

OPERATION MANUAL

CGS-818M

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I . INSTALLATION OF MACHINE

1. DIMENSION & FLOOR REQUIREMENT:

The minimum space for machine:

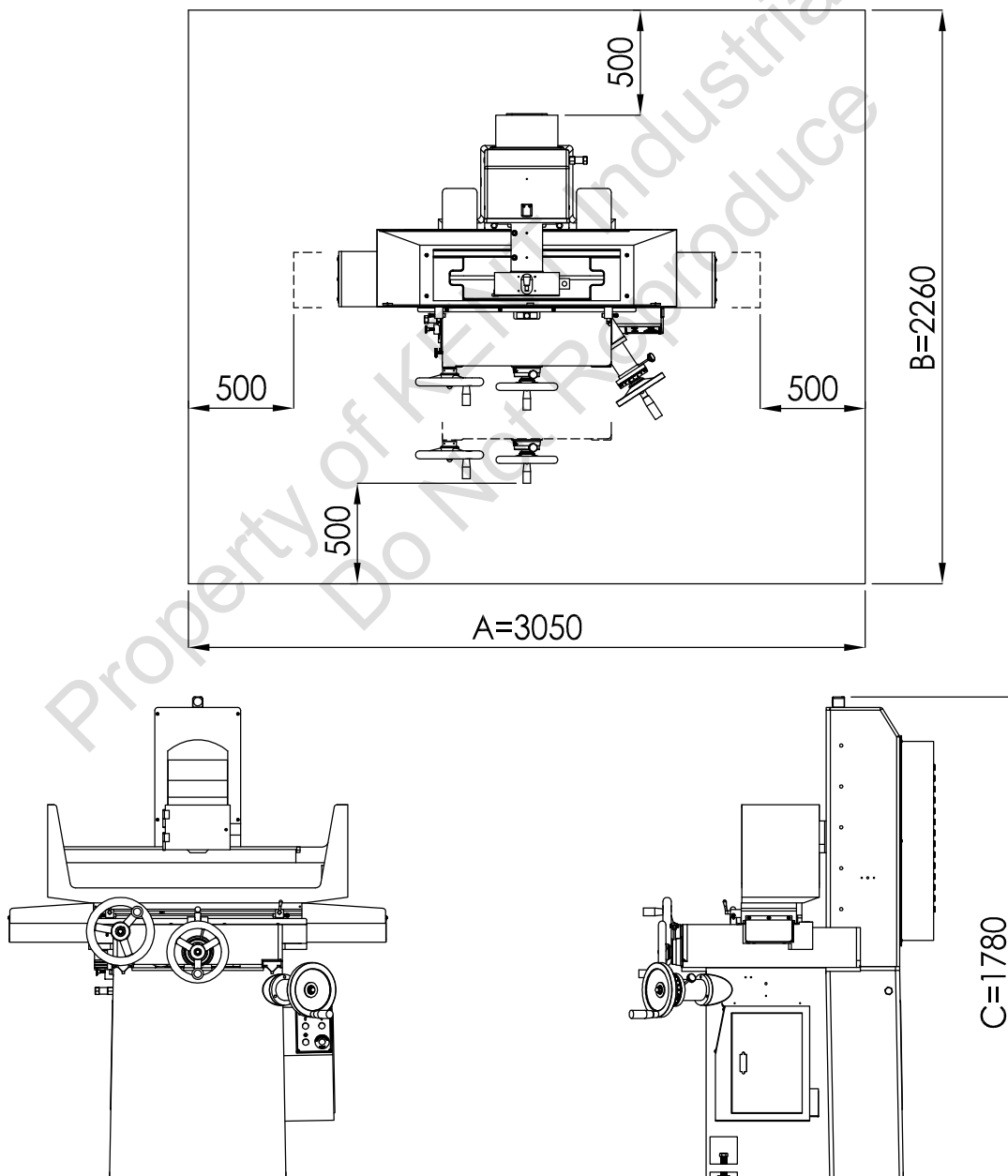
For your convenience to operate, please take the walkway into consideration. Therefore, the ideal space for machine should be:
CB-818:

A - 3050MM (120")

B - 2260MM (89")

C - 1780MM (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.

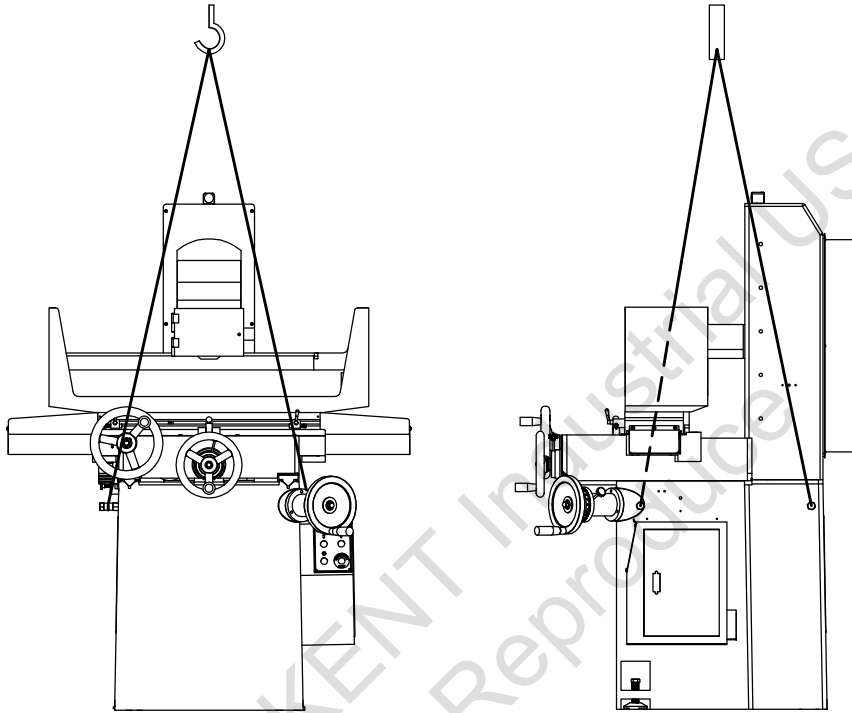
I . INSTALLATION OF MACHINE

4. TRANSPORTATION OF MACHINE:

N.W: 820~1010 KGS; G.W: 920~1110 KGS

(1) CRANE LIFTING: Use steel cable or belt for hanging.

(As shown on the below drawing.)

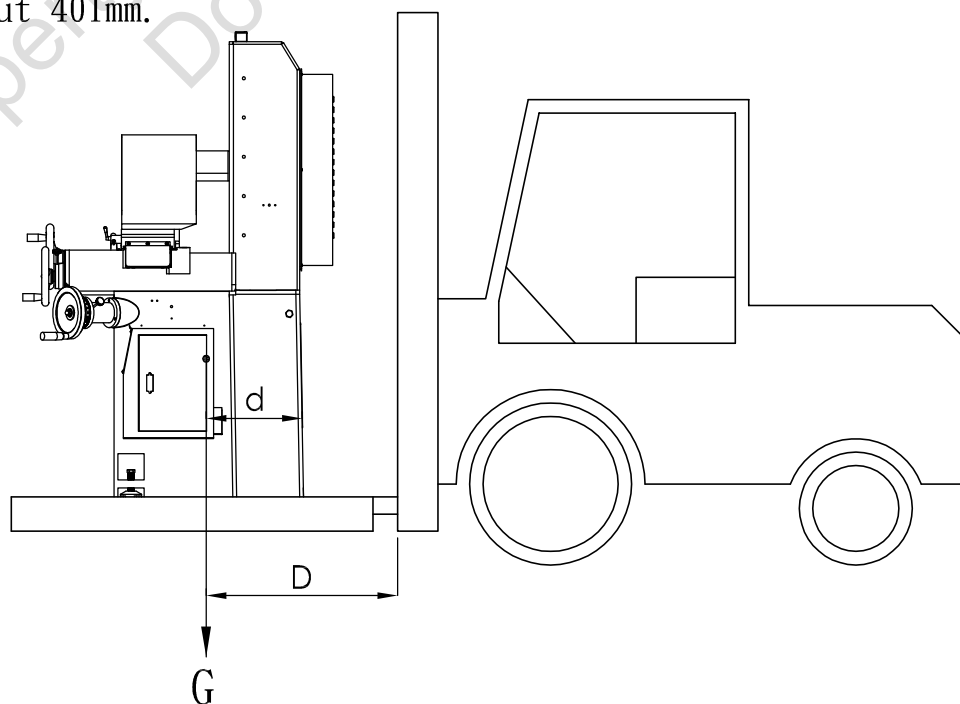


(2) FORK LIFTING: Use the fork lift for transportation.

D: Distance the shorter the better.

G: Center of gravity.

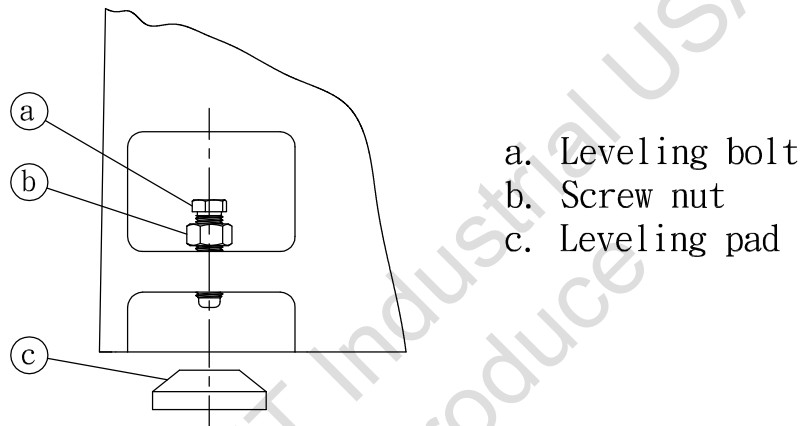
d: About 401mm.



I . INSTALLATION OF MACHINE

5. LEVELING BOLT & PAD

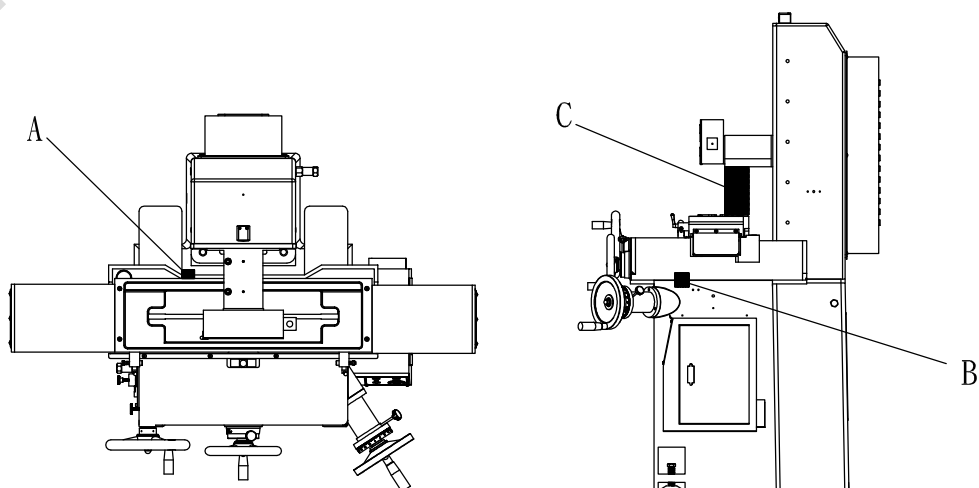
- (1) Lock the leveling bolts and nuts onto the basement, and put the leveling pads under the machine. Lay down the machine carefully and adjust the leveling bolt to set at the center of the leveling pad.
- (2) Follow the above to locate every leveling bolt on each pad, but leave the nuts un-tightened.



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:

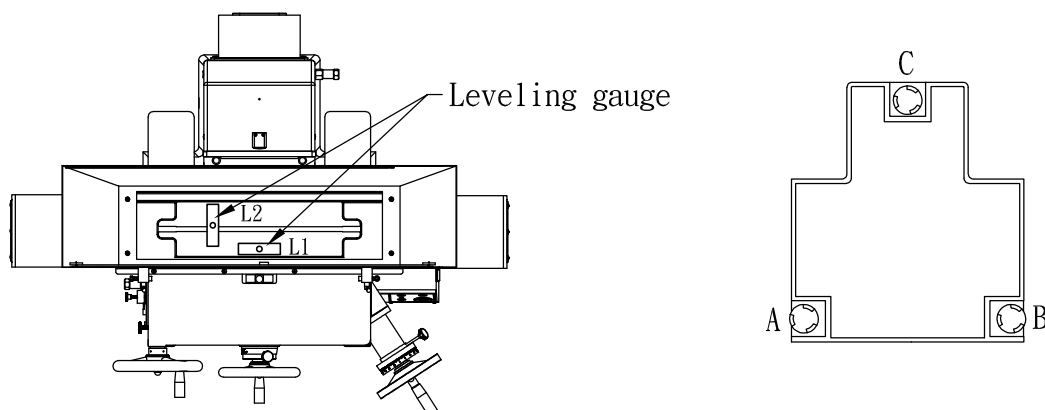
The machine has coated with the anti-rust oil and hanged desiccant to prevent rusting.

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 (1A818~818C II SERIES)

- (1)Hydraulic oil tank capacity: about 50 liters (13 Gallon)
- (2)Please check the drawing below about the oil inlet and outlet of hydraulic system. First, please locate the oil tank in the right and beside the machine. Secondly, connect the oil pipes according to the tags attached on them 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.
- (3)Connect the power cable into the electrical box by the labels on them.

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

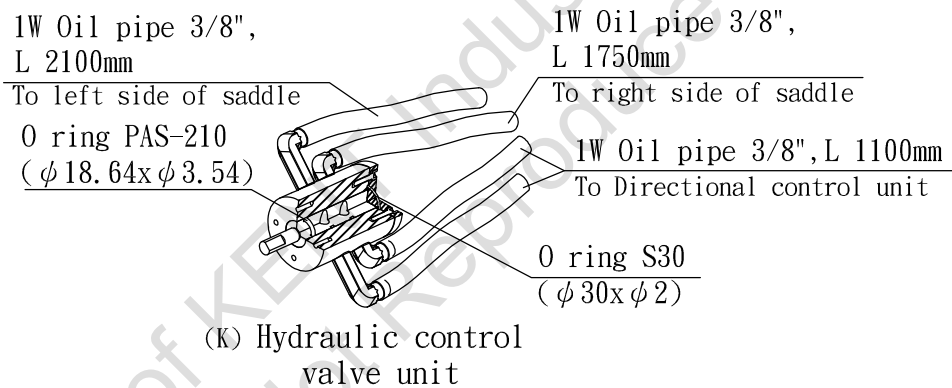
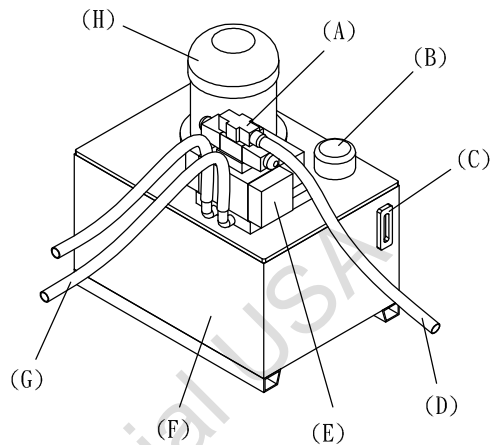
- (1)First-time oil replacement should be done after 3 months operation.
 - (2)Replace the oil and the filter at an interval of 6 months after the first replacement.
 - (3)Check the pressure for pump within 10~12 Kg/cm².
- *Hydraulic system is properly adjusted before the shipment. Unless it's necessary, 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 enviromental laws.

Please be sure to fill in the following suggested oil:

BRAND	TYPE	BRAND	TYPE
ESSO	NUTO H32	MOBIL	D. T. E 24
BP	EVERGOL HLP32	TEXACO	LUBE TAC #2
SHELL	TELUS 32	ARAL	VITAM GF 32

I. INSTALLATION OF MACHINE

- (A) Magnetic control valve
- (B) Oil inlet
- (C) Oil gauge
- (D) Power cable
- (E) Directional control unit
- (F) Hydraulic tank
- (G) Oil pipe
- (H) Hydraulic motor
- (K) Hydraulic control valve unit



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

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:

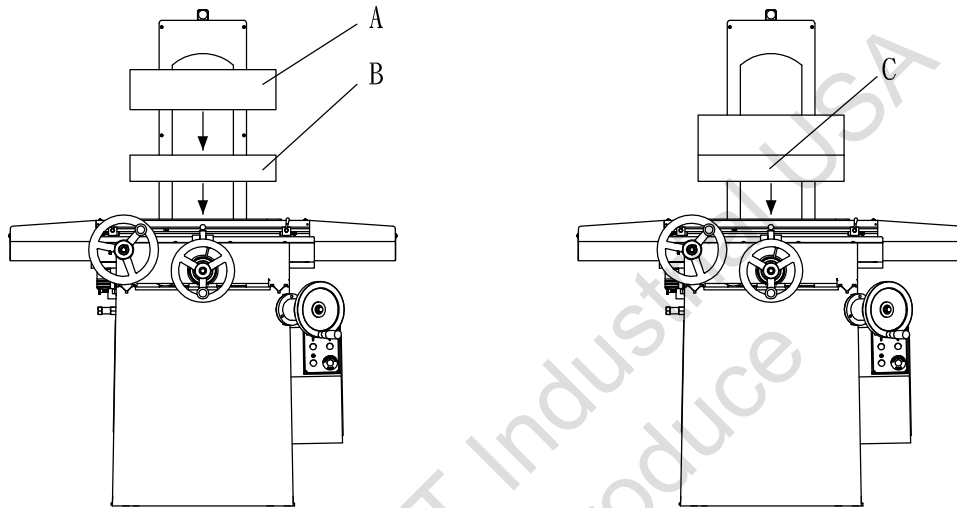
For using this machine safely, please ask every operator, maintenance technician or any other people to obey the safety precautions. To obey the safety precautions below will reduce the danger of any possible damage.

- 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

3. TABLE LOADING CAPACITY:

A = Workpiece weight: 160KGS, B = Magnetic chuck weight: 30KGS,
C = A+B Total weight: 190KGS



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.

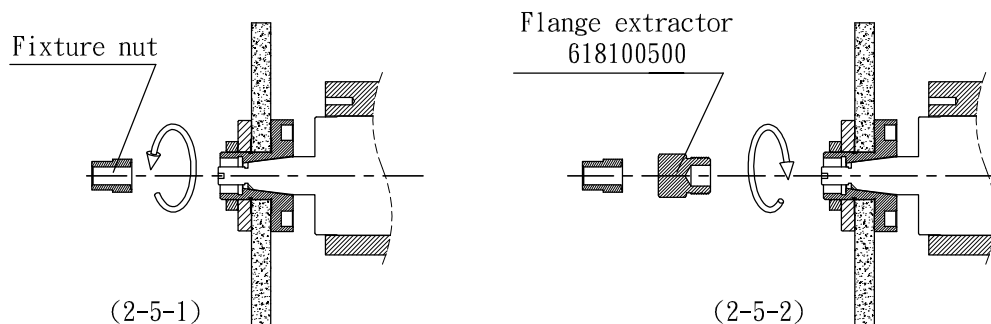
II. SAFETY PRECAUTIONS

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)

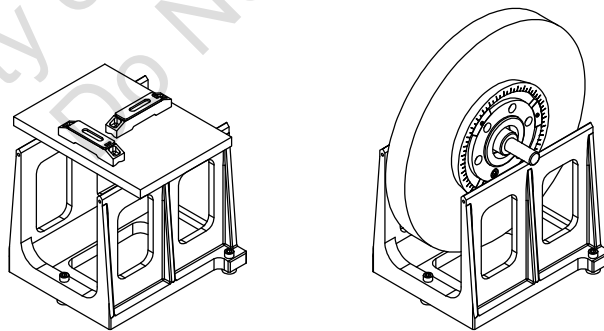


II. SAFETY PRECAUTIONS

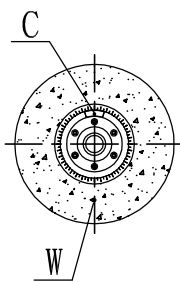
7. GRINDING WHEEL BALANCING ADJUSTMENT:

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.

