical conveying height: 4 m, horizontal conveying distance: 5m.
8) Power supply: 3Φ, 230 / 400 / 460 / 575V, 50 / 60Hz.

We reserve the right to change specifications without prior notice.

1.3 Safety Regulations

Strictly abide by the following safety regulations to prevent damage of the machine or personal injuries.

1.3.1 Safety Signs and Labels

All the electrical components should be installed by professional technicians.

Turn off the main switch and control switch during maintenance or repair.

Warning! High voltage!

This sign is attached on the cover of control box!

Warning! Be careful!

Be more careful at the place where this sign appears!

Attention！

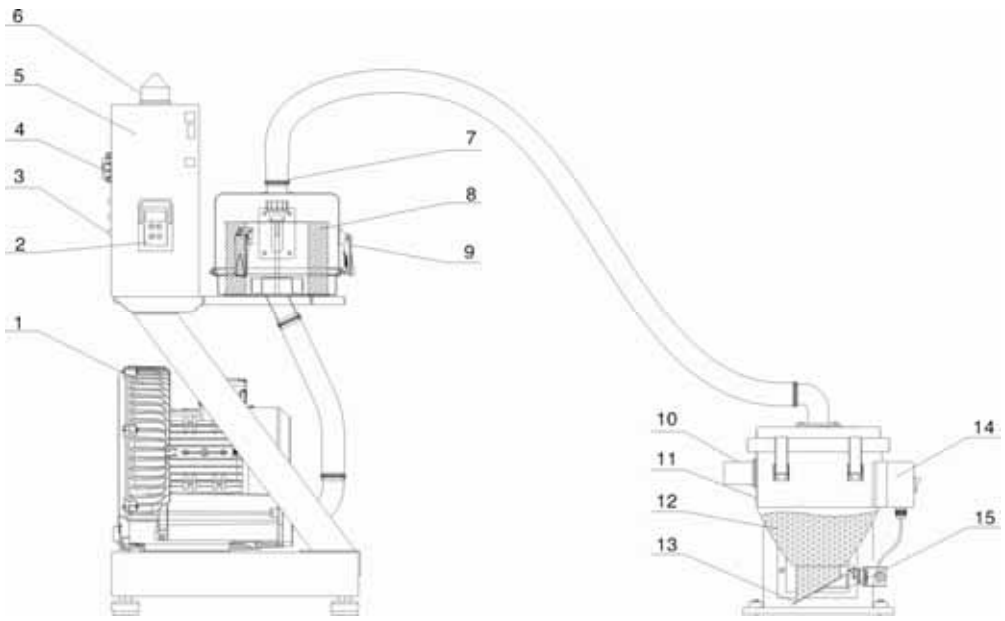
No need for regular inspection because all the electrical parts in the control unit are fixed tightly！

2. Structure Characteristics and Working Principle

2.1 Main Functions

SAL-UG series "Euro" Separate-vacuum hopper Loaders are suitable for conveying plastic granules over long distance. Utilizing high efficiency vacuum blower to produce vacuum in material hopper, plastic materials will then be fed into material hopper by outside pressure.

2.1.1 Working Principle of SAL-1HP/2HP



Names of Parts：

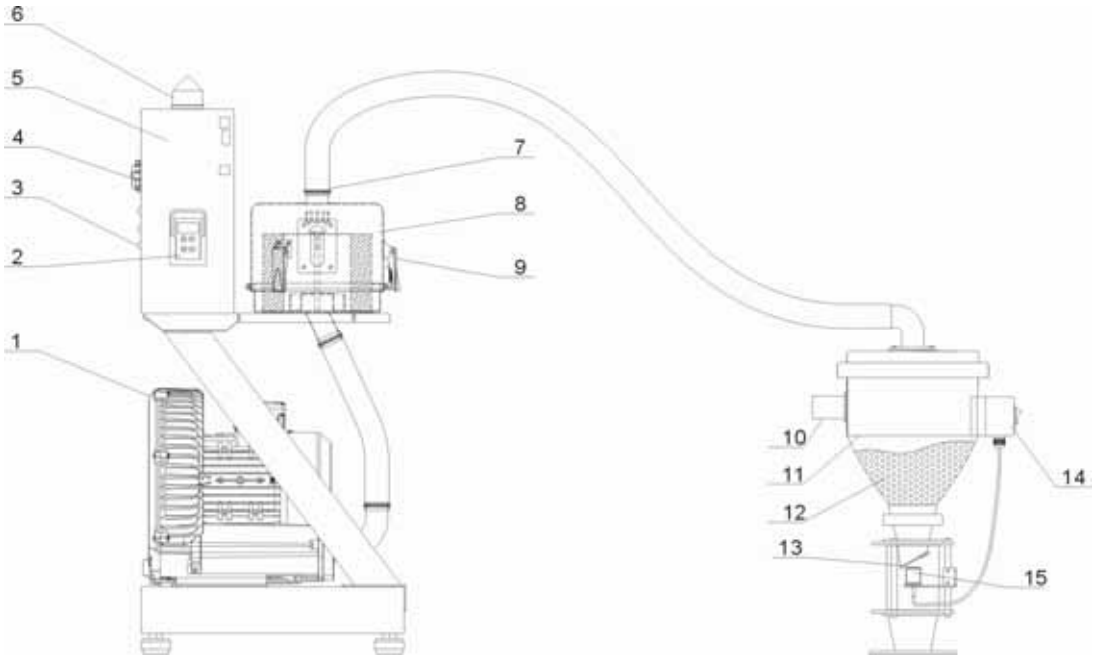
1. Blower	2. Red alarm	3. Alarm light 2	4. Main switch
5. Electrical control box	6. Alarm light 1	7. Air suction pipe	8. Air filter
9. Spring clip	10. Material inlet	11. Material hopper	
12. Raw materials	13. Reverse stopping flap		
14. Junction box	15. Magnetic proximity switch		

Picture 2-1：Working Principle of SAL-1HP/2HP

Vacuum inside of material hopper (11), meanwhile non-return flap (13) is closed. Materials will be drawn into material hopper (11) by pressure difference through material inlet (10). When material suction is completed, materials automatically fall down by self-gravity. Motor will start to work again when reed switch (15) detects no materials left in the hopper. If the machine cannot draw

materials for three times, the red alarm lamp (6) on control box and alarm lamp (3) will blink.

2.1.2 Working Principle of SAL-1HP/2HP (E)



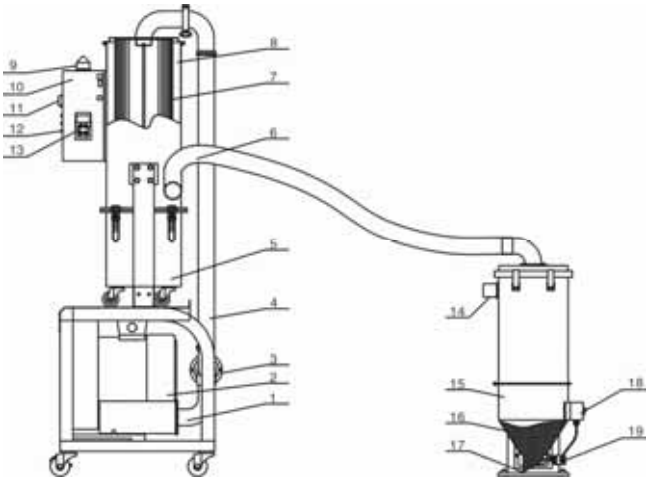
Names of Parts：

1. Blower	2. Red alarm	3. Alarm light 2	4. Main switch
5. Electrical control box	6. Alarm light 1	7. Air suction pipe	8. Air filter
9. Spring clip	10. Material inlet	11. Material hopper	
12. Raw materials	13. Reverse stopping flap		
14. Junction box	15. Photosensor		

Picture 2-2：Working Principle of SAL-1HP/2HP (E)

After starting the machine, motor (1) begins to work to produce high-pressure vacuum inside of material hopper (11), meanwhile non-return flap (13) is closed. Materials will be drawn into material hopper (10) by pressure difference through material inlet (11). When material suction is completed, materials automatically fall down by self-gravity. Motor will start to work again when magnetic proximity switch (15) detects no materials left in the hopper. If the machine cannot draw materials for three times, the red alarm lamp (6) on control box and alarm lamp (3) will blink.

2.1.3 Working Principle of SAL-3.5HP~SAL-15HP



Names of Parts：

1. Blower suction pipe 2. Blower 3. Vacuum breaking diaphragm valve
4. Steel wire hose 5. Dust collecting barrel 6. Air suction pipe
7. Air filter 8. Dust separating barrel 9. Control caninet
10. Alarm light 1 11. Main switch 12. Alarm light 2
13. Hand-held control panel 14. Material inlet 15. Material hopper
16. Raw materials 17. Reverse stopping flap
18. Junction box Magnetic proximity switch 19. Magnetic proximity switch

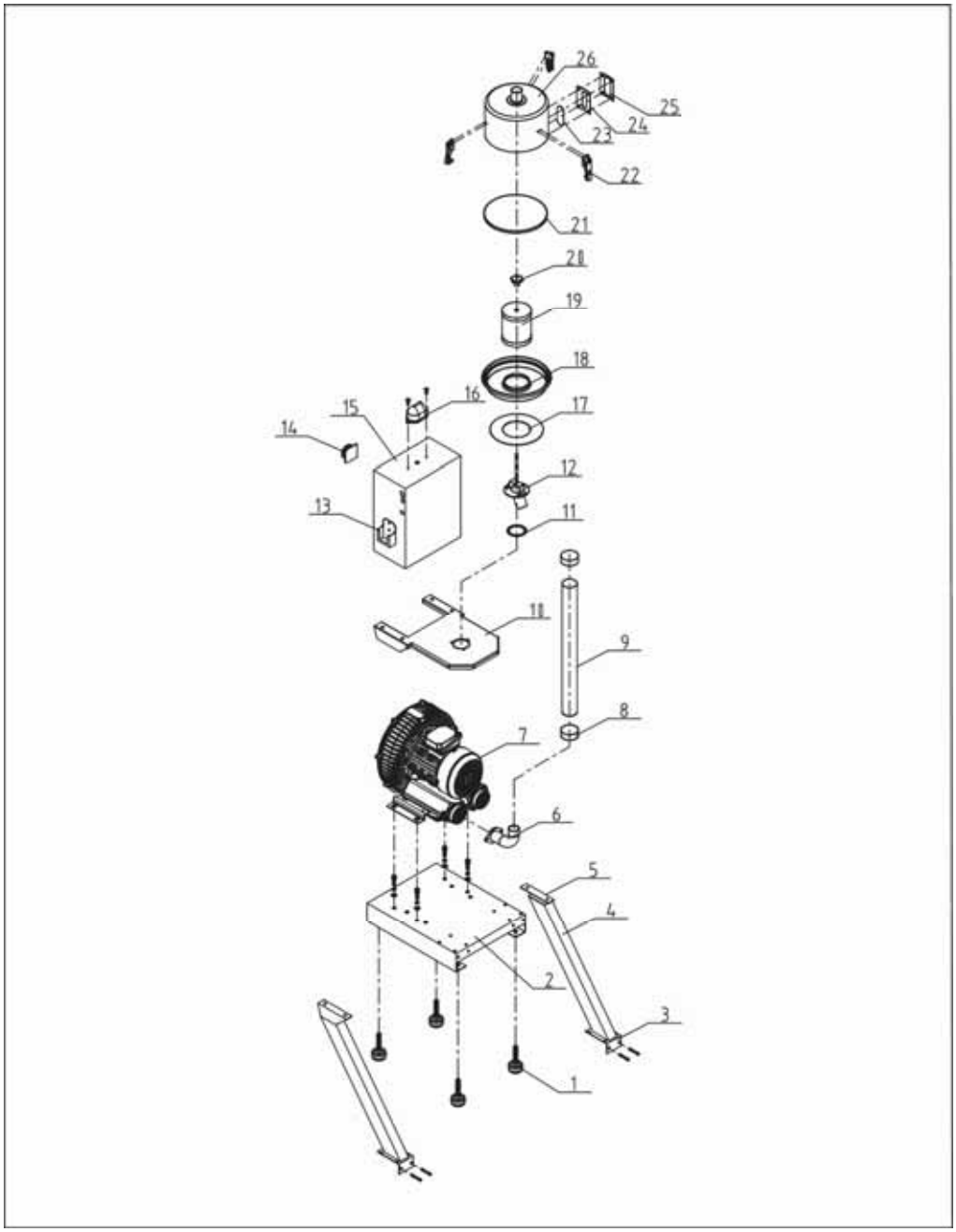
Picture 2-3：Working Principle of SAL-3.5HP~SAL-15HP

After starting the machine, blower (1) begins to work to produce high-pressure vacuum inside of material hopper (15), meanwhile close the reverse stopping flap (17). Materials will be drawn into material hopper by pressure difference through material inlet (14). When material suction is completed, materials automatically fall down by self-gravity. Motor will start to work again when magnetic proximity switch (18) detects no materials left in the hopper. If the machine cannot suck materials for three times, the red alarm lamp (9) and alarm lamp (12) on control box will blink.

When blower (2) sucks materials, the air inside the air-inputting pipe will be conveyed by the cyclone device into filter (7) for filtering. Few dust adhibits in the filter. After the blower finishes the suction, the vacuum breaking diaphragm valve (3) installed between the blower and filter will create a reverse impulsive airflow to shake down the dust sticking to the filter to the dust collection bucket (5).

2.2 Assembly Drawing

2.2.1 Assembly Drawing (SAL-1HP/2HP-UG)



Remarks: Please refer to material list 2.2.2 for specific explanation of the Arabic numbers in parts drawing.

