

EF-AC/ 80
OPERATION INSTRUCTION

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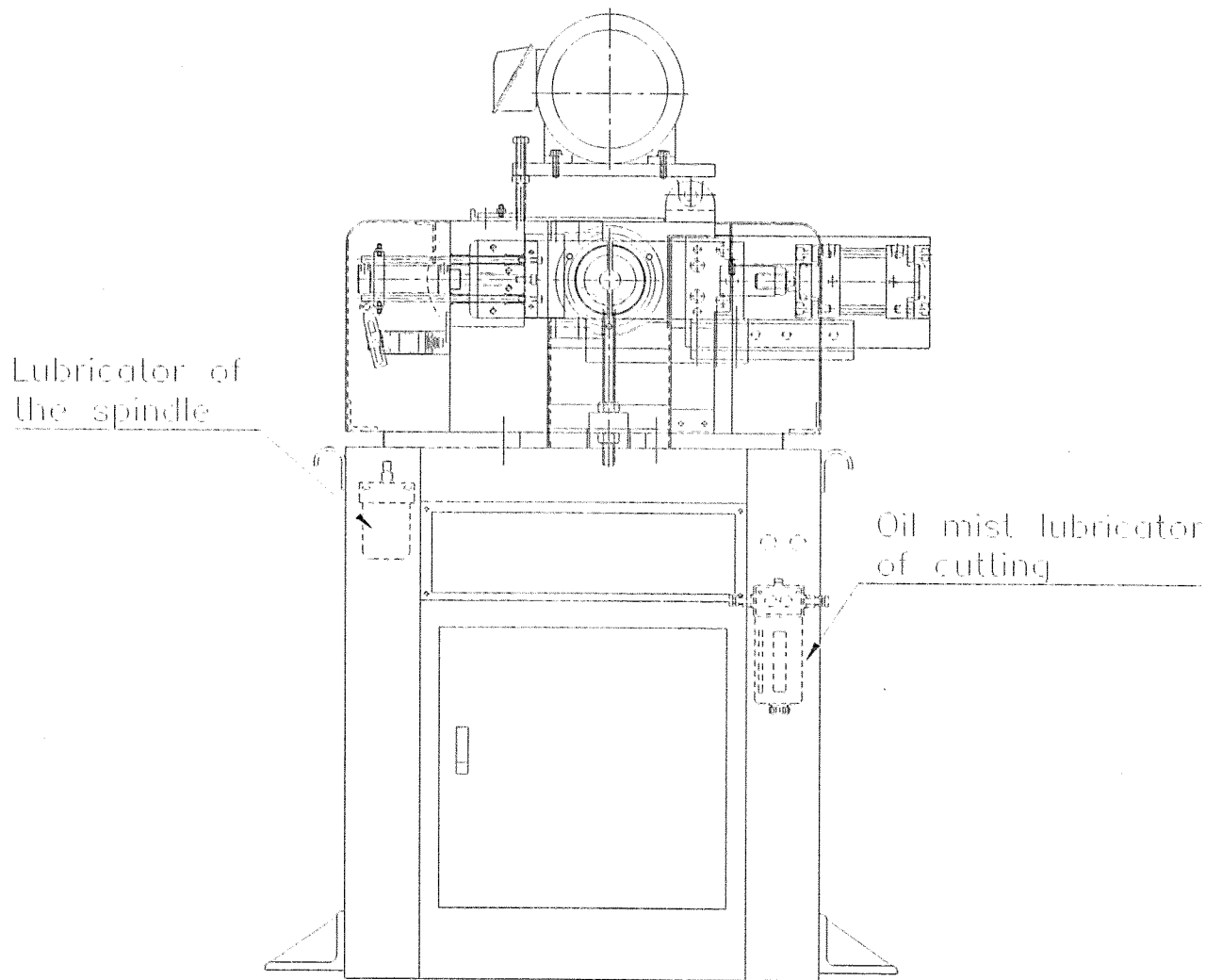
1. Safety

- (1) Read this instruction carefully and understand it thoroughly before installing, operating, and / or adjusting the machine.
- (2) Never place hands, fingers, or any part of body into the dangerous areas of the machine, unless the motor is turned off and all main power switches are in off position and tagged.
- (3) The dangerous areas are:
 - Tool head and cutting bits area,
 - Cylinder stroke areas,
 - Clamping die areas,
 - Cutting chips flying away area,
 - Motor pulley and belt areas.
- (4) Always wear a pair of goggles when operating the machine.
- (5) Press the emergency button immediately if any abnormal happens.