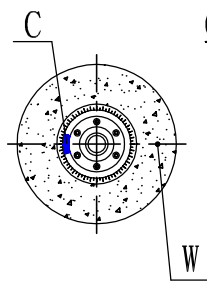
- (1) Put the balancing stand on a steady table or ground, and use the leveling gauge to adjust the levelness of the balancing stand. (2-6-1)
- (2) Let the wheel roll freely on the stand to find out its gravity center "W" and mark it on the wheel. (2-6-2)
- (3) Insert a balancing block into the opposite 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)



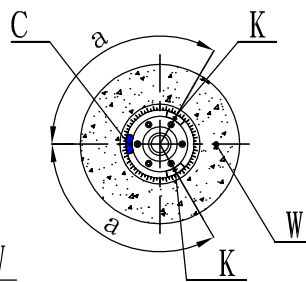
(2-6-1)



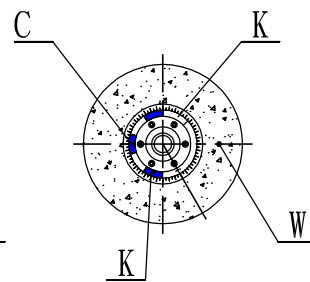
(2-6-2)



(2-6-3)



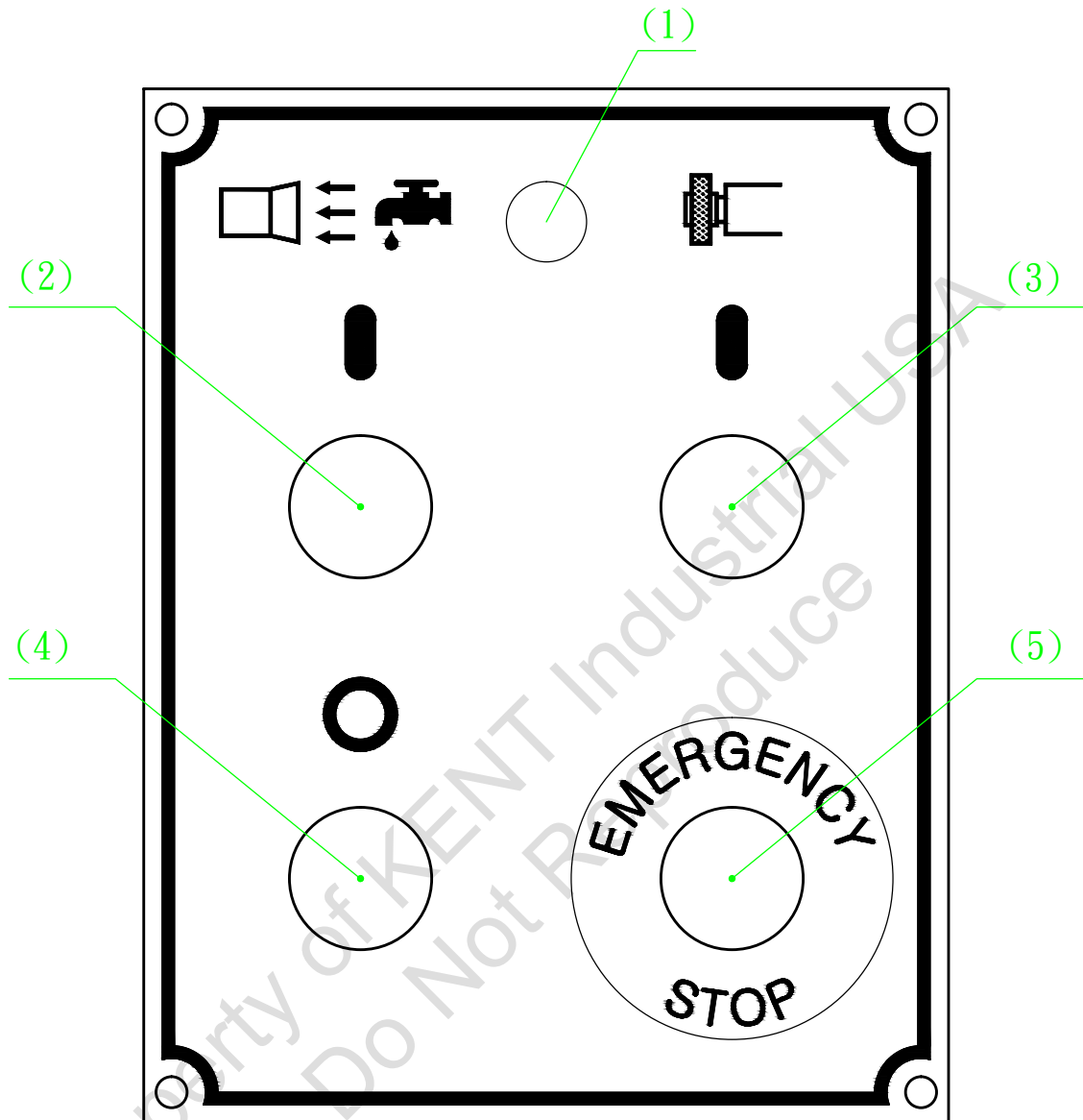
(2-6-4)



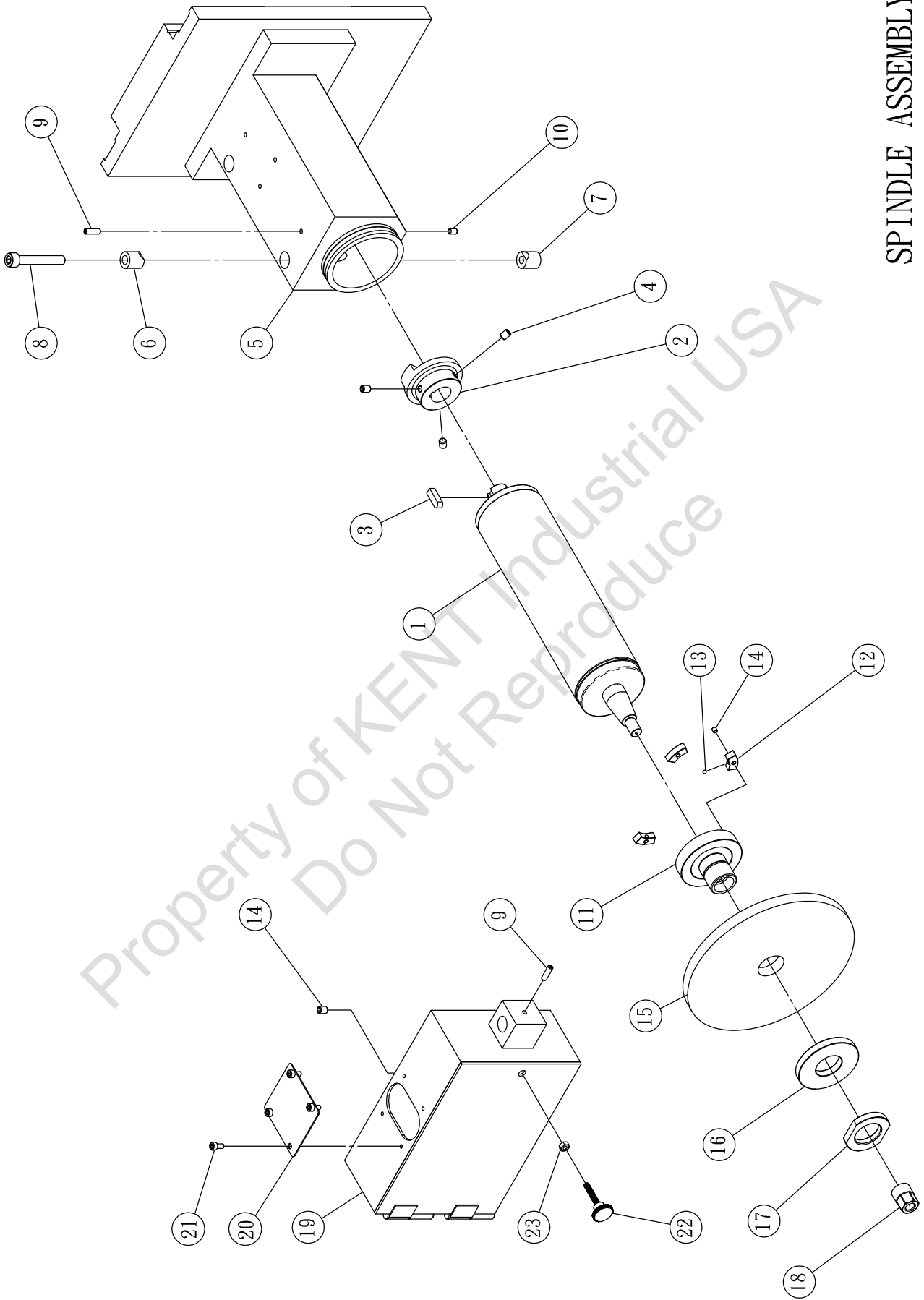
(2-6-5)

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.



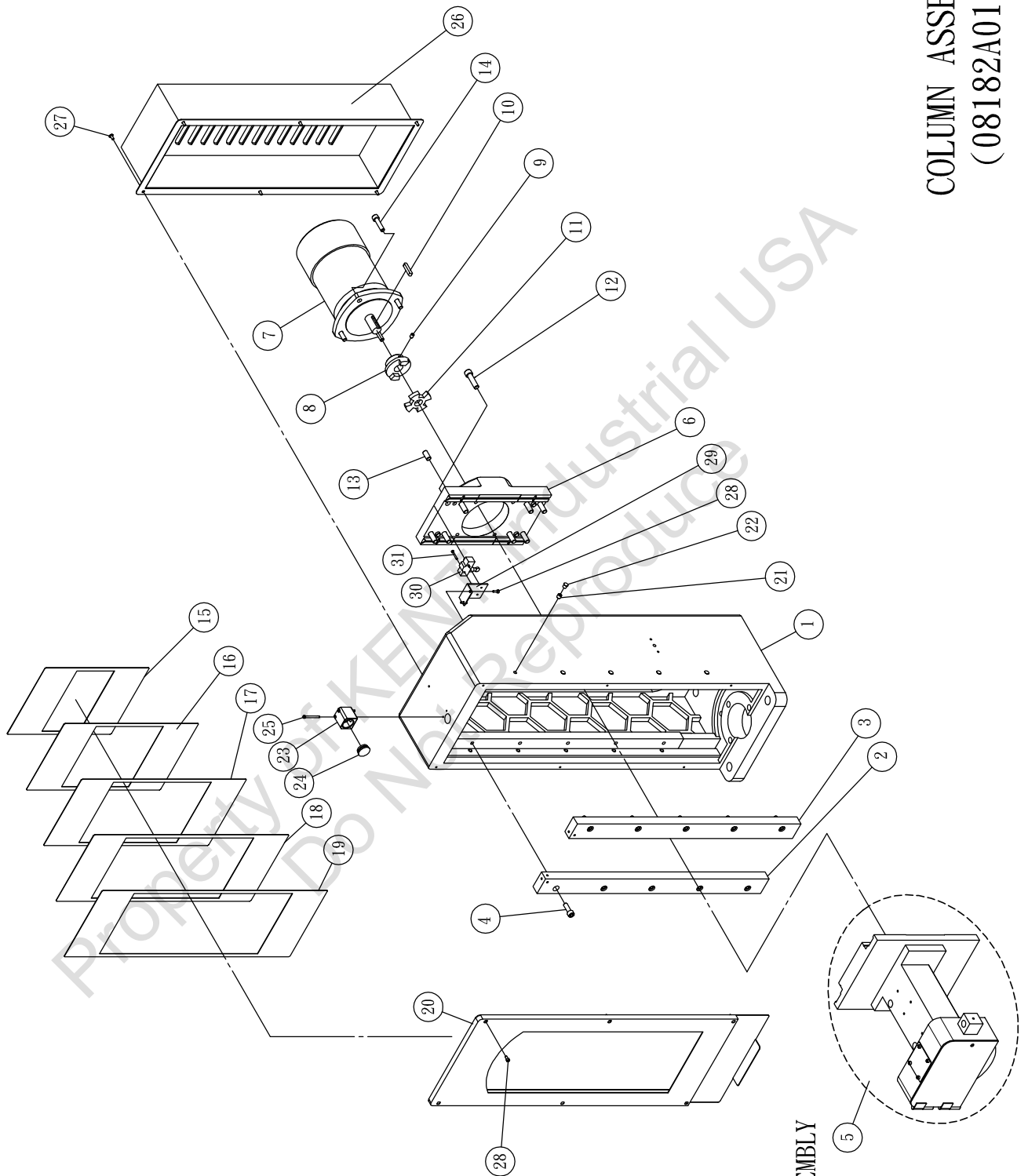
SPINDLE ASSEMBLY
(08181A0200)

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SPINDLE ASSEMBLY (08181A0200)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	08181A0100	Spindle	1	
2	0618101100	Motor coupling	1	
3	KEYS080725	Pin	1	8x7x25
4	BHU0081210	Inner hexagonal headless screw	3	M8-10L
5	081810010B	Spindle housing	1	
6	06181010A0	Spindle fixing ring A	2	
7	06181010B0	Spindle fixing ring B	2	
8	BH00101560	Inner hexagonal screw	2	M10x1.5Px60L
9	BHU0061020	Inner hexagonal headless screw	3	M6-20L
10	BHU0061010	Inner hexagonal headless screw	2	M6-10L
11	FA0010A350	Wheel flange	1	
12	FA0010B350	Balancing block	3	
13	SB00000004	Steel ball	3	∅4
14	BHU0050805	Inner hexagonal headless screw	4	M5-5L
15	WH00205130	Grinding wheel	1	
16	FA0010C350	Flange spacer	1	
17	FA0010D350	Flange fixing ring	1	
18	FA0010E350	Tightening nut	1	
19	0618100200	Wheel guard	1	
20	06181001B0	Wheel guard top cover	1	
21	BH00050810	Inner hexagonal screw	4	M5x0.8Px10L
22	3060405400	Fixing knob	1	
23	FA0010E350	Nut	1	M6

COLUMN ASSEMBLY
(08182A0100)



SPINDLE ASSEMBLY

COLUMN ASSEMBLY (08182A0100)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	0618201300	Column	1	
2	06182012A0	Vertical rail (L)	1	
3	06182012B0	Vertical rail (R)	1	
4	BH00101530	Inner hexagonal screw	10	M10x1. 5Px30L
5	08181A0100	Spindle assembly	1set	(ACER)
6	0818200200	Motor fixing board	1	
7	MS01362346	Motor	1	230/460V , 60HZ , 3HP 3Ø 2P
8	0618101100	Coupling	1	
9	BHU0081210	Inner hexagonal headless screw	3	M8-10L
10	KEYD080840	Pin	1	8x8x40
11	0618101200	Rubber coupling	1	
12	BH00121745	Inner hexagonal screw	8	M12x1. 75Px45L
13	BHU0121725	Inner hexagonal headless screw	4	M12-25L
14	BH00101550	Inner hexagonal screw	4	M10x1. 5Px50L
15	0618200400	Dust proof sheet	1	
16	0618200500	Dust proof sheet	1	
17	0618200600	Dust proof sheet	1	
18	0618200700	Dust proof sheet	1	
19	0618200800	Dust proof sheet	1	
20	0618200300	Front cover plate	1	
21	BHU0101510	Inner hexagonal headless screw	10	M10-10L
22	HP0000HP09	Plug	10	HP-09
23	0618202300	Lubrication oil gauge	1	
24	OLG0000029	Lubrication oil gauge glass	1	Ø 29
25	BH00040745	Inner hexagonal screw	2	M4x0. 7Px45L
26	0818200300	Rear cover plate	1	
27	BRC0050812	Cross round head screw	6	M5x0. 8Px12L