Picture 2-4：Assembly Drawing (SAL-1HP/2HP-UG)

2.2.2 Parts List (SAL-1HP/2HP-UG)

Chart 2-1：Parts List (SAL-1HP/2HP-UG)

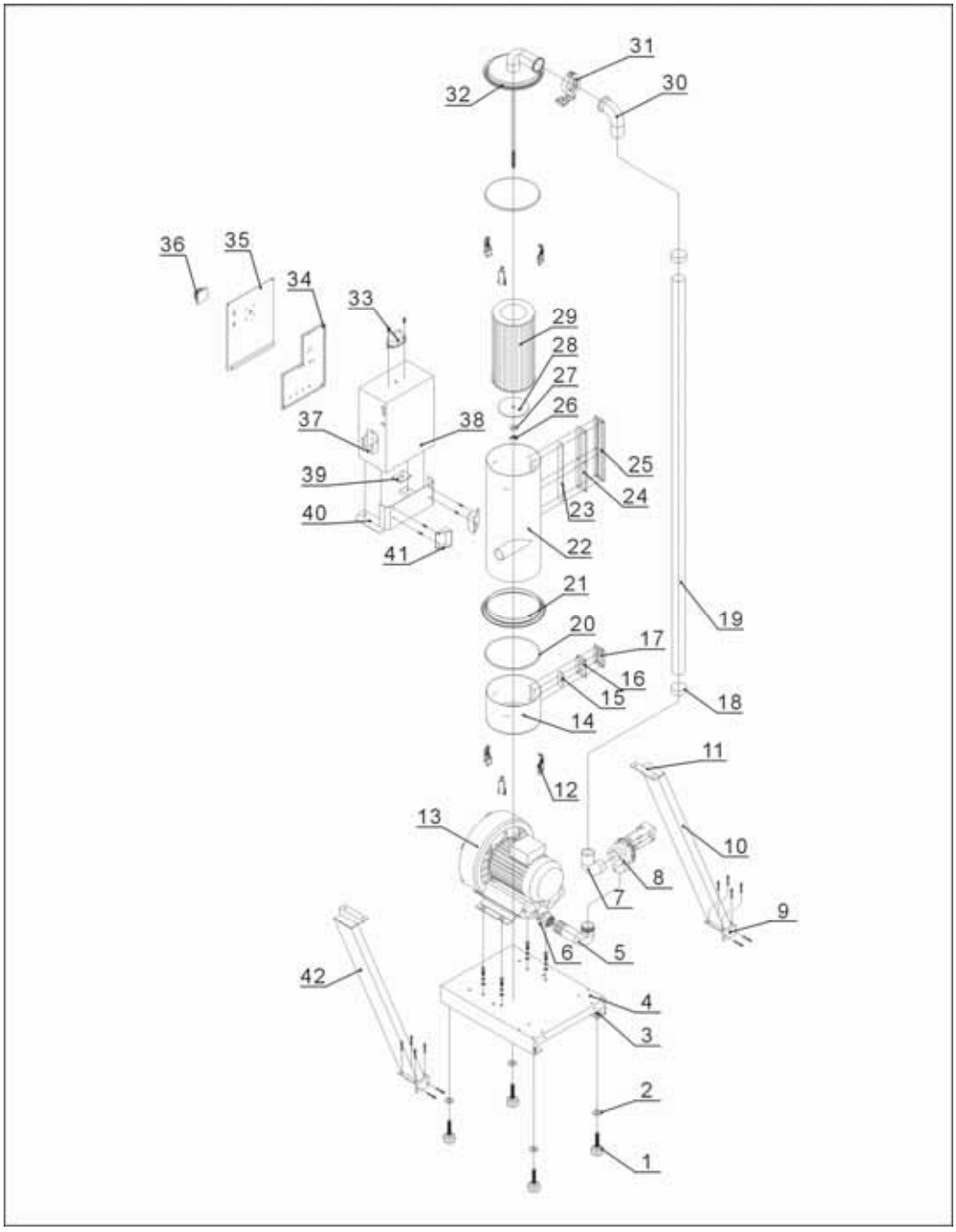
No.	Name	Part No.	No.	Name	Part No.
1	Anti-vibration pad	YW03005000000	14	Main switch *	YE10200300000-
2	Base	BL26000100121	15	Control box	BL21000101720
3	Lower welding block on column	-	16	Alarm light	YE83305100200
4	Standing post	BL21000100220	17	Filter barrel lid barrel	YR10030000000
5	Upper welding block on column	-	18	Filter barrel lid	-
6	Air inlet pipe	BL21000100320	19	Air filter*	YR50708000000
7	High pressure pipe 1HP	BM30031000150	20	Star nut	YW69051600000
	High pressure pipe 2HP	BM30042000050	21	Filter container seal ring**	YR10708000100
8	Clip	YW02000200000	22	Spring clip*	YW02003000400
9	Steel wired plastic pipe	YR60157000000	23	Acryl	BH32070000050
10	Filter fixing bracket	BL21000100120	24	Seal ring	YR40000400000
11	Filter barrel base fastener	-	25	Lron sheet of 4-hole sight glass	YW09000000400
12	Filter barrel lid assembly	-	26	Filter barrel	BL26000203621
13	Controller holder	BL21000100420			

* 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.

2.2.3 Assembly Drawing (SAL-3.5HP/5HP-UG)



Remarks: Please refer to material list 2.2.4 for specific explanation of the Arabic numbers in Pparts drawing.

Picture 2-5：Assembly Drawing (SAL-3.5HP/5HP-UG)

2.2.4 Parts List (SAL-3.5HP/5HP-UG)

Chart 2-2：Parts List (SAL-3.5HP/5HP-UG)

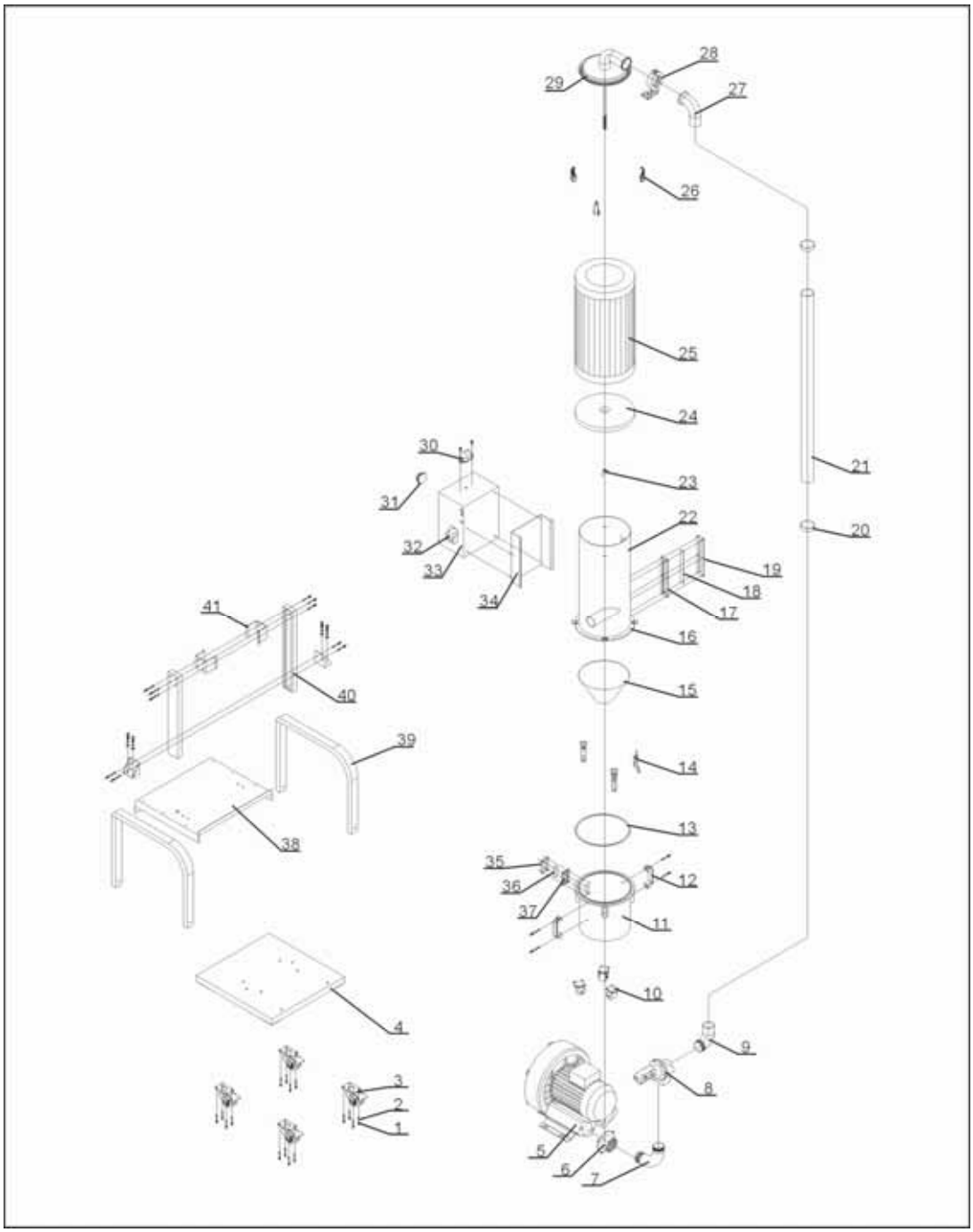
No.	Name	Part No.	No.	Name	Part No.
1	Anti-vibration pad Φ50	YW03005000000	22	Filter barrel assembly	-
2	Filter barrel lid 8	YW66082200100	23	Acryl	YR40001200000
3	Nut M12	YW64012100000	24	Seal ring	YR40000600000
4	Base	BL21003500120	25	Lron sheet of 4-hole sight glass	YW09000600000
5	Air inlet fastener	BL26003506520-	26	Butterfly nut 5/16 ″	YW69000800000
6	Blower flange	-	27	Filter fixing plate 8	YW66082200100
7	Vacuum breaking diaphragm valve 1.5 ″	BY20015000050	28	Stator	BL21003500520
8	Vacuum breaking diaphragm valve pipe connector	BL21003500420	29	Air filter ADC2	YR50181100000
9	Standing post lower welded block	-	30	Air suction pipe	-
10	Right standing column	BL26003506620	31	Coupling clip	YW07000200000
11	Standing post top welded block	-	32	Filter barrel lid assembly	-
12	Spring clip*	YW02003000400	33	Alarm light Lte-3051 ac220v	YE83305100200
13	High pressure pipe 3.5HP	BM30053500050	34	Control base board	-
	High pressure pipe 5HP	BM30055000050	35	Cover board	-
14	Dust collection bin	BL26003507021	36	Main power switch	YE10210300000
15	Acryl	BH32070000050	37	Controller holder	BL26010241820
16	Seal ring	YR40000400000	38	Control box	BL26003505321
17	Lron sheet of 4-hole Sight glass	YW09000000400	39	Fixing plate	-
18	Clip 2.5 ″	YW02002500000	40	Insulation material	-
19	Steel wired plastic Pipe 2 ″	YR60205000100	41	Control cabinet mounting plate	-
20	Dust collecting barrel Seal ring*	YR10708000100	42	Left standing pole	BL26003506620
21	Filter container ring	BL19003500120			

* 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.

2.2.5 Assembly Drawing (SAL-7.5HP/10HP/15HP-UG)



Remarks: Please refer to material list 2.2.6 for specific explanation of the Arabic numbers in parts drawing.

Picture 2-6：Assembly Drawing (SAL-7.5HP/10HP/15HP-UG)

2.2.6 Parts List (SAL-7.5HP/10HP/15HP-UG)

Chart 2-3：Parts List (SAL-7.5HP/10HP-UG)

No.	Name	Part No.	No.	Name	Part No.
1	Hex. head screw	YW60084000200	21	Steel wire hose	YR60002500000
2	Spring washer	YW66081600000	22	Filter barrel assembly	-
3	3” movable castor	YW03000300200	23	Butterfly nut	YW69051600000
	3” castor with brake	YW03000300000	24	Filter fixing plate	BL26007504720
4	Base	BL26007502721	25	Air filter*	YR50221400000
5	High pressure blower 7.5HP	BM30075000050	26	Spring clip	YW02003000400
	High pressure blower 10HP	BM30081000050	27	Filter barrel lid assembly	-
6	Blower flange	-	28	2.5” coupling clip	YW07002500600
7	Air inlet fastener	BL26007504920	29	Filter barrel lid assembly	-
8	Pneumatic diaphragm valve	BY20020000150	30	Alarm light	YE83305100200
9	Pneumatic valve coupling	BL26007502020	31	Main switch	YE10210300000
10	Castor	YW03002500000	32	Controller holder	BL26010241820
11	Dust collecting barrel	BL26007502421	33	Control cabinet	BL26007503521
12	Aluminium handle	BW20012000040	34	Control cabinet mounting plate	-
13	Dust collecting barrel seal ring*	-	35	Lron sheet of 4-hole sight glass	YW09000000400
14	Large handle	YW02003000100	36	Acryl	BH32070000050
15	Cyclone baffle	-	37	4-holes window seal ring	YR40000400000
16	Bottom ring of filter barrel	-	38	Middle board	-
17	6-holes window seal ring	YR40000600000	39	Supporting frame 1	-
18	Acryl	YR40001200000	40	Pillar of filter barrel	-
19	Lron sheet of 6-hole sight glass	YW09000600000	41	Filter fixing bracket	-
20	Clip	YW02002500000			