2. Specification

EF-AC/80	
Item	Specifications
Spindle motor	3HP x 6P,60Hz
Spindle RPM	920 RPM
Pressured air	6~9KGS/CM ² ,120ml/min
Tool Head	Standard tool head for ø20 ~ ø80 mm
Working capacity	Tube ø20~ø80 mm
	Bar/edge ø9~ø50 mm
Standard Accessories	1.One pc tool head 2.One set clamping jaw
Optional Accessories	1.Different size clamping jaws
Weight	380 L.G
Dimensions W x D x H mm	800 x 750 x 1350

3. Outline

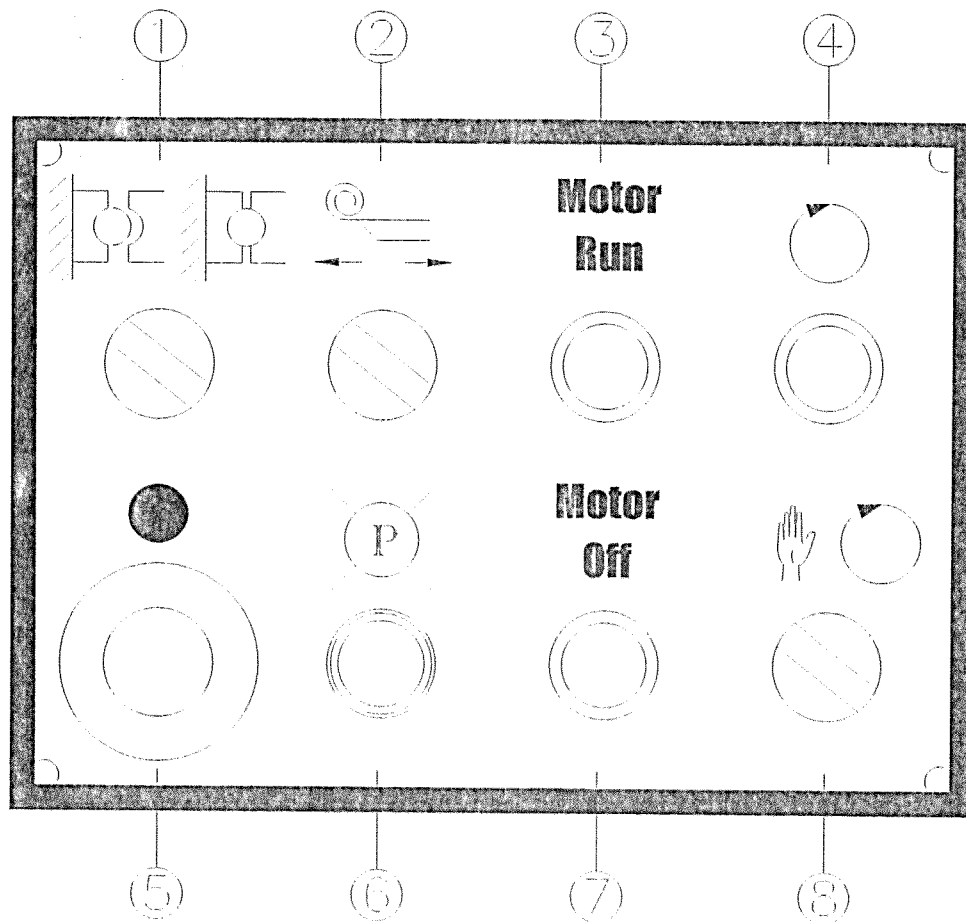


Front view

4. Installation

- (1) Remove packing material.
- (2) Check the machine for any damage.
- (3) Check the accessories for any shortage.
- (4) Lift or move the machine with a sling and hoist or a forklift of proper capacity.
- (5) Install the machine on a level and rigid floor. Fix the machine with anchor bolts
- (6) Connect proper electric power and pneumatic source to the machine.
- (7) Adjust the air pressure to 6 kg/cm^2 on the pressure regulator.
- (8) Check the motor running direction. If the direction is not the same as the marked direction, exchange connective sequence of any 2 wires of main power.
- (9) Keep the area around the machine and the dangerous area empty and clear to avoid interfering the machine's operation and injure the operator.

5.Description of Control Panel



Item	Description
1	Selection switch, clamping die close or open
2	Selection switch, cutting head feed forward or move back
3	Push button switch, motor run
4	Push button switch, semi-auto operation start
5	Push button switch, emergency stop
6	Lamp, light up when power on
7	Push button switch, motor stop
8	Selection switch, manual or semi-auto operation

6. Replacement of Tool Head

- (1) Release 3 pieces of the fixing screw.
- (2) Take off the tool head from the spindle.
- (3) Replace a new tool head on to the spindle.
- (4) Tighten 3 pieces of the fixing screw.

7. Adjustment of Cutting Bits

Generally, there are 3 sets of tool seat and cutting bit of

- (1) end facing,
 - (2) outside wall chamfering,
 - (3) inside wall chamfering,
- on a standard tool head.