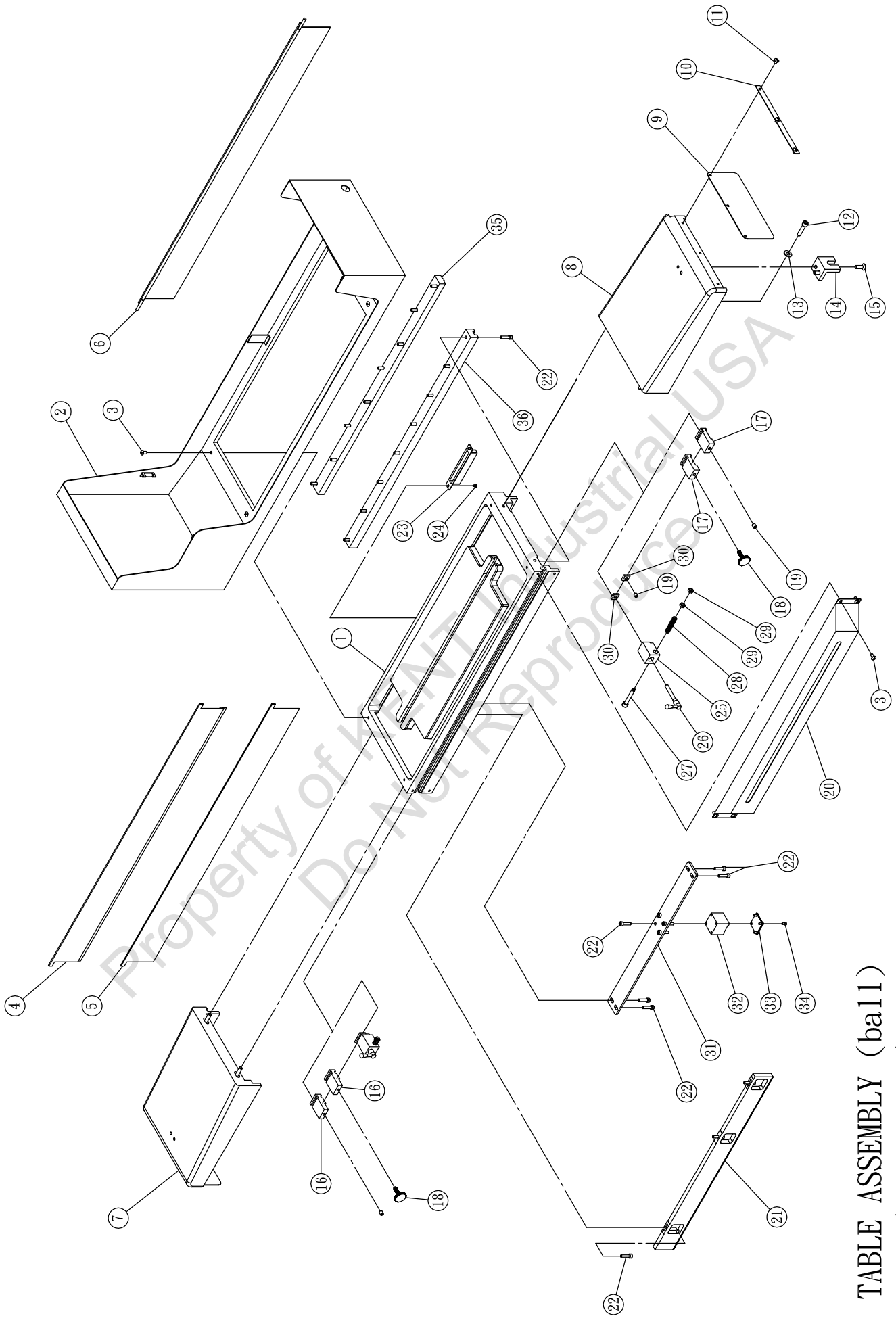
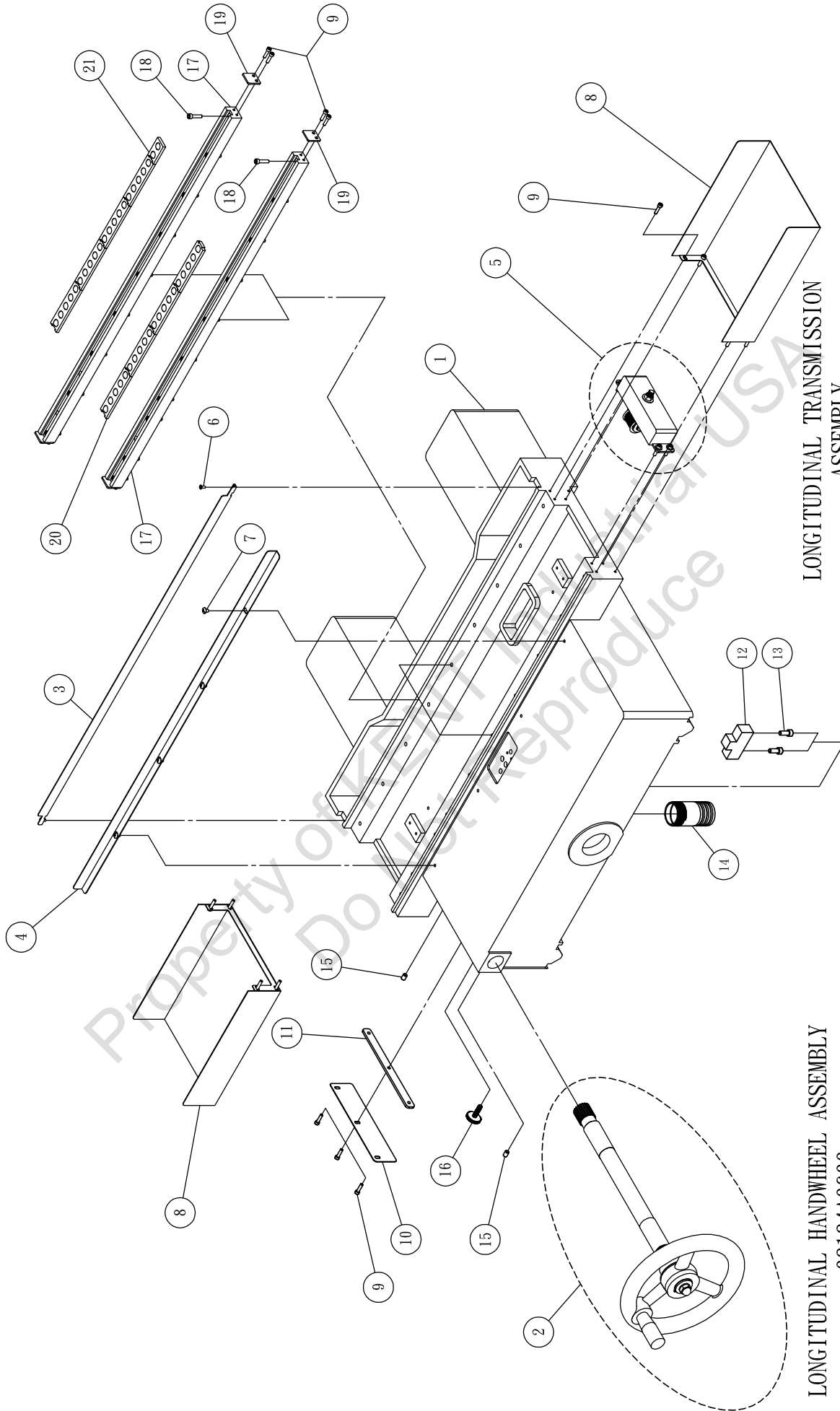


TABLE ASSEMBLY (ba11)
 (08183A0100)

TABLE ASSEMBLY (ball 08183A0100)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	08183001B0	Table (ball)	1	
2	0818301000	Splash guard	1	
3	BRC0061012	Cross head screw	8	M6x1. 0Px12L
4	06181002A0	Coolant guarding board A (Rear)	1	
5	06181002B0	Coolant guarding board B (Rear)	1	
6	06181002C0	Coolant guarding board C (Front)	1	
7	08183003L0	Table wing (L)	1	0818300200 (For 818M)
8	08183003R0	Table wing (R)	1	0818300200 (For 818M)
9	0818300900	Rubber plate	2	
10	0818300600	Fixing bar	2	
11	BRC0061008	Cross round head screw	6	M6x1. 0Px8L
12	BH00081235 BH00081220	Inner hexagonal screw	4	M8x1. 25Px35L (For Hydraulic) M8x1. 25Px20L (For 818M)
13	WP00081602	Washer	4	8x16x2
14	06183035M0	Cylinder rack	2	For Hydraulic
15	BHP0081220	Flat head inner hexagonal screw	4	
16	06183044M0	Sensor block (L)	2	(For Hydraulic)
17	06183045M0	Sensor block (R)	2	(For Hydraulic)
18	0618405200	Fixing knob	2	D-8070-30-M8-30 (For Hydraulic)
19	BHU0081210	Inner hexagonal headless screw	2	M8-8L
20	06184035A0	Longitudinal travel adjustor cover (Hydraulic)	1	(For Hydraulic)
21	0618303300	Gear bar	1	(For Hydraulic)
22	BH00061025	Inner hexagonal screw	27	M6x1. 0Px25L (For Hydraulic)
23	06183032M0	Coolant guiding block	1	
24	BRC0040706	Cross round head screw	2	M4x0. 7Px6L
25	06183020A0	Adjustor block(R)	2	
26	HF00450850	Adjusting knob	2	
27	BH00081250	Inner hexagonal screw	2	M8x1. 25Px50L (For 818M)



LONGITUDINAL TRANSMISSION
ASSEMBLY

SADDLE ASSEMBLY
(FOR BALL WAYS)
(08184A0100)

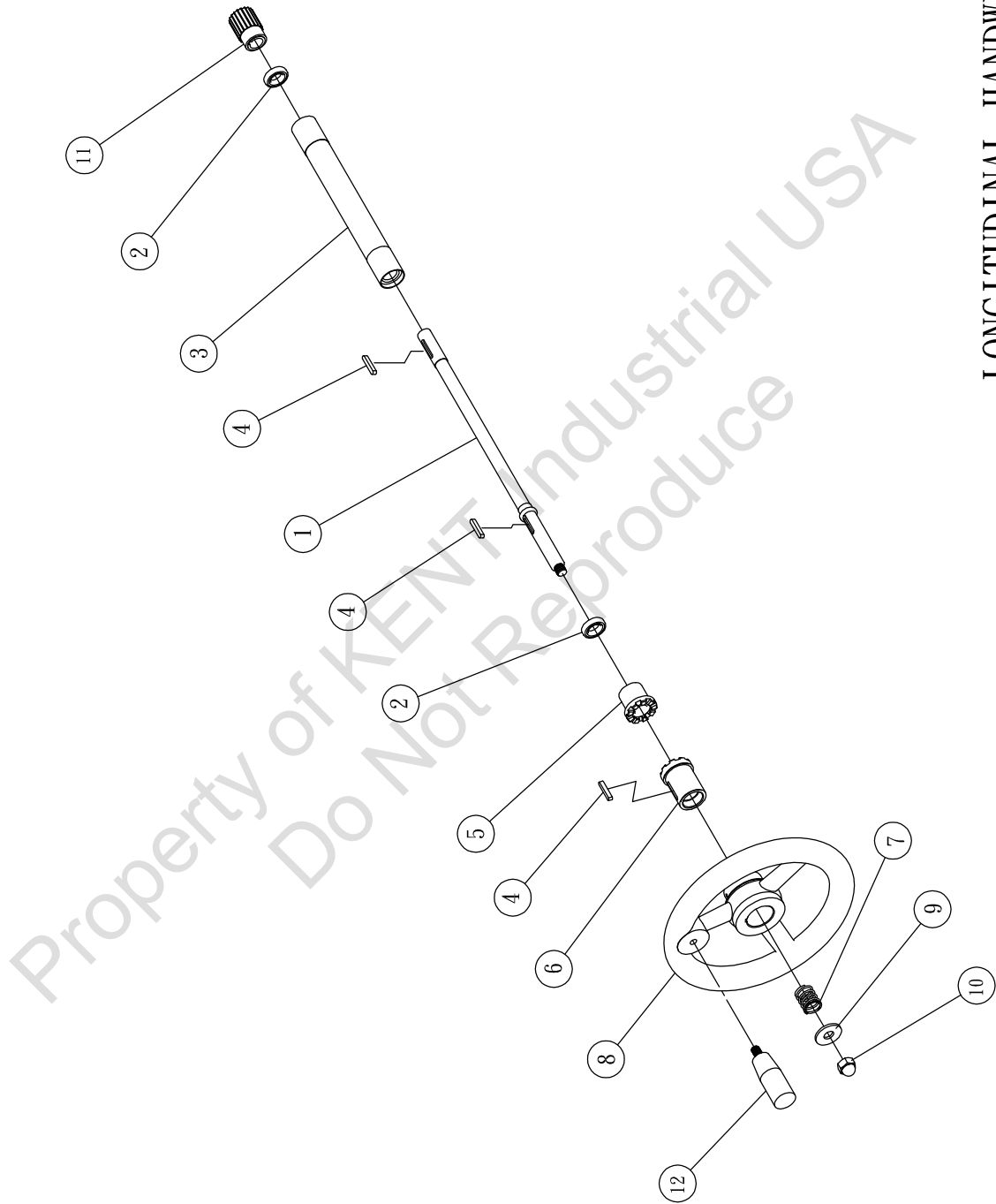
08184A0800

LONGITUDINAL HANDWHEEL ASSEMBLY

08184A0600

SADDLE ASSEMBLY (ball 08184A0100)

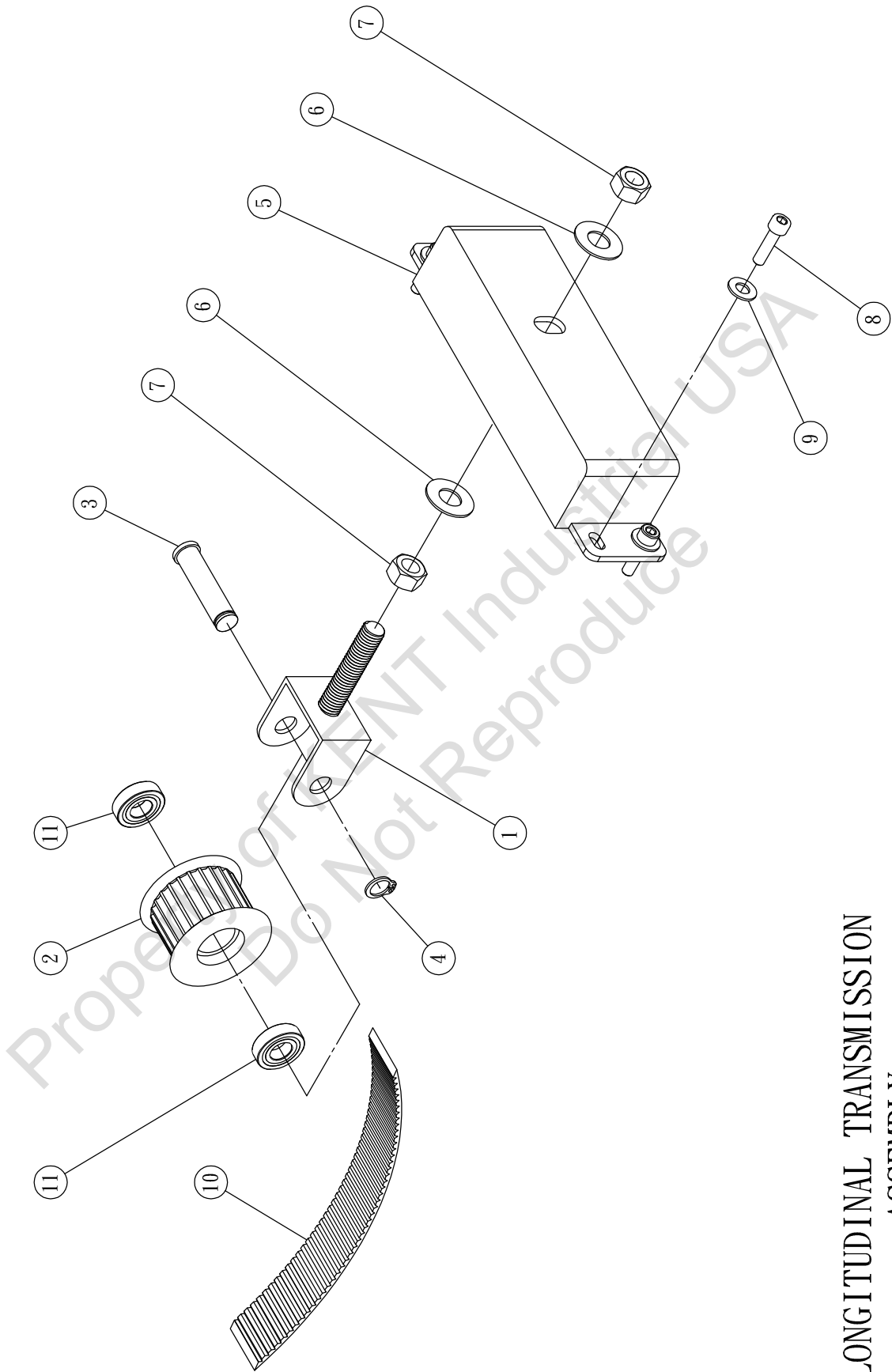
NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	08184001B0	Saddle	1	
2	08184A0600	Longitudinal handwheel assembly	1set	
3	0818401800	Dust proof bar(rear)	1	
4	0818401700	Dust proof bar(front)	1	
5	08184A0800	Longitudinal transmission assembly	1set	
6	BPC0040708	Flat head screw	2	M4x0.7Px8L
7	BRC0061008	Cross round head screw	4	M6x1.0Px8L
8	0818401100	Dust proof plate	2	
9	BH00050820	Inner hexagonal screw	19	M5x0.8Px20L
10	0818401400	Crossfeed locking bar (outer)	1	
11	0818401300	Crossfeed locking bar (inner)	1	
12	0818401600	Longitudinal fixed stroke block	1	
13	BH00081220	Inner hexagonal screw	2	M8x1.25Px20L
14	CONA01123E	Pipe	1	1½ " x 3 inch E
15	BHU0050812	Inner hexagonal headless screw	2	M5x12L
16	0618405200	Handwheel handle	1	D-8070-30-M8-30
17	0818400800	Longitudinal steel rail (concave)	2	
18	BH00061025	Inner hexagonal screw	19	M6x1.0Px25L
19	0618400800	Protection plate	4	
20	0618420500	Steel ball retainer (F)	1	20pcs 5/8" steel ball
21	0618422500	Steel ball retainer (R)	1	22pcs 5/8" steel ball



LONGITUDINAL HANDWHEEL ASSEMBLY
(08184A0600)

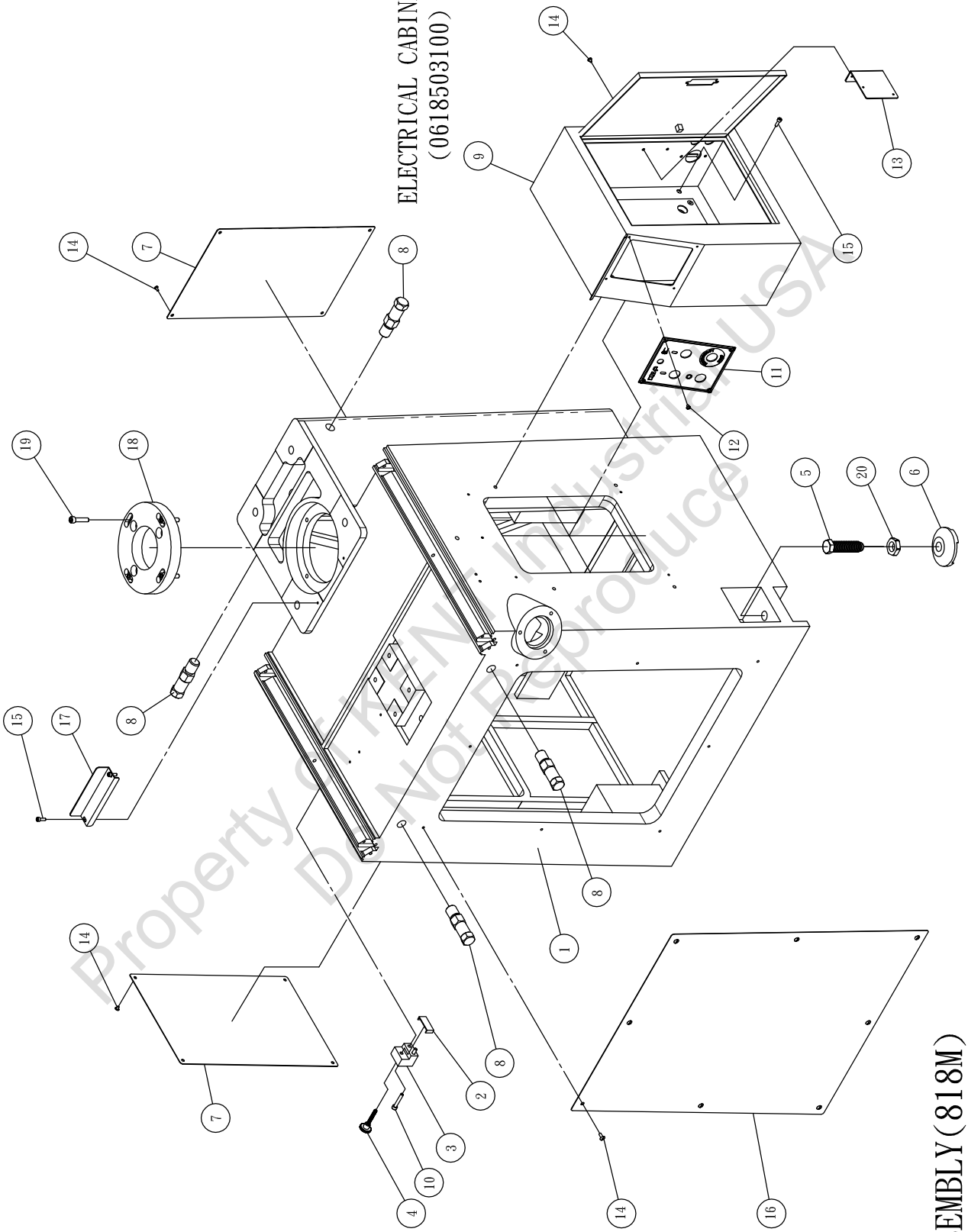
LONGITUDINAL HANDWHEEL ASSEMBLY (08184A0600)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	08184005B0	Transmission shaft	1	
2	B0006903ZZ	Bearing	2	6903ZZ(17x30x7)
3	08184004B0	Shaft housing	1	
4	KEYD050530	Pin	3	5x5x30L
5	06184002A0	Gear	1	
6	06184003B0	Gear	1	
7	SC00176522	Spring	1	
8	WH00KSP250	Handwheel	1	
9	WP00122502	Washer	1	12x25x2
10	NE00000M12	Nut	1	M12
11	06184006A0	Gear (For one V one flat type)	1	0618400600 Gear-M
12	HE00G90M10	Handle	1	FG90-M10