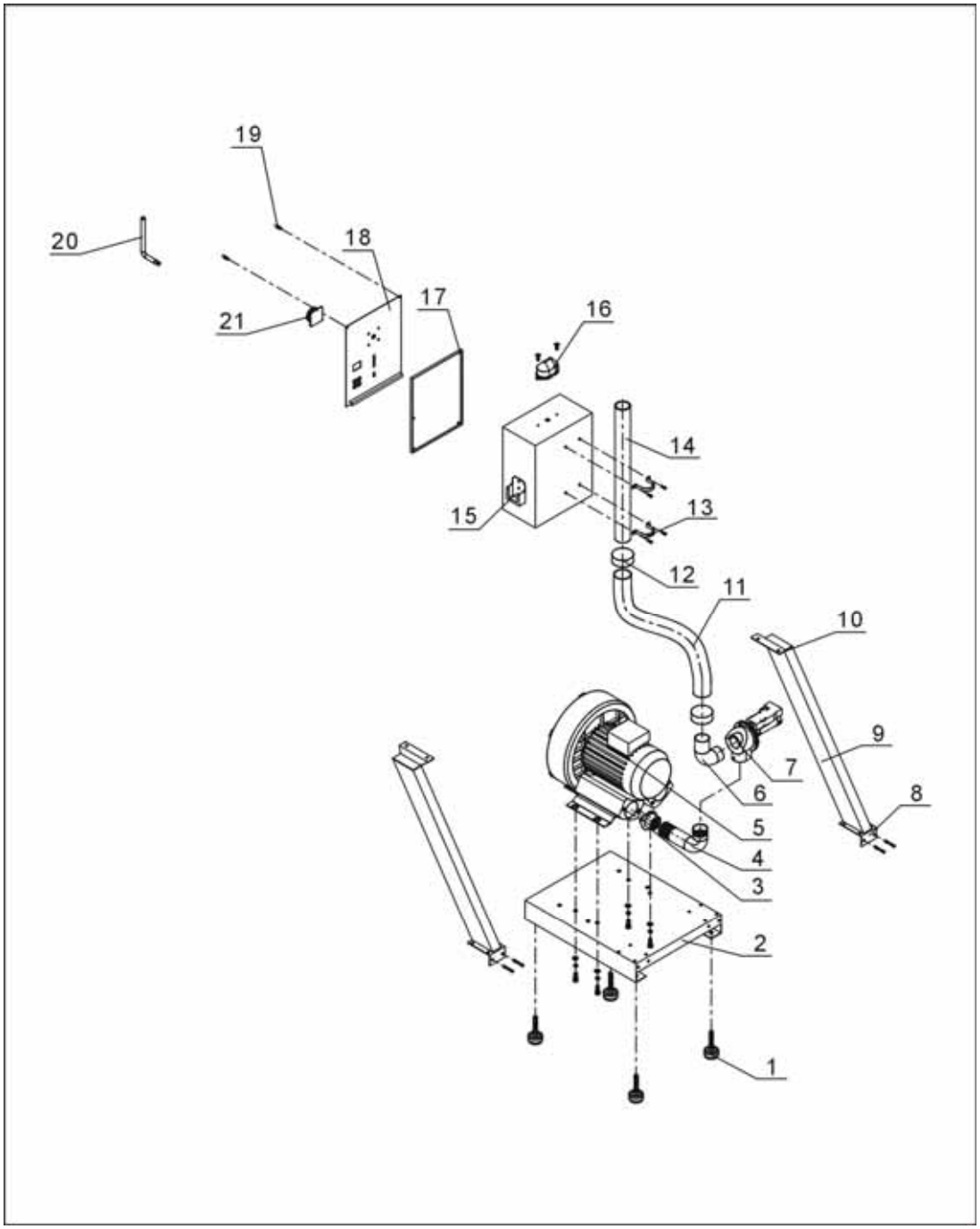
* means possible broken parts.
** means easy broken part. and spare backup is suggested.
Please confirm the version of manual before placing the purchase order to guarantee that the item number of the spare part is in accordance with the real object.

Chart 2-4：Parts List (SAL-15HP-UG)

No.	Name	Part No.	No.	Name	Part No.
1	Hex. head screw	YW60084000200	21	Steel wire hose	YR60002500000
2	Spring washer	YW66081600000	22	Filter barrel assembly	-
3	3” movable castor	YW03000300200	23	Butterfly nut	YW69051600000
	3” castor with brake	YW03000300000	24	Filter fixing plate	BL26007504720
4	Base	BL26001500921	25	Air filter*	YR50221400000
5	High pressure blower 15HP	YM30091900000	26	Spring clip*	YW02003000400
6	Blower flange	-	27	Filter barrel lid assembly	-
7	Air inlet fastener	BL26007504920-	28	2.5” coupling clip	YW07000300000
8	Pneumatic diaphragm valve	BY20020000150	29	Filter barrel lid assembly	-
9	Pneumatic valve coupling	BL26007502020	30	Alarm light	YE83305100200
10	Castor	YW03002500000	31	Main switch	YE10210300000
11	Dust collecting barrel	BL26001501421	32	Controller holder	BL26010241820
12	Aluminium handle	BW20012000040	33	Control cabinet	BL26001501921
13	Dust collecting barrel seal ring*	-	34	Control cabinet mounting plate	-
14	Large handle	YW02003000100	35	Lron sheet of 4-hole sight glass	YW09000000400
15	Cyclone baffle	-	36	Acryl	YR40001200100
16	Bottom ring of filter barrel	-	37	4-holes window seal ring	YR40000400000
17	6-holes window seal ring	YR40000600000	38	Middle board	-
18	Acryl	YR40001200000	39	Supporting frame 1	-
19	Lron sheet of 6-hole sight glass	YW09000600000	40	Pillar of filter barrel	-
20	Clip	YW02002500000	41	Filter fixing bracket	-

* 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.

2.2.7 Assembly Drawing (SAL-1HP/2HP-UGS)



Remarks: Please refer to material list 2.2.8 for specific explanation of the Arabic numbers in parts drawing.

Picture 2-7：Assembly Drawing (SAL-1HP/2HP-UGS)

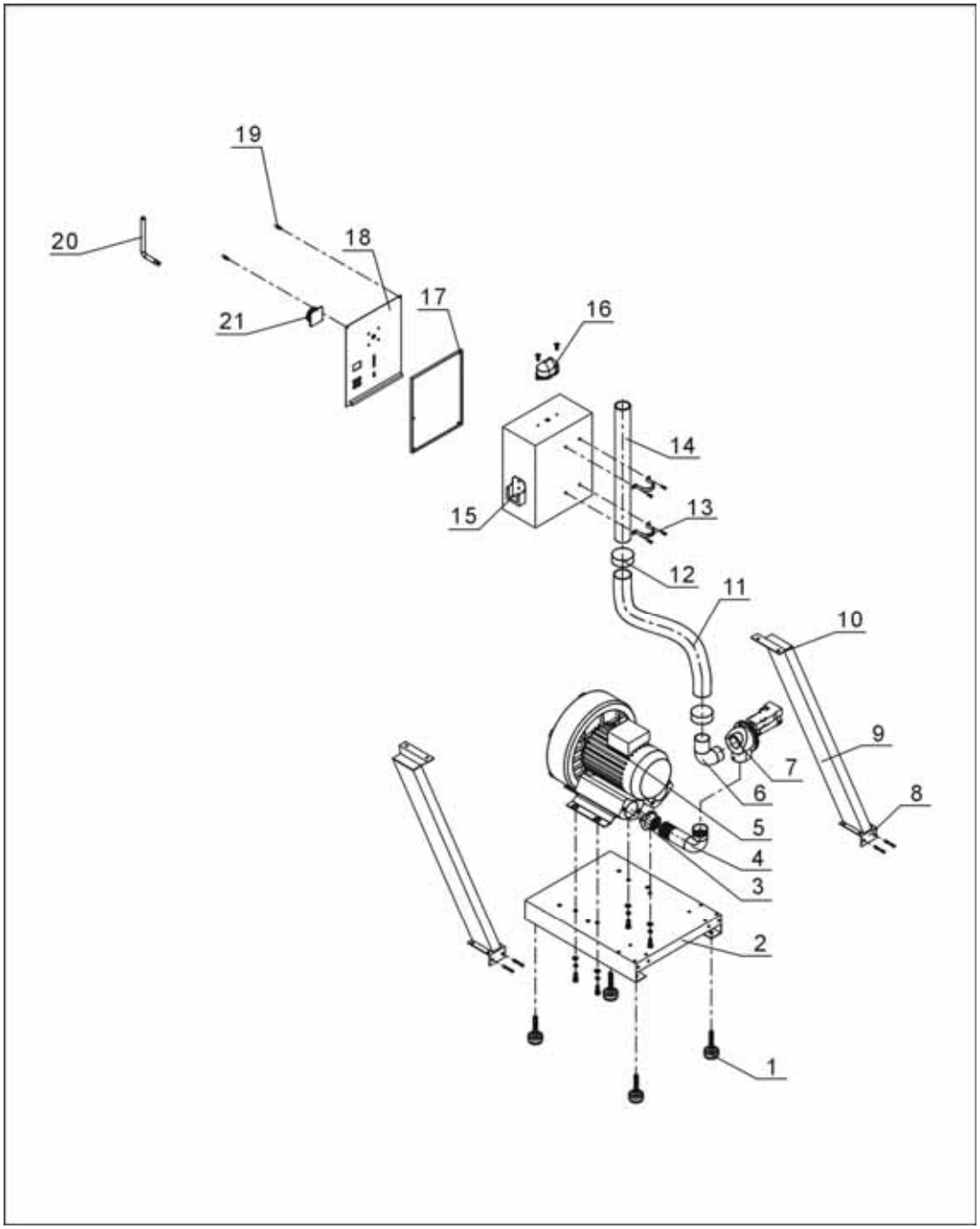
2.2.8 Parts List (SAL-1HP/2HP-UGS)

Chart 2-5：Parts List (SAL-1HP/2HP-UGS)

No.	Name	Part No.	No.	Name	Part No.
1	Anti-vibration pad	YW03005000000	11	Steel wired plastic pipe	YR60157000000
2	Base	-	12	Clip	YW02000200000
3	Blower flange	-	13	Coupling clip	-
4	Air inlet pipe	-	14	Air suction pipe	-
5	High pressure pipe 1HP	BM30031000150	15	Handle box	-
	High pressure pipe 2HP	BM30042000050	16	Alarm light	YE83305100200
6	Membrane pipe	-	17	Control box	-
7	Vacuum breaking diaphragm valve	BY20015000050	18	Control box cover	-
8	Lower welding block on column	-	19	Star Studded anti-theft screw	YW61051080000
9	Standing post	-	20	Special spanner for anti-theft screw	JT40450000000
10	Upper welding block on column	-	21	Main switch *	-

* 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.

2.2.9 Assembly Drawing (SAL-3.5HP/5HP-UGS)



Remarks: Please refer to material list 2.2.10 for specific explanation of the Arabic numbers in parts drawing.

Picture 2-8：Assembly Drawing (SAL-3.5HP/5HP-UGS)

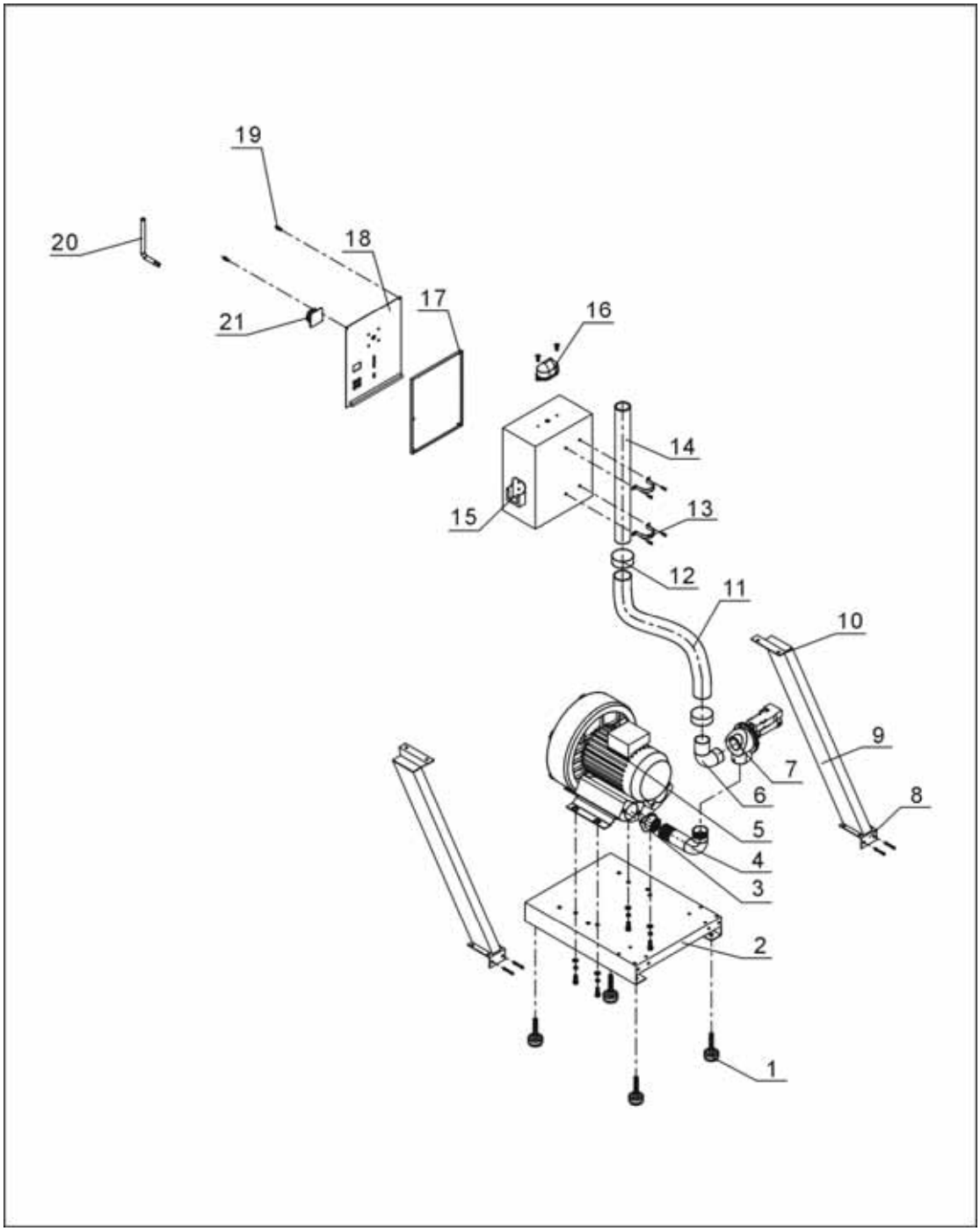
2.2.10 Parts List (SAL-3.5HP/5HP-UGS)

Chart 2-6：Parts List (SAL-3.5HP/5HP-UGS)

No.	Name	Part No.	No.	Name	Part No.
1	Anti-vibration pad	YW03005000000	11	Steel wired plastic pipe	YR60205040100
2	Base	-	12	Clip	YW02000200000
3	Blower flange	-	13	Coupling clip	-
4	Air inlet pipe	-	14	Air suction pipe	-
5	High pressure pipe 3.5HP	YM30052900000	15	Handle box	-
	High pressure pipe 5HP	YM30062900000	16	Alarm light	YE83305100200
6	Membrane pipe	-	17	Control box	-
7	Vacuum breaking diaphragm valve	BY20015000050	18	Control box cover	-
8	Lower welding block on column	-	19	Star Studded anti-theft screw	YW61051080000
9	Standing post	-	20	Special spanner for anti-theft screw	JT40450000000
10	Upper welding block on column	-	21	Main switch *	-

* 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.