For special propose, the number of set of tool seat and cutting bit may be 1 or 2 or 4, depending on the requirement of the shape to be finished.

Here, a tool head with 3 sets of tool seat and cutting bits is used as an example to illustrate the adjustment procedure.

Adjustment these cutting bits shall be as the following sequence.

7.1 Adjustment of tool seat and cutting bit for end facing

1. Loosen the fixing screws for 3 sets of tool seat.
2. Take a piece of working tube against the left clamping die and slide it to tool head to check the cutting bit position. Use the tube end as the position reference for checking.
3. Adjust the positioning screw of the end facing to have the cutting bit be able to cut the tube end exactly.
4. Adjust the positioning screws of the outside wall chamfering and the inside wall chamfering to have the cutting bits move away the tube end.
5. Tighten the fixing screws for 3 sets of tool seat.

6. Use manual operation to check and adjust the cutting bit.
 - (1) Turn the selection switch to manual operation.
 - (2) Adjust the feeding stroke to its shortest stroke.
 - (3) Turn main power on.
 - (4) Take a piece of working tube into clamping area and turn the clamping switch to closing position to hold the tube.
 - (5) Press the motor run switch.
 - (6) Turn the feeding switch to forward position. The tool bit will cut the tube end.
 - (7) Turn the feeding switch to backward position.
 - (8) Turn the clamping switch to opening position to release the tube.
 - (9) Check facing quality. If not acceptable, repeat above steps by increasing the feed stroke a little bit each time, until the result is good.
 - (10) Stop the motor and turn off power.

7.2 Adjustment of tool seat and cutting bit for outside wall chamfering

1. Loosen the fixing screw of the tool seat for outside wall chamfering.
2. Take a piece of working tube against the left clamping die and slide it to tool head to check the cutting bit position. Use the tube end as the position reference for checking.

3. Adjust the positioning screw of the outside wall chamfering to have the cutting bit be able to cut the tube end exactly.
4. Tighten the fixing screws of the tool seat for outside wall chamfering.
5. Use manual operation to check and adjust the cutting bit.
 - (1) Turn the selection switch to manual operation.
 - (2) Adjust the feeding stroke to its shortest stroke.
 - (3) Turn main power on.
 - (4) Take a piece of working tube into clamping area and turn the clamping switch to closing position to hold the tube.
 - (5) Press the motor run switch.
 - (6) Turn the feeding switch to forward position. The tool bit will cut the tube end.
 - (7) Turn the feeding switch to backward position.
 - (8) Turn the clamping switch to opening position to release the tube.
 - (9) Check facing quality. If not acceptable, repeat above steps by increasing the feed stroke a little bit each time, until the result is good.
 - (10) Stop the motor and turn off power.

