

CHIAO BANG

OPERATION MANUAL

CB-618M

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I . INSTALLATION OF MACHINE

1. DIMENSION & FLOOR REQUIREMENT:

The minimum space for machine:

For your convenience to operate, please take the walkway into consideration. Therefore, the ideal space for machine should be:

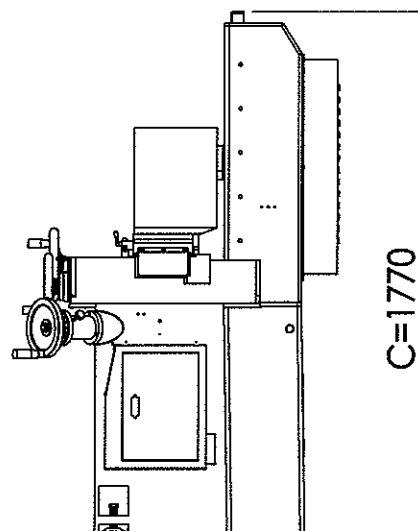
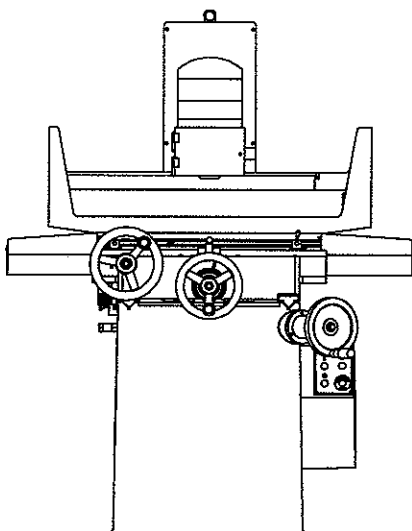
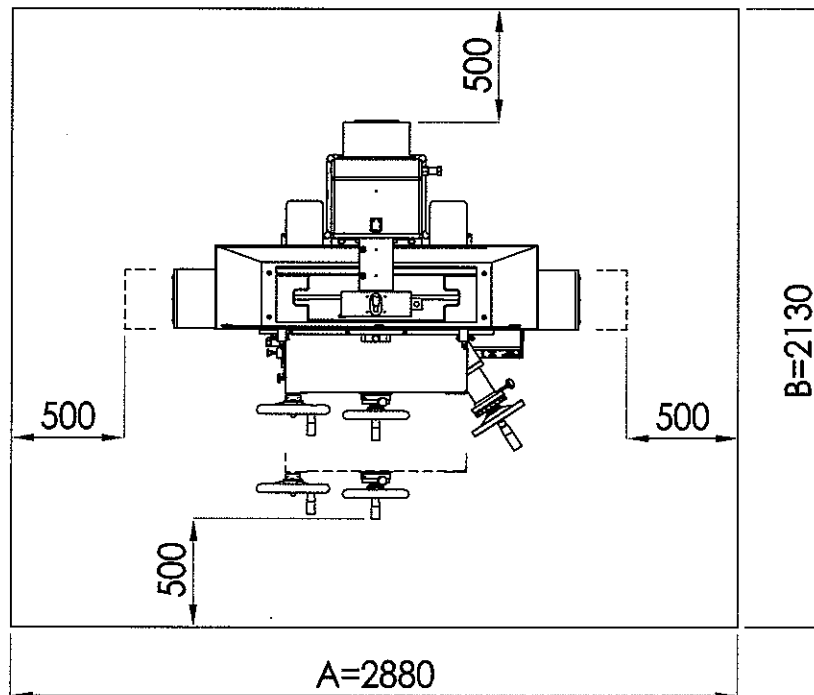
CB-618ASD:

A - 2880MM (115")

B - 2130MM (85")

C - 1770MM (70")

Note: Keep the machine away from the environment which might cause any explosion.



I . INSTALLATION OF MACHINE

2. REQUIREMENT OF THE GROUND:

Firm, steady, well constructed ground, and a well adjusted levelness of machine are the essential elements for precision grinding. The heat from the sunshine, and any vibration might also influence the precision.

The foundation for the machine needs:

- (1)The bearing strength for machine should be more than 2 tons/m².
- (2)Avoid the sun shining directly on the grinder.
- (3)Avoid locating machine near other machines, such as Press or EDM.
- (4)Good ventilation.
- (5)Please install your machine based on the foundation plan.
- (6)Foundation drawing please refer to the following:

3. REQUIREMENT OF THE ENVIROMENT:

As there's no anti-explosive electrical device, this machine cannot be operated in a potentially explosive environment. The requirement of the environment for this machine is as the below:

- (1)Temperature: 5~40°C; However, if you're doing very precise grinding, please keep the temperature around 20°C.
- (2)Relative humidity: 30%~95%, no dew allowed.
- (3)Atmosphere: don't allow dust, corrosive fumes, salt, or acidic air in the neighborhood.
- (4)Avoid any vibrating environment.
- (5)Avoid sun shining directly on the machine.
- (6)Avoid the disturbance from electromagnetism.

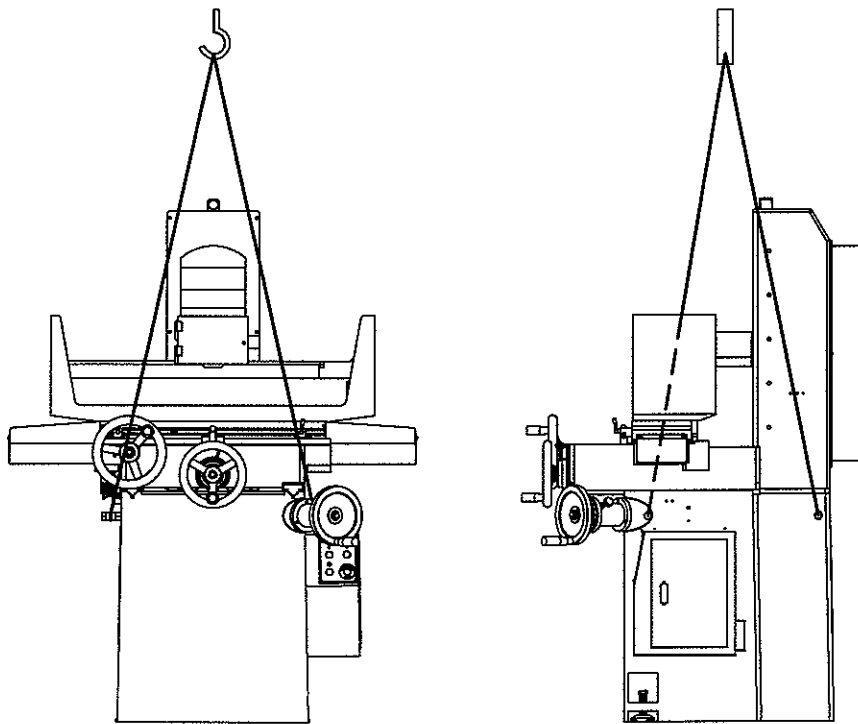
Light level: above 200 Lux.

I . INSTALLATION OF MACHINE

4. TRANSPORTATION OF MACHINE:

N.W: 740~840 KGS; G.W: 840~940 KGS

- (1) CRANE LIFTING: Use steel cable or belt for hanging.
(As shown on the below drawing.)

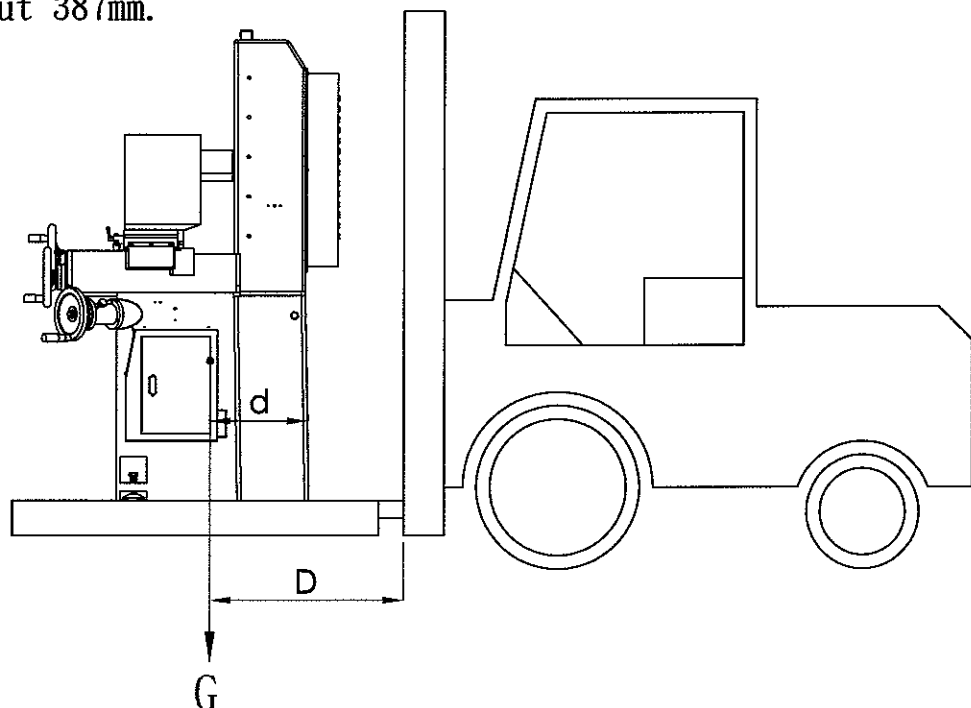


- (2) FORK LIFTING: Use the fork lift for transportation.

D: Distance the shorter the better.

G: Center of gravity.

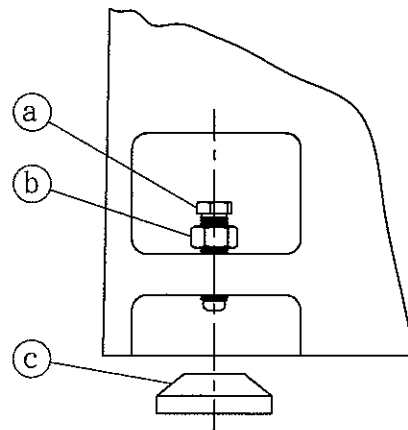
d: About 387mm.



I . INSTALLATION OF MACHINE

5. LEVELING BOLT & PAD

- (1) Lock the leveling bolts and nuts onto the basement, and put the leveling pads under the machine. Lay down the machine carefully and adjust the leveling bolt to set at the center of the leveling pad.
- (2) Follow the above to locate every leveling bolt on each pad, but leave the nuts un-tightened.



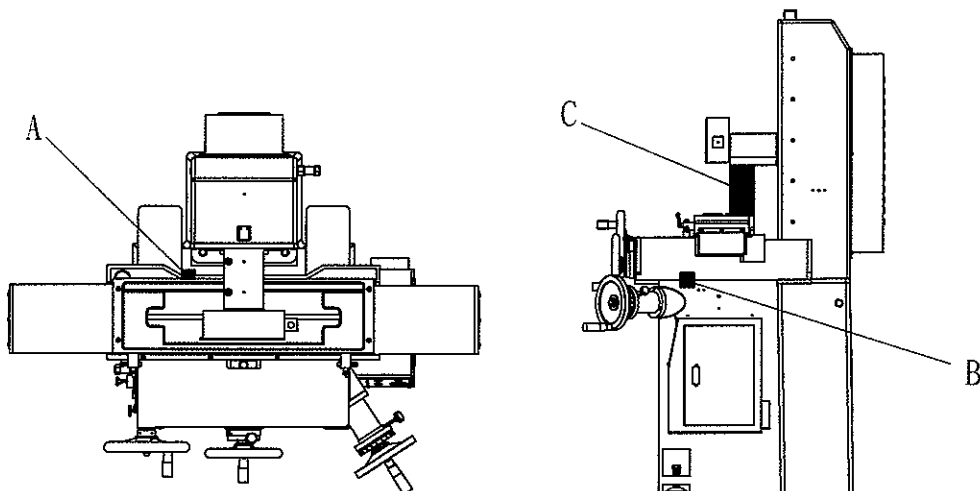
- a. Leveling bolt
- b. Screw nut
- c. Leveling pad

6. REMOVE THE CLAMPS

When the machine is fixed on the required location, please remove the clamps. Do not cast away the clamps, they could be prepared for next transportation.

NOTE: (1) Before dismantling the crossfeed (B) and longitudinal (A) fixing blocks, please don't operate the handwheels to move the machine in case of any damage.

- (2) Using the vertical feed handwheel to move the spindle upward to take off the fixing wooden block (C).