LONGITUDINAL TRANSMISSION
 ASSEMBLY
 (08184A0800)

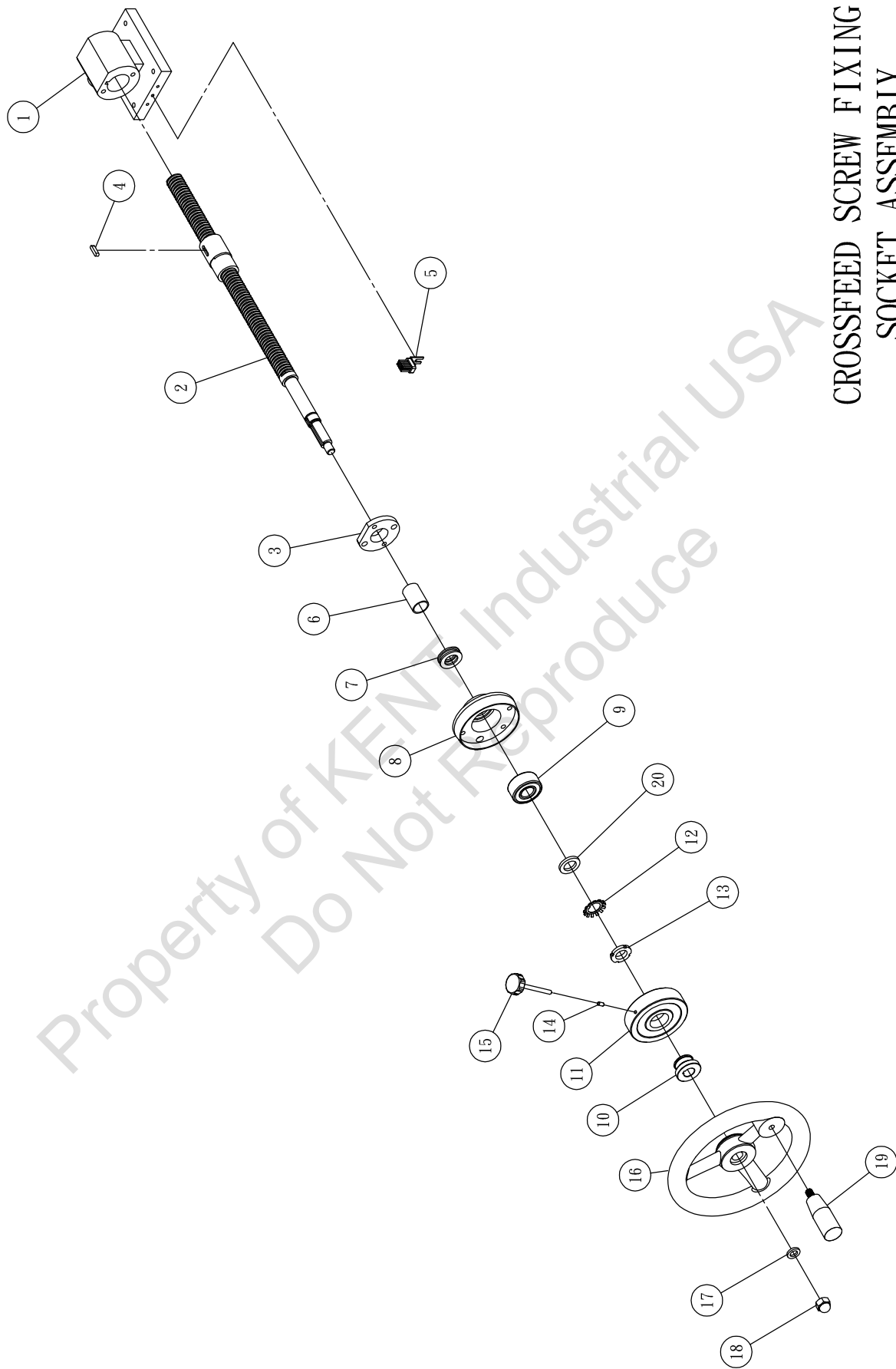
ELECTRICAL CABINET
(0618503100)



BASE ASSEMBLY (818M)
(08185A0100)

BASE ASSEMBLY (818M 08185A0100)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	08185001A0	Base (flat)	1	08185001B0 (concave)
2	0618504500	Fixing plate	1	
3	0618503000	Fixing seat	1	
4	3060405500	Fixing screw (adjustable)	1	
5	0618502400	Leveling bolt	3	
6	0618501200	Leveling block	3	
7	0618504300	Side cover	2	
8	0618504900	Lifting bolt	4	
9	0618503100	Electrical cabinet (R)	1	818M (L) 0618503200
10	BH00061035	Inner hexagonal screw	2	M6x1. 0Px35L
11	0618504600	Control panel	1	
12	BRC0040706	Cross round head screw	4	M4x0. 7Px6L
13	0618505400	Switch fixed seat	1	
14	BRC0050810	Cross round head screw	18	M5x0. 8Px10L
15	BH00050810	Inner hexagonal screw	6	M5x0. 8Px10L
16	08185002A0	Base cover (flat)	1	08185003B0 (concave)
17	0818200400	Column cover	1	
18	3060501200	Lift fixed plates	1	
19	BH00081235	Inner hexagonal screw	4	M8x1. 25Px35L
20	0618502500	Adjustment nut	3	7/8" - 9 UNS

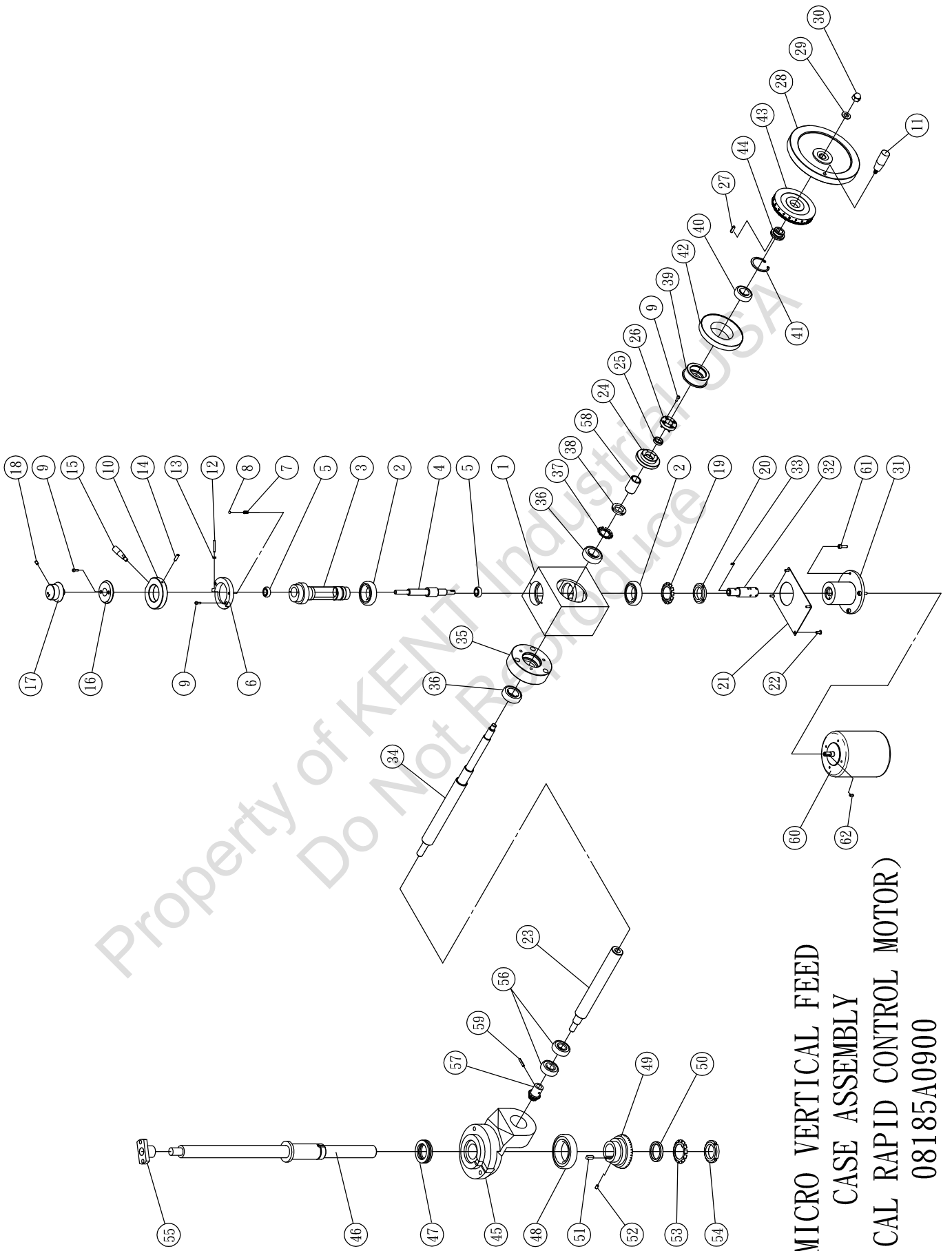


CROSSFEED SCREW FIXING
 SOCKET ASSEMBLY
 (08185A0500)

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CROSSFEED SCREW FIXING SOCKET ASSEMBLY (08185A0500)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	06185011A0	Crossfeed screw fixing socket	1	
2	08185002C0(公)	Crossfeed screw	1	08185002N0(in)
3	0618500900	Crossfeed nut adjusting ring	1	
4	KEYD050520	Pin	1	5x5x20
5	0618501500	Brush fixing pin	1	
6	0618402500	Ring	1	
7	B000051104	Bearing	1	51104(20x21x35x10)
8	0618400700	Crossfeed indication ring	1	
9	B00005204Z	Bearing	1	5204Z(20x47x20.6)
10	0618405400	Crossfeed indication ring sleeve	1	
11	06184004C0(公)	Crossfeed graduation ring	1	06184004N0(in)
12	AW04000M20	Serrate washer	1	AW04
13	AN04M20P15	Nut	1	AN04(M20x1.0P)
14	PIN0005030	Pin	1	5x30L
15	SS0000M620	Hand knob	1	M6x20L
16	WH00KSP200	Handwheel	1	KSP200(hollow)
17	WP00122003	Washer	1	12x20x3
18	NE00000M12	Nut	1	M12
19	HE00G90M10	Handle	1	FG90-M10
20	3060415700	Crossfeed screw washer	1	



MICRO VERTICAL FEED
CASE ASSEMBLY
(VERTICAL RAPID CONTROL MOTOR)
08185A0900

MICRO VERTICAL FEED CASE ASSEMBLY (VERTICAL RAPID CONTROL MOTOR)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	06185D0700	Micro vertical feed case	1	
2	B0006007ZZ	Bearing	2	6007ZZ(35x62x14)
3	06184C0400	Micro vertical feed shaft	1	
4	06185D0202	Micro vertical feed gear	1	
5	B0006000ZZ	Bearing	2	6000ZZ(10x26x8)
6	06184C0600	Ring	1	
7	SC00503006	Spring	1	∅ 6 OD x P3 x ∅0.6 x 18L
8	SB01000006	Steel ball	2	∅ 6
9	BH00040712	Inner hexagonal screw	8	M4x0.7Px12L
10	06184C0500	Ring	1	
11	HA00R90M10	Handle	1	FR90-M10
12	BHU0040730	Screw	1	M4x0.7Px30L
13	NH000000M4	Nut	1	M4
14	BHU0061020	Inner hexagonal headless screw	1	M6-20L
15	06184C1300	Micro crossfeed handle	1	
16	06184C0300	Micro vertical feed indication ring	1	
17	06184C01N0	Micro vertical feed graduation ring	1	mm : 06184C01C0
18	BHU0061010	Inner hexagonal headless screw	1	M6-10L
19	AW07000M35	Serrate washer	1	AW07
20	AN07M35P15	Nut	1	AN07(M35x1.5P)
21	06185D0800	Micro vertical feed case cover board	1	
22	BRC0050810	Cross round head screw	4	M5x0.8Px10L
23	06185D1400	Vertical feed gear shaft	1	
24	06185D0201	Micro vertical feed gear	1	
25	RING00SC20	Spacer ring	1	SC-20
26	06185D1000	Micro vertical feed fixing ring	1	
27	KEYD050520	Pin	1	5x5x20

MICRO VERTICAL FEED CASE ASSEMBLY (VERTICAL RAPID CONTROL MOTOR)

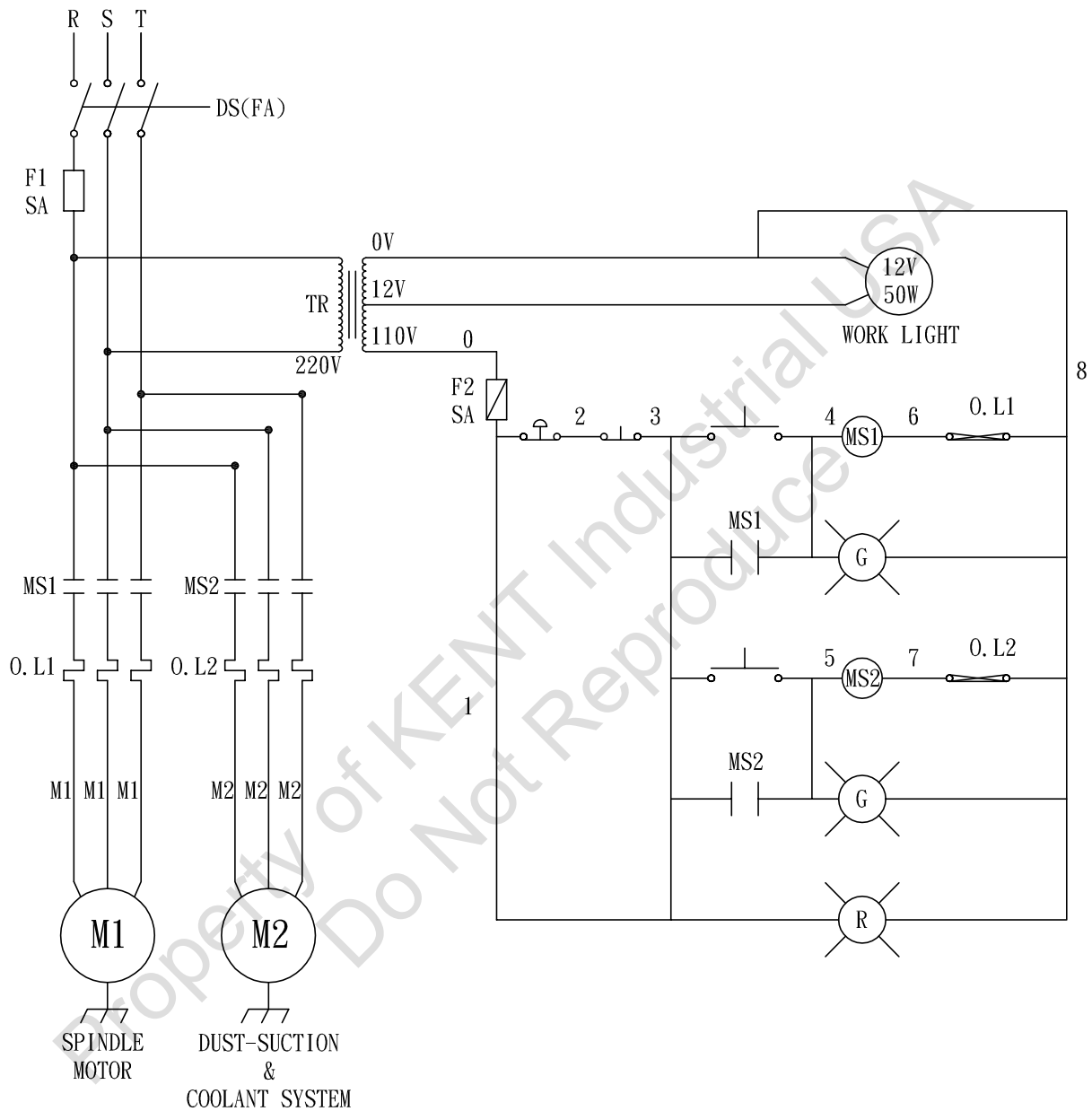
NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
28	WH00KRA200	Handwheel	1	KRA200
29	WP00122003	Washer	1	13x24x2.5
30	NE00000M12	Nut	1	M12
31	06185D19AS	Vertical feed motor socket	1	3A : 06185D193A
32	06185D18C2	Vertical feed motor shaft	1	3A : 06185D1800
33	KEYD030310	Pin	1	3x3x10
34	08185D1200	Vertical feed handwheel shaft	1	
35	06185D1600	Micro vertical feed case fixing seat	1	
36	B0006205ZZ	Bearing	2	6205ZZ(25x52x15)
37	AW05000M25	Serrate washer	1	AW05
38	AN05M25P15	Nut	1	AN05(M25x1.5P)
39	06185D1700	Micro vertical feed case fixing ring	1	
40	B0006204ZZ	Bearing	1	6204ZZ(20x47x14)
41	CL01000047	Fixing ring	1	R47
42	0618500500	Vertical feed indication ring	1	ACRE(in) : 06185005A0
43	06185004N0	Vertical feed graduation ring	1	ACRE(in) : 06185004A0
44	0618501800	Indication ring sleeve	1	
45	0618201000	Vertical screw fixing seat	1	
46	06185650NL	Vertical leadscrew	1	06185011C0 (mm)
47	B000051108	Bearing	1	51108(40x42x60x13)
48	B0006011ZZ	Bearing	1	6011ZZ(55x90x18)
49	06182014N1	Gear	1	mm : 06182014C1
50	0618502300	Spacer	1	
51	KETD070722	Pin	1	7x7x22
52	BHU0061010	Inner hexagonal headless screw	1	M6-10L
53	AW08000M40	Serrate washer	1	AW08
54	AN08M40P15	Nut	1	AN08(M40x1.5P)

MICRO VERTICAL FEED CASE ASSEMBLY (VERTICAL RAPID CONTROL MOTOR)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
55	0618501300	Vertical leadscrew nut	1	
56	B0006204ZZ	Bearing	2	6204ZZ(20x47x14)
57	06182009N2	Gear	1	mm : 06182009C2
58	0618402500	F/R Screw washer	1	
59	PINS005025	Spring pin	1	∅ 5x25L
60	3 A : MU01102200 ASD : MSUD29902A	Vertical rapid control motor	1	3 A : 1/4HP ASD : CKM-299-02A
61	BH00061020	Inner hexagonal screw	4	M6x1.0Px20L
62	KEYD040412	Pin	1	4x4x12

IV. ELECTRICAL WIRING DIAGRAM

⊙. WIRING DIAGRAM (818M):



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

OPERATION MANUAL

CGS-818M

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VI.ELECTRICAL WIRING DIAGRAM

◎.WIRING DIAGRAM.....	IV-1
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I . INSTALLATION OF MACHINE

1. DIMENSION & FLOOR REQUIREMENT:

The minimum space for machine:

