

EF-AC/60
OPERATION INSTRUCTION

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Content

1. Safety
2. Specification
3. Outline
4. Installation
5. Description of Control Panel
6. Replacement of Tool Head
7. Adjustment of Cutting Bits
8. Adjustment of Feeding Speed
9. Selection of Spindle Speed
10. Operation
11. Maintenance
12. Pneumatic System Diagram
13. Electric System Diagram
14. Parts List

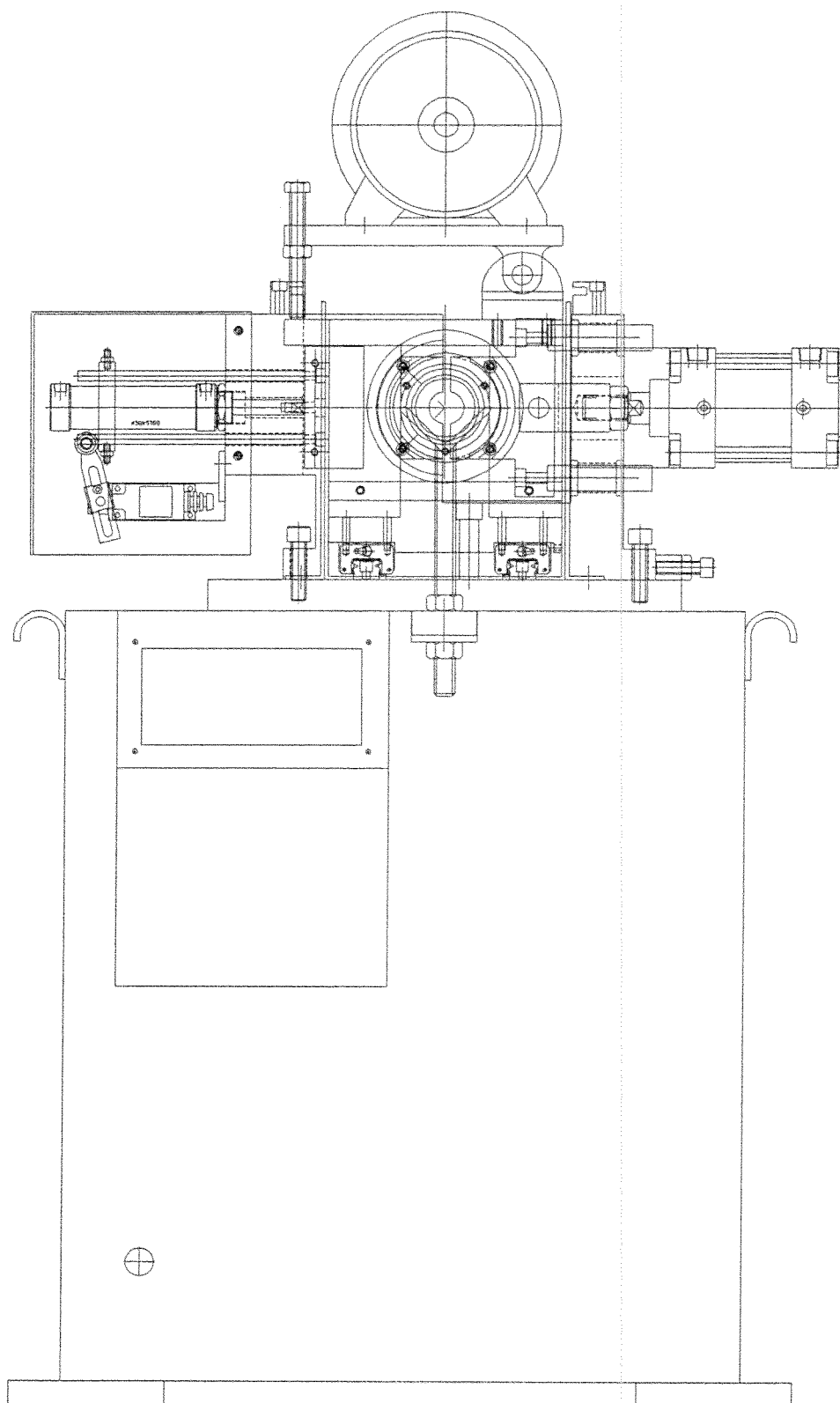
1. Safety

- (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/60	
Item	Specifications
Spindle motor	1HP x 4P
Spindle RPM	786/1508 RPM
Working Functions & Capacity	Standard Functions a. Tube inside & outside edge chamfering & facing. Tube O.D. $\phi 15 \sim \phi 60$mm, 2.5mm max. wall thickness. b. Bar out-edge chamfering O.D. $\phi 9 \sim \phi 25$mm