7.3 Adjustment of tool seat and cutting bit for inside wall chamfering

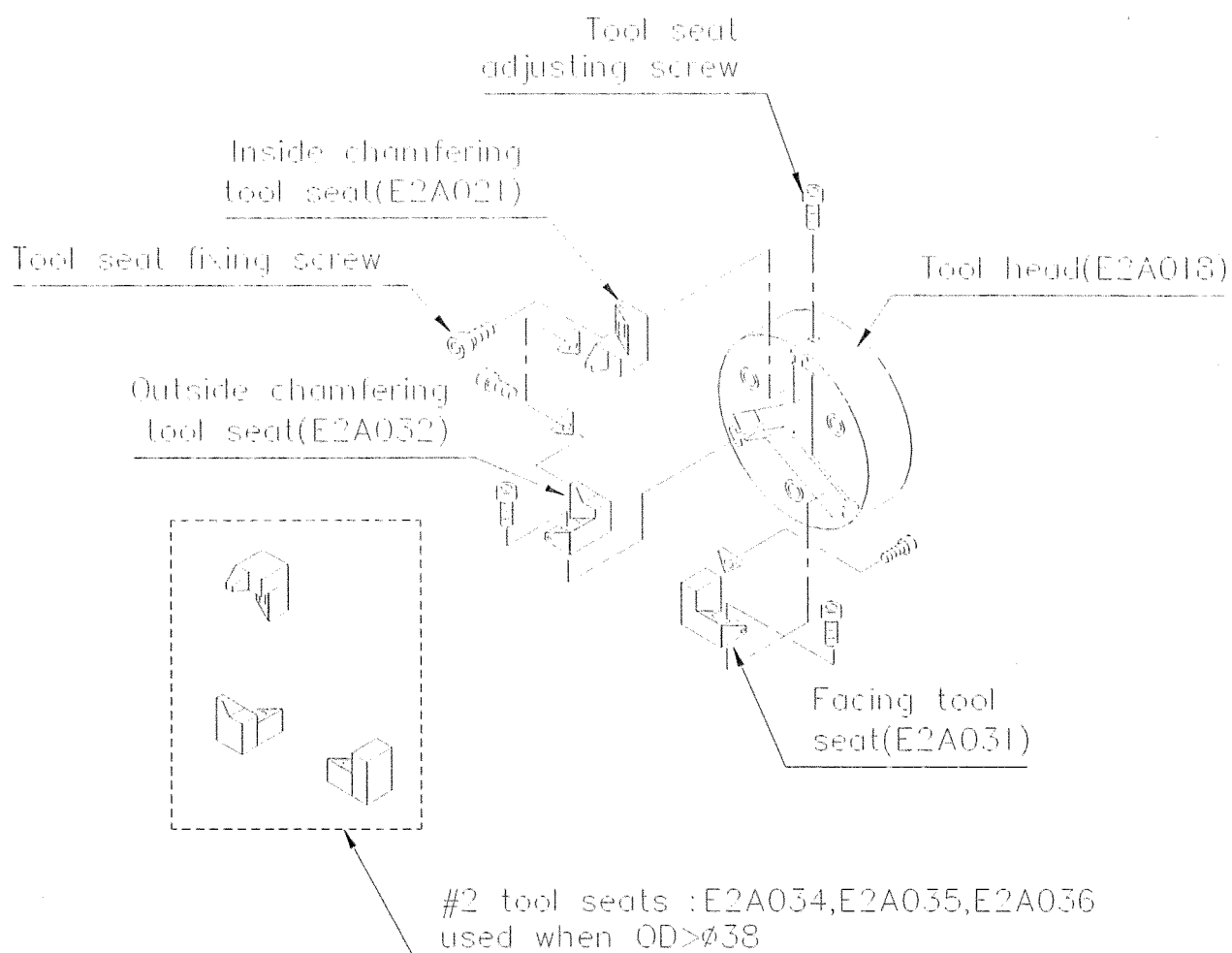
1. Loosen the fixing screw of the tool seat for inside wall chamfering.

2. Take a piece of working tube against the left clamping die and slide it to tool head to check the cutting bit position. Use the tube end as the position reference for checking.
3. Adjust the positioning screw of the outside wall chamfering to have the cutting bit be able to cut the tube end exactly.
4. Tighten the fixing screws of the tool seat for outside wall chamfering.
5. Use manual operation to check and adjust the cutting bit.
 - (1) Turn the selection switch to manual operation.
 - (2) Adjust the feeding stroke to its shortest stroke.
 - (3) Turn main power on.
 - (4) Take a piece of working tube into clamping area and turn the clamping switch to closing position to hold the tube.
 - (5) Press the motor run switch.
 - (6) Turn the feeding switch to forward position. The tool bit will cut the tube end.
 - (7) Turn the feeding switch to backward position.
 - (8) Turn the clamping switch to opening position to release the tube.
 - (9) Check facing quality. If not acceptable, repeat above steps by increasing the feed stroke a little bit each time, until the result is good.
 - (10) Stop the motor and turn off power.

Warning

- (1) Tool bit fixing screws must be sure been solidly tighten to prevent any vibration happens.
- (2) Chip protection cover must be in right position to prevent any chip flying out of machine.