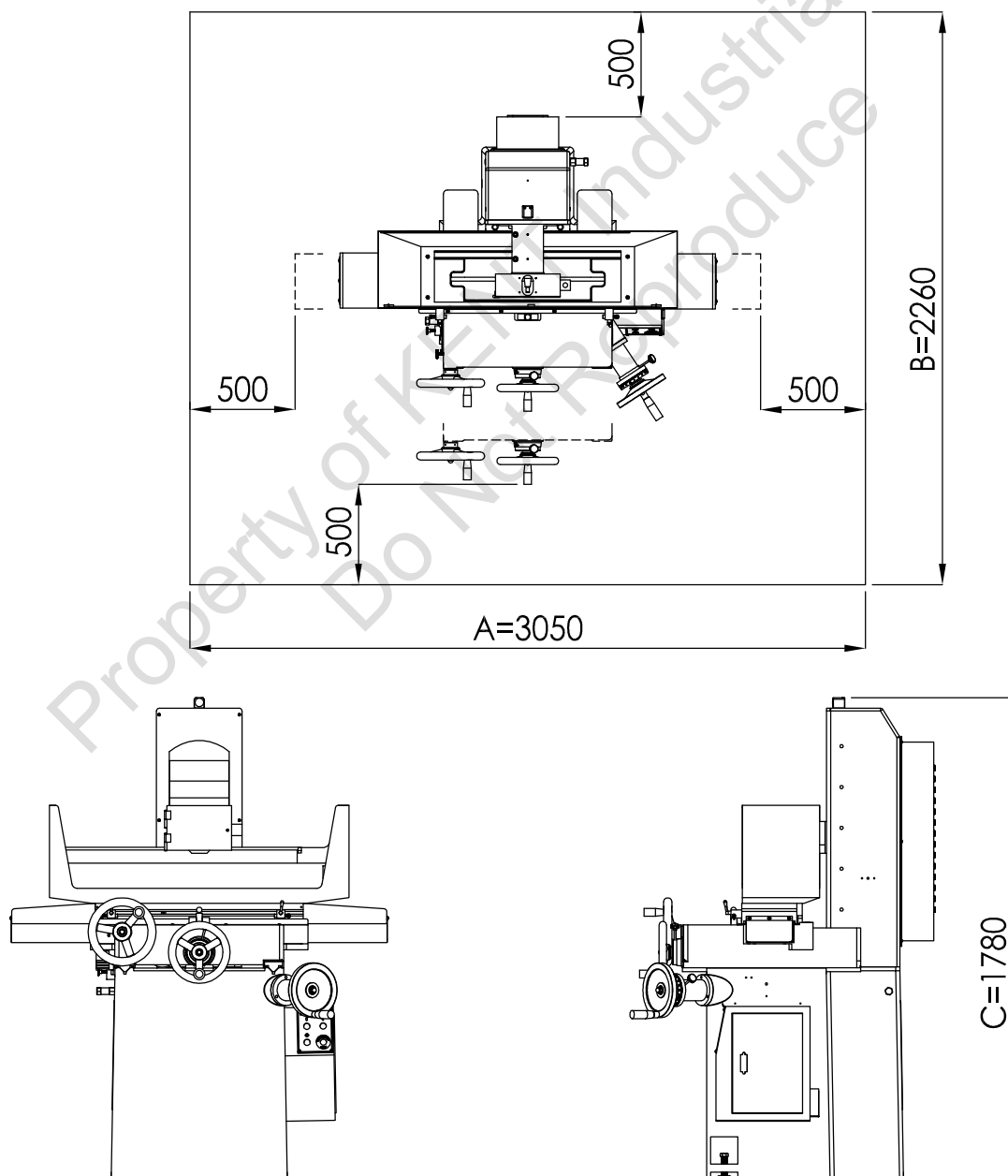
For your convenience to operate, please take the walkway into consideration. Therefore, the ideal space for machine should be:
CB-818:

A - 3050MM (120")

B - 2260MM (89")

C - 1780MM (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.

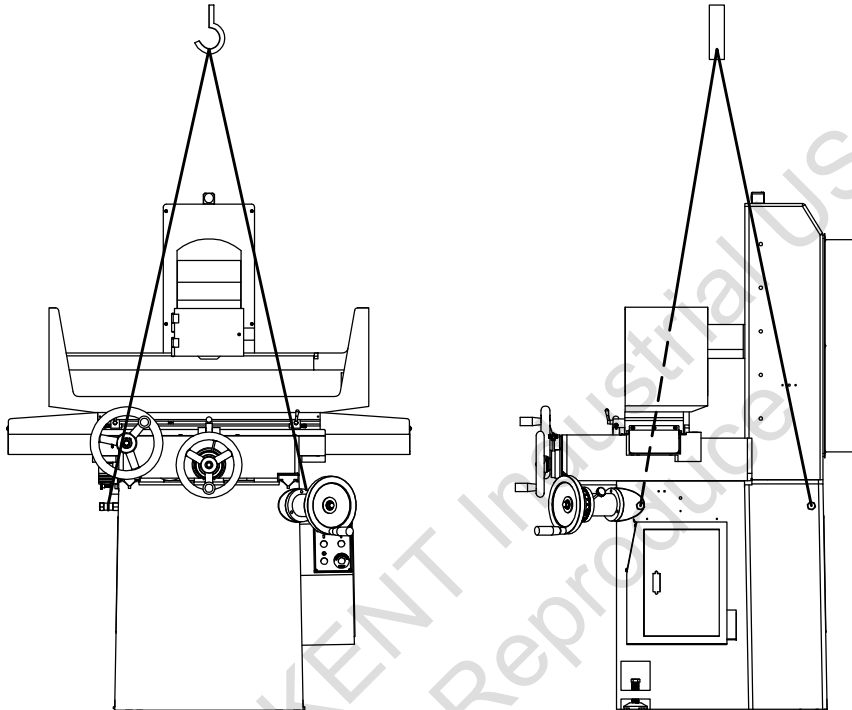
I . INSTALLATION OF MACHINE

4. TRANSPORTATION OF MACHINE:

N.W: 820~1010 KGS; G.W: 920~1110 KGS

(1) CRANE LIFTING: Use steel cable or belt for hanging.

(As shown on the below drawing.)

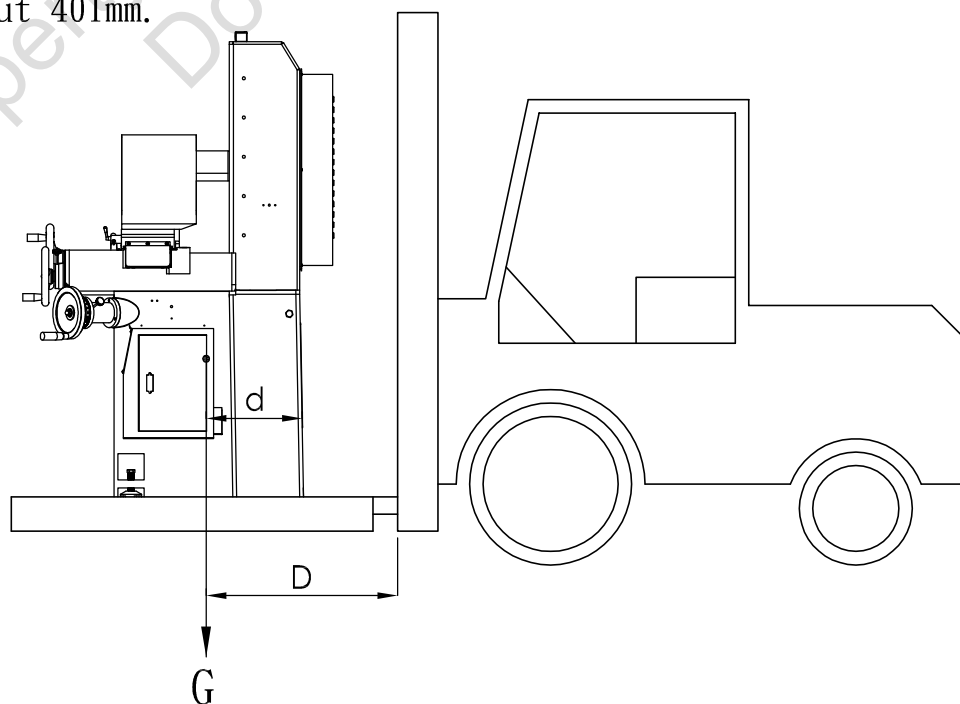


(2) FORK LIFTING: Use the fork lift for transportation.

D: Distance the shorter the better.

G: Center of gravity.

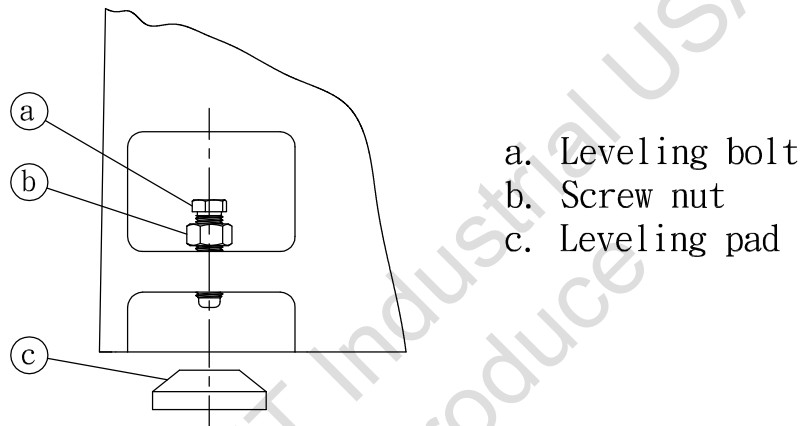
d: About 401mm.



I . INSTALLATION OF MACHINE

5. LEVELING BOLT & PAD

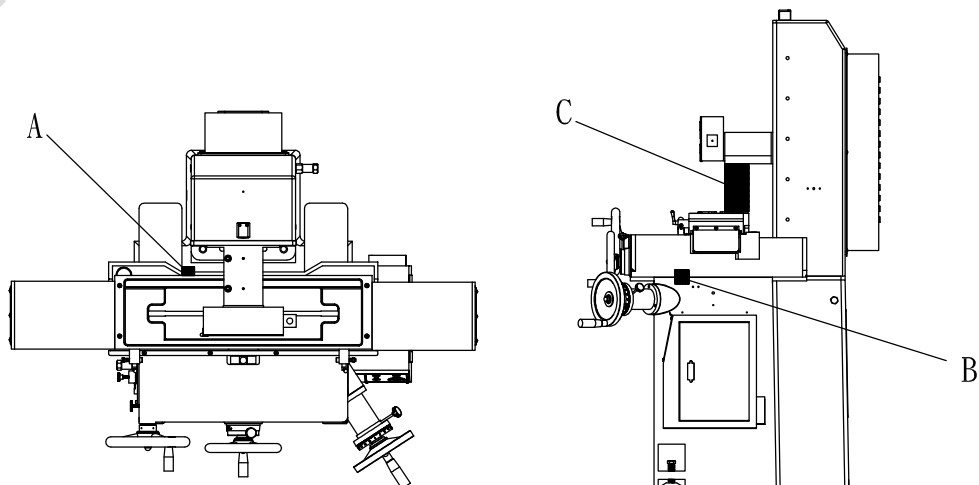
- (1) Lock the leveling bolts and nuts onto the basement, and put the leveling pads under the machine. Lay down the machine carefully and adjust the leveling bolt to set at the center of the leveling pad.
- (2) Follow the above to locate every leveling bolt on each pad, but leave the nuts un-tightened.



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:

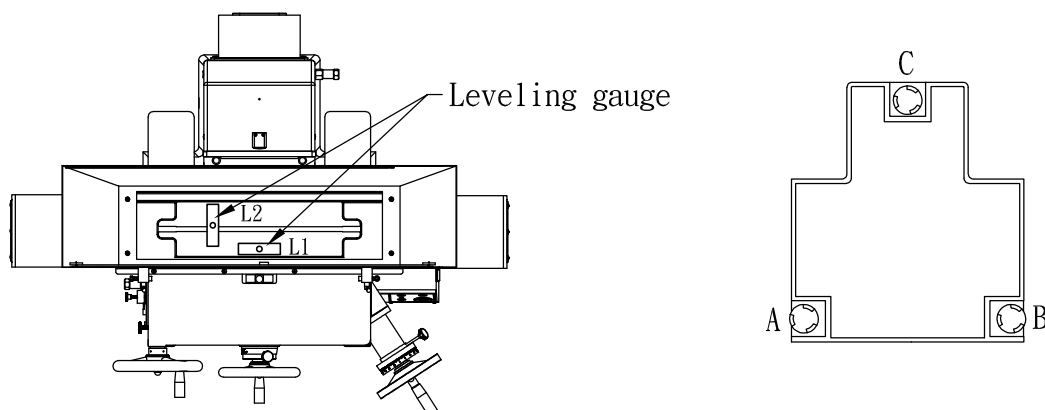
The machine has coated with the anti-rust oil and hanged desiccant to prevent rusting.

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 (1A818~818C II SERIES)

- (1)Hydraulic oil tank capacity: about 50 liters (13 Gallon)
- (2)Please check the drawing below about the oil inlet and outlet of hydraulic system. First, please locate the oil tank in the right and beside the machine. Secondly, connect the oil pipes according to the tags attached on them 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.
- (3)Connect the power cable into the electrical box by the labels on them.

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

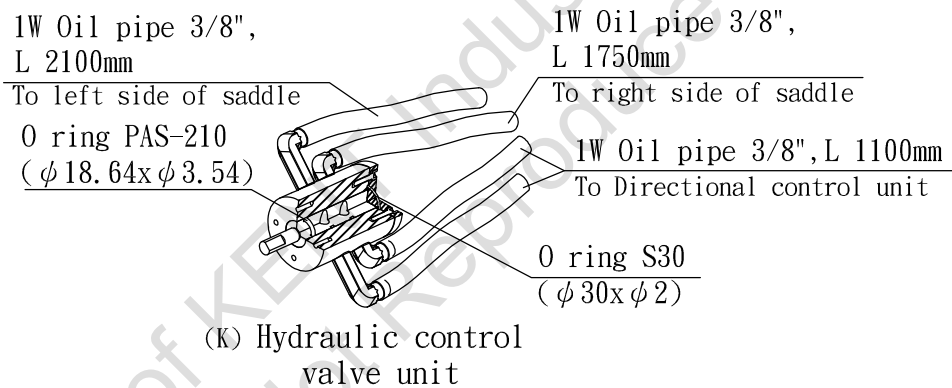
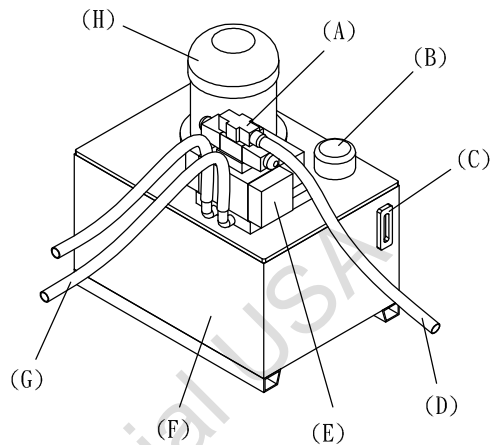
- (1)First-time oil replacement should be done after 3 months operation.
 - (2)Replace the oil and the filter at an interval of 6 months after the first replacement.
 - (3)Check the pressure for pump within 10~12 Kg/cm².
- *Hydraulic system is properly adjusted before the shipment. Unless it's necessary, 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 enviromental laws.

Please be sure to fill in the following suggested oil:

BRAND	TYPE	BRAND	TYPE
ESSO	NUTO H32	MOBIL	D. T. E 24
BP	EVERGOL HLP32	TEXACO	LUBE TAC #2
SHELL	TELUS 32	ARAL	VITAM GF 32

I. INSTALLATION OF MACHINE

- (A) Magnetic control valve
- (B) Oil inlet
- (C) Oil gauge
- (D) Power cable
- (E) Directional control unit
- (F) Hydraulic tank
- (G) Oil pipe
- (H) Hydraulic motor
- (K) Hydraulic control valve unit



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

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:

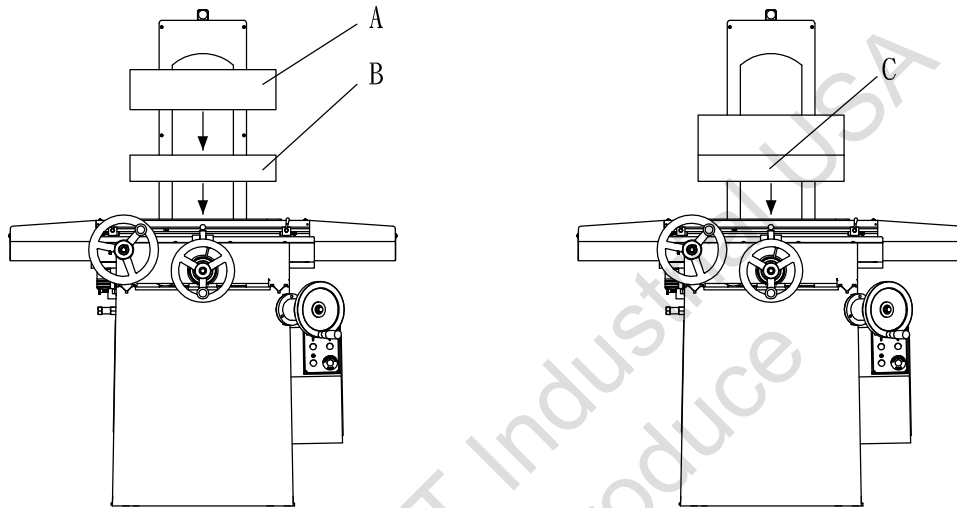
For using this machine safely, please ask every operator, maintenance technician or any other people to obey the safety precautions. To obey the safety precautions below will reduce the danger of any possible damage.

- 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

3. TABLE LOADING CAPACITY:

A = Workpiece weight: 160KGS, B = Magnetic chuck weight: 30KGS,
C = A+B Total weight: 190KGS



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.

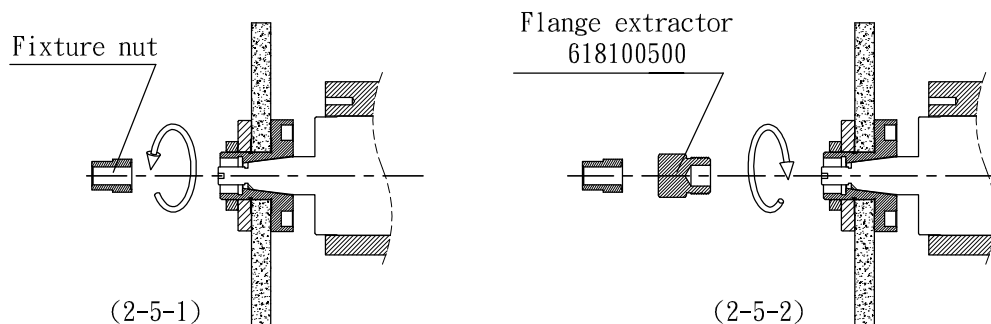
II. SAFETY PRECAUTIONS

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)

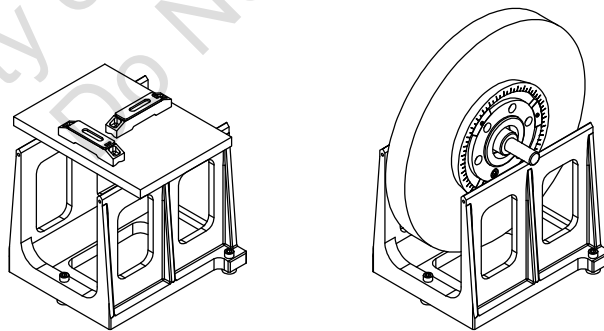


II. SAFETY PRECAUTIONS

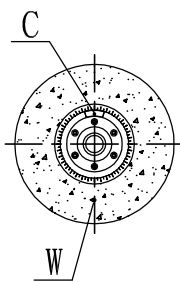
7. GRINDING WHEEL BALANCING ADJUSTMENT:

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.