I . INSTALLATION OF MACHINE

7. REMOVE DESICCANT & CLEAN THE ANTI-RUST OIL:

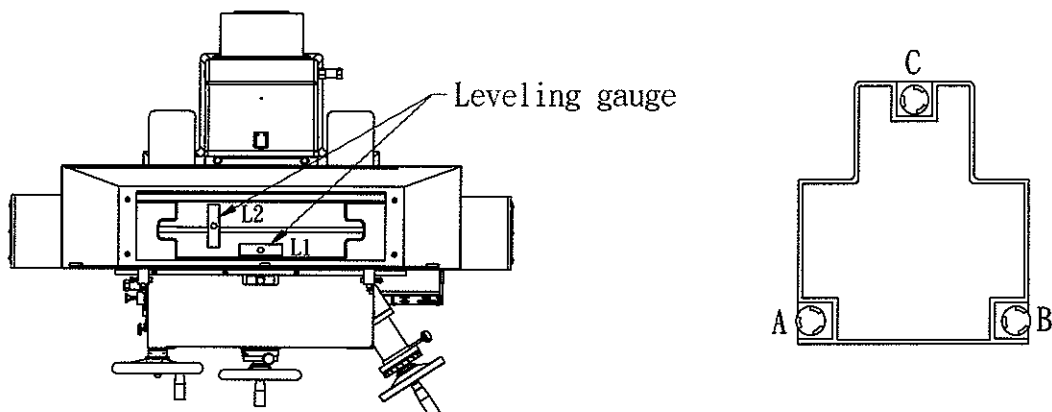
The machine has coated with the anti-rust oil and hanged desiccant to prevent rusting.

The brown cream on the surface of machine is anti-rust oil.

We coated the anti-rust oil on the table, spindle nose....., etc., and the desiccant will be put inside the electrical box, or hang on the table...., etc. After installation, please take off the desiccant and use cleaning rag with diesel to wipe off the anti-rust oil. Do not use any liquid that might corrode metal to do the job.

8. LEVELNESS ADJUSTMENT:

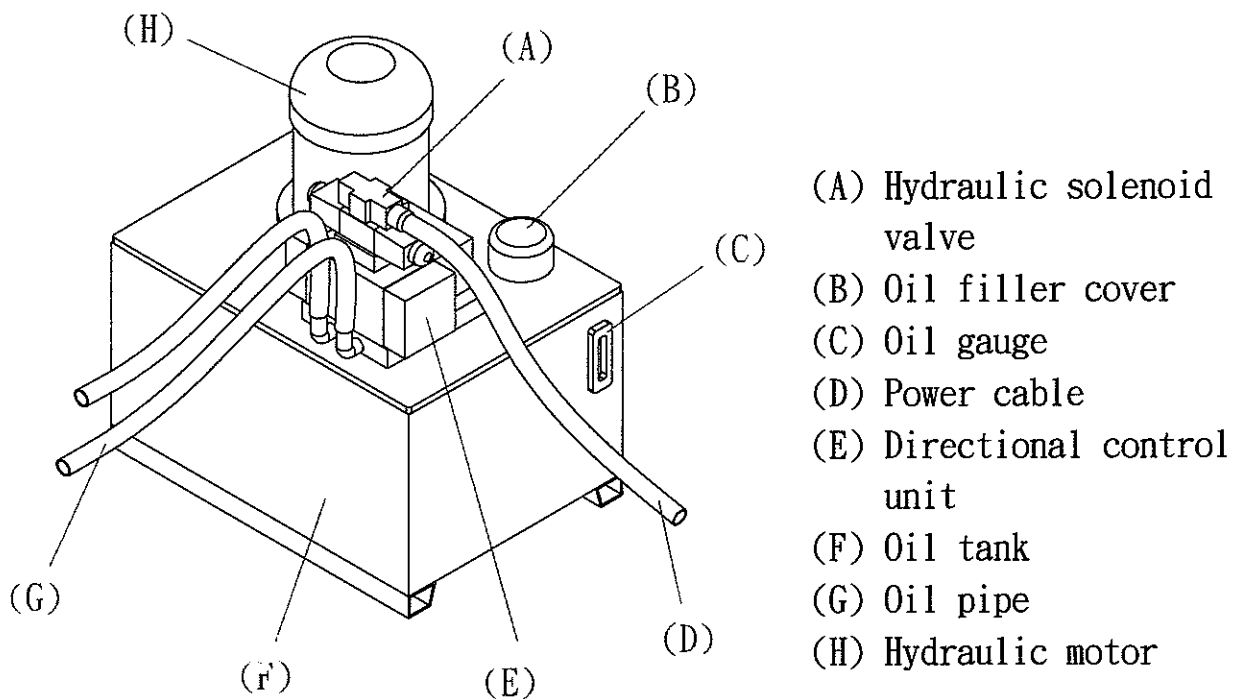
- (1) Necessary tools: Leveling gauge x 2 sets (Tolerance: 0.02mm);
Spanner x 2 sets (M26 & M32).
- (2) Clean up the table surface or magnetic chuck, and put 2 sets of leveling gauge on by crosswise and longitudinal direction (L1 & L2).
- (3) First, adjust the leveling bolts A & B to set the leveling bubble of leveling gauge L1 at the center (tolerance maintains within 1 scale). Secondly adjust the leveling bolt C to keep the bubble of the leveling gauge L2 at the center (tolerance maintains within 1 scale).
Repeat the adjustment methods until the tolerance of both leveling gauges satisfy the precision requirement.
- (4) After the adjustment, tighten the screw nuts.
- (5) Newly set up machine should check the levelness once in a week.
And after that, check up should be made every six months.



I . INSTALLATION OF MACHINE

9. HYDRAULIC SYSTEM SET UP:

- (1) Hydraulic oil capacity: total oil tank is about 13 liters.
- (2) Please check the drawing below about the oil inlet and outlet of hydraulic system. First, please locate the hydraulic tank in the right and beside the machine. Secondly, connect the hydraulic pipes according to the tags attached on the pipes and the oil tank. Thirdly, fill in sufficient oil with recommended oil brand. The oil level must maintain within the required amount shown on the oil gauge.



I . INSTALLATION OF MACHINE

(3) Connect the power cables into the electrical box by the labels on them.

To ensure the performance of hydraulic system, please obey the below:

(1)First-time oil replacement should be done after 3 months operation.

(2)Replace the oil and the filter at an interval of 6 months after the first replacement.

(3)Check the pressure of pump within 12~16 Kg/cm².

*Hydraulic system is properly adjusted before shipment.

Unless it's necessary, please don't re-adjust it casually.

*Clean the filter of hydraulic tank every 6 months. Please discard the waste material according to the government sanitation or environmental laws.

Please be sure to fill the following suggested oil:

BRAND	TYPE	BRAND	TYPE
SUN	SUNVIS 916	SHELL	TELUS 32
SHOWA	A-R32	MOBIL	D. T. E 24
ESSO	NUTO H32	TEXACO	LUBE TAC #2
BP	ENERGOL HLP 32	ARAL	VITAM GF 32

10. AUTO LUBRICATION OIL CIRCULATION SYSTEM:

(1)With the spindle activation, this system starts immediately to constantly deliver the lubrication oil to necessary guide ways for smoothness and prevent wear out.

(2)A lubrication oil gauge (G) mounted on the top of the column for monitoring. Whenever the machine is on, it's obvious to check the oil from this gauge.

(3)Recommended oil brand: CPC #32 SLIDEWAY OIL or ISO #G68

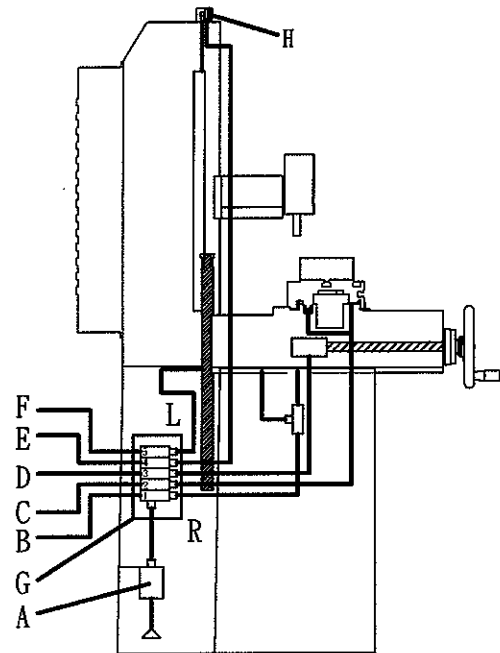
(4)Oil capacity: 4 liters.

I . INSTALLATION OF MACHINE

10. AUTO LUBRICATION OIL CIRCULATION SYSTEM:

(5)Parts list:

- F. Vertical feed screw
- E. Vertical slideways
- D. Cross feed screw
- C. Saddle seat slideways
- B. Base seat R/L slideways
- G. Oil distributor
- A. Lubrication oil pump
- H. Lubrication oil gauge



Note: Diseases of the skin may be caused by continuous contact with the oil, particularly with neat oil, and also with soluble oil. The following precautions should be taken:

1. : Avoid unnecessary contact with the oil.
2. : Wear protective clothing.
3. : Use protective shields.
4. : Do not wear oil soaked or contaminated clothing.
5. : After work thoroughly wash all parts of the body that has contact with the oil.
6. : Change the oil regularly.
7. : Dispose the oil correctly and properly.

I . INSTALLATION OF MACHINE

11. REQUIREMENT OF THE ELECTRICITY:

- (1)Voltage: 3 Phases, AC voltage which is decided by customers, rated voltage: 0.9~1.1.
- (2)Frequency: 50/60Hz, 0.99~1.01 rated frequency.
- (3)Voltage for electromagnetic chuck: Max. DC 110V (optional accessory).
- (4)Electricity consumption: 3 KVA.
- (5)Connecting wire: 2mm (R, S, T, E)
- (6)Check the rotation direction of the spindle motor, hydraulic motor and so on after the wire connection. Make sure all the motors rotation is by clockwise. We've done the test before the shipment, if one of the motors rotation is normal, the rest will be the same.

II. SAFETY PRECAUTIONS

Safety first!

We're glad to provide the information for using machines safely, to assist and keep safety while you're working, and to help avoiding any damage to the machine. We present this manual for your reference.

Please check if there's any pages missing in your manual as soon as you receive the machine. Let us or the agent nearby know if there's any insufficiency.

Put your manual near the machine in case you want to read it. Also keep the manual carefully so that you'll be able to read it any time you want.

Please use your experience and the information from this manual to get the most secure working environment.

1. GENERAL OPERATING SAFETY PRECAUTIONS:

- 1.1. : Machine usage - Obey every message and instructions you learn from the manual.
- 1.2. : Only an operator who is well trained for grinding machines should operate and maintain the machine.
- 1.3. : Please read and understand the manuals before using the machines.
- 1.4. : Keep the working area clean, and leave no oil spot.
- 1.5. : Do not wear gloves while operating machines.
- 1.6. : Please wear suitable outfit while operating machines.
Tie up your sleeve links and don't wear any necktie.
- 1.7. : Do not touch any moving or rotating parts of the machine.
- 1.8. : Do not touch or open the parts where we have the electrical signs on, such as electrical box.
- 1.9. : Turn off the power before maintenance or leaving machine unattended.
- 1.10. : Make sure you have enough light in your working area.

II. SAFETY PRECAUTIONS

1. GENERAL OPERATING SAFETY PRECAUTIONS:

- 1.11. : Prepare non-electric-conductor fire extinguisher (dry powder) in case of any fire danger.
- 1.12. : Stop the machine immediately if anything unexpected happens.

2. SAFETY PRECAUTIONS FOR OPERATING MACHINE:

For using this machine safely, please ask every operator, maintenance technician or any other people to obey the safety precautions. To obey the safety precautions below will reduce the danger of any possible damage.

- 2.1. : This machine can only grind metal workpiece. But do not grind magnesium or magnesium alloy.
- 2.2. : This machine cannot be used in a place where there's gas which is easy to burn or explode.
- 2.3. : Do not disassemble any protective guard before using.
- 2.4. : Please read and understand your manual before operation.
- 2.5. : Check the position of emergency stop buttons and other stop button before operation.
- 2.6. : Confirm the function of the buttons before operation.
- 2.7. : Wear safety glasses.
- 2.8. : Make sure every switch is in the position of "OFF" before operation.
- 2.9. : Require people with experiences to balance and install the grinding wheel.
- 2.10. : Check the running direction of the grinding wheel before operating.
- 2.11. : Turn on the power to rotate the grinding wheel about five minutes at least, then start to work.
- 2.12. : Check if the workpiece is secure on the table or magnetic chuck and is very steady before operation.
- 2.13. : Stop the movement of the table before adjusting the travel of cross and longitudinal movement.