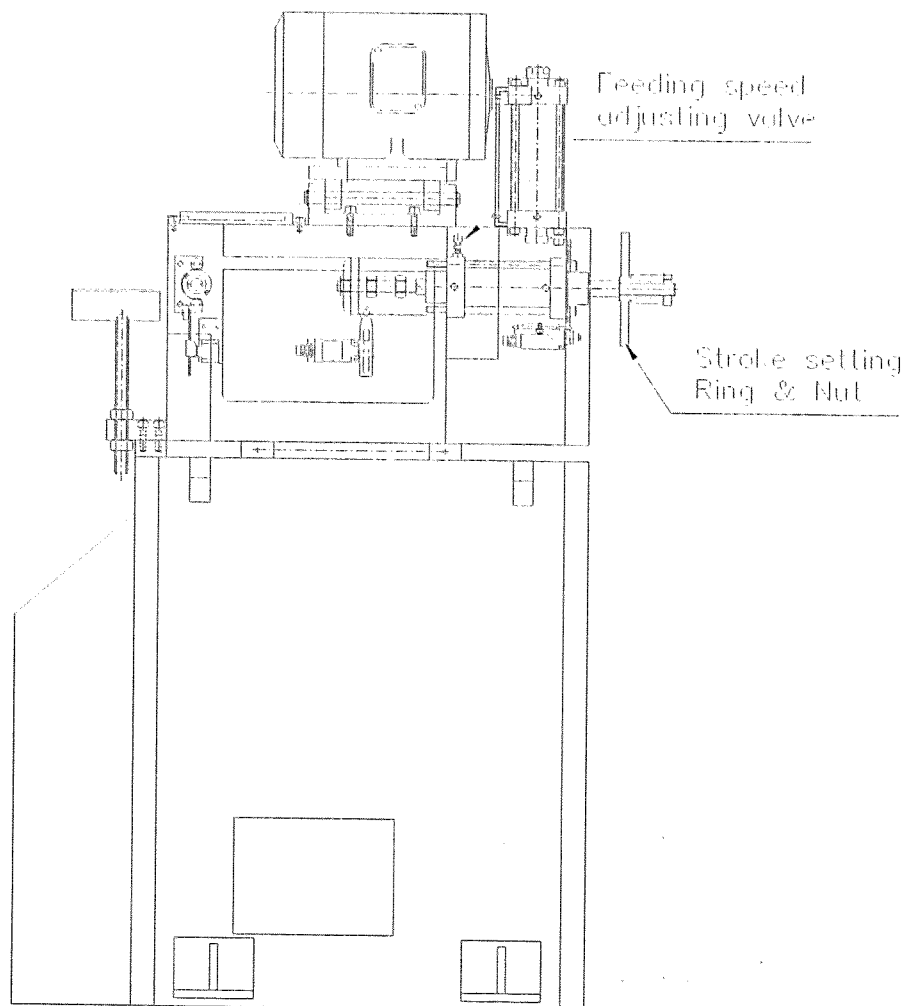
Drawing of standard tool head, E2A018



8. Adjustment of Feeding Speed

The feeding speed shall be adjusted according to the material property, the diameter, thickness of wall of the workpiece. The stainless steel, the larger diameter, or thicker wall tube shall use slower feeding speed. The correct feeding speed results in smooth cutting, low noise, unburned chips, and longer cutting bit's life.

The feeding speed is adjusted through a valve on the feeding cylinder head as shown on following drawing.



9. Adjustment of Feeding Stroke

The feeding stroke determine the amount of material been cut off, This can be adjusted by setting the ring and nut shown in the above diagram.

1. To reduce the stroke, loose the screws of the nut and turn the ring clockwise to screw it forward thus will reduce the stroke. Tighten the nut and the fixing screws after the ring reach the proper position.
2. To increase the stroke, loose the screws of the nut and turn the ring counterclockwise to screw it backward thus will increase the stroke, Tighten the nut and the fixing screws after the ring reach the proper position.
3. Do not change the position of the limit switch.

10. Selection of Spindle Speed

The standard spindle speed is 920 RPM when the motor shaft speed is 3HP,6P, 60HZ,1120RPM, and is not adjustable. This will cover the most usage of customers. However we still have one option set of pulley for customers to order to meet their special needs. If you have this set of pulley, here is the method to adjust them :

The spindle speed is adjusted through changing the pulley and belt combination on the spindle and motor shaft as shown on following:

MOTOR SHAFT SPEED : 3HP,6P,60HZ,1120RPM				
BELT POSITION	1AND3	1AND4	2AND4	
PCD OF MOTOR PULLEY	116	116	77	
PCD OF SPINDLE PULLEY	77	95	95	
SPINDLE SPEED (RPM)	1687	1367	907	
SUIT FOR WORKING PIECE	1 MILD STEEL TUBE ø3/8"-ø1" 2 BRONZE & AL	MILD STEEL TUBE ø1"-ø1 1/4"	MILD STEEL TUBE ø1 1/4"-ø2"	

- (1) Remove the protection cover of motor and spindle pulleys.
- (2) Loosen the belt tension adjusting bolt to remove the belt.
- (3) Place belt on the desired pulleys as above table and tighten the belt tension adjusting bolt. Please reverse install the motor pulley when use combination 1 & 4.
- (4) Install the protection cover.

Warning

Please make sure to turn off the power before you do the adjustment.

11. Operation

11.1 Manual operation

- (1) Manual operation is used to adjust and check the tool head, tool seats, cutting bits, feeding speed, spindle speed, etc. and test the machine running. For above operation please refer to the previous sections for details.
- (2) Has the Manual Semi-auto Selection Switch shifted to the manual position, functions of the clamp moving, the motor running, tool head turning, can be individually controlled by the dedicated switches.

11.2 Semi-auto operation

- (1) Semi-auto operation is used to production propose.
- (2) If all components have been adjusted and checked in good condition as above section, the machine may run under the semi-auto operation mode.