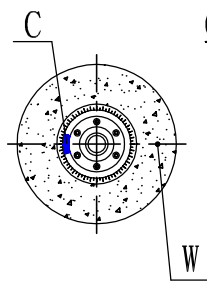
- (1) Put the balancing stand on a steady table or ground, and use the leveling gauge to adjust the levelness of the balancing stand. (2-6-1)
- (2) Let the wheel roll freely on the stand to find out its gravity center "W" and mark it on the wheel. (2-6-2)
- (3) Insert a balancing block into the opposite 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)



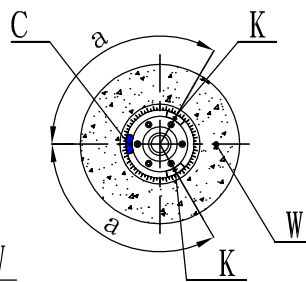
(2-6-1)



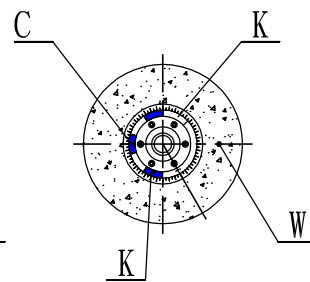
(2-6-2)



(2-6-3)



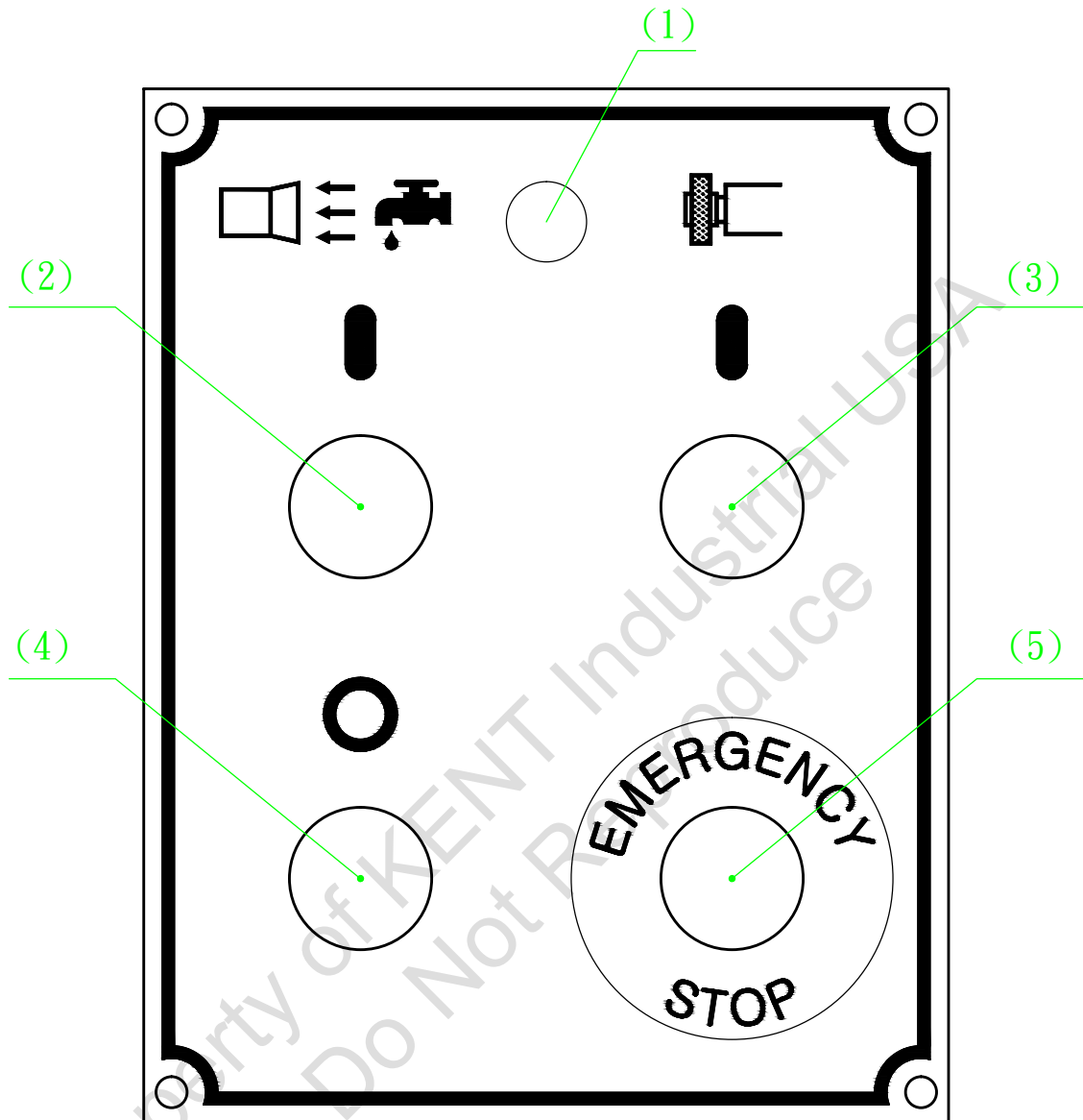
(2-6-4)



(2-6-5)

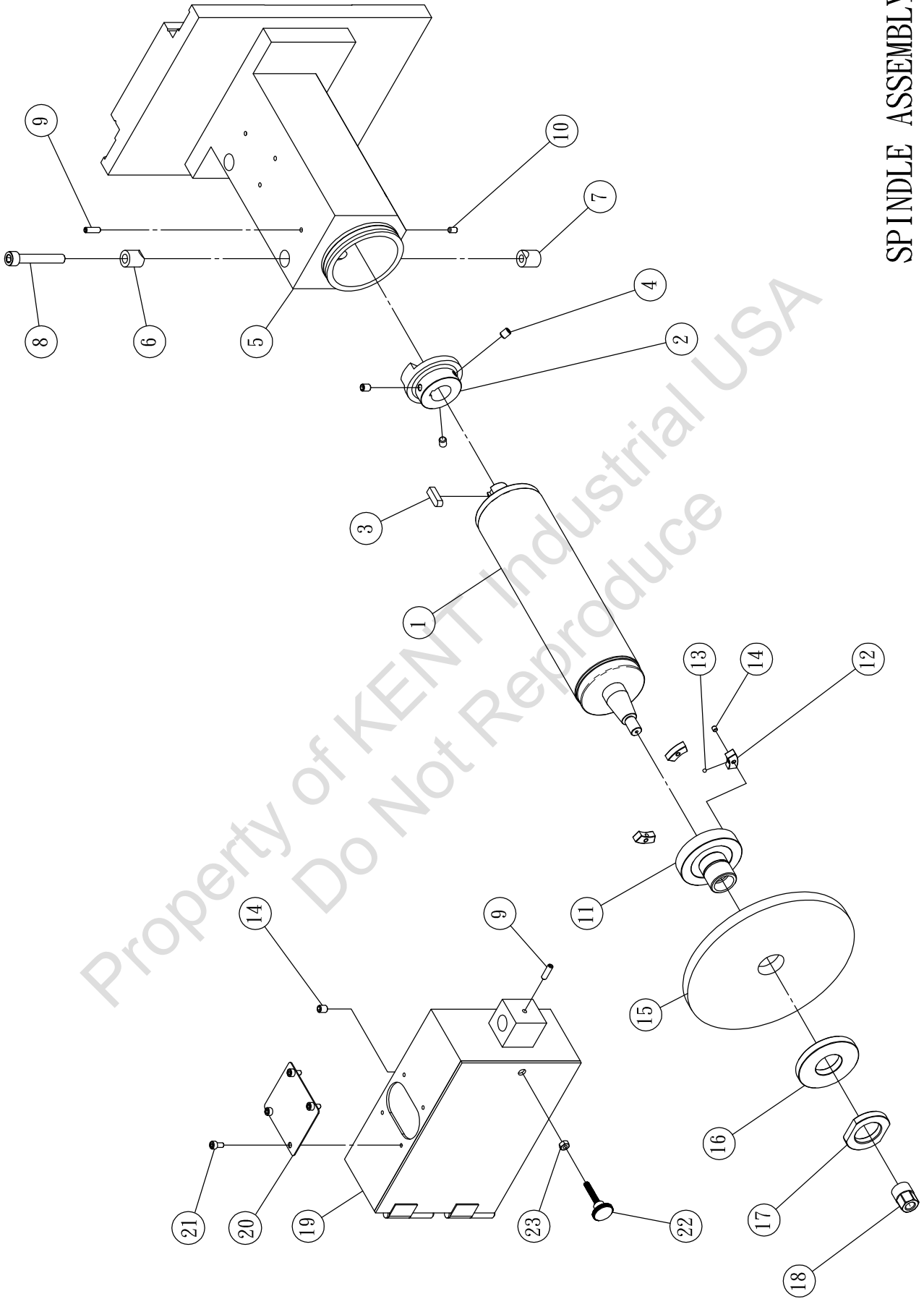
II . SAFETY PRECAUTIONS

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.

SPINDLE ASSEMBLY
(08181A0200)

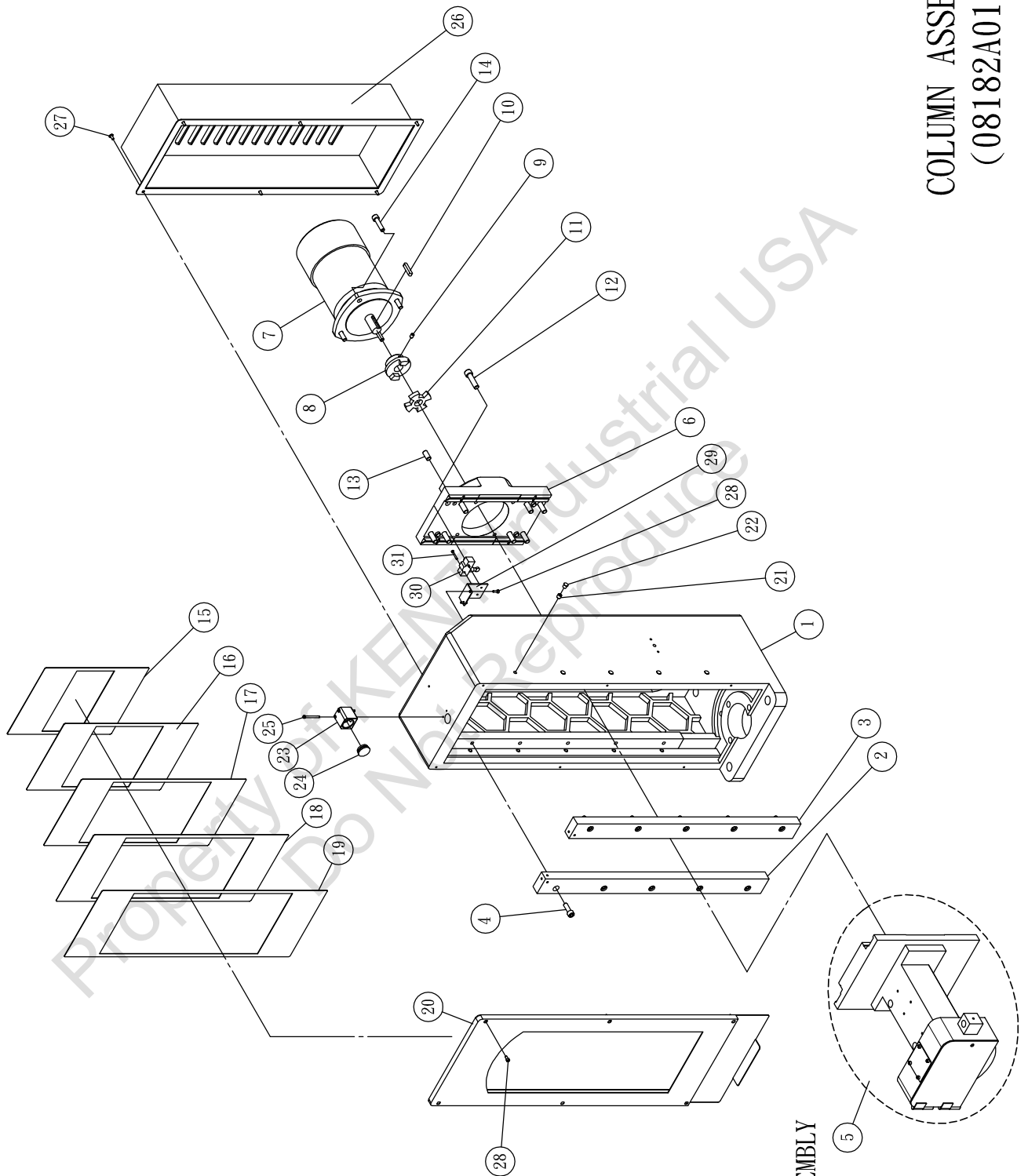


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SPINDLE ASSEMBLY (08181A0200)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	08181A0100	Spindle	1	
2	0618101100	Motor coupling	1	
3	KEYS080725	Pin	1	8x7x25
4	BHU0081210	Inner hexagonal headless screw	3	M8-10L
5	081810010B	Spindle housing	1	
6	06181010A0	Spindle fixing ring A	2	
7	06181010B0	Spindle fixing ring B	2	
8	BH00101560	Inner hexagonal screw	2	M10x1.5Px60L
9	BHU0061020	Inner hexagonal headless screw	3	M6-20L
10	BHU0061010	Inner hexagonal headless screw	2	M6-10L
11	FA0010A350	Wheel flange	1	
12	FA0010B350	Balancing block	3	
13	SB00000004	Steel ball	3	∅4
14	BHU0050805	Inner hexagonal headless screw	4	M5-5L
15	WH00205130	Grinding wheel	1	
16	FA0010C350	Flange spacer	1	
17	FA0010D350	Flange fixing ring	1	
18	FA0010E350	Tightening nut	1	
19	0618100200	Wheel guard	1	
20	06181001B0	Wheel guard top cover	1	
21	BH00050810	Inner hexagonal screw	4	M5x0.8Px10L
22	3060405400	Fixing knob	1	
23	FA0010E350	Nut	1	M6

COLUMN ASSEMBLY
(08182A0100)



SPINDLE ASSEMBLY

COLUMN ASSEMBLY (08182A0100)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	0618201300	Column	1	
2	06182012A0	Vertical rail (L)	1	
3	06182012B0	Vertical rail (R)	1	
4	BH00101530	Inner hexagonal screw	10	M10x1.5Px30L
5	08181A0100	Spindle assembly	1set	(ACER)
6	0818200200	Motor fixing board	1	
7	MS01362346	Motor	1	230/460V , 60HZ , 3HP 3Ø 2P
8	0618101100	Coupling	1	
9	BHU0081210	Inner hexagonal headless screw	3	M8-10L
10	KEYD080840	Pin	1	8x8x40
11	0618101200	Rubber coupling	1	
12	BH00121745	Inner hexagonal screw	8	M12x1.75Px45L
13	BHU0121725	Inner hexagonal headless screw	4	M12-25L
14	BH00101550	Inner hexagonal screw	4	M10x1.5Px50L
15	0618200400	Dust proof sheet	1	
16	0618200500	Dust proof sheet	1	
17	0618200600	Dust proof sheet	1	
18	0618200700	Dust proof sheet	1	
19	0618200800	Dust proof sheet	1	
20	0618200300	Front cover plate	1	
21	BHU0101510	Inner hexagonal headless screw	10	M10-10L
22	HP0000HP09	Plug	10	HP-09
23	0618202300	Lubrication oil gauge	1	
24	OLG0000029	Lubrication oil gauge glass	1	Ø 29
25	BH00040745	Inner hexagonal screw	2	M4x0.7Px45L
26	0818200300	Rear cover plate	1	
27	BRC0050812	Cross round head screw	6	M5x0.8Px12L

COLUMN ASSEMBLY (08182A0100)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
28	BH00050810	Inner hexagonal screw	8	M5x0.8Px10L
29	3060211900	Vertical adjustment switch fixing board	1	3A~ASD
30	SM00AM1307	Limit switch	1	3A~ASD / AM-1307
31	BH00040720	Inner hexagonal screw	2	3A~ASD / M4x0.7Px20L