	Optional Functions c. Tube inside & outside edge chamfering & facing with special tool seats Tube O.D. $\phi 9 \sim \phi 13$mm d. With special tool's head & tool seat Bar out-edge chamfering & centering. Bar O.D. $\phi 9 \sim \phi 30$mm, C4 chamfer Bar O.D. $\phi 30 \sim \phi 60$mm, C2 chamfer
Standard Accessories	a. One piece standard tool head. (E2A018) b. One set chamfering jaws (for one O.D. size) c. Tool seats E2A021/E2A031/E2A032/E2A034/E2A035 /E2A036, for tube $\phi 15 \sim \phi 60$ mm(O.D.)
Optional Accessories	d. Tool seats E2A019/E2A021/E2A042 for tube $\phi 9 \sim \phi 15$ mm(O.D.) e. Tool head E2K124 & tool seat E2K125 for Bar end centering. f. Oil mist system. g. Different size clamping jaws.
Pressured air	6~8KGS/CM ² , 120ml/min
Weight	210 KG
Dimensions W x D x H mm	642 x 994 x 1110

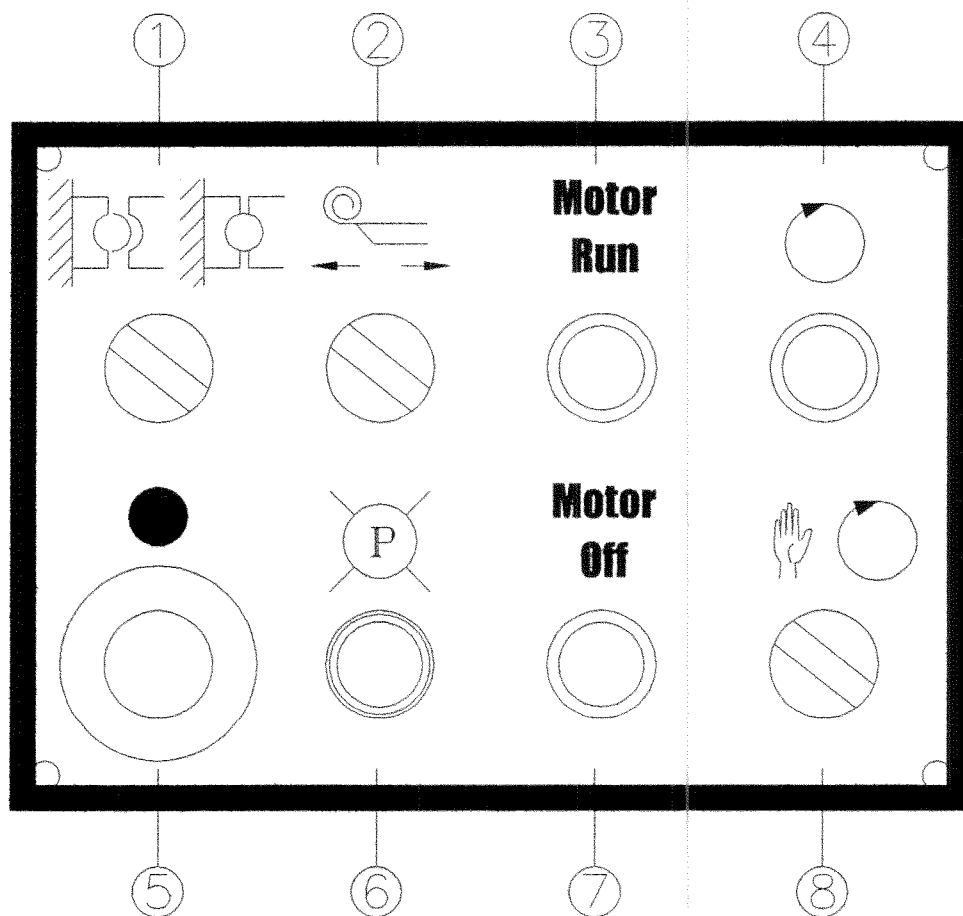
3. Outline



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 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