2.2.11 Assembly Drawing (SAL-7.5HP/15HP-UGS)



Remarks: Please refer to material list 2.2.12 for specific explanation of the Arabic numbers in parts drawing.

Picture 2-9：Assembly Drawing (SAL-7.5HP/15HP-UGS)

2.2.12 Parts List (SAL-7.5HP/15HP-UGS)

Chart 2-7：Parts List (SAL-7.5HP/10HP-UGS)

No.	Name	Part No.	No.	Name	Part No.
1	Anti-vibration pad	YW03005000000	11	Steel wired plastic pipe	YR60205040100
2	Base	-	12	Clip	YW02000200000
3	Blower flange	-	13	Coupling clip	-
4	Air inlet pipe	-	14	Air suction pipe	-
5	High pressure pipe 7.5HP	YM30072900000	15	Handle box	-
	High pressure pipe 10HP	YM30082900000	16	Alarm light	YE83305100200
6	Membrane pipe	-	17	Control box	-
7	Vacuum breaking diaphragm valve	BY20015000050	18	Control box cover	-
8	Lower welding block on column	-	19	Star Studded anti-theft screw	YW61051080000
9	Standing post	-	20	Special spanner for anti-theft screw	JT40450000000
10	Upper welding block on column	-	21	Main switch *	-

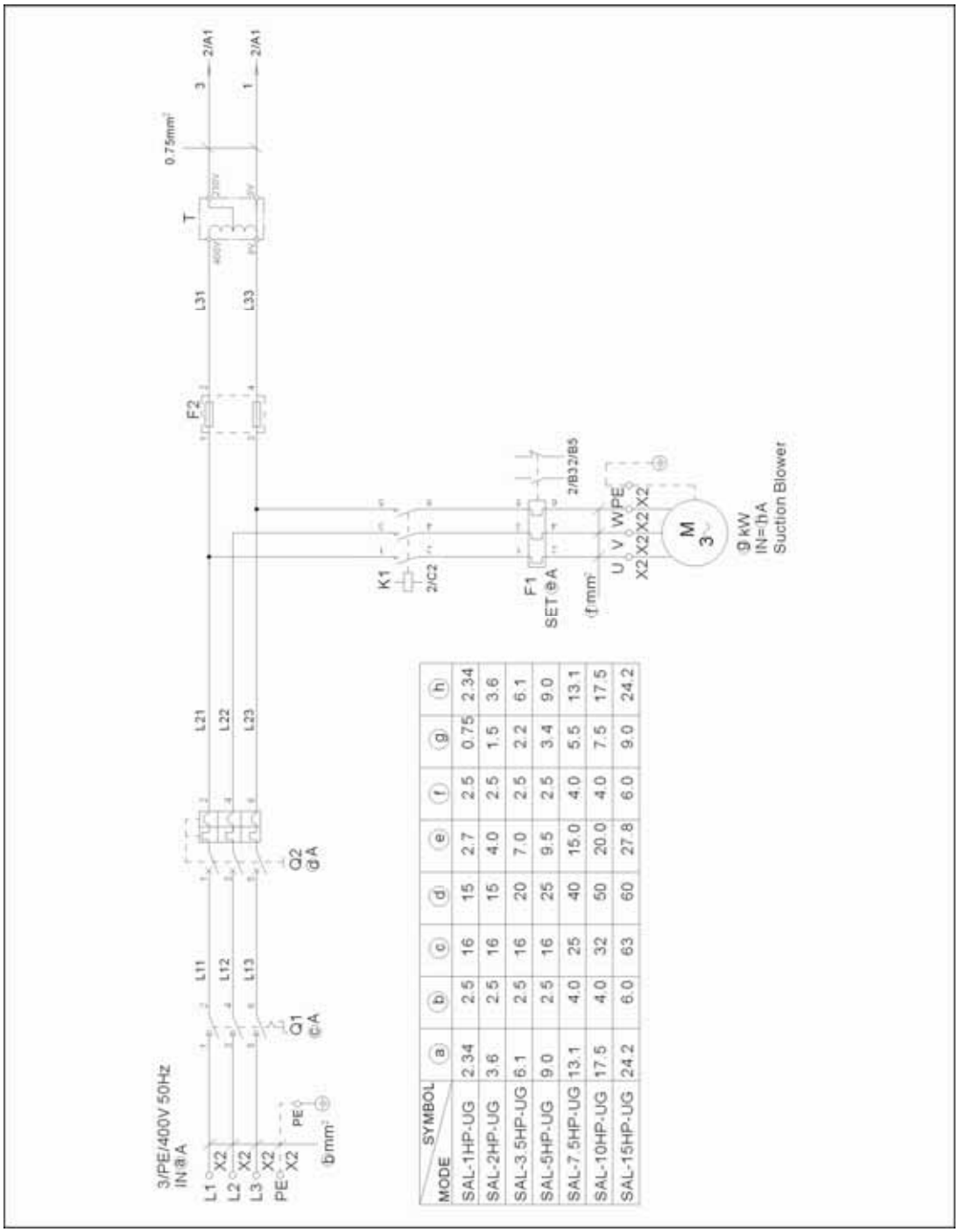
Chart 2-8：Parts List (SAL-15HP-UGS)

No.	Name	Part No.	No.	Name	Part No.
1	Anti-vibration pad	YW03005000000	12	Clip	YW02000200000
2	Base	-	13	Coupling clip	-
3	Blower flange	-	14	Air suction pipe	-
4	Air inlet pipe	-	15	Handle box	-
5	High pressure pipe 15HP	YM30091900000	16	Alarm light	YE83305100200
6	Membrane pipe	-	17	Control box	-
7	Vacuum breaking diaphragm valve	BY20015000050	18	Control box cover	-
8	Lower welding block on column	-	19	Star Studded anti-theft screw	YW61051080000
9	Standing post	-	20	Special spanner for anti-theft screw	JT40450000000
10	Upper welding block on column	-	21	Main switch *	-
11	Steel wired plastic pipe	YR60205040100			

* 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.

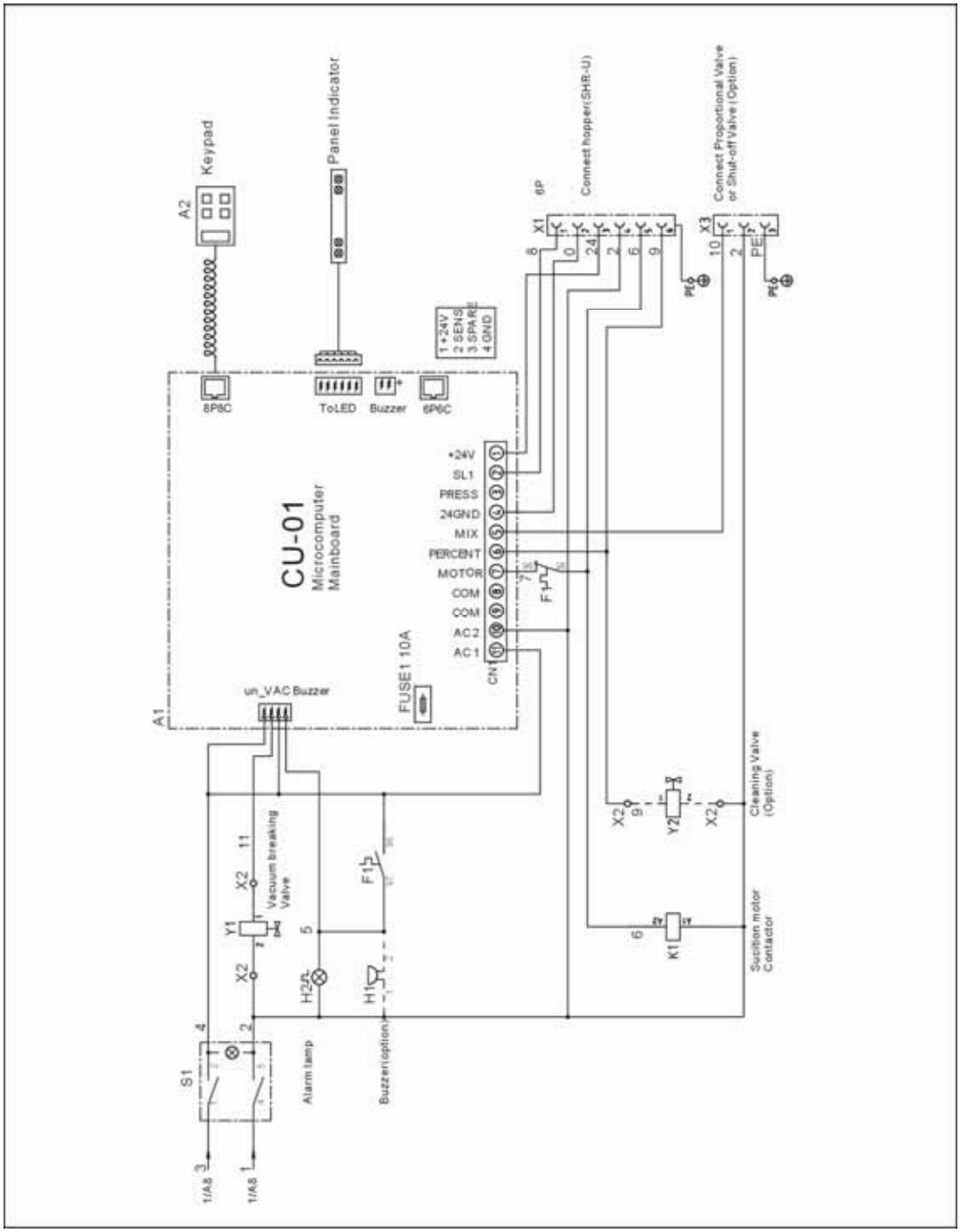
2.3 Electrical Diagram

2.3.1 Main Circuit (400V)



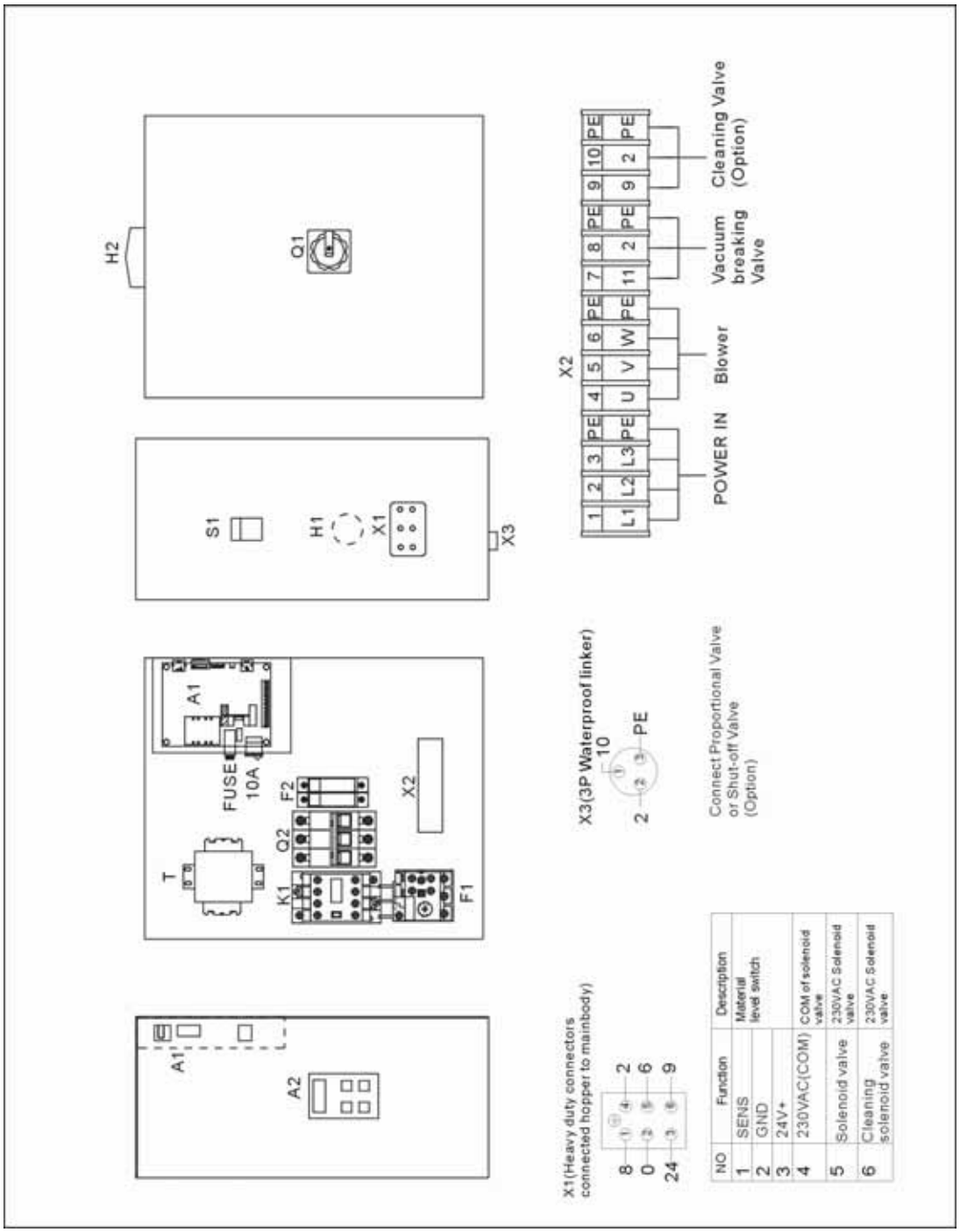
MODE \ SYMBOL	a	b	c	d	e	f	g	h
SAL-1HP-UG	2.34	2.5	16	15	2.7	2.5	0.75	2.34
SAL-2HP-UG	3.6	2.5	16	15	4.0	2.5	1.5	3.6
SAL-3.5HP-UG	6.1	2.5	16	20	7.0	2.5	2.2	6.1
SAL-5HP-UG	9.0	2.5	16	25	9.5	2.5	3.4	9.0
SAL-7.5HP-UG	13.1	4.0	25	40	15.0	4.0	5.5	13.1
SAL-10HP-UG	17.5	4.0	32	50	20.0	4.0	7.5	17.5
SAL-15HP-UG	24.2	6.0	63	60	27.8	6.0	9.0	24.2