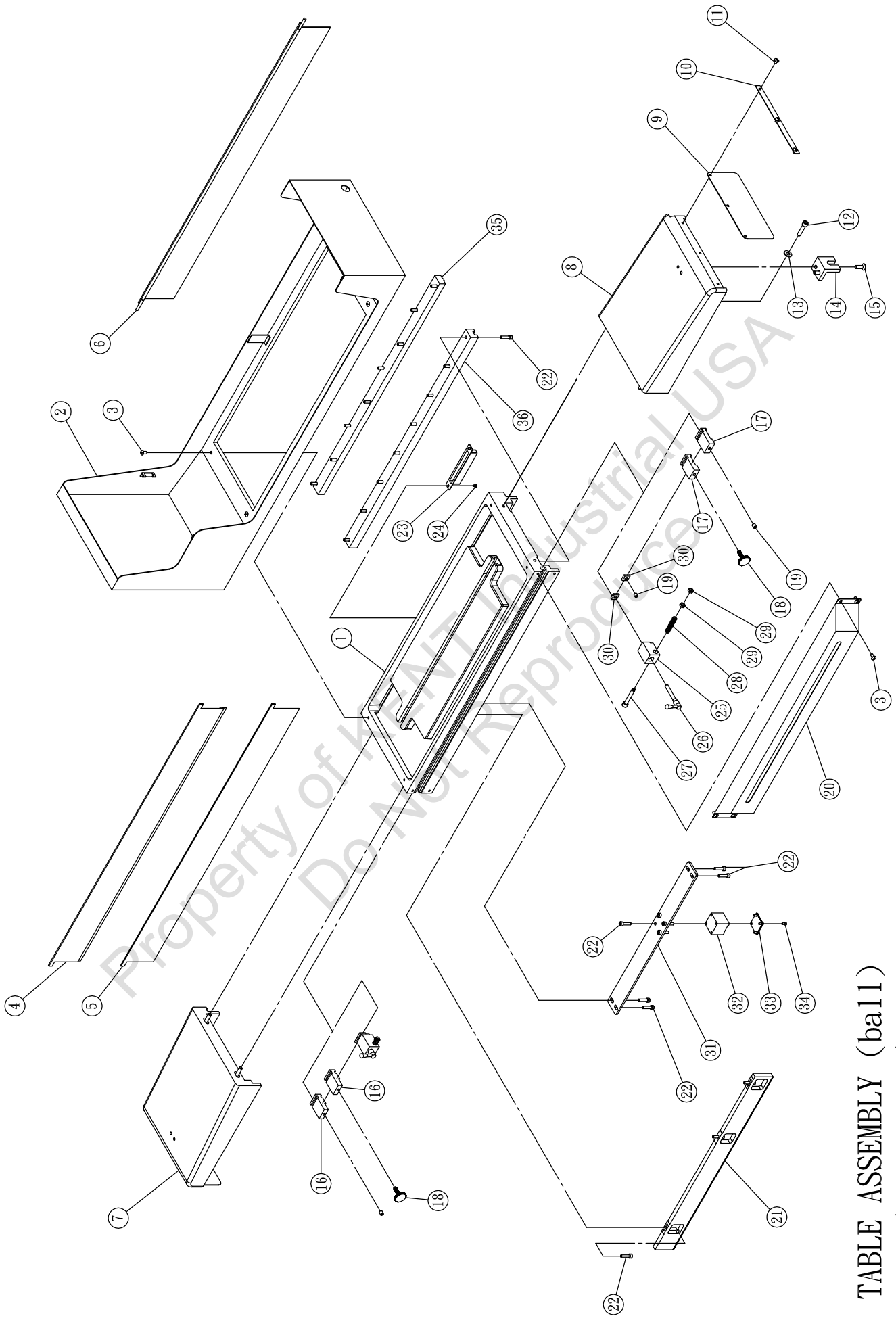


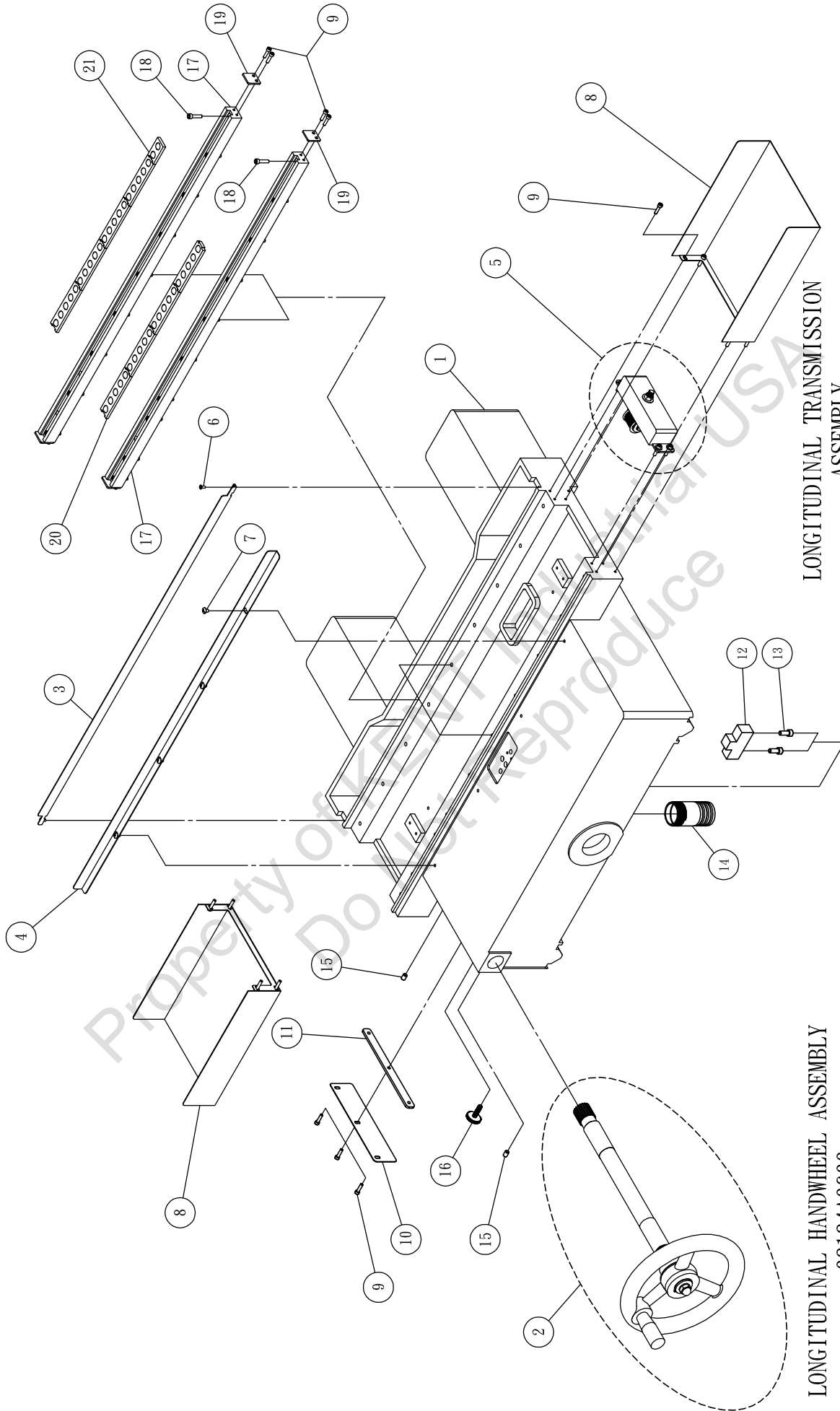
TABLE ASSEMBLY (ba11)
(08183A0100)

TABLE ASSEMBLY (ball 08183A0100)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	08183001B0	Table (ball)	1	
2	0818301000	Splash guard	1	
3	BRC0061012	Cross head screw	8	M6x1. 0Px12L
4	06181002A0	Coolant guarding board A (Rear)	1	
5	06181002B0	Coolant guarding board B (Rear)	1	
6	06181002C0	Coolant guarding board C (Front)	1	
7	08183003L0	Table wing (L)	1	0818300200 (For 818M)
8	08183003R0	Table wing (R)	1	0818300200 (For 818M)
9	0818300900	Rubber plate	2	
10	0818300600	Fixing bar	2	
11	BRC0061008	Cross round head screw	6	M6x1. 0Px8L
12	BH00081235 BH00081220	Inner hexagonal screw	4	M8x1. 25Px35L (For Hydraulic) M8x1. 25Px20L (For 818M)
13	WP00081602	Washer	4	8x16x2
14	06183035M0	Cylinder rack	2	For Hydraulic
15	BHP0081220	Flat head inner hexagonal screw	4	
16	06183044M0	Sensor block (L)	2	(For Hydraulic)
17	06183045M0	Sensor block (R)	2	(For Hydraulic)
18	0618405200	Fixing knob	2	D-8070-30-M8-30 (For Hydraulic)
19	BHU0081210	Inner hexagonal headless screw	2	M8-8L
20	06184035A0	Longitudinal travel adjustor cover (Hydraulic)	1	(For Hydraulic)
21	0618303300	Gear bar	1	(For Hydraulic)
22	BH00061025	Inner hexagonal screw	27	M6x1. 0Px25L (For Hydraulic)
23	06183032M0	Coolant guiding block	1	
24	BRC0040706	Cross round head screw	2	M4x0. 7Px6L
25	06183020A0	Adjustor block(R)	2	
26	HF00450850	Adjusting knob	2	
27	BH00081250	Inner hexagonal screw	2	M8x1. 25Px50L (For 818M)

TABLE ASSEMBLY (ball 08183A0100)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
28	SC00854516	Spring	2	(For 818M)
29	NH000014M8	Nut	4	M8 (For 818M)
30	0618302600	Fixing nut	4	(For 818M)
31	0818302000	Longitudinal belt fixed block	1	(For 818M)
32	0818302100	Timing belt seat	1	(For 818M)
33	0618402100	Timing belt fixing board	1	(For 818M)
34	BHP0040708	Inner hexagonal screw	4	M4x0.7Px8L (For Hydraulic)
35	0618300400	Convex table rail	1	
36	0618300500	Concave table rail	1	



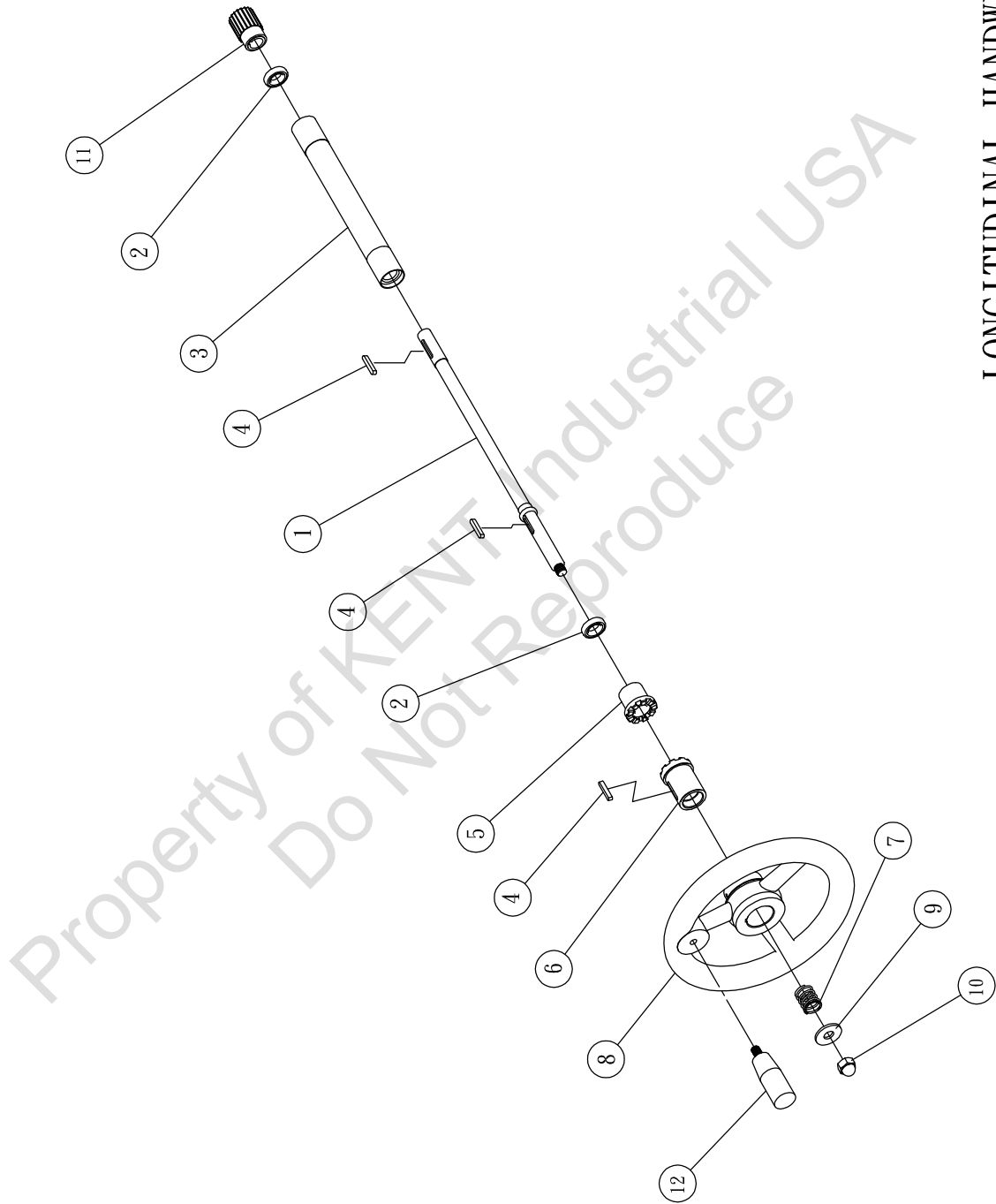
LONGITUDINAL HANDWHEEL ASSEMBLY
08184A0600

LONGITUDINAL TRANSMISSION
ASSEMBLY
08184A0800

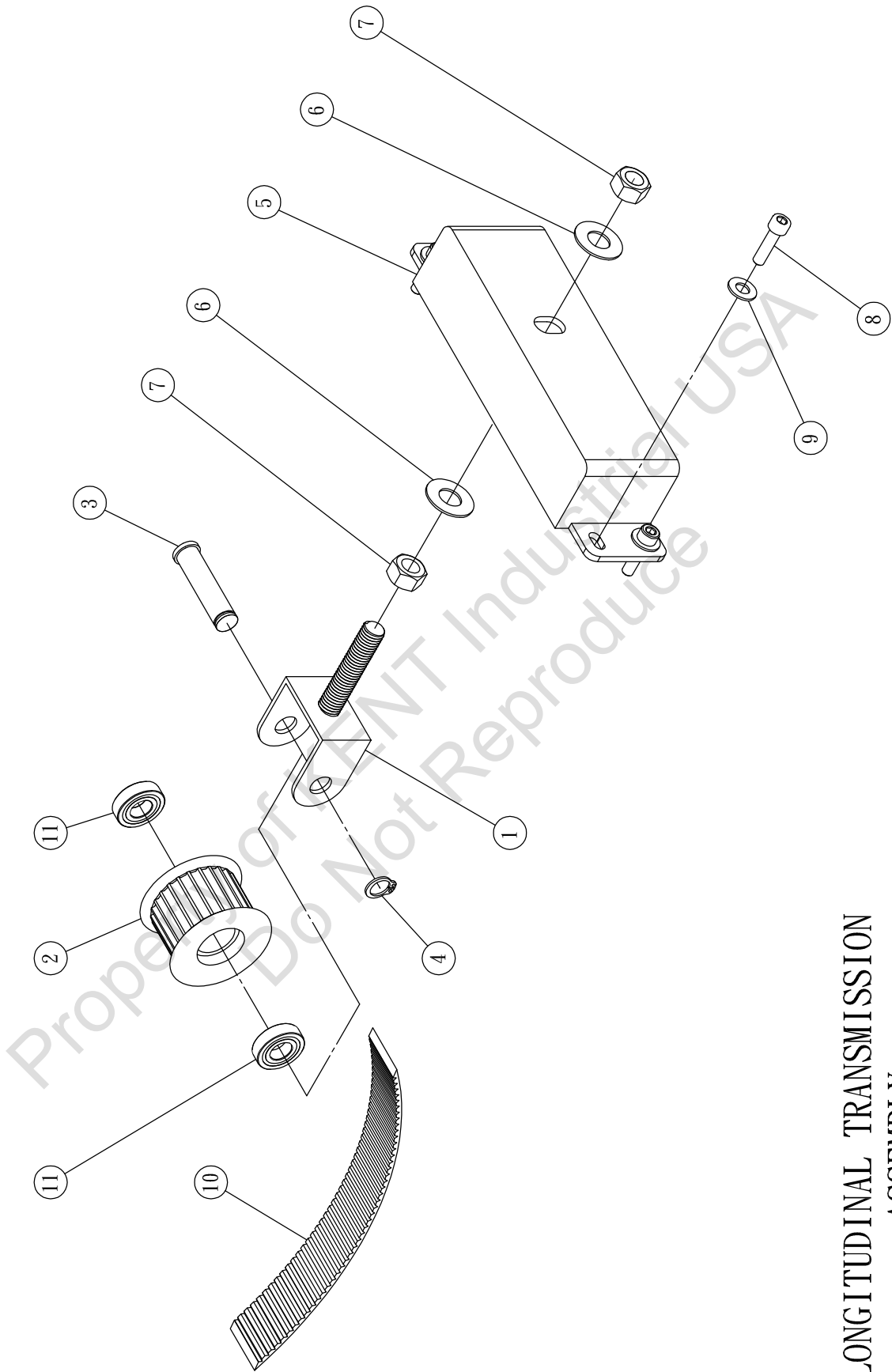
SADDLE ASSEMBLY
(FOR BALL WAYS)
(08184A0100)

SADDLE ASSEMBLY (ball 08184A0100)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	08184001B0	Saddle	1	
2	08184A0600	Longitudinal handwheel assembly	1set	
3	0818401800	Dust proof bar(rear)	1	
4	0818401700	Dust proof bar(front)	1	
5	08184A0800	Longitudinal transmission assembly	1set	
6	BPC0040708	Flat head screw	2	M4x0.7Px8L
7	BRC0061008	Cross round head screw	4	M6x1.0Px8L
8	0818401100	Dust proof plate	2	
9	BH00050820	Inner hexagonal screw	19	M5x0.8Px20L
10	0818401400	Crossfeed locking bar (outer)	1	
11	0818401300	Crossfeed locking bar (inner)	1	
12	0818401600	Longitudinal fixed stroke block	1	
13	BH00081220	Inner hexagonal screw	2	M8x1.25Px20L
14	CONA01123E	Pipe	1	1½ " x 3 inch E
15	BHU0050812	Inner hexagonal headless screw	2	M5x12L
16	0618405200	Handwheel handle	1	D-8070-30-M8-30
17	0818400800	Longitudinal steel rail (concave)	2	
18	BH00061025	Inner hexagonal screw	19	M6x1.0Px25L
19	0618400800	Protection plate	4	
20	0618420500	Steel ball retainer (F)	1	20pcs 5/8" steel ball
21	0618422500	Steel ball retainer (R)	1	22pcs 5/8" steel ball



LONGITUDINAL HANDWHEEL ASSEMBLY
(08184A0600)

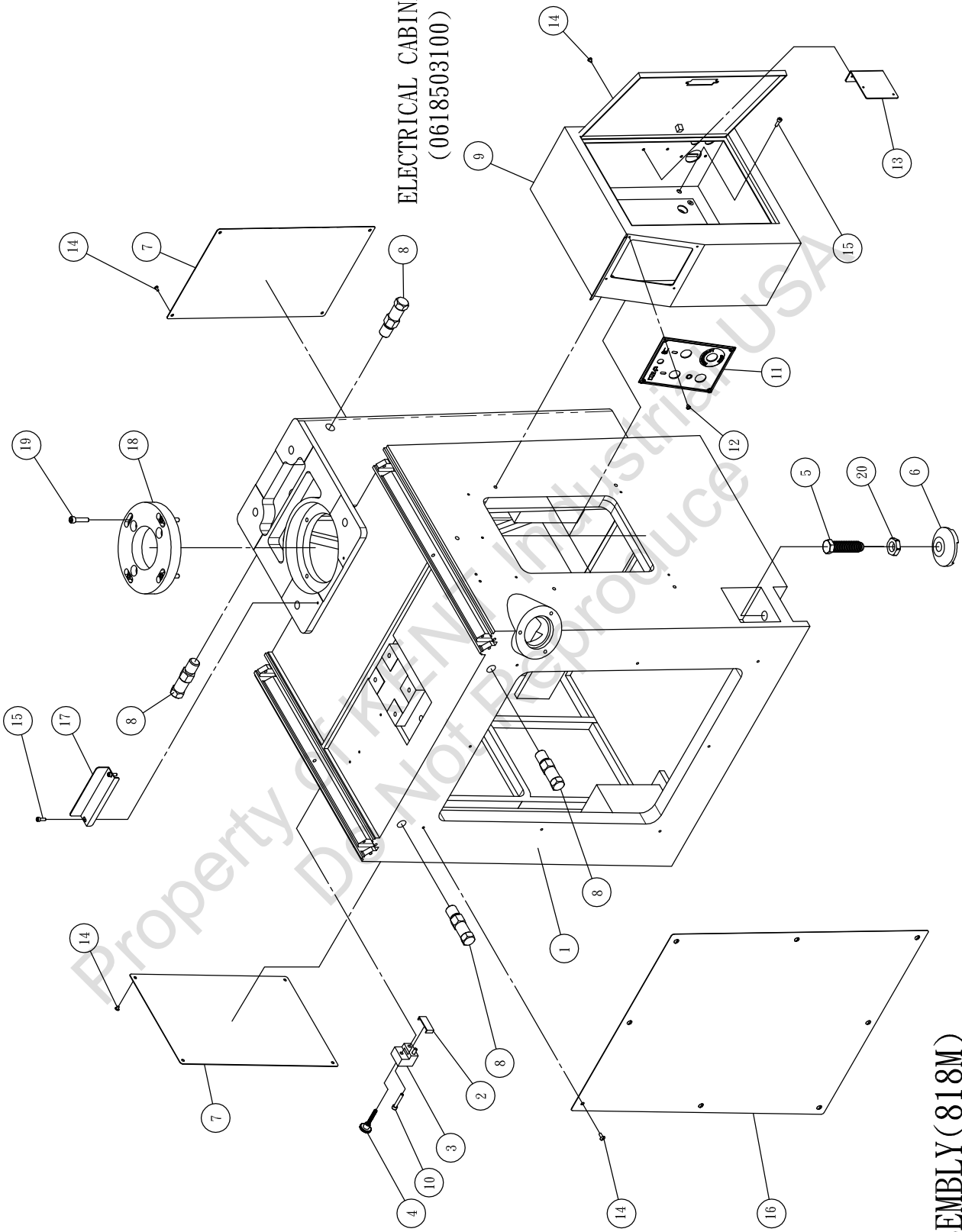


LONGITUDINAL TRANSMISSION
 ASSEMBLY
 (08184A0800)