II . SAFETY PRECAUTIONS

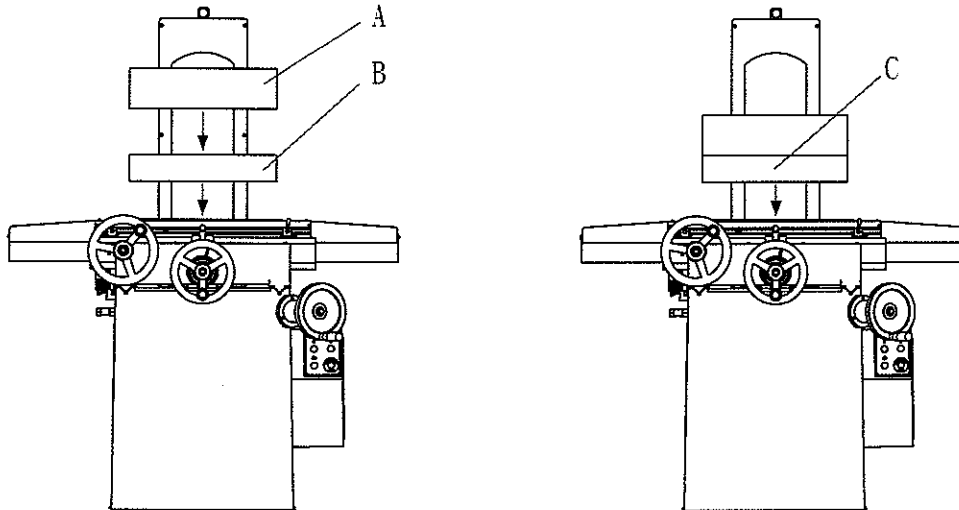
2. SAFETY PRECAUTIONS FOR OPERATING MACHINE:

- 2.14. :Before changing the procedure of grinding, make sure the machine stops completely.
- 2.15. :Never use any coolant liquid that is easy to burn or poisonous.
- 2.16. :The grinding wheel of this machine should be able to handle at least 2000M/min. speed.
- 2.17. :Do not grind on the side of the grinding wheel.
- 2.18. :Do not change any electrics or parts of machine.
- 2.19. :Require qualified people to maintain the electrical parts of machine.
- 2.20. :Do not tear off the warning signs on the machine. If they are not clear or damaged, please contact your agent or our sales department for replacement.
- 2.21. :Never mount on a workpiece too large for the machine.
- 2.22. :Use the correct lifting equipment for handling.
- 2.23. :Never use excessive depth of grinding or feed rate.
- 2.24. :Do not run the machine unattended.
- 2.25. :Turn off the coolant before stopping wheel.
- 2.26. :Do not grind the material for which the wheel is not designed.
- 2.27. :Dress the wheel regularly to avoid loading.

II. SAFETY PRECAUTIONS

3. TABLE LOADING CAPACITY:

A = Workpiece weight: 160KGS, B = Magnetic chuck weight: 20KGS,
C = A+B Total weight: 180KGS



4. GENERAL GRINDING:

- (1). Grinding volume: If it's for mass grinding volume, it's recommended choosing low grain size grinding wheel (about #30~#36), and set the dressing speed fast.
- (2) If it's for smooth/polishing surface grinding, it's recommended choosing high grain size grinding wheel (about #46~#80), and set the dressing speed low.
- (3) Table deforming: Mostly, the reason for this is set the grinding value too much, grinding face gets worn out or less of cooling. Find the reason and fix it.
- (4) Workpiece burnt out: if this happens, mostly the reason is the grinding wheel gets worn out or too much chips stuck in the grinding wheel.

NOTE: Correctly choosing suitable grinding wheel and proper operation has effective influence on the grinding performance.

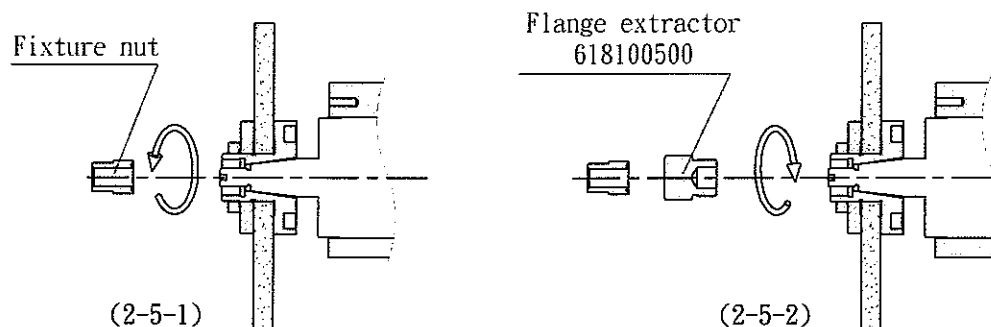
II. SAFETY PRECAUTIONS

5. GRINDING WHEEL ASSEMBLY:

- (1) Choosing correct grinding wheel and do the sound test to decide which grinding wheel is suitable for your production. Please check the below:
 - a. Check if there's any crack, damage or notch in the wheel. Abandon the wheel with any of the above problem.
 - b. See if there's any label or paper on the wheel, and don't tear them off.
 - c. Check if there's anything between flange and the wheel. Clean it up before set up.
 - d. See if the wheel got deformed. If it is, abandon it.
- (2) Tap the wheel with a wooden hammer, listen if there's any metal sound, and also change the places you tap to listen if there's any different sound. Cracks of the wheel will reveal by different sound.
- (3) After using the grinding wheel for a period of time, check and tighten the wheel with the flange again.

6. GRINDING WHEEL ENGAGE/DISENGAGE PROCEDURE:

- ENGAGE:(a) Clean the contact surface of the spindle taper and the I.D. of wheel flange, and apply some oil on. Then it's OK to put the wheel & flange set onto the spindle.
- (b) Screw up the fixture nut by counter-clockwise direction to fasten the wheel & flange set on the spindle. (2-5-1)
- DISENGAGE: Loosen the fixture nut and take it off. Then screw in the flange extractor to draw out the wheel & flange set from the spindle. (2-5-2)

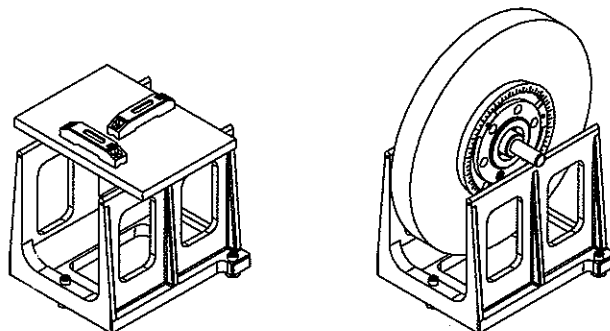


II. SAFETY PRECAUTIONS

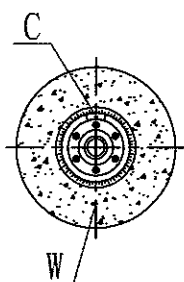
7. GRINDING WHEEL BALANCING ADJUSTMENT:

In order to obtain fine surface finish, the grinding wheel must be checked and re-balanced periodically. A standard and well balanced grinding wheel is supplied from the grinder manufacturer. Please note the following procedure for balancing.

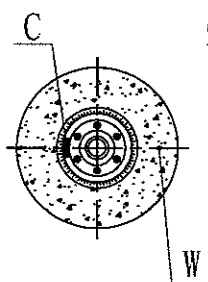
- (1) Put the balancing stand on a steady table or ground, and use the leveling gauge to adjust the levelness of the balancing stand. (2-6-1)
- (2) Let the wheel roll freely on the stand to find out its gravity center "W" and mark it on the wheel. (2-6-2)
- (3) Insert a balancing block into the opposite side as "C", and rotate the wheel 90 degrees to check which side is heavier. (2-6-3)
- (4) Insert another balancing block on heavier side as "K", in which is on the same arc from "C" point. (2-6-4)
- (5) Turn the wheel 90 degrees to check the balance of the wheel. If it's still not well balanced, repeat the above method until the wheel balance is done. If it requires to do the grinding on different workpiece material, it's better to change the wheel with the flange set to save time for balancing. (2-6-5)



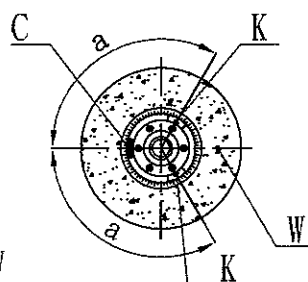
(2-6-1)



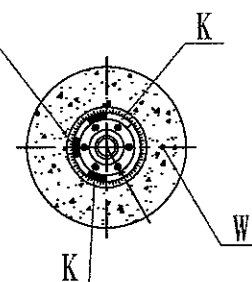
(2-6-2)



(2-6-3)



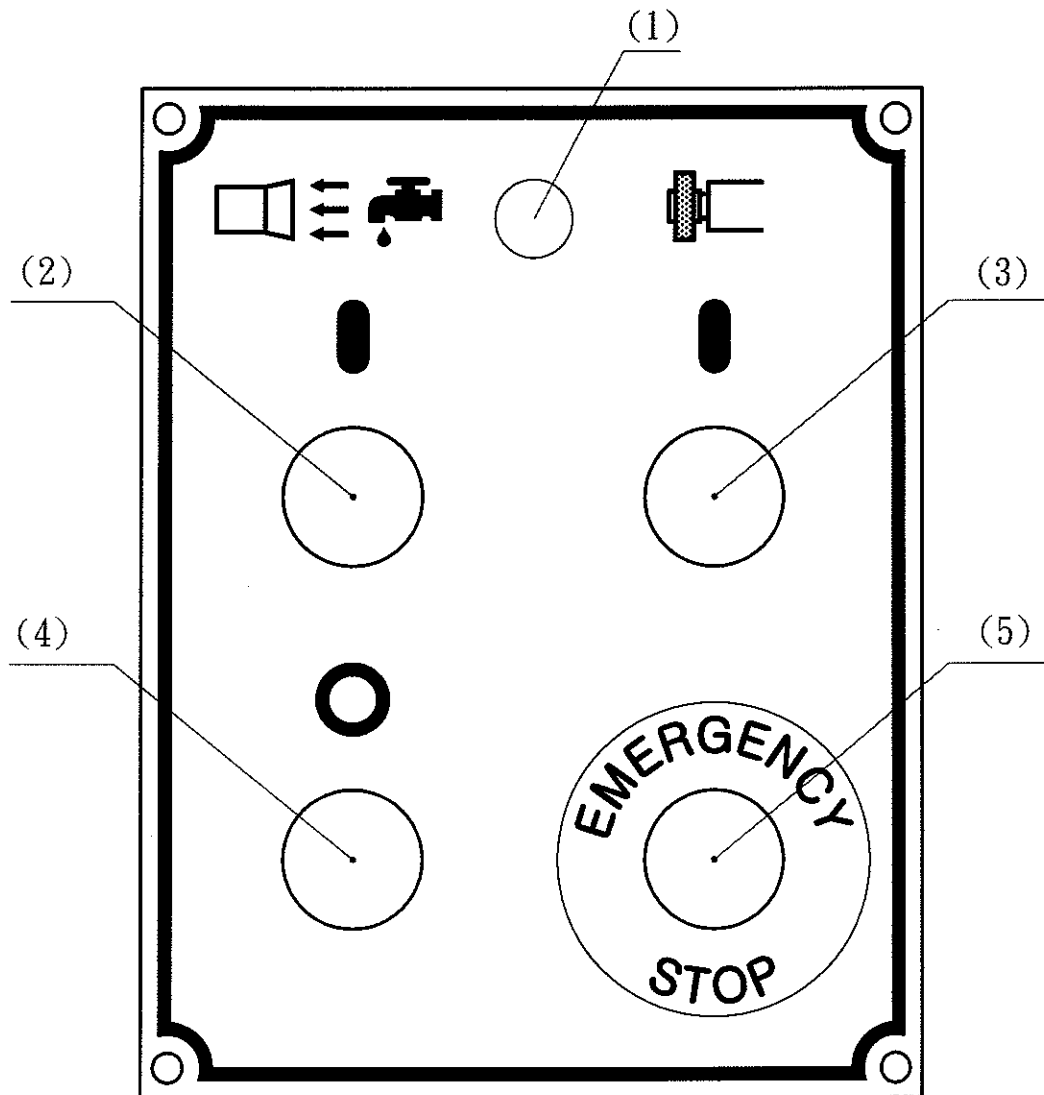
(2-6-4)



(2-6-5)