Picture 2-10：Main Circuit 1 (400V)



Picture 2-11：Main Circuit 2 (400V)

2.3.2 Electrical Components Layout (400V)



Picture 2-12：Electrical Components Layout (400V)

2.3.3 Electrical Components List (400V)

Chart 2-9：Electrical Components List (SAL-1HP-UG(S))(400V)

NO.	Symbol	Name	SAL-1HP-UG(S)	
			Specification	Part NO.
1	Q1	Main switch*	16A	YE10200300000
2	Q2	Circuit breakers*	15A	YE40601500000
3	K1	Contactors**	230V 50/60Hz	YE00300000000
4	T	Transformer**	350mA	YE70350400000
5	F1	Overload relays	2~3.2A	YE01023200000
6	F2	Fuse box**	500V 32A	YE41032200000
7	-	Fuse**	500V 2A 10×38	YE46002000100
8	S1	Control switch	4P (WH)	YE10210400000
9	H1	Buzzer	60-250VAC 50/60Hz	YE84003500000
10	H2	Alarm lamp*	230VAC 50/60Hz	YE83305100200
11	A1	Microcomputer mainboard**	230VAC 50/60Hz	YE80023560000
12	A2	Keypad**	-	YE80001000000
13	X1	Heavy duty cconnectors	16A 400V	YE68061640100
14	X2	Terminal board	$2.5mm^2$	YE61250040000
15	-	Terminal board	$2.5mm^2$ PE	YE61253500000
16	-	Terminal board	$2.5mm^2$	YE61250040000
17	-	Terminal board	$2.5mm^2$ PE	YE61253500000
18	X3	Waterproof linker	250V 3P	YE62163000100
19	M	Blower**	1HP	BM30031000150
20	Y1	Solenoid vavle*	230V 50/60Hz	YE32051800300
21	Y2	Solenoid vavle*	230V 50/60Hz	YE32212000000

* 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.

Chart 2-10：Electrical Components List (SAL-2HP-UG(S)) (400V)

NO.	Symbol	Name	SAL-2HP-UG(S)	
			Specification	Part NO.
1	Q1	Main switch*	16A	YE10200300000
2	Q2	Circuit breakers*	15A	YE40601500000
3	K1	Contactors**	230V 50/60Hz	YE00300000000
4	T	Transformer**	350mA	YE70350400000
5	F1	Overload relays	3.2~5A	YE01032500000
6	F2	Fuse box**	500V 32A	YE41032200000
7	-	Fuse**	500V 2A 10×38	YE46002000100
8	S1	Control switch	4P (WH)	YE10210400000
9	H1	Buzzer	60-250VAC 50/60Hz	YE84003500000
10	H2	Alarm lamp*	230VAC 50/60Hz	YE83305100200
11	A1	Microcomputer mainboard**	230VAC 50/60Hz	YE80023560000
12	A2	Keypad**	-	YE80001000000
13	X1	Heavy duty cconnectors	16A 400V	YE68061640100
14	X2	Terminal board	$2.5mm^2$	YE61250040000
15	-	Terminal board	$2.5mm^2$ PE	YE61253500000
16	-	Terminal board	$2.5mm^2$	YE61250040000
17	-	Terminal board	$2.5mm^2$ PE	YE61253500000
18	X3	Waterproof linker	250V 3P	YE62163000100
19	M	Blower**	2HP	BM30042000050
20	Y1	Solenoid vavle*	230V 50/60Hz	YE32051800300
21	Y2	Solenoid vavle*	230V 50/60Hz	YE32212000000

* 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.

Chart 2-11：Electrical Components List (SAL-3.5HP-UG(S)) (400V)

NO.	Symbol	Name	SAL-3.5HP-UG(S)	
			Specification	Part NO.
1	Q1	Main switch*	16A	YE10200300000
2	Q2	Circuit breakers*	20A	YE40602000000
3	K1	Contactors**	230V 50/60Hz	YE00300000000
4	T	Transformer**	350mA	YE70350400000
5	F1	Overload relays	5~8A	YE01050800000
6	F2	Fuse box**	500V 32A	YE41032200000
7	-	Fuse**	500V 2A 10×38	YE46002000100
8	S1	Control switch	4P (WH)	YE10210400000
9	H1	Buzzer	60-250VAC 50/60Hz	YE84003500000
10	H2	Alarm lamp*	230VAC 50/60Hz	YE83305100200
11	A1	Microcomputer mainboard**	230VAC 50/60Hz	YE80023560000
12	A2	Keypad**	-	YE80001000000
13	X1	Heavy duty cconnectors	16A 400V	YE68061640100
14	X2	Terminal board	$2.5mm^2$	YE61250040000
15	-	Terminal board	$2.5mm^2$ PE	YE61253500000
16	-	Terminal board	$2.5mm^2$	YE61250040000
17	-	Terminal board	$2.5mm^2$ PE	YE61253500000
18	X3	Waterproof linker	250V 3P	YE62163000100
19	M	Blower**	3.5HP	BM30053500050
20	Y1	Solenoid vavle*	230V 50/60Hz	YE32051800300
21	Y2	Solenoid vavle*	230V 50/60Hz	YE32212000000

* 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.

Chart 2-12：Electrical Components List (SAL-5HP-UG(S)) (400V)

NO.	Symbol	Name	SAL-5HP-UG(S)	
			Specification	Part NO.
1	Q1	Main switch*	16A	YE10200300000
2	Q2	Circuit breakers*	25A	YE40602500000
3	K1	Contactors**	230V 50/60Hz	YE00300000000
4	T	Transformer**	350mA	YE70350400000
5	F1	Overload relays	6.3~10A	YE01631000000
6	F2	Fuse box**	500V 32A	YE41032200000
7	-	Fuse**	500V 2A 10×38	YE46002000100
8	S1	Control switch	4P (WH)	YE10210400000
9	H1	Buzzer	60-250VAC 50/60Hz	YE84003500000
10	H2	Alarm lamp*	230VAC 50/60Hz	YE83305100200
11	A1	Microcomputer mainboard**	230VAC 50/60Hz	YE80023560000
12	A2	Keypad**	-	YE80001000000
13	X1	Heavy duty cconnectors	16A 400V	YE68061640100
14	X2	Terminal board	$2.5mm^2$	YE61250040000
15	-	Terminal board	$2.5mm^2$ PE	YE61253500000
16	-	Terminal board	$2.5mm^2$	YE61250040000
17	-	Terminal board	$2.5mm^2$ PE	YE61253500000
18	X3	Waterproof linker	250V 3P	YE62163000100
19	M	Blower**	5HP	BM30055000050
20	Y1	Solenoid vavle*	230V 50/60Hz	YE32051800300
21	Y2	Solenoid vavle*	230V 50/60Hz	YE32212000000

* 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.

Chart 2-13：Electrical Components List (SAL-7.5HP-UG(S)) (400V)

NO.	Symbol	Name	SAL-7.5HP-UG(S)	
			Specification	Part NO.
1	Q1	Main switch*	25A	YE10210300000
2	Q2	Circuit breakers*	40A	YE40604000000
3	K1	Contactors**	230V 50/60Hz	YE00320000000
4	T	Transformer**	350mA	YE70350400000
5	F1	Overload relays	10~16A	YE01101600100
6	F2	Fuse box**	500V 32A	YE41032200000
7	-	Fuse**	500V 2A 10×38	YE46002000100
8	S1	Control switch	4P (WH)	YE10210400000
9	H1	Buzzer	60-250VAC 50/60Hz	YE84003500000
10	H2	Alarm lamp*	230VAC 50/60Hz	YE83305100200
11	A1	Microcomputer mainboard**	230VAC 50/60Hz	YE80023560000
12	A2	Keypad**	-	YE80001000000
13	X1	Heavy duty cconnectors	16A 400V	YE68061640100
14	X2	Terminal board	$2.5mm^2$	YE61250040000
15	-	Terminal board	$2.5mm^2$ PE	YE61253500000
16	-	Terminal board	$2.5mm^2$	YE61250040000
17	-	Terminal board	$2.5mm^2$ PE	YE61253500000
18	X3	Waterproof linker	250V 3P	YE62163000100
19	M	Blower**	7.5HP	BM30075000050
20	Y1	Solenoid vavle*	230V 50/60Hz	YE32051800300
21	Y2	Solenoid vavle*	230V 50/60Hz	YE32212000000

* 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.

Chart 2-14：Electrical Components List (SAL-10HP-UG(S)) (400V)

NO.	Symbol	Name	SAL-10HP-UG(S)	
			Specification	Part NO.
1	Q1	Main switch*	32A	YE10220300000
2	Q2	Circuit breakers*	50A	YE40605000000
3	K1	Contactors**	230V 50/60Hz	YE00330000000
4	T	Transformer**	350mA	YE70350400000
5	F1	Overload relays	12.5~20A	YE01125200100
6	F2	Fuse box**	500V 32A	YE41032200000
7	-	Fuse**	500V 2A 10×38	YE46002000100
8	S1	Control switch	4P (WH)	YE10210400000
9	H1	Buzzer	60-250VAC 50/60Hz	YE84003500000
10	H2	Alarm lamp*	230VAC 50/60Hz	YE83305100200
11	A1	Microcomputer mainboard**	230VAC 50/60Hz	YE80023560000
12	A2	Keypad**	-	YE80001000000
13	X1	Heavy duty cconnectors	16A 400V	YE68061640100
14	X2	Terminal board	$2.5mm^2$	YE61250040000
15	-	Terminal board	$2.5mm^2$ PE	YE61253500000
16	-	Terminal board	$2.5mm^2$	YE61250040000
17	-	Terminal board	$2.5mm^2$ PE	YE61253500000
18	X3	Waterproof linker	250V 3P	YE62163000100
19	M	Blower**	10HP	BM30081000050
20	Y1	Solenoid vavle*	230V 50/60Hz	YE32051800300
21	Y2	Solenoid vavle*	230V 50/60Hz	YE32212000000

* 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.

Chart 2-15：Electrical Components List (SAL-15HP-UG(S)) (400V)

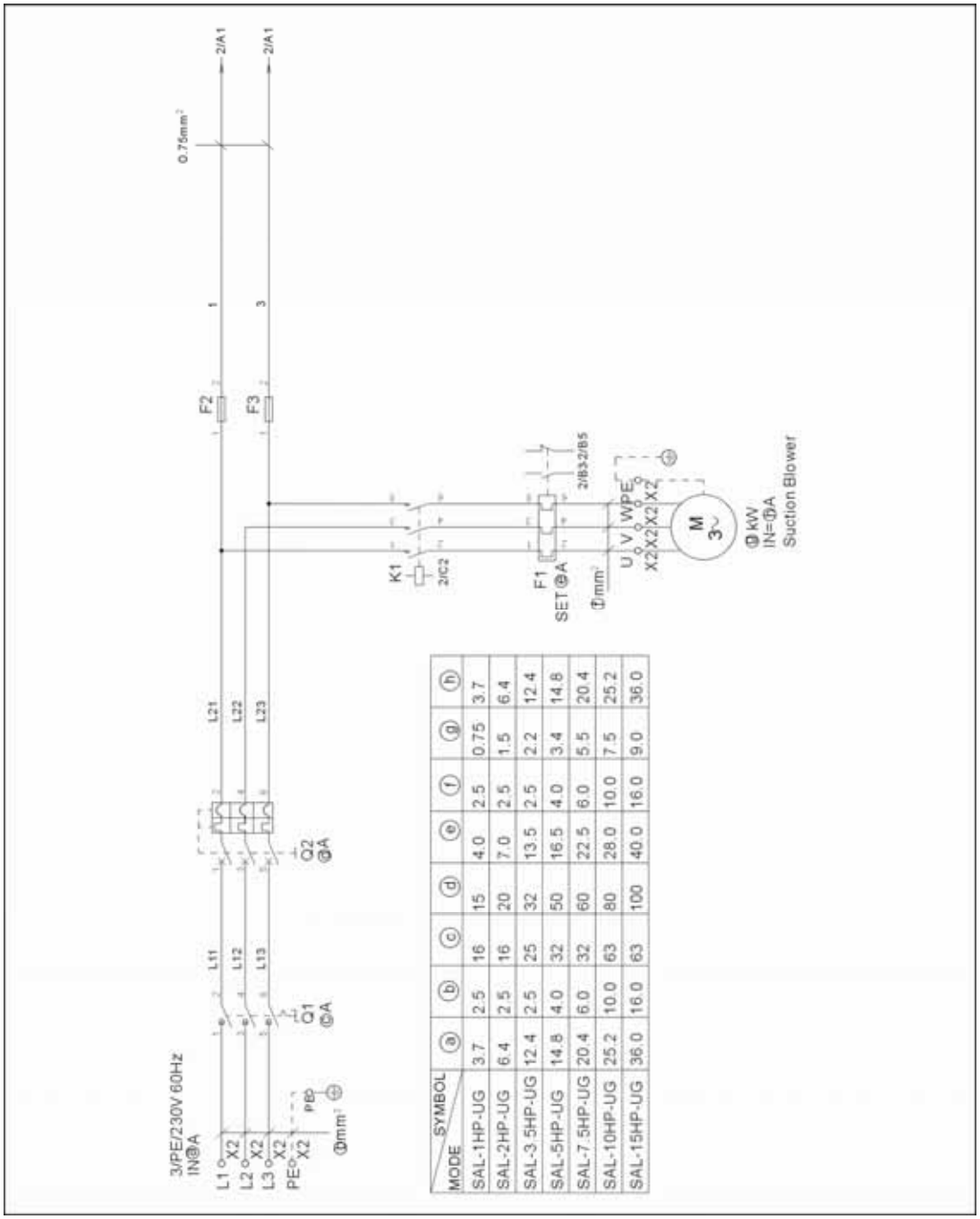
NO.	Symbol	Name	SAL-15HP-UG(S)	
			Specification	Part NO.
1	Q1	Main switch*	63A	YE10250400000
2	Q2	Circuit breakers*	60A	YE40606000000
3	K1	Contactors**	230V 50/60Hz	YE00340000000
4	T	Transformer**	350mA	YE70350400000
5	F1	Overload relays	20~32A	YE01203200200
6	F2	Fuse box**	500V 32A	YE41032200000
7	-	Fuse**	500V 2A 10×38	YE46002000100
8	S1	Control switch	4P (WH)	YE10210400000
9	H1	Buzzer	60-250VAC 50/60Hz	YE84003500000
10	H2	Alarm lamp*	230VAC 50/60Hz	YE83305100200
11	A1	Microcomputer mainboard**	230VAC 50/60Hz	YE80023560000
12	A2	Keypad**	-	YE80001000000
13	X1	Heavy duty cconnectors	16A 400V	YE68061640100
14	X2	Terminal board	$2.5mm^2$	YE61250040000
15	-	Terminal board	$2.5mm^2$ PE	YE61253500000
16	-	Terminal board	$2.5mm^2$	YE61250040000
17	-	Terminal board	$2.5mm^2$ PE	YE61253500000
18	X3	Waterproof linker	250V 3P	YE62163000100
19	M	Blower**	15HP	YM30091900000
20	Y1	Solenoid vavle*	230V 50/60Hz	YE32051800300
21	Y2	Solenoid vavle*	230V 50/60Hz	YE32212000000

* means possible broken parts.