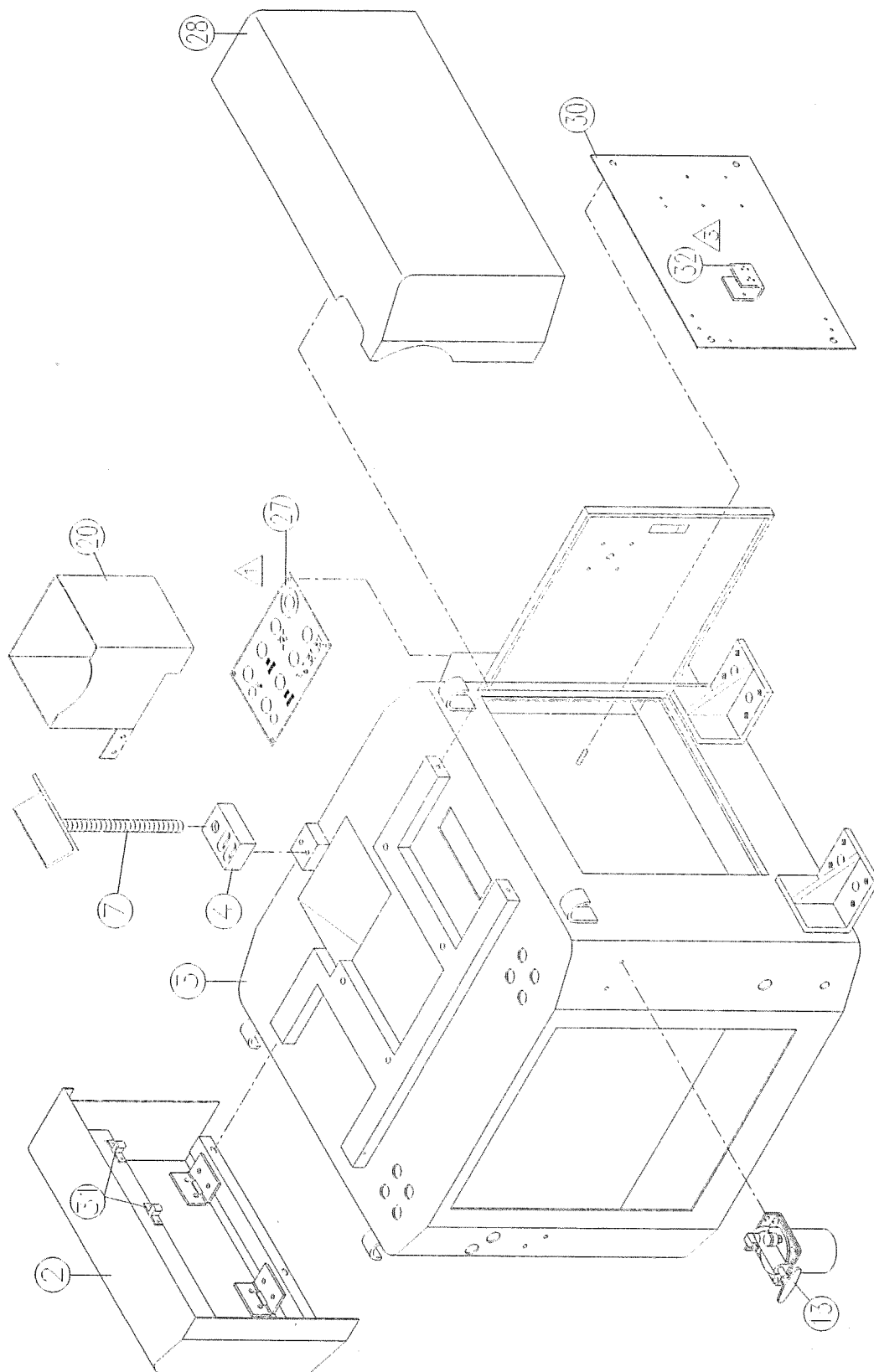
12. Maintenance

- (1) Everyday before starting the machine, check main power wire and compressed air hose if they are in good connection and good condition.
- (2) Everyday after finishing working, remove all chips and dirt and wipe it clean. Apply some lube oil on moving parts.
- (3) Release condensed water trapped in the air treatment assembly from time to time.
- (4) Every week check the oil cup of the air treatment assembly , the spindle lubricator and the oil mist lubricator. All of them use R32(SAE 10) oil, keep the amount of oil at about 150 cc inside.