II . SAFETY PRECAUTIONS

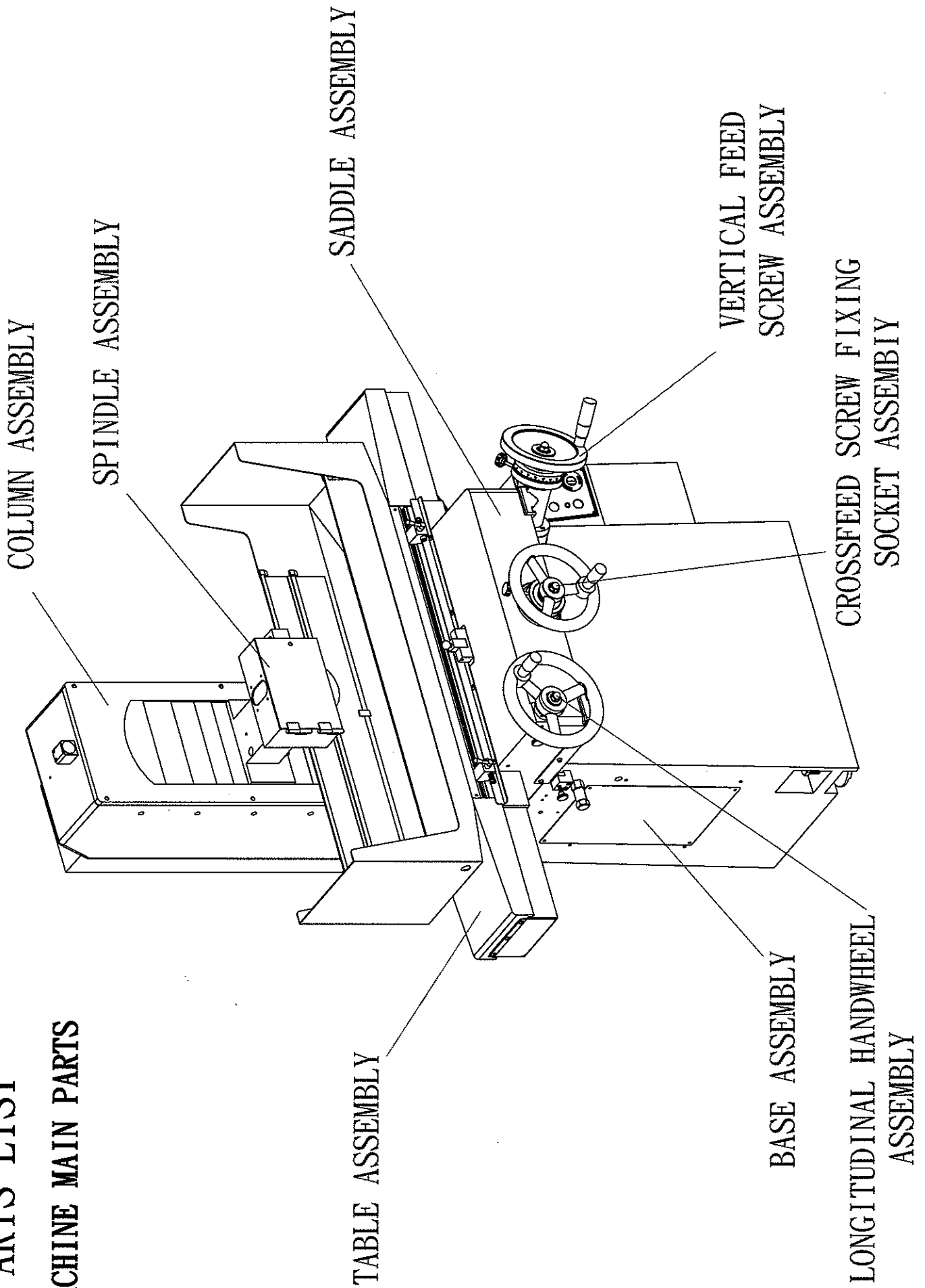
8. CONTROL PANEL (MANUAL TYPE)

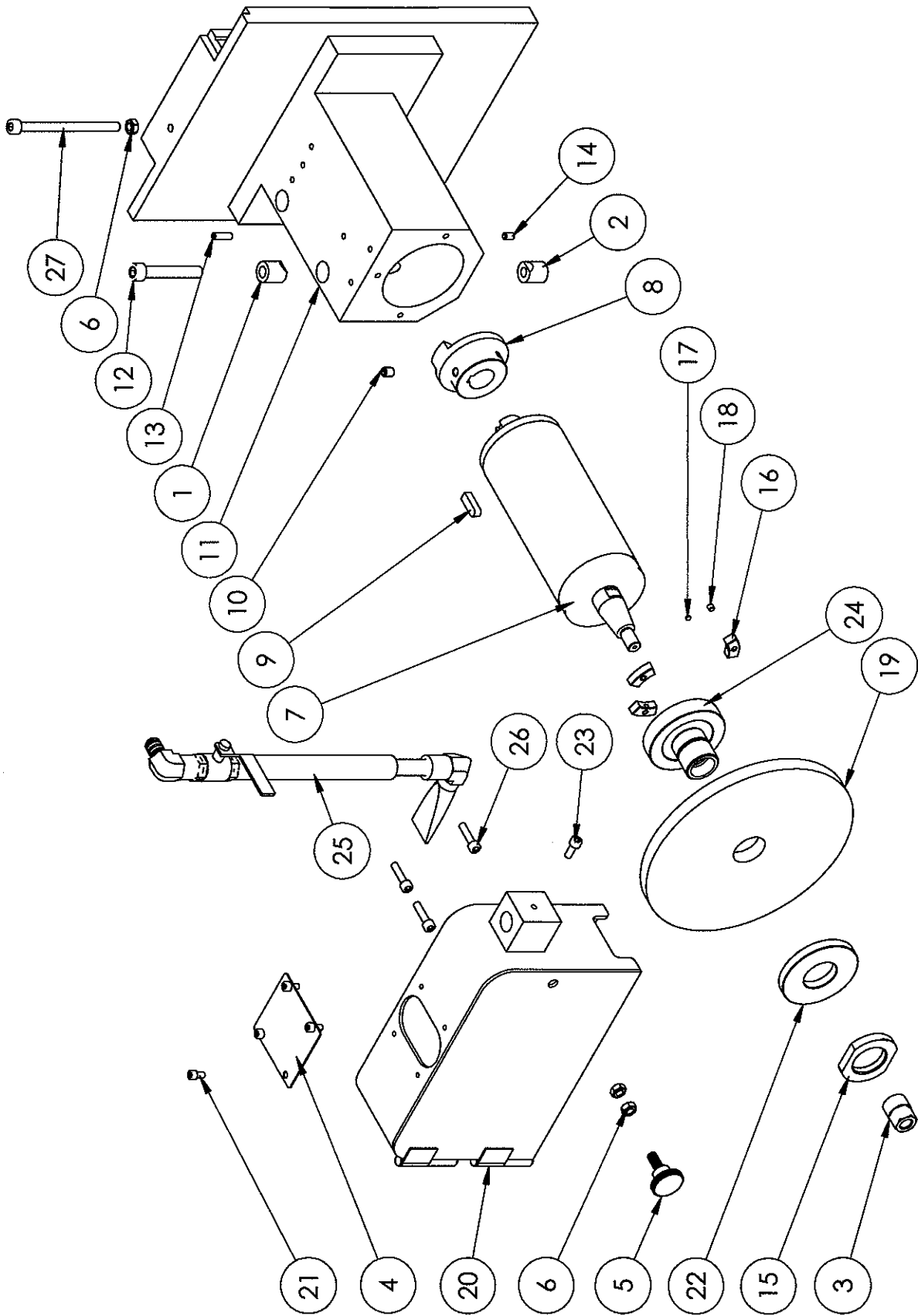


- (1) Power supply indication light: With the light on, it means the power supply is normal.
- (2) Coolant on button: Press this button, with the light on, it means the coolant system is activated.
- (3) Spindle on button: Press this button, with the light on, it means the spindle is activated.
- (4) Coolant off button: Press this button, the coolant system will stop running.
- (5) Emergency stop button: Press this button will shut down all the functions in the machine.