1. 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 bit 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

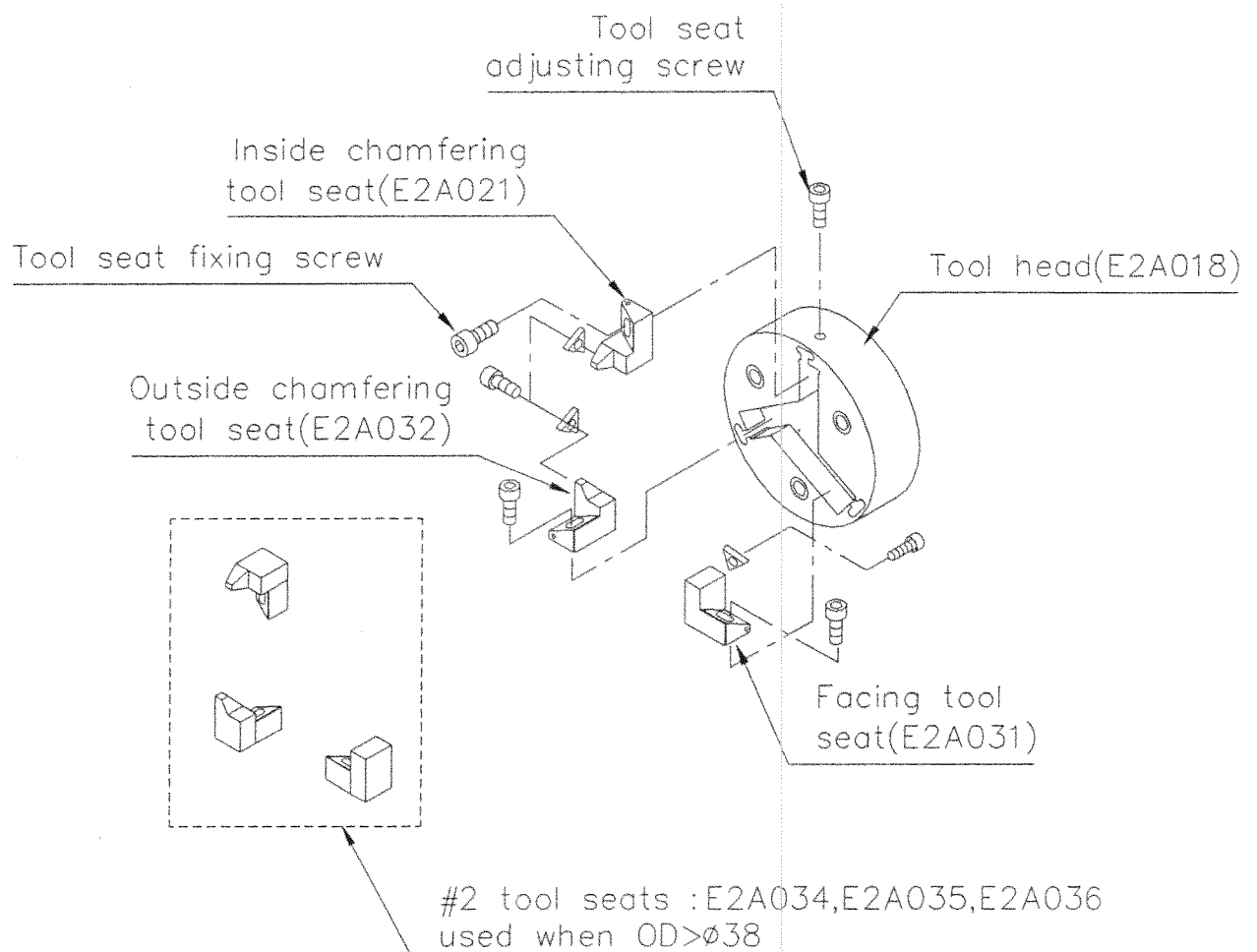
1. Loosen the fixing screw of the tool seat for inside wall chamfering.

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.