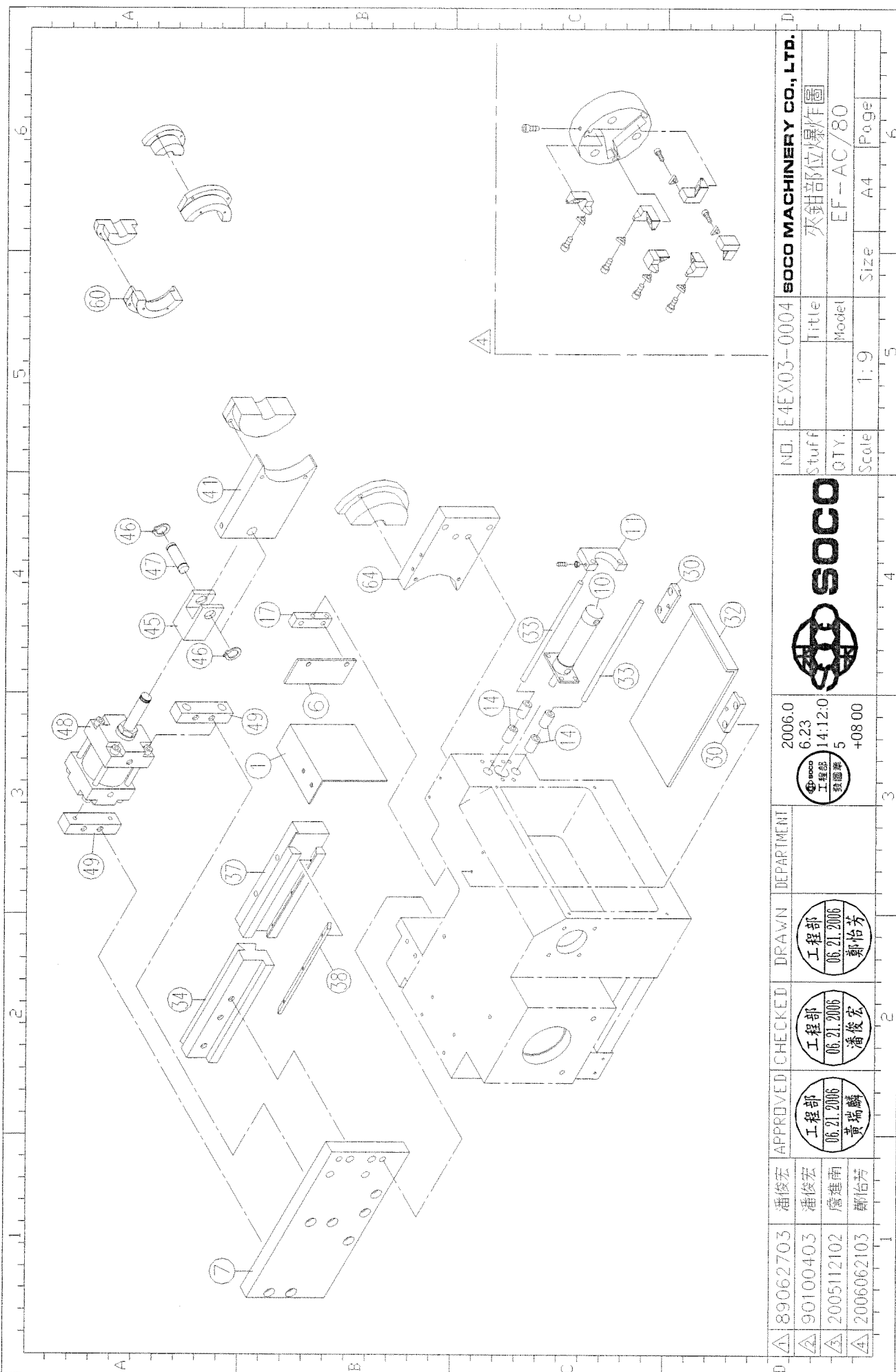
13. Pneumatic System Diagram

14. Electric System Diagram

15. Parts List



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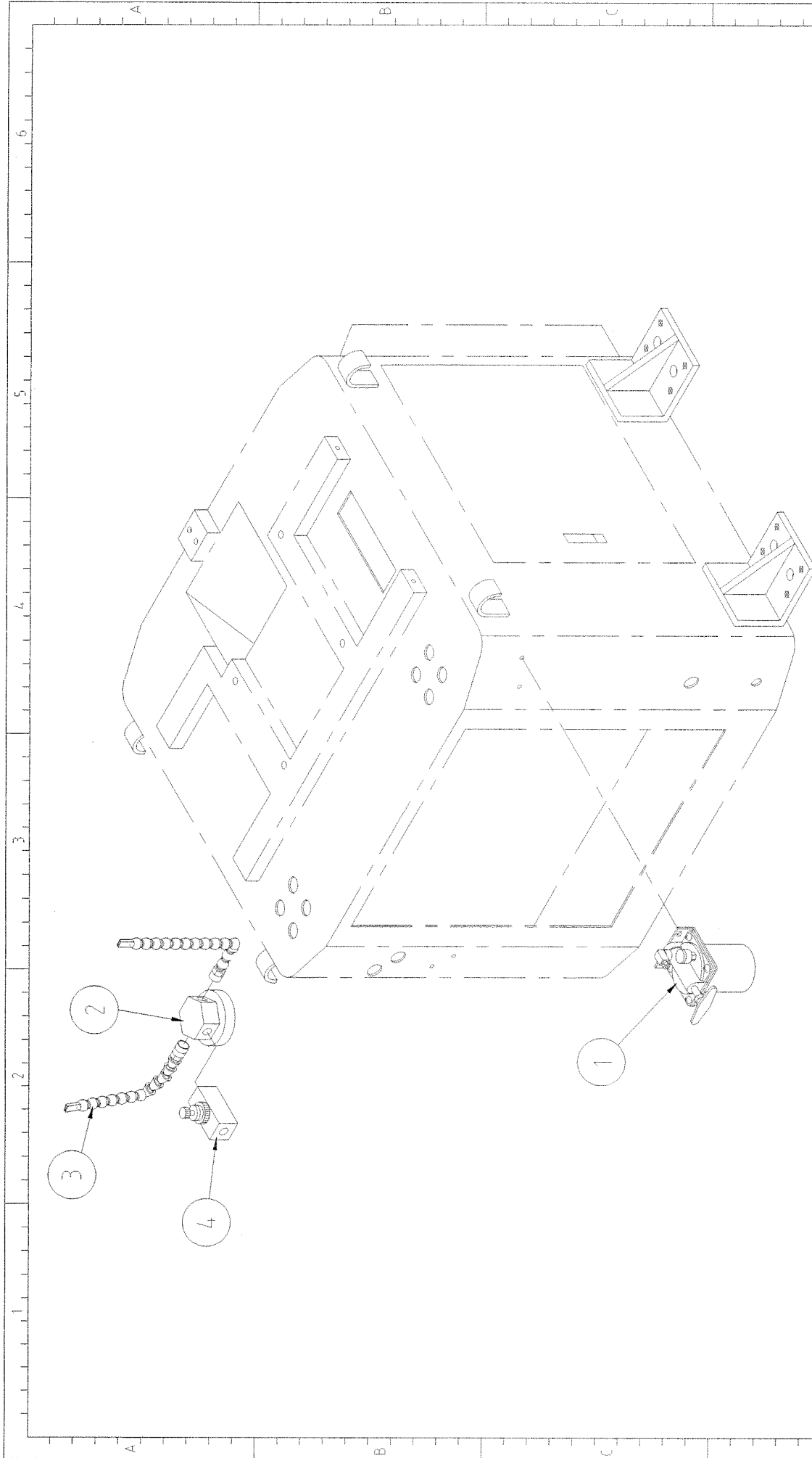


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***** EF-AC/80 *****

序號	件 號	品 名	用 量	規 格	序號	件 號	品 名	用 量	規 格
002	E4H014	齒型皮帶護蓋(噴漆)	1		045	E4D010	左夾鉗(大)(染黑)	1	
003	ZX0041	圓型皮帶	1	800-5GT W:25	049	E3A043	軸承壓蓋	1	
004	E4B010	馬達皮帶輪(染黑)	1	2HP 及 3HP 用	052	E4A001	機頭(噴漆)	1	
009	E3B002	左馬達架	1	2HP 及 3HP 用	057	E9A011	夾鉗壓板(染黑)	1	配合 E3A001.E3A002
012	ZP0033	C型扣環	2	S-16	058	E3B013	間隔環	2	
013	E3B004	馬達架固定軸	1		059	E3B014	支撐板壓塊	1	
014	E3B003	馬達固定板	1		060	ZQ0068	油封	1	75.90.8 TC
018	E3B012	皮帶輪支撐板	1		061	E3H038	進刀缸護蓋	1	
019	VA0037	軸承	2	6208 ZZ	062	E3H040	氣缸護蓋軸	1	
020	E4B011	主軸皮帶輪(染黑)	1	2HP 及 3HP 用	063	E4MG01	馬達發料模組	1	3HP×6P
021	ZK0271	精密螺帽	1	YSR M30*P1.5					
022	VA0032	軸承	1	6206 ZZ					
023	VB0024	軸承	1	7206CYDB/GL P5					
024	E3A040	主軸內襯套	1	與 E3A038 配組					
025	E3A044	主軸	1						
026	E3A038	主軸固定套(L)	1	與 E3A04004 配組					
029	E3A006	主軸連接桿	1						
031	E3Y028	氣缸行程調整環	1						
034	E3Y006	極限開關固定座	1						
037	E4A010	退刀後限頂輪(染黑)	1						
040	E3Y007	極限開關滑座	1						
041	E3Y004	空油缸(左)+油桶	1	ALHR63*33WA+HA63*100LB					
042	E4H013	開關固定座	1						





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