III. PARTS LIST

1. MACHINE MAIN PARTS



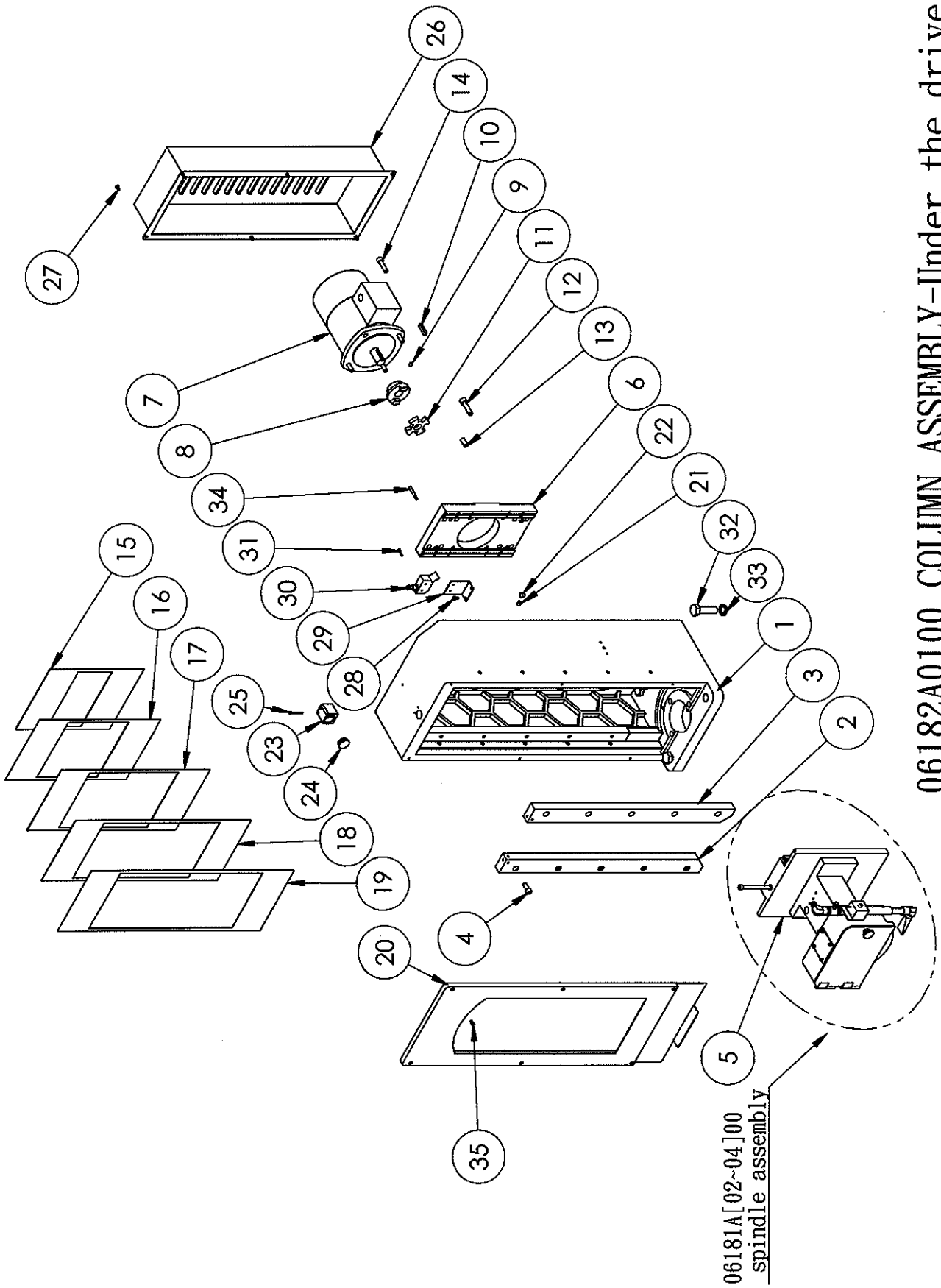


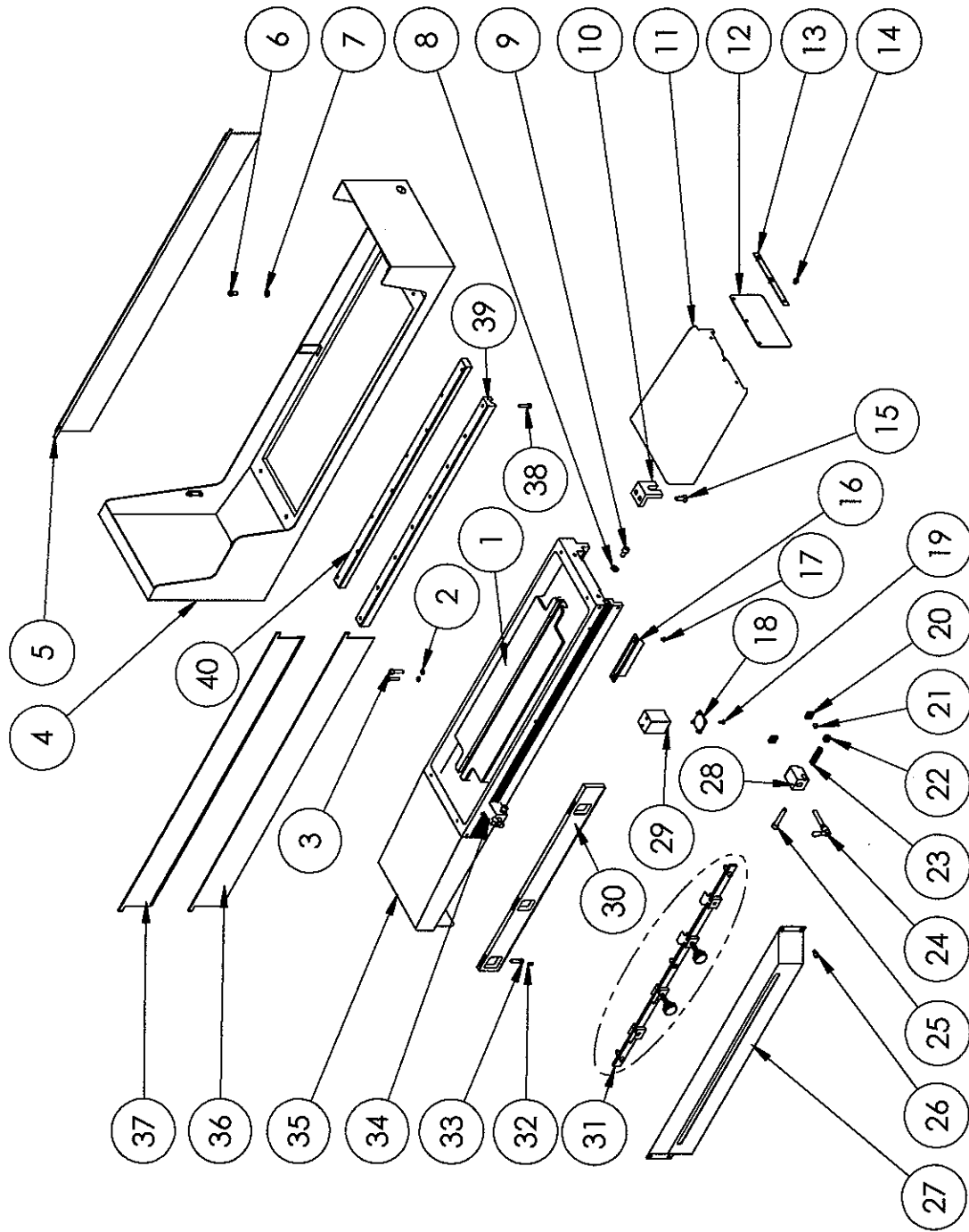
06181A0300 spindle assembly

06181A0300 spindle assembly

NO.	PART NO.	DESCRIPTION	Q, TY	NOTE[SPEC.]
1	06181010A0	spindle fixed block A	2	
2	06181010B0	spindle fixed block B	2	screw tooth
3	0618102000	flange locking nut	1	
4	06181001B0	cover plate	1	
5	3060405400	wheel guard handle	1	
6	NH000000M8	hex. Nut	3	M8x1.25Px12Wx6H
7	06181A0100	Spindle assembly	1	
8	0618101100	motor coupling	1	
9	KEYS080725	key	1	8x7x25
10	BHU0081210	Inner hex. headless screw	3	M8-10L
11	0618100900	spindle housing	1	
12	BH00101560	inner hex. Screw	2	M10x1.50Px60L
13	BHU0061020	Inner hex. headless screw	2	M6x1.0Px20L
14	BHU0061010	Inner hex. headless screw	2	M6x1.0Px10L
15	FA0S10C350	flange cover	1	
16	FA0010B350	balancing block	3	33130-92-004
17	SB01000004	steel ball	3	$\phi 4$
18	BHU0050805	Inner hex. headless screw	3	M5-5L
19	WH00205133	grinding wheel	1	205x13x31.75
20	0618100100	wheel guard	1	
21	BH00050810	inner hex. Screw	4	M5x0.8Px10L
22	FA0S10B350	flange plate	1	
23	BH00061016	inner hex. Screw	1	M6x1.0Px16L
24	FA0010A350	Flange body	1	
25	06181A2100	Spray nozzle set	1	
26	BH00061025	inner hex. Screw	3	M6x1.0Px25L
27	BH00081211	inner hex. Screw	1	M8x1.25Px110L

06182A0100 COLUMN ASSEMBLY-Under the drive

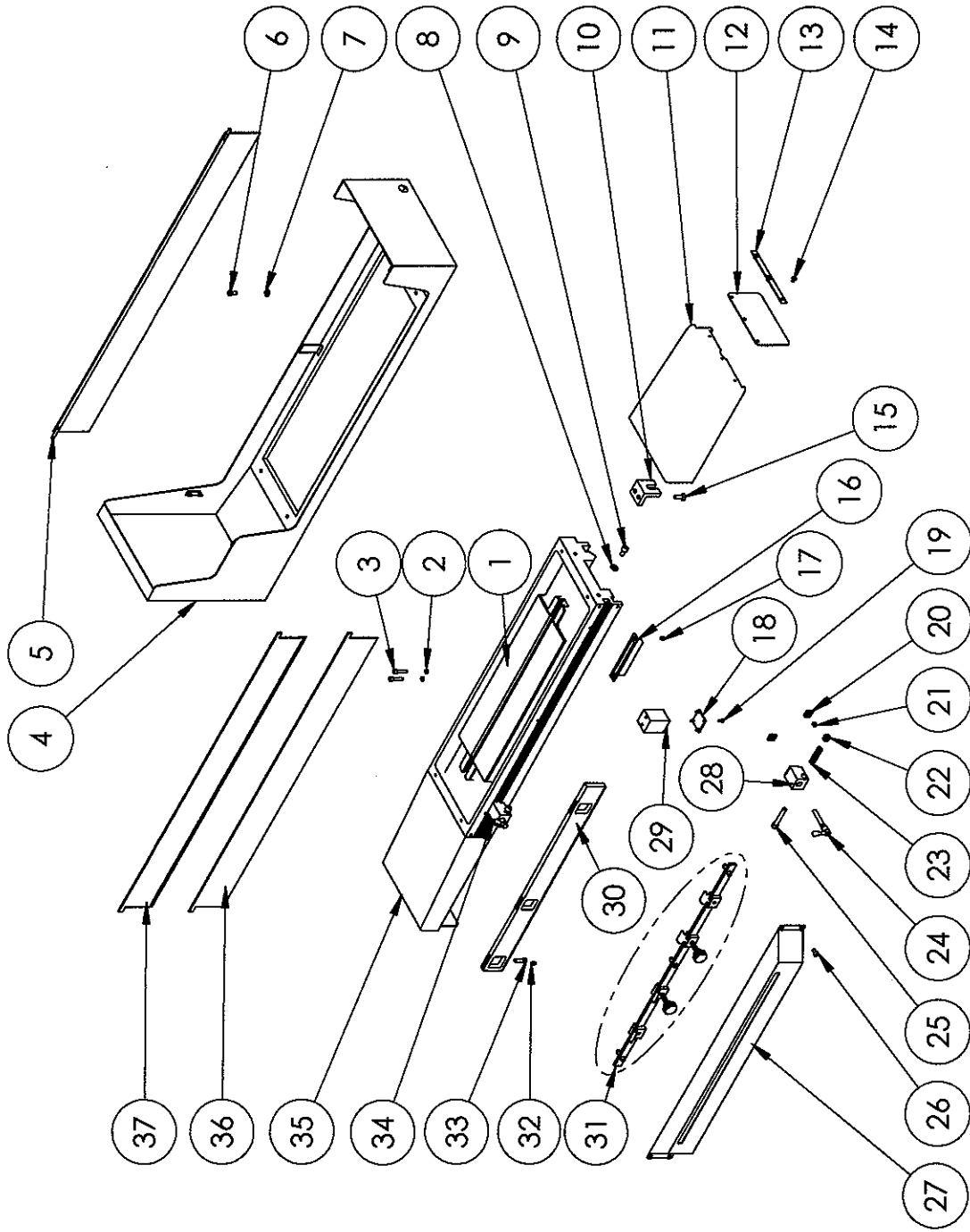




06183A0100 TABLE ASSEMBLY(ball way type)

06183A0100 TABLE ASSEMBLY(ball way type)

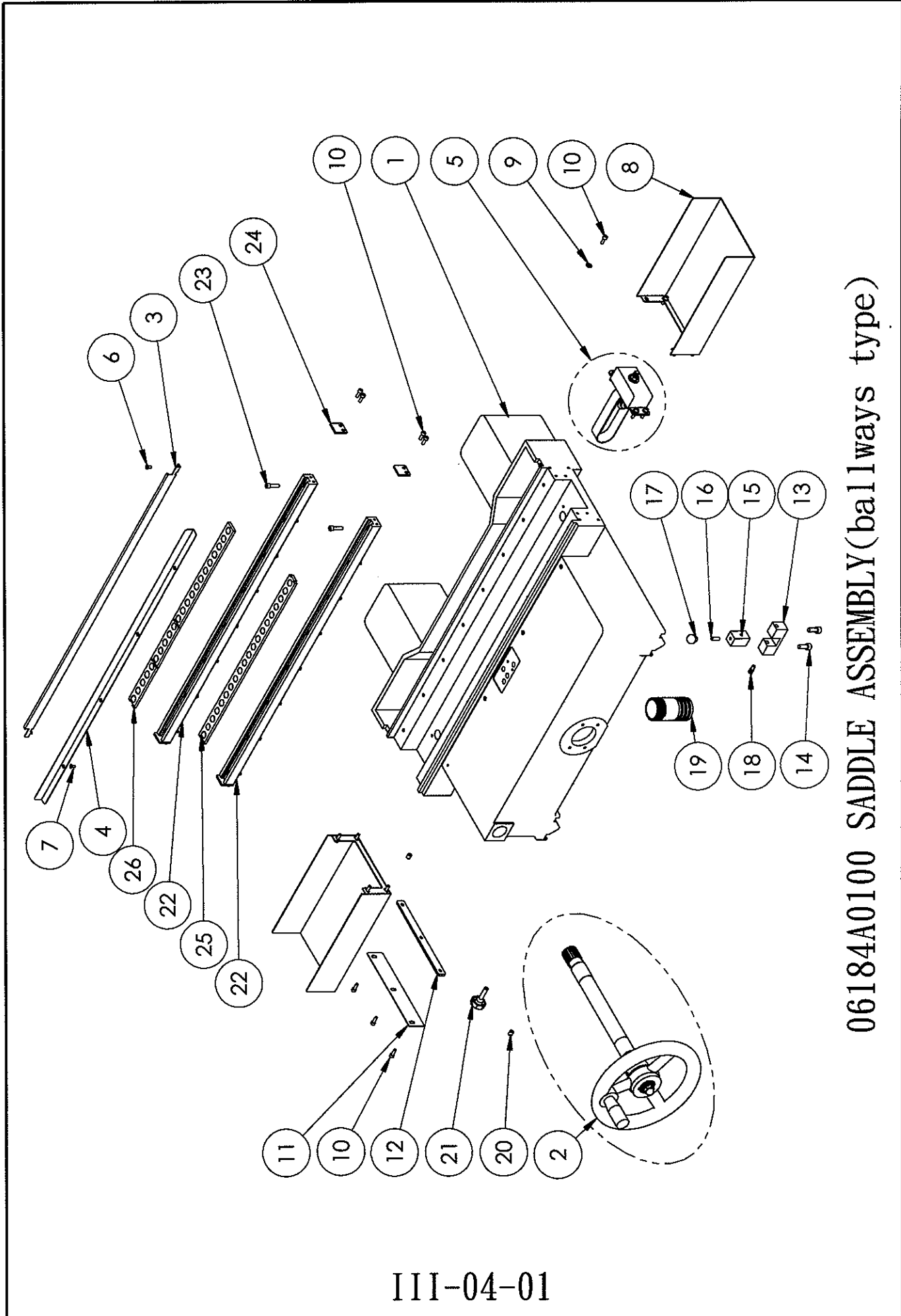
NO.	PART NO.	DESCRIPTION	Q, TY	NOTE[SPEC.]
1	0618300300	table	1	ball way type
2	0618402000	copper gasket	2	M6x1.0Px10L*Inner hex. headless screw*for hydraulic
3	BH00061030	hex. screw	2	M6x1.0Px30L
4	0618300100	splash guard	1	
5	06183002C0	coolant guarding board(rear C)	1	
6	BH00061016	hex. screw	4	M6x1.0Px16L
7	WP00061602	washer	4	6x16x2
8	WP00081602	washer	4	8x16x2
9	BH00081216	hex. screw	4	M8x1.25Px16/30L*for hydraulic
10	06183035M0	cylinder rack	2	for hydraulic
11	0618301900	cover	1	0618302200* table wing R
12	0618301800	Cover film	2	
13	0618301700	cover tableting	2	
14	BRC0050808	cross round head screw	6	M5Xx0.8Px8L
15	BHP0081220	Flat head hexagonal screws inner	4	M8x1.25Px20L*for hydraulic
16	06183032M0	water head	1	
17	BRC0040708	cross round head screw	2	M4X0.7Px8L
18	0618402100	timing belt fixing board	1	
19	BPC0040708	phillips flat-head screws	4	
20	0618302600	fixing nut	4	
21	BHU0081208	Inner hex. headless screw	2	M8-8L
22	NH000000M8	nut	4	M8x1.25Px12Wx6H
23	SC00854516	spring	2	
24	HF00450850	adjusting knob	2	45R-8M-50L
25	BH00081250	hex. screw	2	M8x1.25Px50
26	BH00061010	hex. screw	4	M6x1.0Px10L*for hydraulic
27	0618304100	longitudinal travel adjustor cover	1	for hydraulic
28	06183020A0	adjustment of block right	1	
29	0618300900	timing belt seat	1	06183009V0* 一V一平手動用
30	0618303300	left and right rows of teeth	1	for hydraulic
31	06183A1000	adjustment seat of left and right	1	for hydraulic
32	BHU0061010	Inner hex. headless screw	6	M6-10L*for hydraulic
33	BH00061025	hex. screw	3	M6x1.0Px25L*for hydraulic
34	0618302000	adjustment of block left	1	
35	0618301900	cover	1	0618302100* table wing L
36	06183002B0	coolant guarding board(frant B)	1	
37	06183002A0	coolant guarding board(frant A)	1	
38	BH00061025	hex. screw	16	M6x1.0Px25L
39	0618300500	convex table rail	1	
40	0618300400	concave table rail	1	