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

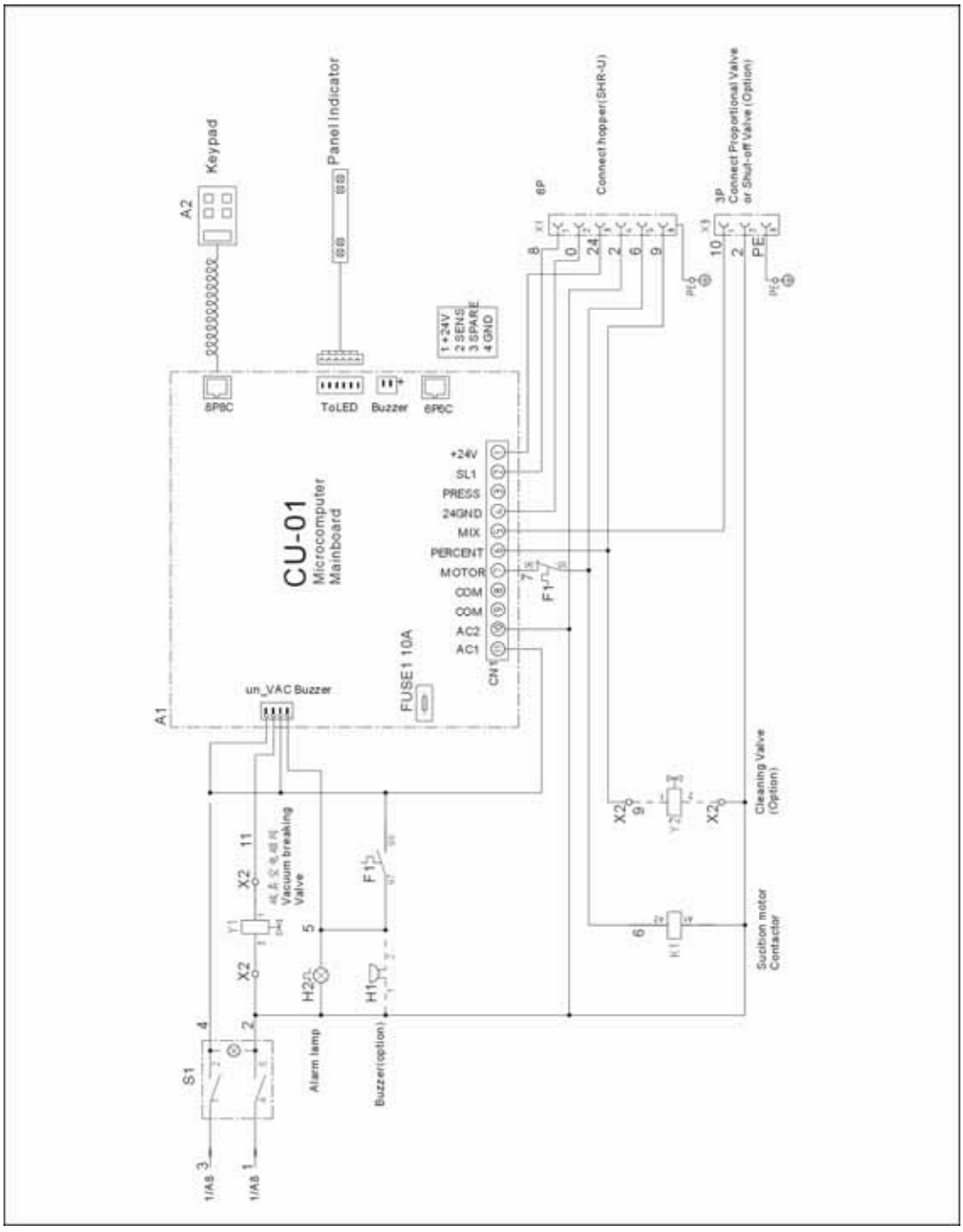
Please confirm the version of manual before placing the purchase order to guarantee that the item number of the spare part is in accordance with the real object.

2.3.4 Main Circuit (230V)



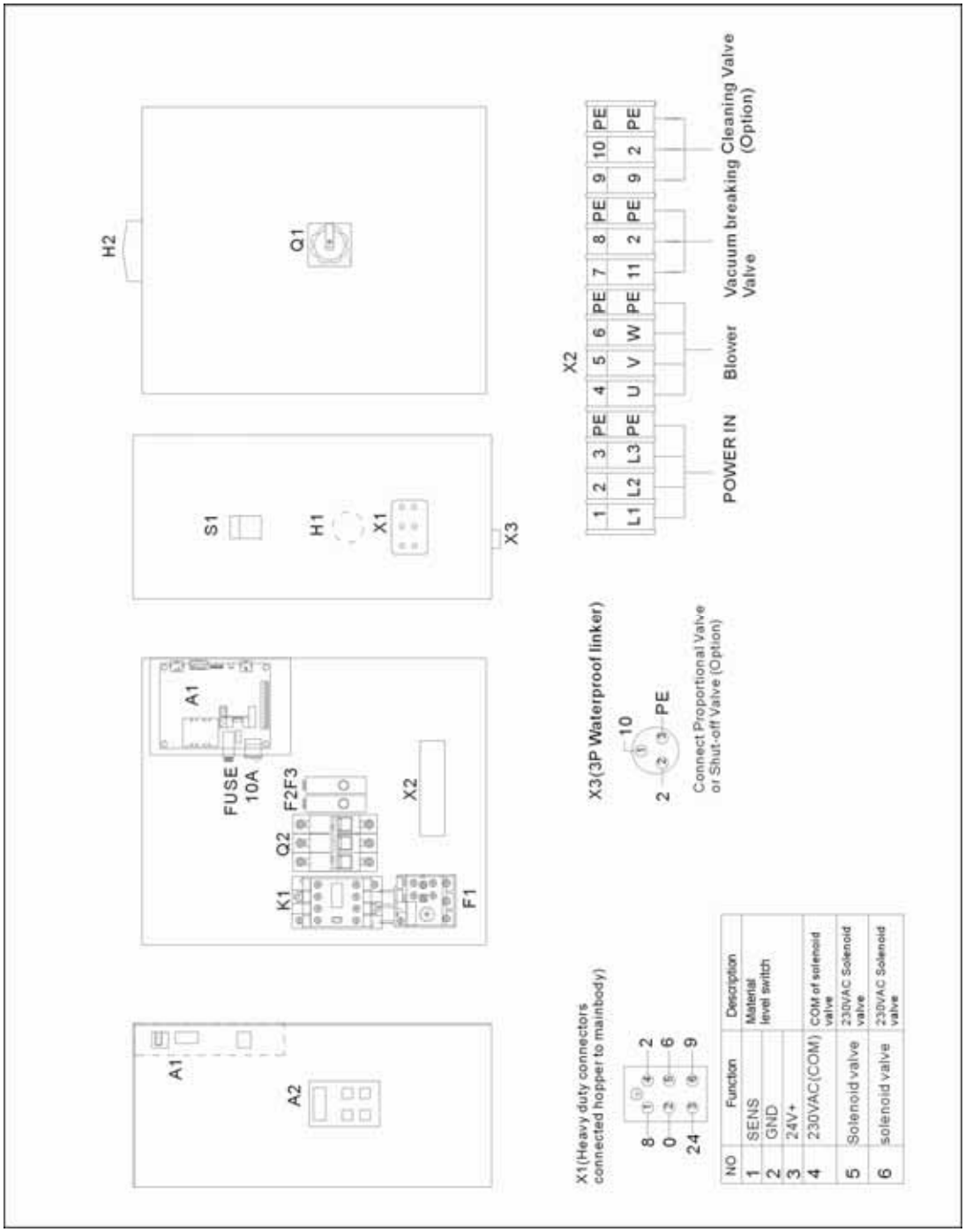
MODE \ SYMBOL	ⓐ	ⓑ	ⓒ	ⓓ	ⓔ	ⓕ	ⓖ	ⓗ
SAL-1HP-UG	3.7	2.5	16	15	4.0	2.5	0.75	3.7
SAL-2HP-UG	6.4	2.5	16	20	7.0	2.5	1.5	6.4
SAL-3.5HP-UG	12.4	2.5	25	32	13.5	2.5	2.2	12.4
SAL-5HP-UG	14.8	4.0	32	50	16.5	4.0	3.4	14.8
SAL-7.5HP-UG	20.4	6.0	32	60	22.5	6.0	5.5	20.4
SAL-10HP-UG	25.2	10.0	63	80	28.0	10.0	7.5	25.2
SAL-15HP-UG	36.0	16.0	63	100	40.0	16.0	9.0	36.0

Picture 2-13：Main Circuit 1(230V)



Picture 2-14：Main Circuit 2(230V)

2.3.5 Electrical Components Layout (230V)



Picture 2-15：Electrical Components Layout (230V)

2.3.6 Electrical Components List (230V)

Chart 2-16：Electrical Components List (SAL-1HP-UG(S))(230V)

NO.	Symbol	Name	SAL-1HP-UG(S)	
			Specification	Part NO.
1	Q1	Main switch*	16A	YE10200300000
2	Q2	Circuit breakers*	15A	YE40601500000
3	K1	Contactors**	230V 50/60Hz	YE00300000000
4	F1	Overload relays	3.2~5A	YE01032500000
5	F2,F3	Fuse**	250V 2A	YE41001000000
6	S1	Control switch	4P (WH)	YE10210400000
7	H1	Buzzer	60-250VAC 50/60Hz	YE84003500000
8	H2	Alarm lamp	230VAC 50/60Hz	YE83305100200
9	A1	Mirocomputer mainboard**	230VAC 50/60Hz	YE80023560000
10	A2	Keypad**	-	YE80001000000
11	X1	Heavy duty connectors	16A 400V	YE68061640100
12	X2	Terminal board	$2.5mm^2$	YE61250040000
13	-	Terminal board	$2.5mm^2$PE	YE61253500000
14	-	Terminal board	$2.5mm^2$	YE61250040000
15	-	Terminal board	$2.5mm^2$PE	YE61253500000
16	X3	Waterproof linker	250V 3P	YE62163000100
17	M	Blower**	1HP	BM30031000150
18	Y1	Solenoid vavle*	230V 50/60Hz	YE32051800300
19	Y2	Solenoid vavle*	230V 50/60Hz	YE32212000000

* 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.

Chart 2-17：Electrical Components List (SAL-2HP-UG(S))(230V)

NO.	Symbol	Name	SAL-2HP-UG(S)	
			Specification	Part NO.
1	Q1	Main switch*	16A	YE10200300000
2	Q2	Circuit breakers*	20A	YE40602000000
3	K1	Contactors**	230V 50/60Hz	YE00310000000
4	F1	Overload relays	5~8A	YE01050800000
5	F2,F3	Fuse**	250V 2A	YE41001000000
6	S1	Control switch	4P (WH)	YE10210400000
7	H1	Buzzer	60-250VAC 50/60Hz	YE84003500000
8	H2	Alarm lamp	230VAC 50/60Hz	YE83305100200
9	A1	Mirocomputer mainboard**	230VAC 50/60Hz	YE80023560000
10	A2	Keypad**	-	YE80001000000
11	X1	Heavy duty connectors	16A 400V	YE68061640100
12	X2	Terminal board	$2.5mm^2$	YE61250040000
13	-	Terminal board	$2.5mm^2$PE	YE61253500000
14	-	Terminal board	$2.5mm^2$	YE61250040000
15	-	Terminal board	$2.5mm^2$PE	YE61253500000
16	X3	Waterproof linker	250V 3P	YE62163000100
17	M	Blower**	2HP	BM30042000050
18	Y1	Solenoid vavle*	230V 50/60Hz	YE32051800300
19	Y2	Solenoid vavle*	230V 50/60Hz	YE32212000000

* 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.