LONGITUDINAL TRANSMISSION ASSEMBLY (08184A0800)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	0618401700	Gear fixing seat	1	
2	0618401600	Gear	1	
3	0618402300	Fixing shaft	1	
4	CL00000010	Ring	1	S10
5	0818401000	Gear fixing case	1	
6	WP00102302	Washer	2	10x23x2
7	NH00014M10	Nut	2	M10
8	BH00050820	Inner hexagonal screw	4	M5x0.8Px20L
9	WP00051201	Washer	4	5x12x1
10	BS00250630	Timing belt	1	XL-630-25W
11	B0006900ZZ	Bearing	2	6900ZZ

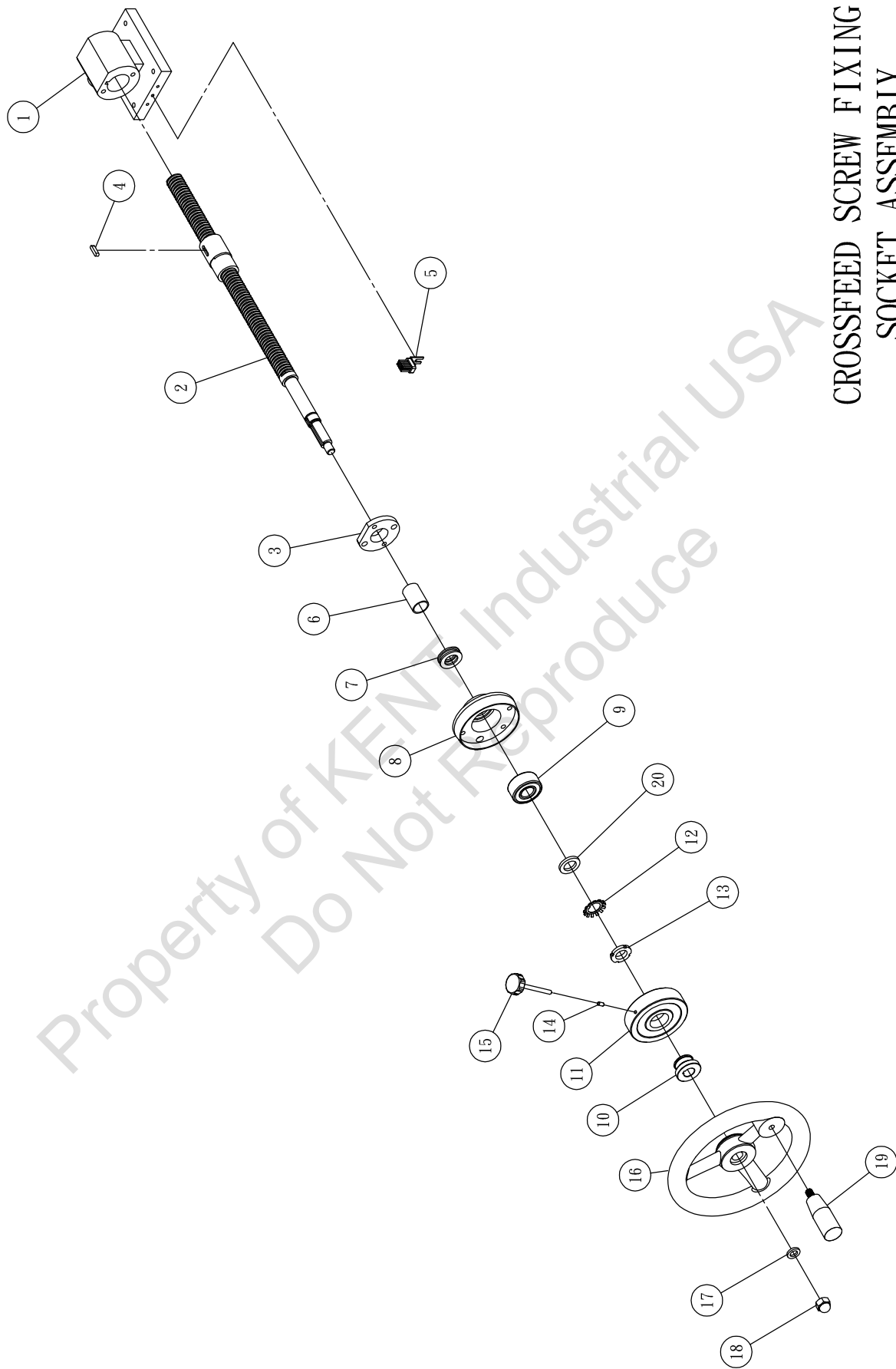
ELECTRICAL CABINET
(0618503100)



BASE ASSEMBLY (818M)
(08185A0100)

BASE ASSEMBLY (818M 08185A0100)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	08185001A0	Base (flat)	1	08185001B0 (concave)
2	0618504500	Fixing plate	1	
3	0618503000	Fixing seat	1	
4	3060405500	Fixing screw (adjustable)	1	
5	0618502400	Leveling bolt	3	
6	0618501200	Leveling block	3	
7	0618504300	Side cover	2	
8	0618504900	Lifting bolt	4	
9	0618503100	Electrical cabinet (R)	1	818M (L) 0618503200
10	BH00061035	Inner hexagonal screw	2	M6x1. 0Px35L
11	0618504600	Control panel	1	
12	BRC0040706	Cross round head screw	4	M4x0. 7Px6L
13	0618505400	Switch fixed seat	1	
14	BRC0050810	Cross round head screw	18	M5x0. 8Px10L
15	BH00050810	Inner hexagonal screw	6	M5x0. 8Px10L
16	08185002A0	Base cover (flat)	1	08185003B0 (concave)
17	0818200400	Column cover	1	
18	3060501200	Lift fixed plates	1	
19	BH00081235	Inner hexagonal screw	4	M8x1. 25Px35L
20	0618502500	Adjustment nut	3	7/8" - 9 UNS

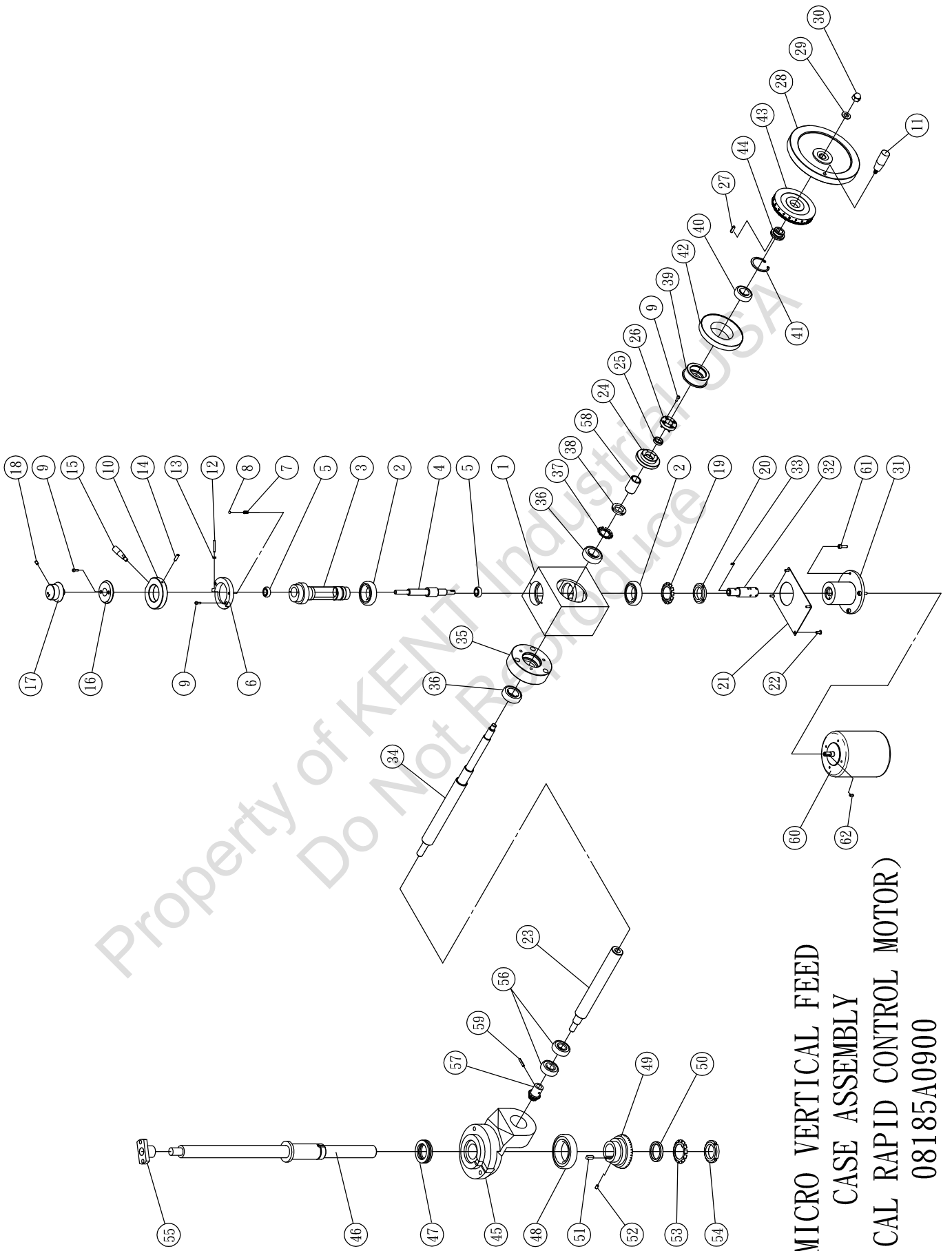


CROSSFEED SCREW FIXING
 SOCKET ASSEMBLY
 (08185A0500)

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CROSSFEED SCREW FIXING SOCKET ASSEMBLY (08185A0500)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	06185011A0	Crossfeed screw fixing socket	1	
2	08185002C0(公)	Crossfeed screw	1	08185002N0(in)
3	0618500900	Crossfeed nut adjusting ring	1	
4	KEYD050520	Pin	1	5x5x20
5	0618501500	Brush fixing pin	1	
6	0618402500	Ring	1	
7	B000051104	Bearing	1	51104(20x21x35x10)
8	0618400700	Crossfeed indication ring	1	
9	B00005204Z	Bearing	1	5204Z(20x47x20.6)
10	0618405400	Crossfeed indication ring sleeve	1	
11	06184004C0(公)	Crossfeed graduation ring	1	06184004N0(in)
12	AW04000M20	Serrate washer	1	AW04
13	AN04M20P15	Nut	1	AN04(M20x1.0P)
14	PIN0005030	Pin	1	5x30L
15	SS0000M620	Hand knob	1	M6x20L
16	WH00KSP200	Handwheel	1	KSP200(hollow)
17	WP00122003	Washer	1	12x20x3
18	NE00000M12	Nut	1	M12
19	HE00G90M10	Handle	1	FG90-M10
20	3060415700	Crossfeed screw washer	1	



MICRO VERTICAL FEED
CASE ASSEMBLY
(VERTICAL RAPID CONTROL MOTOR)
08185A0900

MICRO VERTICAL FEED CASE ASSEMBLY (VERTICAL RAPID CONTROL MOTOR)

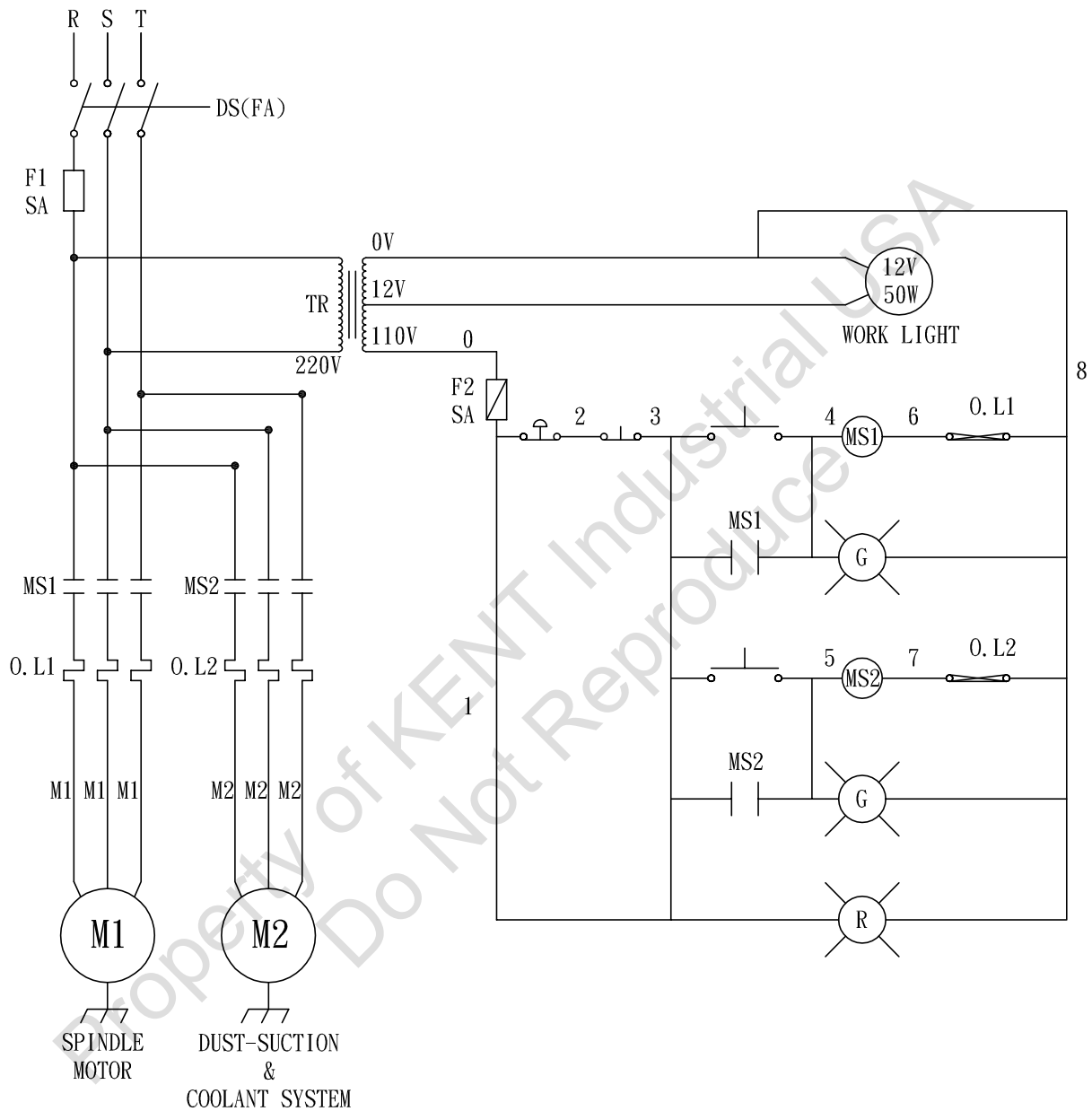
NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
1	06185D0700	Micro vertical feed case	1	
2	B0006007ZZ	Bearing	2	6007ZZ(35x62x14)
3	06184C0400	Micro vertical feed shaft	1	
4	06185D0202	Micro vertical feed gear	1	
5	B0006000ZZ	Bearing	2	6000ZZ(10x26x8)
6	06184C0600	Ring	1	
7	SC00503006	Spring	1	∅ 6 OD x P3 x ∅0.6 x 18L
8	SB01000006	Steel ball	2	∅ 6
9	BH00040712	Inner hexagonal screw	8	M4x0.7Px12L
10	06184C0500	Ring	1	
11	HA00R90M10	Handle	1	FR90-M10
12	BHU0040730	Screw	1	M4x0.7Px30L
13	NH000000M4	Nut	1	M4
14	BHU0061020	Inner hexagonal headless screw	1	M6-20L
15	06184C1300	Micro crossfeed handle	1	
16	06184C0300	Micro vertical feed indication ring	1	
17	06184C01N0	Micro vertical feed graduation ring	1	mm : 06184C01C0
18	BHU0061010	Inner hexagonal headless screw	1	M6-10L
19	AW07000M35	Serrate washer	1	AW07
20	AN07M35P15	Nut	1	AN07(M35x1.5P)
21	06185D0800	Micro vertical feed case cover board	1	
22	BRC0050810	Cross round head screw	4	M5x0.8Px10L
23	06185D1400	Vertical feed gear shaft	1	
24	06185D0201	Micro vertical feed gear	1	
25	RING00SC20	Spacer ring	1	SC-20
26	06185D1000	Micro vertical feed fixing ring	1	
27	KEYD050520	Pin	1	5x5x20

MICRO VERTICAL FEED CASE ASSEMBLY (VERTICAL RAPID CONTROL MOTOR)

NO.	DRAWING NO. /SPEC.	DESCRIPTION	Q/TY	NOTE
28	WH00KRA200	Handwheel	1	KRA200
29	WP00122003	Washer	1	13x24x2.5
30	NE00000M12	Nut	1	M12
31	06185D19AS	Vertical feed motor socket	1	3A : 06185D193A
32	06185D18C2	Vertical feed motor shaft	1	3A : 06185D1800
33	KEYD030310	Pin	1	3x3x10
34	08185D1200	Vertical feed handwheel shaft	1	
35	06185D1600	Micro vertical feed case fixing seat	1	
36	B0006205ZZ	Bearing	2	6205ZZ(25x52x15)
37	AW05000M25	Serrate washer	1	AW05
38	AN05M25P15	Nut	1	AN05(M25x1.5P)
39	06185D1700	Micro vertical feed case fixing ring	1	
40	B0006204ZZ	Bearing	1	6204ZZ(20x47x14)
41	CL01000047	Fixing ring	1	R47
42	0618500500	Vertical feed indication ring	1	ACRE(in) : 06185005A0
43	06185004N0	Vertical feed graduation ring	1	ACRE(in) : 06185004A0
44	0618501800	Indication ring sleeve	1	
45	0618201000	Vertical screw fixing seat	1	
46	06185650NL	Vertical leadscrew	1	06185011C0 (mm)
47	B000051108	Bearing	1	51108(40x42x60x13)
48	B0006011ZZ	Bearing	1	6011ZZ(55x90x18)
49	06182014N1	Gear	1	mm : 06182014C1
50	0618502300	Spacer	1	
51	KETD070722	Pin	1	7x7x22
52	BHU0061010	Inner hexagonal headless screw	1	M6-10L
53	AW08000M40	Serrate washer	1	AW08
54	AN08M40P15	Nut	1	AN08(M40x1.5P)

IV. ELECTRICAL WIRING DIAGRAM

⊙. WIRING DIAGRAM (818M):



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