06183A0200 TABLE ASSEMBLY(V TYPE)

06183A0200 TABLE ASSEMBLY(V type)

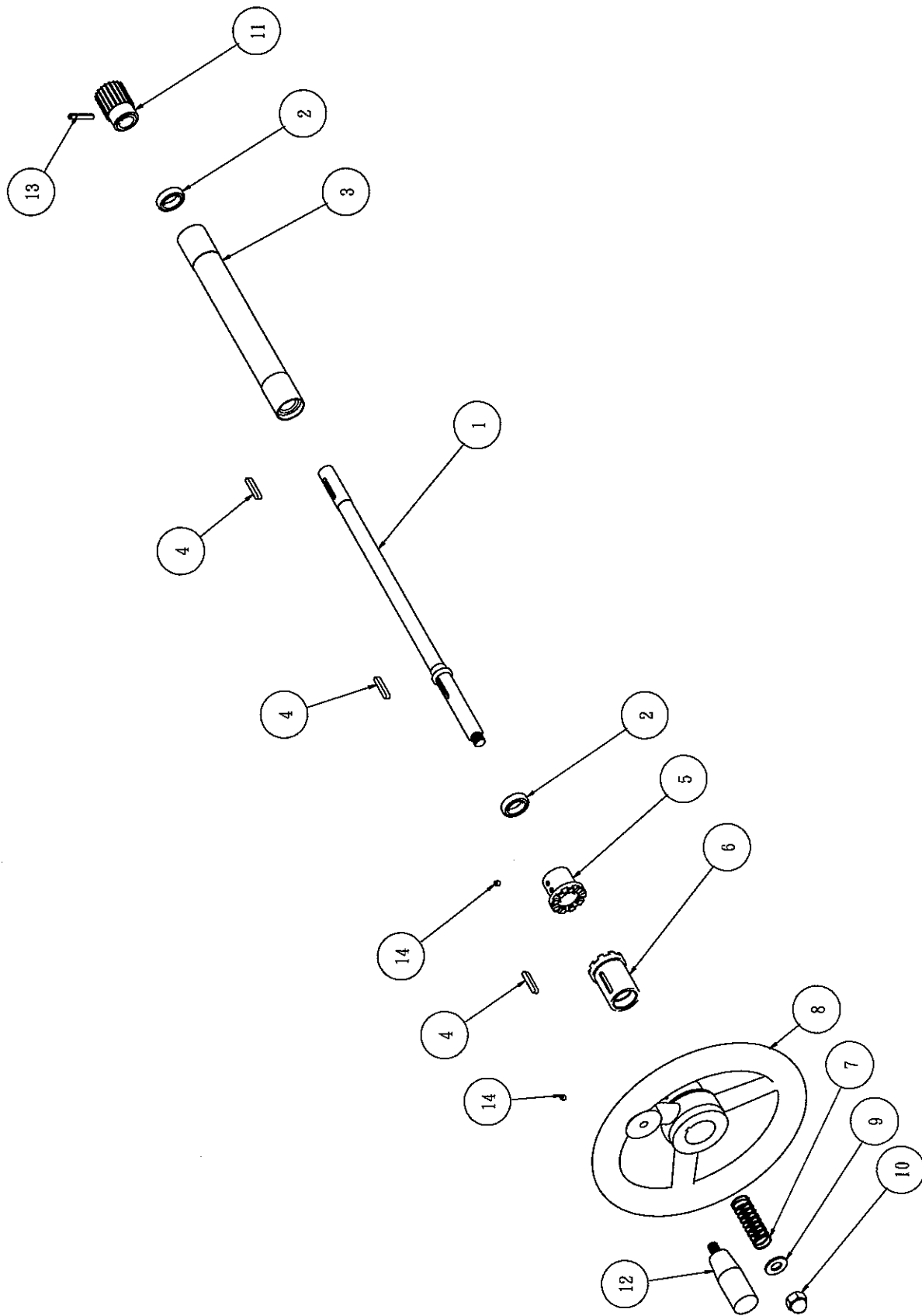
NO.	PART NO.	DESCRIPTION	Q, TY	NOTE[SPEC.]
1	06183003A0	table	1	V type
2	0618402000	copper gasket	2	M6x1.0Px10L*Inner hex. headless screw*for hidraulic
3	BH00061030	hex. screw	2	M6x1.0Px30L
4	0618300100	splash guard	1	
5	06183002C0	coolant guarding board(rear C)	1	
6	BH00061016	hex. screw	4	M6x1.0Px16L
7	WP00061602	washer	4	6x16x2
8	WP00081602	washer	4	8x16x2
9	BH00081216	hex. screw	4	M8x1.25Px16/30L*for hidraulic
10	06183035M0	cylinder rack	2	for hidraulic
11	0618301900	cover	1	0618302200* table wing R
12	0618301800	Cover film	2	
13	0618301700	cover tableting	2	
14	BRC0050808	cross round head screw	6	M5Xx0.8Px8L
15	BHP0081220	Flat head hexagonal screws inner	4	M8x1.25Px20L*for hidraulic
16	06183032M0	water head	1	
17	BRC0040708	cross round head screw	2	M4X0.7Px8L
18	0618402100	timing belt fixing board	1	
19	BPC0040708	phillips flat-head screws	4	
20	0618302600	fixing nut	4	
21	BHU0081208	Inner hex. headless screw	2	M8-8L
22	NH000000M8	nut	4	M8x1.25Px12Wx6H
23	SC00854516	spring	2	
24	HF00450850	adjusting knob	2	45R-8M-50L
25	BH00081250	hex. screw	2	M8x1.25Px50
26	BH00061010	hex. screw	4	M6x1.0Px10L*for hidraulic
27	0618304100	longitudinal travel adjustor cover	1	for hidraulic
28	06183020A0	adjustment of block right	1	
29	0618300900	timing belt seat	1	06183009V0* -V-平手動用
30	0618303300	left and right rows of teeth	1	for hidraulic
31	06183A1000	adjustment seat of left and right	1	for hidraulic
32	BHU0061010	Inner hex. headless screw	6	M6-10L*for hidraulic
33	BH00061025	hex. screw	3	M6x1.0Px25L*for hidraulic
34	0618302000	adjustment of block left	1	
35	0618301900	cover	1	0618302100* table wing L
36	06183002B0	coolant guarding board(frant B)	1	
37	06183002A0	coolant guarding board(frant A)	1	



06184A0100 SADDLE ASSEMBLY(ballways type)

06184A0100 SADDLE ASSEMBLY(ballways type)

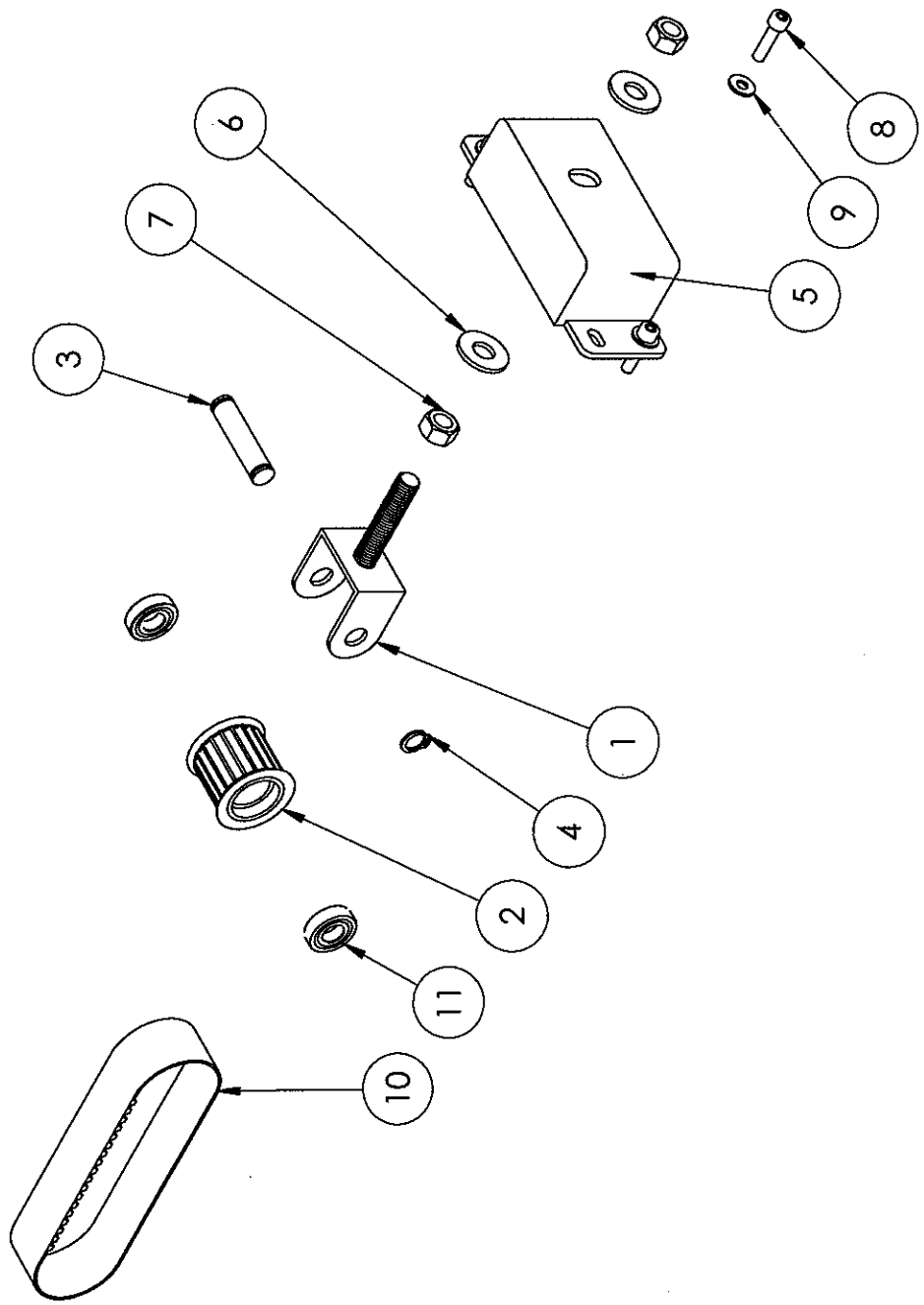
NO.	PART NO.	DESCRIPTION	Q, TY	NOTE[SPEC.]
1	06184010V0	saddle	1	
2	06184A0600	longitudinal handwheel assembly	1	
3	0618401200	dust proof bar(Rear)	1	
4	0618401000	dust proof bar(Front)	1	
5	06184A0800	longitudinal transmission assembly	1	
6	BPC0040708	flat head screw	2	M4x0.7Px8L
7	BPC0040708	flat head screw	4	M4x0.7Px8L
8	0618405500	dust proof plate	2	
9	WP00061602	washer	8	6x16x2
10	BH00050816	inner hex. Screw	19	M5x0.8Px16L
11	0618402900	Crossfeed locking bar(Outer)	1	
12	0618403000	Crossfeed locking bar(Inner)	1	
13	0618402400	Longitudinal travel fixing seat	1	
14	BH00081220	inner hex. Screw	2	M8x1.25Px20
15	0618402200	Longitudinal travel fixing block	1	
16	BHU0061020	Inner hex. headless screw	1	M6-20L
17	NYB0025014	plastic round ball	1	
18	0618402800	pin	1	
19	CONA14T90E	pipe	1	1 1/2*3''
20	BHU0081210	Inner hex. headless screw	2	M8-10L
21	SS0000M830	hand knob	1	M8x30L
22	618400900	saddle guideway concave	2	
23	BH00061025	inner hex. Screw	16	M6x1.0Px25L
24	618400800	protecction plate	4	
25	618420500	steel ball rail(F)	1	Φ 5/8'' -20個
26	618422500	steel ball rail(R)	1	Φ 5/8'' -22個
27				