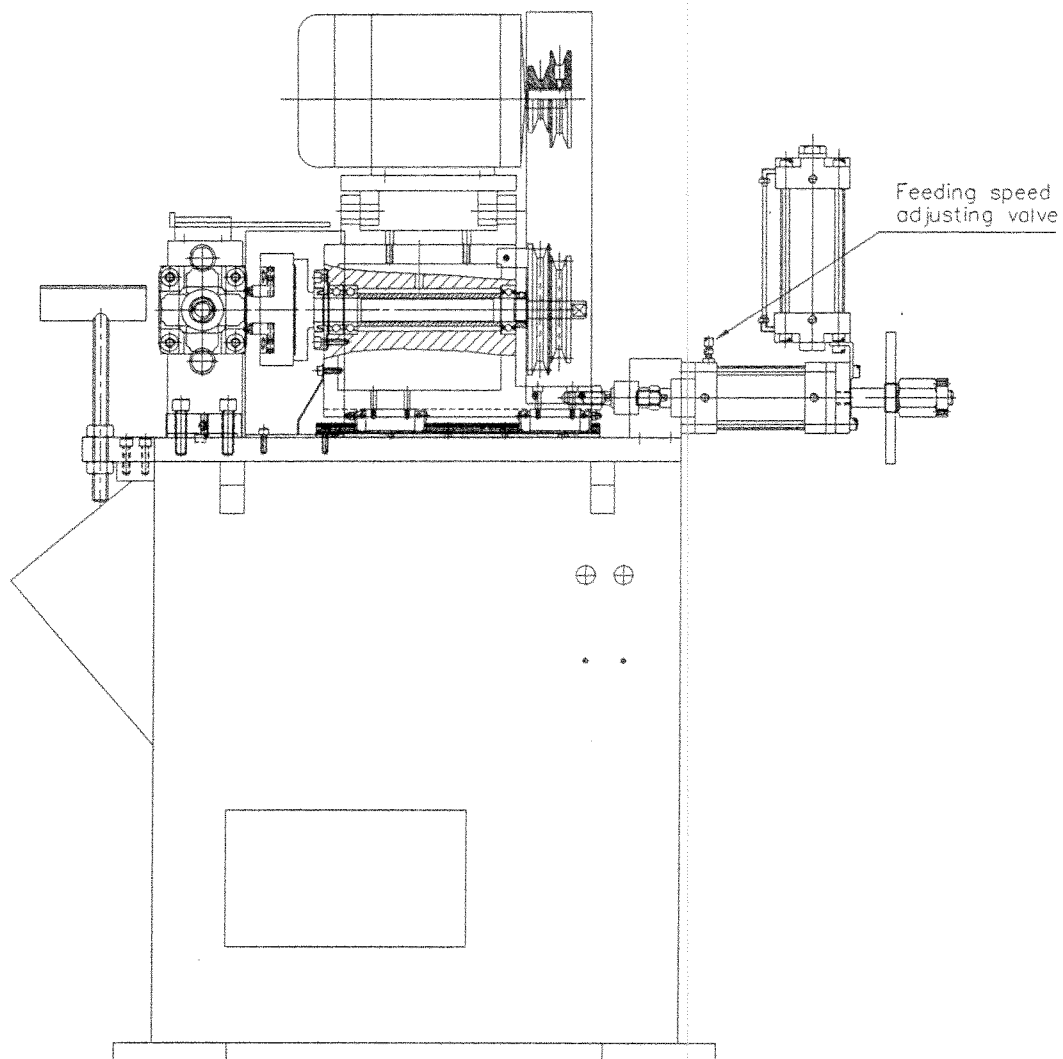
Drawing of standard tool head, E2A018



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.

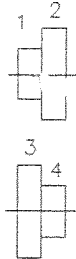
The feeding speed is adjusted through a valve on the feeding cylinder head as shown on following drawing.



9. Selection of Spindle Speed

The spindle 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 spindle speed will result in smooth cutting, low noise, unburned chips, and longer cutting bit's life.

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 : 1HP, 4P, 60HZ, 1720RPM					 MOTOR PULLEY SPINDLE PULLEY
BELT POSITION	1AND3	2AND4	1AND4	2AND3	
PCD OF MOTOR PULLEY	58.8	90.6	58.8	90.6	
PCD OF SPINDLE PULLEY	128.7	103.3	103.3	128.7	
SPINDLE SPEED (RPM)	786	1508	980	1210	
SUIT FOR WORKING PIECE MILD STEEL	BAR ≤ Ø1"	TUBE			

- (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.
- (4) Install the protection cover.

10. Operation

10.1 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.

10.2 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.

11. 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.

Note : Use Mobil Vactra 2 for the supplement to lubricator.