Chart 2-18：Electrical Components List (SAL-3.5HP-UG(S))(230V)

NO.	Symbol	Name	SAL-3.5HP-UG(S)	
			Specification	Part NO.
1	Q1	Main switch*	25A	YE10210300000
2	Q2	Circuit breakers*	32A	YE40603200000
3	K1	Contactors**	230V 50/60Hz	YE00320000000
4	F1	Overload relays	8~12.5A	YE01812500100
5	F2,F3	Fuse**	250V 2A	YE41001000000
6	S1	Control switch	4P (WH)	YE10210400000
7	H1	Buzzer	60-250VAC 50/60Hz	YE84003500000
8	H2	Alarm lamp	230VAC 50/60Hz	YE83305100200
9	A1	Mirocomputer mainboard**	230VAC 50/60Hz	YE80023560000
10	A2	Keypad**	-	YE80001000000
11	X1	Heavy duty connectors	16A 400V	YE68061640100
12	X2	Terminal board	$2.5mm^2$	YE61250040000
13	-	Terminal board	$2.5mm^2$PE	YE61253500000
14	-	Terminal board	$2.5mm^2$	YE61250040000
15	-	Terminal board	$2.5mm^2$PE	YE61253500000
16	X3	Waterproof linker	250V 3P	YE62163000100
17	M	Blower**	3.5HP	BM30053500050
18	Y1	Solenoid vavle*	230V 50/60Hz	YE32051800300
19	Y2	Solenoid vavle*	230V 50/60Hz	YE32212000000

* 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.

Chart 2-19：Electrical Components List (SAL-5HP-UG(S))(230V)

NO.	Symbol	Name	SAL-5HP-UG(S)	
			Specification	Part NO.
1	Q1	Main switch*	32A	YE10220300000
2	Q2	Circuit breakers*	50A	YE40605000000
3	K1	Contactors**	230V 50/60Hz	YE00330000000
4	F1	Overload relays	12.5~20A	YE01125200100
5	F2,F3	Fuse**	250V 2A	YE41001000000
6	S1	Control switch	4P (WH)	YE10210400000
7	H1	Buzzer	60-250VAC 50/60Hz	YE84003500000
8	H2	Alarm lamp	230VAC 50/60Hz	YE83305100200
9	A1	Mirocomputer mainboard**	230VAC 50/60Hz	YE80023560000
10	A2	Keypad**	-	YE80001000000
11	X1	Heavy duty connectors	16A 400V	YE68061640100
12	X2	Terminal board	$2.5mm^2$	YE61250040000
13	-	Terminal board	$2.5mm^2$PE	YE61253500000
14	-	Terminal board	$2.5mm^2$	YE61250040000
15	-	Terminal board	$2.5mm^2$PE	YE61253500000
16	X3	Waterproof linker	250V 3P	YE62163000100
17	M	Blower**	5HP	BM30055000050
18	Y1	Solenoid vavle*	230V 50/60Hz	YE32051800300
19	Y2	Solenoid vavle*	230V 50/60Hz	YE32212000000

* 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.

Chart 2-20：Electrical Components List (SAL-7.5HP-UG(S))(230V)

NO.	Symbol	Name	SAL-7.5HP-UG(S)	
			Specification	Part NO.
1	Q1	Main switch*	63A	YE10250400000
2	Q2	Circuit breakers*	60A	YE40606000000
3	K1	Contactors**	230V 50/60Hz	YE00340000000
4	F1	Overload relays	16~25A	YE01162500300
5	F2,F3	Fuse**	250V 2A	YE41001000000
6	S1	Control switch	4P (WH)	YE10210400000
7	H1	Buzzer	60-250VAC 50/60Hz	YE84003500000
8	H2	Alarm lamp	230VAC 50/60Hz	YE83305100200
9	A1	Mirocomputer mainboard**	230VAC 50/60Hz	YE80023560000
10	A2	Keypad**	-	YE80001000000
11	X1	Heavy duty connectors	16A 400V	YE68061640100
12	X2	Terminal board	$2.5mm^2$	YE61250040000
13	-	Terminal board	$2.5mm^2$PE	YE61253500000
14	-	Terminal board	$2.5mm^2$	YE61250040000
15	-	Terminal board	$2.5mm^2$PE	YE61253500000
16	X3	Waterproof linker	250V 3P	YE62163000100
17	M	Blower**	7.5HP	BM30075000050
18	Y1	Solenoid vavle*	230V 50/60Hz	YE32051800300
19	Y2	Solenoid vavle*	230V 50/60Hz	YE32212000000

* 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.

Chart 2-21：Electrical Components List (SAL-10HP-UG(S))(230V)

NO.	Symbol	Name	SAL-10HP-UG(S)	
			Specification	Part NO.
1	Q1	Main switch*	63A	YE10250400000
2	Q2	Circuit breakers*	80A	YE40800300000
3	K1	Contactors**	230V 50/60Hz	YE00350000000
4	F1	Overload relays	25~36A	YE01253600200
5	F2,F3	Fuse**	250V 2A	YE41001000000
6	S1	Control switch	4P (WH)	YE10210400000
7	H1	Buzzer	60-250VAC 50/60Hz	YE84003500000
8	H2	Alarm lamp	230VAC 50/60Hz	YE83305100200
9	A1	Mirocomputer mainboard**	230VAC 50/60Hz	YE80023560000
10	A2	Keypad**	-	YE80001000000
11	X1	Heavy duty connectors	16A 400V	YE68061640100
12	X2	Terminal board	$2.5mm^2$	YE61250040000
13	-	Terminal board	$2.5mm^2$PE	YE61253500000
14	-	Terminal board	$2.5mm^2$	YE61250040000
15	-	Terminal board	$2.5mm^2$PE	YE61253500000
16	X3	Waterproof linker	250V 3P	YE62163000100
17	M	Blower**	10HP	BM30081000050
18	Y1	Solenoid vavle*	230V 50/60Hz	YE32051800300
19	Y2	Solenoid vavle*	230V 50/60Hz	YE32212000000

* 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.

Chart 2-22：Electrical Components List (SAL-15HP-UG(S))(230V)

NO.	Symbol	Name	SAL-15HP-UG(S)	
			Specification	Part NO.
1	Q1	Main switch*	63A	YE10250400000
2	Q2	Circuit breakers*	100A	YE40100300000
3	K1	Contactors**	230V 50/60Hz	YE00472200100
4	F1	Overload relays	32~50A	YE01325000200
5	F2,F3	Fuse**	250V 2A	YE41001000000
6	S1	Control switch	4P (WH)	YE10210400000
7	H1	Buzzer	60-250VAC 50/60Hz	YE84003500000
8	H2	Alarm lamp	230VAC 50/60Hz	YE83305100200
9	A1	Mirocomputer mainboard**	230VAC 50/60Hz	YE80023560000
10	A2	Keypad**	-	YE80001000000
11	X1	Heavy duty connectors	16A 400V	YE68061640100
12	X2	Terminal board	$2.5mm^2$	YE61250040000
13	-	Terminal board	$2.5mm^2$PE	YE61253500000
14	-	Terminal board	$2.5mm^2$	YE61250040000
15	-	Terminal board	$2.5mm^2$PE	YE61253500000
16	X3	Waterproof linker	250V 3P	YE62163000100
17	M	Blower**	15HP	YM30091900000
18	Y1	Solenoid vavle*	230V 50/60Hz	YE32051800300
19	Y2	Solenoid vavle*	230V 50/60Hz	YE32212000000

* 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 Description of Electrical Components

2.4.1 Opposite-type Photoelectric Switch

1) Used for SAL-U-GE series for control of material conveying and material shortage alarm.
2) A pair of photoelectrical sensors is installed on the fastening screw of glass tube.

Picture 2-16：Opposite-type Photoelectric Switch

2.4.2 Magnetic Proximity Switch

1) Used for SAL-U-G series for control of material conveying and material shortage alarm.
2) It is installed at the bottom of material hopper.

Picture 2-17：Magnetic Proximity Switch

2.5 Optional Accessories

2.5.1 Air Accumulator

2.5.1.1 Function of air Accumulator

Air accumulator is fixed on SAL-6U/12U-(CA) which can reinforce the spray washing.

Picture 2-18：Air Accumulator

2.5.1.2 Specification of air Accumulator

Air accumulator: HxD=170x76mm

Note!

Please fix the air supply correctly. Air pressure not less than 4 bar.

2.5.2 Fillter Screen

2.5.2.1 Which Condition Need to Xhoose this Filter Screen

This type fillter screen can used up to 30% grinding material can increased working life.

Picture 2-19：Fillter Screen

2.5.2.2 Spec of the Fillter Screen

Screen number: 14 Steel dia.: 0.5mm

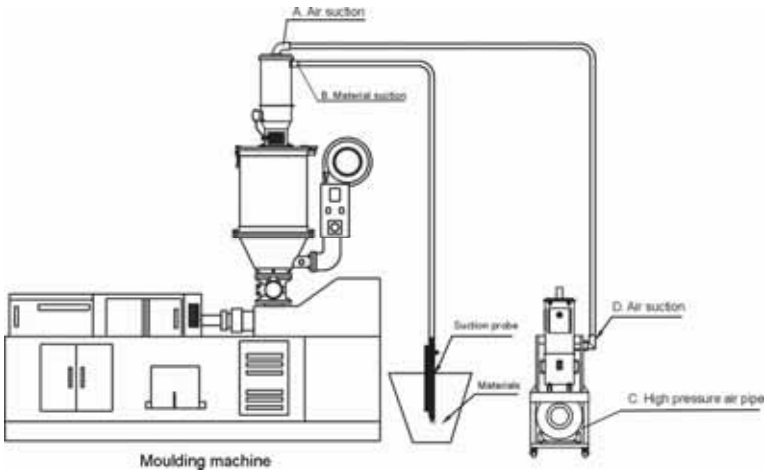
3. Installation and Debugging

Read this chapter carefully before installation of the machine. Install the machine by following steps.

Power supply should be fixed by qualified technicians!

3.1 Install the Machine on the Dryer

3.1.1 Installation Elements



Picture 3-1：Installation Elements

3.1.2 Installation Steps

1) Put the main body of the machine at a proper place and connect it with power supply.
2) Install material hopper onto the dryer and connect it with signal wires from the main body.
3) Use steel wire conveying hose to connect air suction pipe (A) on material hopper with air suction pipe (D) on main body. Material suction (B) should be connected with material suction probe (B) in material storage bin.
4) Connect high pressure air pipe (C) with air supply (pressure at 3~6kg/cm^2).

3.1.3 Power Supply

Make sure that the power supply conforms with required specifications before installation. SAL-UG (E) Series should be Connected with 3Φ 400V 50Hz Power supply or other specifications if required.

Make sure main switch is turned off before you connect the power.

4. Application and Operation

4.1 Start / Stop of the Machine

The start/stop of SAL-UG series is controlled by main switch in front of control box and alternative switch on the left side.

4.2 Keys on the Control Panel

Picture 4-1：Keys on the Control Panel

SET Choose an item or cancel current input.

ENT Choose an item and store current input value. It is also used to clear the alarm when alarm occurs.

▲ Increase setting value.

▼ Decrease setting value.

▲ + ▼ Stop the machine in 3 sec. Press SET to resume operation.

4.3 Parameter Setting

4.3.1 Enter Basic Setting Mode

During normal operation, press SET for about 1 sec. to enter [F.01] setting screen. [F.01] and its value show alternatively after 0.8 sec. If you want to set

[F.04], the system will show [F.99]. [F.99] and its value will show alternatively after 0.8 sec. Input correct password to enter [F.01], then press SET to switch to [F.04].

4.3.2 Modify a Parameter

Press ▲ to increase parameter value. Keep on pressing ▲ to quickly increase it's value until the maximum of it. Press ▼ to decrease parameter value. Keep on pressing ▼ to reduce it's value until the minimum of it. Press ENT to confirm parameter setting to store its value into the microprocessor and enter next setting item. If you did not change anything, press ENT to enter into next setting item. Press SET to cancel parameter setting and return back to current setting screen. If you did not change anything, press SET to enter into next setting item.

4.3.3 Finish Parameter Setting

Keep on pressing SET for about 1 sec. to return to normal display mode. If you did not touch any keys for 20 seconds, the machine will return to normal display mode without storing any changes of the parameter.

4.3.4 Basic Parameter List

Para. code	Functions	Value		Note
F.01	Material conveying time Material conveying time can be controlled and set by two manners: 1. [F.01] is defined as material conveying time (DIP8 is off). It is stored in the microprocessor. It's value could be seen when setting [F.01] and can be revised and re-stored in the microprocessor. 2. Set conveying time by DIP switch (DIP8 is on) on the control box. DIP switch is working according to a binary system. Material conveying time set by DIP switch will not be stored in the micro-processor, but the machine will read the value each time you start the machine. You can check the value of [F.01] for conveying time set by DIP switch. It can be revised and stored into the microprocessor through control panel. The machine will read set value as material conveying time each time you start the machine. Action code: S.02	10 seconds	5-127 seconds	-
F.02	Material mixing time This function will be started simultaneously with material conveying. It is set as a percentage of conveying time: it's value is calculated by following formula: conveying time×[F.02]%. Set it's value as 0 to disenable it.	0% Not enabled	0-100%	-
F.03	Material mixing frequency setting [F.02] means to start material mixing after a certain times of material conveying. Set [F.02] as 1, which means to start material mixing at every material conveying. Set it's value as 0 to cancel material mixing.	1	1-9	-
F.04	First layer lockup When to enter first layer setting, if [F.04] is not set as 0, then the screen will switch to [F.99], and require you to input a password before setting [F.01]. If the password is incorrect, the screen will return to normal display mode. Set [F.04] as 0 to cancel the password.	0	0-999	-

At delivery, the machine was not coded. You can set a code for the machine. In case of losing the code, please contact our company.

4.4 Process Setting

4.4.1 Enter into process setting mode

Start the machine, press SET for about 1 sec. To enter basic setting mode. Then press SET and ENT at the same time to enter parameter [F.05] setting. [F.05] and it's value show alternatively. If you have set [F.12], the system will switch to

[F.98]. Enter correct password to enter [F.05], then press SET to switch to [F.12].

4.4.2 Modify a Parameter

Press ▲ to increase parameter value. Keep on pressing ▲ to quickly increase it's value until the maximum of it. Press ▼ to reduce parameter value. Keep on pressing ▼ to reduce it's value until the minimum of it. Press ENT to confirm parameter setting and store it's value into the micro-processor and to enter next setting item. If you did not change anything, press SET to enter into next setting item. Press SET to cancel parameter setting and return back to current setting screen. If you did not change anything, press ENT to enter into next setting item.