06184A0600 LONGITUDINAL HANDWHEEL ASSEMBLY

06184A0600 LONGITUDINAL HANDWHEEL ASSEMBLY

NO.	PART NO.	DESCRIPTION	Q, TY	NOTE[SPEC.]
1	0618400500	transmission shaft	1	
2	B0006903ZZ	bearing	2	6903ZZ(17x30x7)
3	0618400400	shaft housing	1	
4	KEYD050530	key	3	5X5X30
5	06184002A0	gear	1	
6	06184003B0	gear	1	
7	SC00176522	spring	1	
8	WH00KSP250	handwheel	1	KSP250 ϕ 35-5-2-M5-0.8P
9	WP00122502	washer	1	12x25x2
10	NE00000M12	nut	1	M12
11	06184006A0	gear(V type)	1	0618400600(ball type)
12	HE00G90M10	handle	1	
13	P1NS005030	pin	1	ϕ 5x30
14	BHU0050805	Inner hex. headless screw	4	M5-5L
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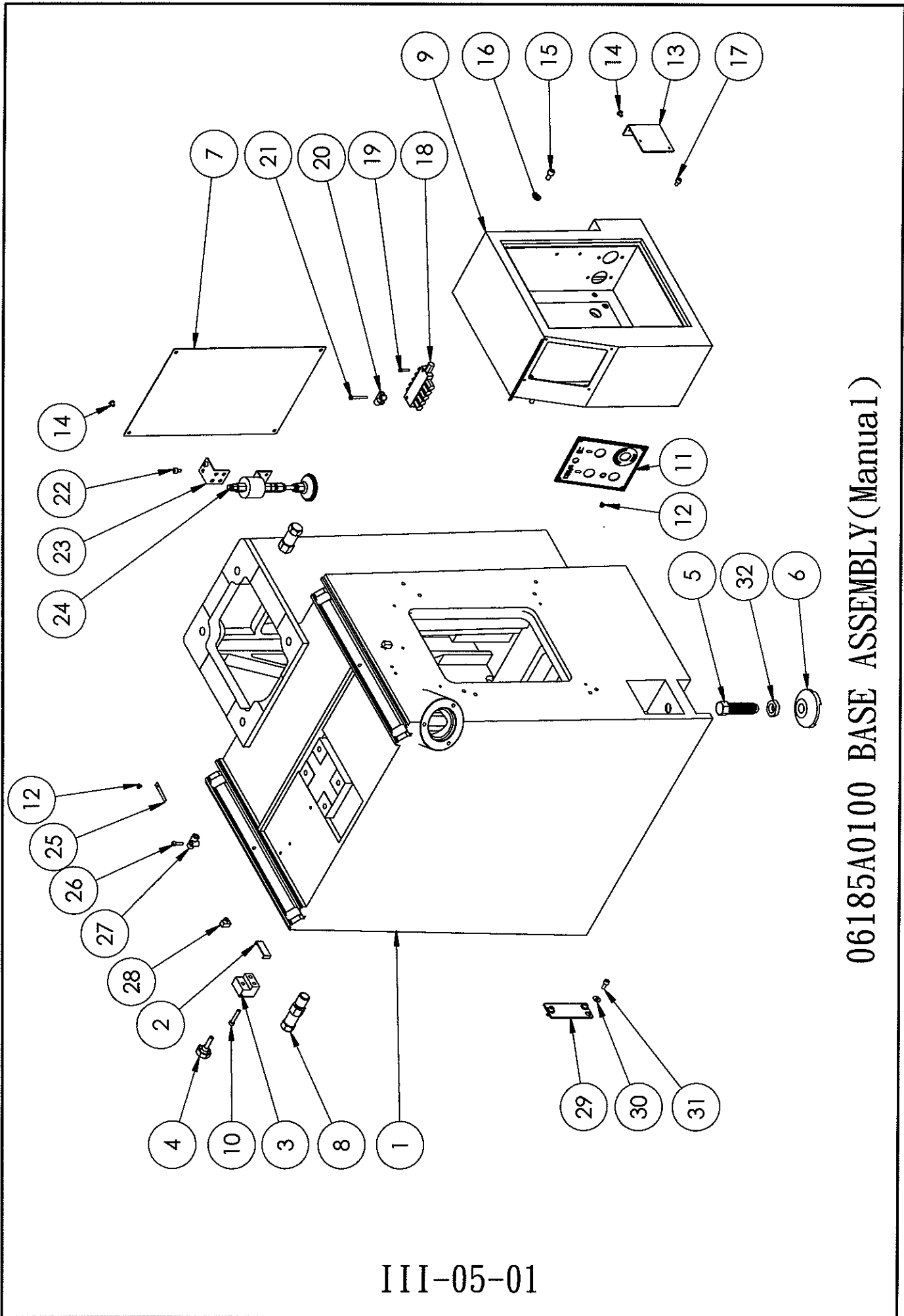


06184A0800 LONGITUDINAL TRANSMISSION ASSEMBLY

III-04C-01

06184A0800 LONGITUDINAL TRANSMISSION ASSEMBLY

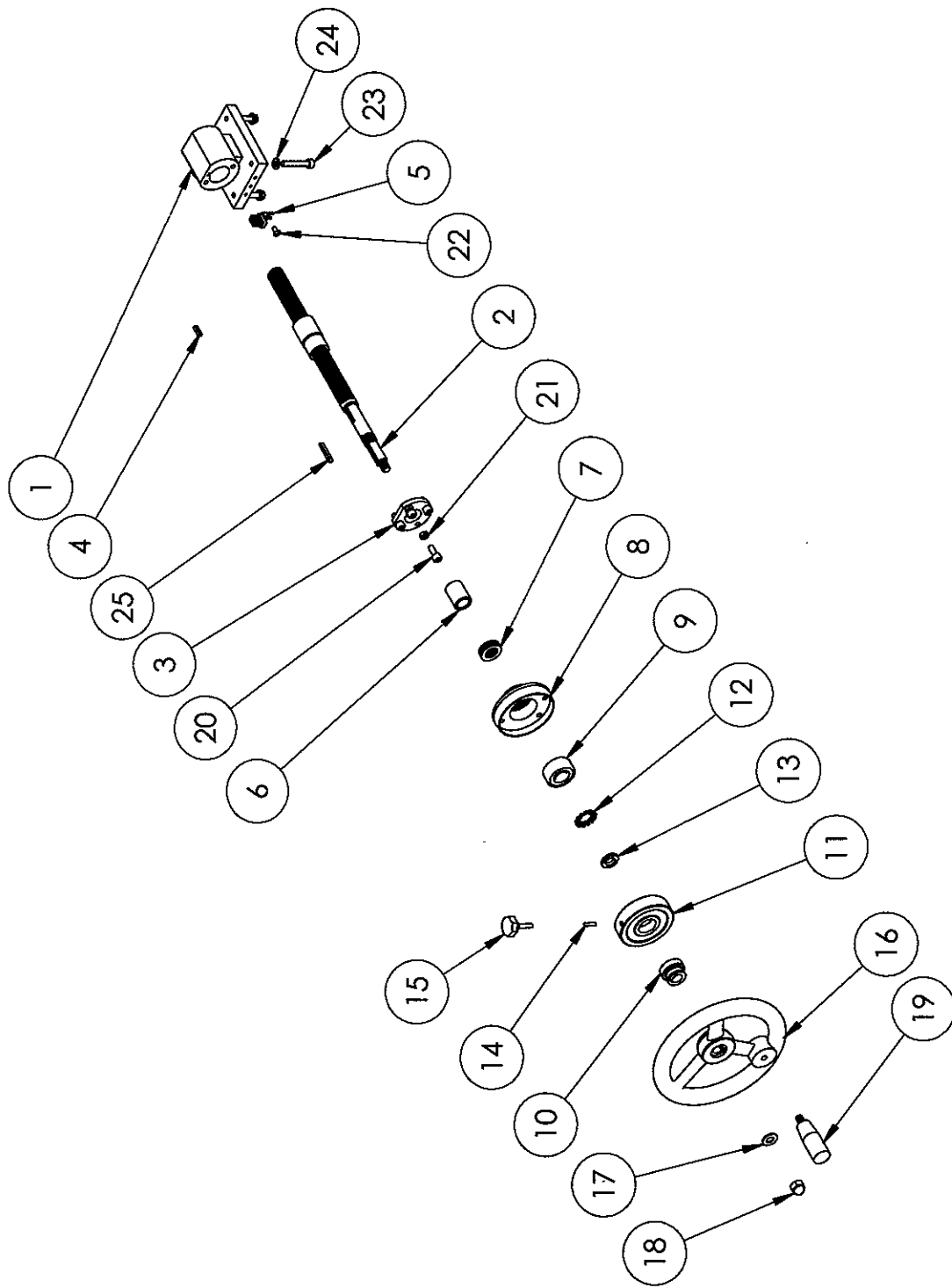
NO.	PART NO.	DESCRIPTION	Q, TY	NOTE[SPEC.]
1	0618401700	gear fixing seat	1	
2	0618401600	gear	1	
3	0618402300	fixing shaft	1	
4	CL00000010	outer buckles	1	S10
5	0618405600	gear fixing case	1	
6	WP00102302	washer	2	10x23x2
7	NH00000M10	nut	2	M10x1.5Px14Wx8H
8	BH00050820	hex. screw	4	M5x0.8Px20L
9	WP00051201	washer	4	5x12x1
10	BS00250564	timing belt	1	XL-564-25mmW
11	B0006900ZZ	bearing	2	6900ZZ(10x22x6)
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06185A0100 BASE ASSEMBLY(Manual)

06185A0100 BASE ASSEMBLY(Manual)

NO.	PART NO.	DESCRIPTION	Q, TY	NOTE[SPEC.]
1	06185013A0	base	1	06185013B0
2	0618504500	fixing plate	1	
3	0618503000	fixing seat	1	
4	SS0000M830	star knob	1	M8x30L
5	0618502400	foundation bolts	3	
6	0618501200	foundation seats	3	
7	0618504300	side cover	2	
8	0618504900	lifting bolt (S)	2	
9	0618503100	electrical box set (R)	1	0618503100 (L)
10	BH00061035	inner hex. Screw	2	M6x1.0Px35L
11	0618504600	control panel	1	
12	BRC0040708	cross round head	8	M4X0.7Px8L
13	0618505400	power switch seat	1	
14	BRC0050808	cross round head	10	M5Xx0.8Px8L
15	BH00081216	inner hex. Screw	4	M8x1.25Px16
16	WP00081602	washer	4	8x16x2
17	BH00061010	inner hex. Screw	4	M6x1.0Px10L
18	CBRMCB5064	oil distributor	1	in ϕ 6 out ϕ 4
19	BH00040720	inner hex. Screw	1	M4x0.7Px20L
20	JUNC03M084	three - way pipe	1	Φ 4
21	BH00040740	inner hex. Screw	1	M4x0.7Px40L
22	BH00061010	inner hex. Screw	4	M6x1.0Px10L
23	0618505000	pump fixed plate	1	
24	EL10110110	electromagnetic pump	1	EL1-110V 240L
25	0618500300	oil scraping piece	4	
26	BH00050820	inner hex. Screw	1	M5x0.8Px20L
27	JUNC02M084	fixed double connector	1	Φ 4
28	ELAM8P1804	right angle connector	2	ϕ 4-PT18 PH-401
29	0618401400	fixed piece	1	
30	WP00061602	washer	3	6x16x2
31	BH00061016	inner hex. Screw	3	M6x1.0Px16L
32	0618502500	foundation nuts	3	
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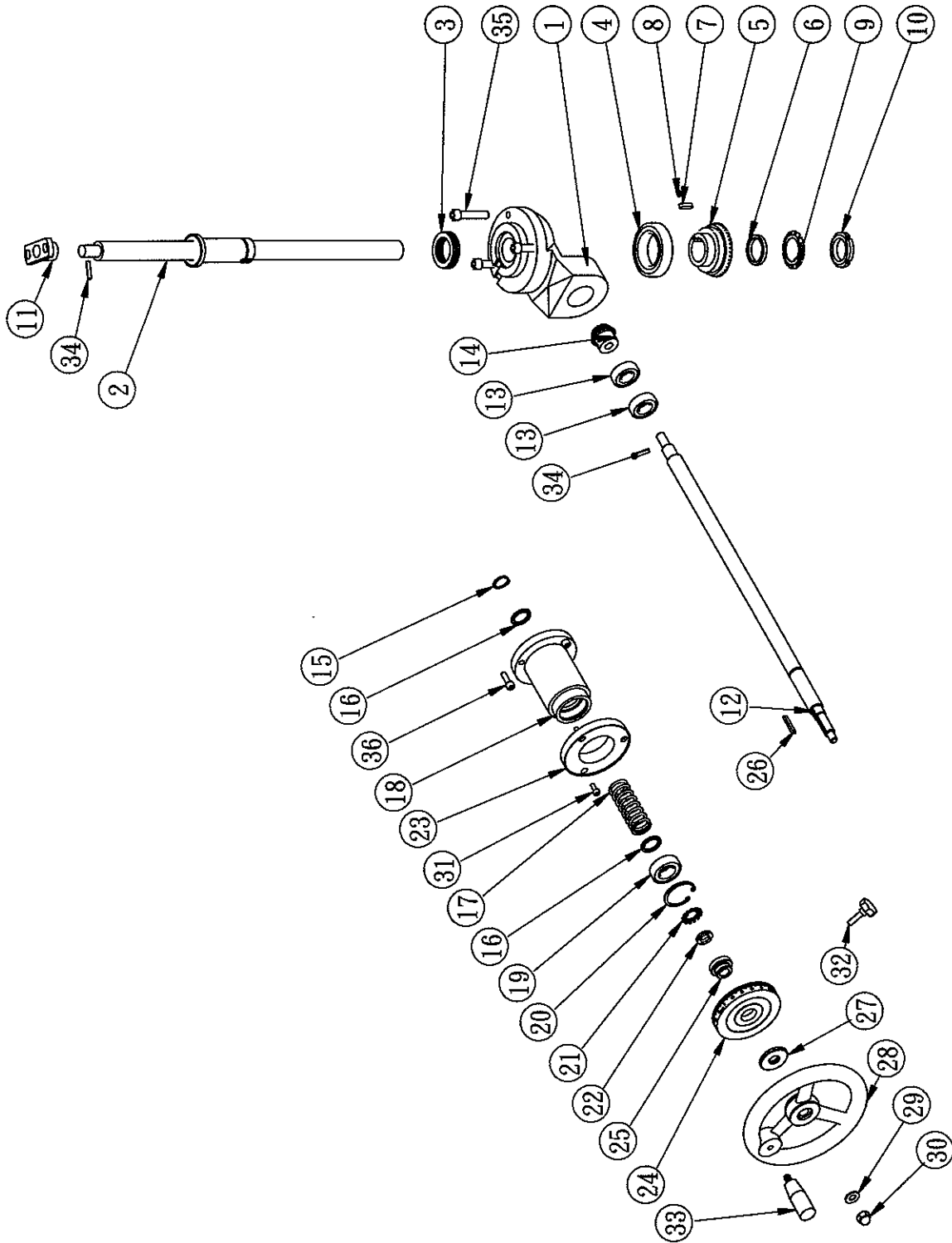


06185A0500 CROSSFEED SCREW FIXING SOCKET ASSEMBLY

III-05A-01

06185A0500 CROSSFEED SCREW FIXING SOCKET ASSEMBLY

NO.	PART NO.	DESCRIPTION	Q, TY	NOTE[SPEC.]
1	06185011A0	crossfeed screw fixing socket	1	
2	06185008C0(MM)	crossfeed screw	1	06185008N0(IN)
3	0618500900	crossfeed nut adjusting ring	1	
4	KEYD050520	key	1	5X5X20
5	0618501500	brush retainer	1	
6	0618402500	shaft sleeve	1	
7	B000051104	thrust bearing	1	51104(20x21x35x10)
8	0618400700	crossfeed indication ring	1	
9	B0005204ZZ	bearing	1	5204ZZ (20x47x20.6)
10	0618405400	crossfeed indication ring sleeve	1	
11	06184004M0(MM)	crossfeed graduation ring	1	06184004N0(IN)
12	AW04000M20	washer	1	AW04
13	AN04M20P10	bearing nuts	1	AN04 (M20x1.0P)
14	P1N0005020	pin	1	5X20L
15	SS0000M630	hand knob	1	M6x30L
16	WH00KSP200	handwheels	1	KSP200
17	WP00122502	washer	1	12x25x2
18	NE00000M12	nut	1	M12
19	HE00G90M10	dianmu handles	1	
20	BH00081220	hex. screw	4	M8x1.25Px20
21	NH000000M8	nut	2	M8x1.25Px12Wx6H
22	BRC0050812	cross round head screw	1	M5Xx0.8Px12L
23	BH00081250	hex. screw	4	M8x1.25Px50
24	WP00081602	washer	4	8x16x2
25	KEYD050540	key	1	5X5X40L
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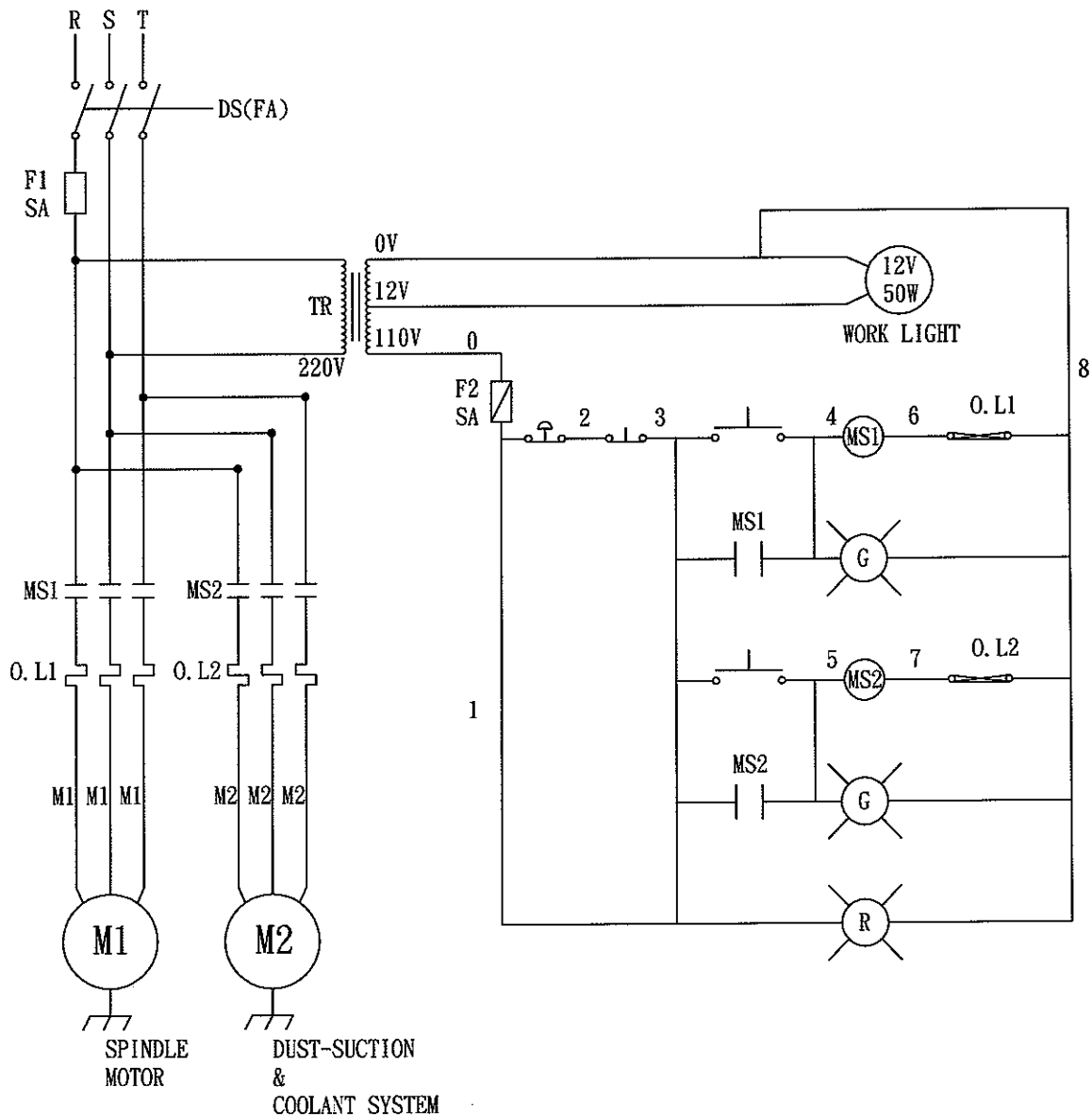
06185A0300 VERTICAL SCERW ASSEMBLY

06185A0300 VERTICAL SCERW ASSEMBLY

NO.	PART NO.	DESCRIPTION	Q, TY	NOTE[SPEC.]
1	0618201000	vertical screw nut seat	1	
2	06185011N0	vertical screw(IN)	1	06185011C0(MM)
3	B000051108	thrust bearing	1	51108(40x42x60x13
4	B00006011Z	bearing	1	6011Z(55x90x18)
5	06182014N1	vertical gear(IN)	1	06182014C1(MM)
6	0618502300	spacer	1	
7	KEYD070625	key	1	7X6X25
8	BHU0061010	Inner hex. headless screw	1	M6-10L
9	AW08000M40	washer	1	AW08
10	AN08M40P15	bearing nuts	1	AN08 (M40x1.5P)
11	0618501300	vertical screw top	1	
12	0618500800	vertical transmission shaft	1	
13	B00006204Z	bearing	2	6204Z(20x47x14)
14	06182009N2	vertical gear(IN)	1	06182009C2(MM)
15	CL00000025	outer buckles	1	S25
16	0618501700	spacer	2	
17	0618501900	spring	1	
18	0618500700	vertical transmission shaft seat	1	
19	B0001205ZZ	bearing	1	1205ZZ (25x52x15)
20	CL01000052	inner buckles	1	R52
21	AW04000M20	washer	1	AW04
22	AN04M20P10	bearing nuts	1	AN04 (M20x1.0P)
23	0618500500	vertical indication ring	1	
24	06185004N0	vertical graduation ring	1	06185004C0(MM)
25	0618501800	indication ring sleeve	1	
26	KEYD050540	key	1	5X5X40
27	0618501600	spacer	1	
28	WH00KSP200	handwheels	1	KSP200
29	WP00122502	washer	1	12x25x2
30	NE00000M12	nut	1	M12
31	BH00061016	inner hex. Screw	3	M6x1.0Px16L
32	SS0000M630	hand knob	1	M6x30L
33	HE00G90M10	dianmu handles	1	
34	P1NS006030	pin	2	6x30
35	BH00121760	inner hex. Screw	3	M12x1.75Px60L
36	BH00081225	inner hex. Screw	3	M8x1.25Px25

IV. ELECTRICAL WIRING DIAGRAM

⊙. WIRING DIAGRAM:



M1	SPINDLE MOTOR
M2	COOLANT SYSTEM OR DUST SUCTION
MS1	MAGNETIC CONTACTOR OF SPINDLE MOTOR
MS2	MAGNETIC CONTACTOR OF COOLANT OR DUST SYSTEM
O. L1	OVERLOAD RELAY
O. L2	OVERLOAD RELAY