4.4.3 Finish Parameter Setting

Keep on pressing SET for about 1 sec. to return to normal display mode. If you did not touch any keys for 20 secretary, the machine will return to normal display mode without storing any changes of the parameter.

4.4.4 Process Parameter List

Para. code	Functions	Value		Note
F.05	Material conveying delayed time The delayed time between first material conveying and later conveying action. 0 stands for no delaying time. Action code: S.06	0 seconds	9990 seconds	10 seconds for unit
F.06	Filter screen cleaning time before material conveying 0 stands for no filter cleaning action. Action code: S.01	3 seconds	0-99 seconds	-
F.07	Filter screen cleaning time after material conveying 0 stands for no filter cleaning action. Action code: S.03	3 seconds	0-99 seconds	-
F.CT	Cycle of mesh cleaning Mesh cleaning is done after several times' suction	3 seconds	1~99 seconds	-
F.08	Check material discharging time Check material discharging time after material conveying. If there are directive signals, then the machine gets into next procedure. If not, add 1 to material shortage counter. When this situation continues until material shortage times exceed the setting value of [F.09], the machine will raise the alarm. Action code: S.04	10 seconds	0-99 seconds	-

Para. code	Functions	Value		Note
F.09	Material shortage alarm If there are not any materials for discharging for several times, the machine would sound the alarm. 1. The alarm will be reset if the machine can get material again. 2. Press ENT on the control panel to clear the alarm 3. Restart the machine. Action code: A.01	3	1-9	-
F.10	Material shortage counting and stop of the machine If there are not any materials for discharging, the machine would stop and sound the alarm. 1. Press ENT to clear the alarm. 2. Restart the machine. Set it's value as 99 to cancel this function. Action code: A.04	99	[F.09]-99	-
F.11	Setting waiting time before or after loading Set screen clean as 0, for either before or after each loading. So it is waiting to be shut before loading.If set 0 for screen clean after loading, so it is waiting to be shut after loading. Set as 0, which indicates no waiting before or after loading.	30	999	-
F.12	Second layer lockup When to enter scond layer setting, if [F.12] is not set as 0, then the screen will switch to [F.98], and require you to input a password before setting [F.05]. If the password is incorrect, the screen will return to normal display mode. Set [F.05] as 0 to cancel the password.	0	999	-

At delivery, the machine was not coded. You can set a code for the machine. In case of losing the code, please contact our company.

4.5 Special Process Setting

4.5.1 Enter into Special Step Setting Mode

Enter into setting mode according to the steps descripped in 4.4. Press SET to choose [F.11], then press SET for about 1 sec. to enter into the setting of [F.13]. [F.13] and it's value will show alternatively.

4.5.2 Modify a Parameter

Press ▲ to increase parameter value. Keep on pressing ▲ to quickly increase it's value until the maximum of it. Press ▼ to decrease parameter value. Keep on pressing ▼ to reduce it's value until the minimum of it. Press ENT to confirm parameter setting and store it's value into the microprocessor and

to enter next setting item. If you did not change anything, press ENT to enter into next setting item. Press SET to cancel parameter setting and return back to current setting screen. If you did not change anything, press SET to enter into next setting item.

4.5.3 Finish Parameter Setting

Keep on pressing SET for about 1 sec. to return to normal display mode. If you did not touch any keys for 20 seconds, the machine will return to normal display mode without storing any changes of the parameter.

4.5.4 Parameter List of Special Process Setting

Para. code	Functions	Value		Note
F.13	Buzzer working mode Setup buzzer working mode 0: uninterrupted sounding 1: Slow, interrupted sounding 2: Quick, interrupted sounding	0	0-2	-
F.14	Set buzzer sounding period Set buzzer sounding period: Set [F.13] as 999 to cancel buzzer sounding function.	999	999	-
F.15	First carbon brush alarm When carbon brush working hours [F.17] get to a certain point, [F.14] will raise the alarm. Please replace the carbon brushes. The alarm will last 5 minutes, and will repeat every 15 minutes until [F.17] set as 0. Set [F.14] as 0 to cancel this function. Action code: A.05	80 Unit 10 Hrs	0-999	-
F.16	Second carbon brush alarm When carbon brush working hours [F.17] get to a certain point, [F.15] will raise the alarm. Please replace the carbon brushes. The alarm will last 5 minutes, and will repeat every 15 minutes until [F.17] set as 0. Set [F.15] as 0 to cancel this function. Action code: A.06	100 Unit 10 Hrs	[F.14]-999	-
F.17	Third carbon brush alarm When carbon brush working hours [F.17] get to a certain point, [F.16] will raise the alarm until [F.17] set as 0. Please repalce the carbon brushes.Set [F.16] as 0 to cancel this function. Action code: A.07	110 Unit 10 Hrs	[F.15]-999	-

Para. code	Functions	Value		Note
F.18	Carbon brush usage record Checking and clear the working hours of carbon brush. Clear carbon brush working hours: set its value as 0, press ENT to confirm.	0	0-999 Set its alue as 0 to lear the record.	-
F.19	Motor startup protective switch Set to on or off the motor startup protective switch 0: if it is on, which indicates slow speed protection of the start up loading motor 1: if it is off, which indicates full speed protection of the start up loading motor.	0	0: soft start on 1: soft start off	-
F.20	Motor Delay Stop Time When motor delay stop, vaccum breaking valve is opened and suck up air, to cool conveying blower and avoid starting/stopping frequently. Olny suitable for SAL-UG/UGP Not suitable for SAL-U	0	0~999 seconds	-

At delivery, the machine was not coded. You can set a code for the machine. In case of losing the code, please contact our company.

4.6 Explanation of Operation Procedures

4.6.1 Operation Procedures

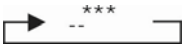
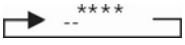
The machine can work without control panel connected with it. The following is an explanation of operation procedures.

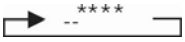
Indicators	Action code	Operation procedures	Relative parameter	Parameter description	
				Default	Range
Red light flickering	S. 01	Filter cleaning	F. 06	3 seconds	0-99 seconds
	S. 02	Material suction	F. 01	10 seconds	5-127 seconds
		Masterbatch suction	F.02	0%	0-100%
			F. 03	3	1-9 times
	S. 03	Filter cleaning and material falling into storage bin	F. 07	3 seconds	0-99 seconds
	S. 04	Wait until materials completely discharged	F. 08	10 seconds	0-99 seconds
	S. 05	Check alarm information (instantly completed, no display on control panel.)	-	-	-

	S. 06	Delayed time for material conveying.	F. 05	0 seconds	0-999 seconds
Green light shines	-	Time for material conveying confirmation	-	-	-

4.6.2 Alarms

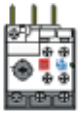
Alarm information display and relative solutions.

Red alarm light	Code	Possible reasons	Solutions	Remarks
	[A.01]	Material shortage alarm [F.9] 1. Material loading time is too short. 2. Can not get any materials. 3. Conveying hose blocked, 4. Not enough suction power.	1. Add material. 2. Increase material conveying time. 3. Stop the machine and check the conveying hose. The alarm will be cleared when the machine can again load the material, or by pressing ENT on the control panel or by cutting off power supply.	
	[A.03]	Filter trouble alarm 1. Filter blocked	1. Stop the machine to clean filter screen or replace it. The alarm will be cleared by cutting off the power or press ENT on the control panel.	
	[A.04]	Non-operation alarm [F.10] 1. After a certain period time of material shortage, the machine will stop working.	Please refer to the solutions of [A.01] or modify the value of [F.10]. The alarm will be cleared by cutting off the power or press ENT on the control panel. Please fix the control panel onto the machine and modify its value.	

Red alarm light	Code	Possible reasons	Solutions	Remarks
	[A.05]	First carbon brush alarm When carbon brush working hours [F.17] gets to a certain point(800 hrs), [F.14] will raise the alarm.	Please prepare the carbon brush for replacement. The alarm will last for 5 minutes. The machine will repeat the alarm every 15 minutes until you reset carbon brush working hour.	
	[A.06]	Second carbon brush alarm When carbon brush working hours [F.17] gets to a certain point(1000 hrs), [F.15] will raise the alarm.	Please replace the carbon brush and reset carbon brush working hour. The alarm will last for 5 minutes. Themachine willl repeat the alarm every 15 minutes until you reset carbon brush working hour.	
	[A.07]	Third carbon brush alarm When carbon brush working hours [F.17] gets to a certain point (1100 hrs), [F.16] will raise the alarm.	Please replace the carbon brush and reset carbon brush working hour. The machine won't stop the alarm until carbon brush working hour is reset.	

--Denotes the light is off, *Stands for flash of the light.

5. Trouble-shooting

Failures	Possible reasons	Solutions
Motor does not work long after material discharge.	1. Main power switch or control switch is off or poorly connected.	1. Turn on main switch and control switch and make sure they are well connected.
	2. Poor contact of magnetic proximity switch.	2. Adjust or replace.
	3. Signal wire is broken.	3. Reconnect
Motor keeps on working after material hopper is full-loaded.	Contactor malfunction.	Repair or replace contactor
Motor can not fully load material hopper, or machine sounds material shortage alarm.	1. No materials left for conveying.	1. Adding material.
	2. Air pipe breakage.	2. Firmly lock it or replace.
	3. Cloth filter is blocked.	3. Clean cloth filter.
Motor can not work.	Phase shortage or motor is burt out.	Check or replace.
Fuse melts each time you turn on the machine.	Short circuit or motor is burt out.	Check electrical circuit.
Motor overload alarm	1. Filter screen is blocked.	Clean the filter screen and press Reset on the overload relaly. 
	2. Phase shortage	Check the electrical circuit and press Reset on the overload relaly. 

6. Maintenance and Repair

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

6.1 Material Hopper

Clean material hopper periodically or when you find conveying capacity reduced. Please loose the spring clips, take down the hopper lid, and take out filter screen. Remove all the dusts and fines on filter screen and inside of material hopper.

6.2 Main Body

Take out the air filter to make it clean periodically or when you find conveying capacity reduced. Always keep smooth air flow through air filter to maintain good conveying capacity.

Cleaning steps:

1) Loosen spring clips of filter cover and butterfly screws, and take out the filter.
2) Remove the dusts adhering to the filter to keep good suction power.

6.3 Glass Tube

When you find that there are material grains clinging to the inner surface of glass tube, please make it clean timely to keep proper function of the machine.

1) Loosen the pipe clip of the hopper, and take out the hopper.
2) Loosen the flange of glass pipe, take out the glass pipe and clean it.

 Note !

Be careful not to break glass tube during cleaning.

6.4 Weekly Checking

1) Check if there are broken electrical wires or not. Replace the broken wires immediately.
2) Check the function of the keys on the control panel.
3) Check if screws at material inlet and the seal ring are loose or not.

Note !

Cut off power supply when you check electrical wires.

6.5 Monthly Checking

1) Check if the clips of hopper lid is loose or not.
2) Check if the reverse stopping flap is out of shape. If it is, please replace it.
3) Check the performance of magnetic proximity switch or photo sensor. If there is poor contact, place fix the problem or replace it.

6.6 Maintenance Schedule

6.6.1 About the Machine

Model _____ SN _____ Manufacture date _____

Voltage_____Φ_____V Frequency _____ Hz Power _____ kW

6.6.2 Installation & Inspection

☐ Check the pipes are correctly connected.

☐ Check all the connections are firmly fixed by clips.

☐ Check that the hopper base is firmly locked.

Electrical Installation

☐ Voltage: _____ V _____ Hz

☐ Fuse melting current: One-phase: A _____ Three-phase: _____ A

☐ Check phase sequence of power supply.

6.6.3 Daily Checking

___/___/___
- ☐ Check main power switch
- ☐ Check filter bag
- ☐ Check motor performance

___/___/___
- ☐ Check main power switch
- ☐ Check filter bag
- ☐ Check motor performance

___/___/___
- ☐ Check main power switch
- ☐ Check filter bag
- ☐ Check motor performance

___/___/___
- ☐ Check main power switch
- ☐ Check filter bag
- ☐ Check motor performance

___/___/___
- ☐ Check main power switch
- ☐ Check filter bag
- ☐ Check motor performance

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- ☐ Check filter bag
- ☐ Check motor performance

___/___/___
- ☐ Check main power switch
- ☐ Check filter bag
- ☐ Check motor performance

6.6.4 Weekly Checking

___/___/___

- ☐ Check if there are broken electrical wires
- ☐ Check if there are loose electrical connections
- ☐ Check flange screws at material inlet
- ☐ Check air filter

___/___/___

- ☐ Check if there are broken electrical wires
- ☐ Check if there are loose electrical connections
- ☐ Check flange screws at material inlet
- ☐ Check air filter

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- ☐ Check if there are loose electrical connections
- ☐ Check flange screws at material inlet
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- ☐ Check if there are loose electrical connections
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- ☐ Check if there are broken electrical wires
- ☐ Check if there are loose electrical connections
- ☐ Check flange screws at material inlet
- ☐ Check air filter

___/___/___

- ☐ Check if there are broken electrical wires
- ☐ Check if there are loose electrical connections
- ☐ Check flange screws at material inlet
- ☐ Check air filter

6.6.5 Monthly Checking

___/___/___

- ☐ Check if the spring clip of hopper lid is loose or not
- ☐ Check if reverse stopping flap is out of shape or not
- ☐ Check the performance of magnetic proximity switch/photoelectrical sensor

___/___/___

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- ☐ Check if reverse stopping flap is out of shape or not
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- ☐ Check if the spring clip of hopper lid is loose or not
- ☐ Check if reverse stopping flap is out of shape or not
- ☐ Check the performance of magnetic proximity switch/photoelectrical sensor

___/___/___

- ☐ Check if the spring clip of hopper lid is loose or not
- ☐ Check if reverse stopping flap is out of shape or not
- ☐ Check the performance of magnetic proximity switch/photoelectrical sensor