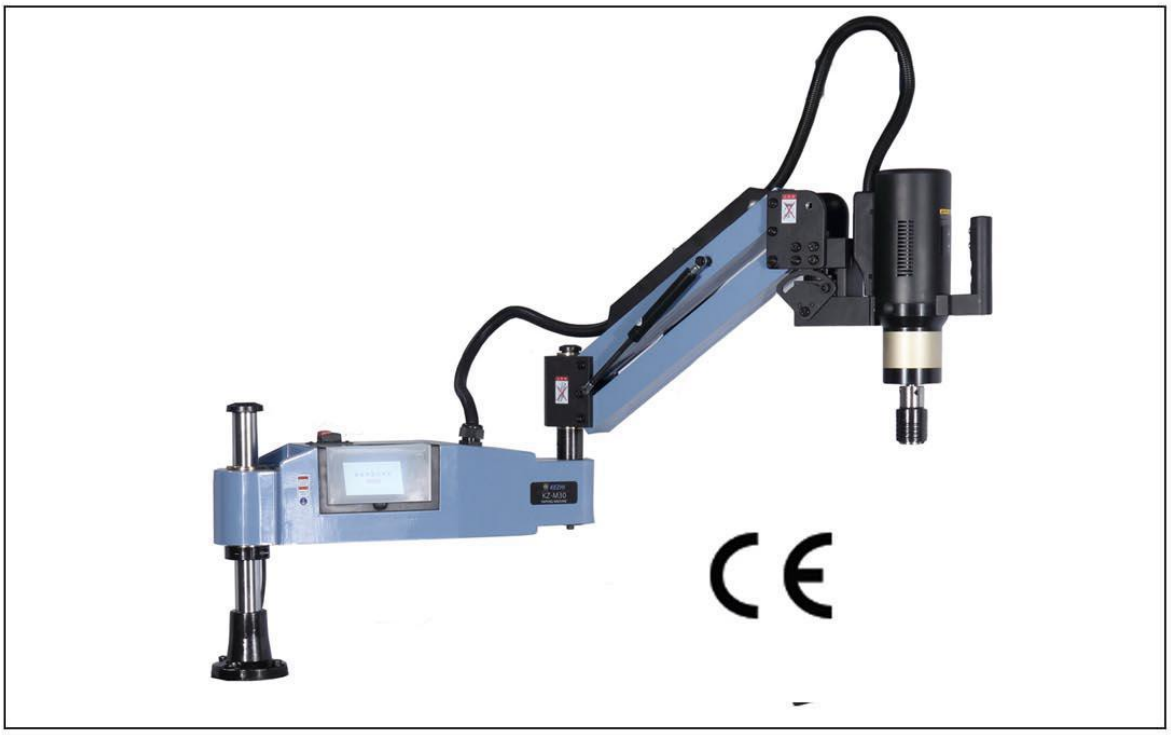
ELECTRIC TAPPING MACHINE

MODEL M12/M16/M24/M36/M48

INSTRUCTION MANUAL

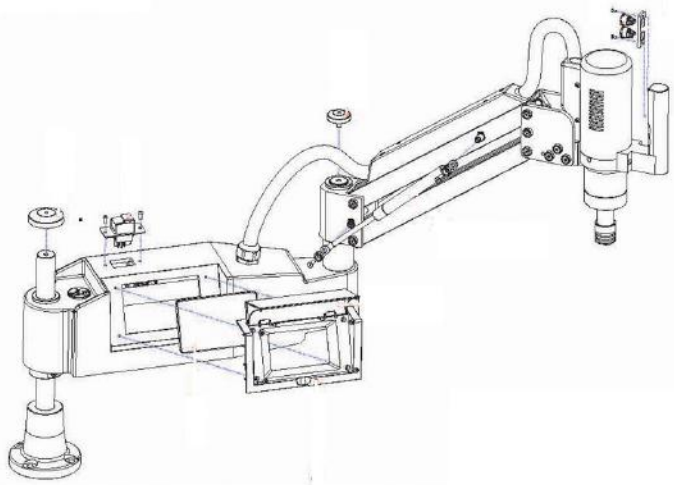


INSTROUCTION

Our Servo Electric Tapping machine with a Two year warranty period on parts from the date of the purchase. This warranty does not apply to a machine determined to have been misused or abused, improperly maintained, or having defects attributed to the use of non-genuine repair parts

For your own safety, read the Operation Manual before working

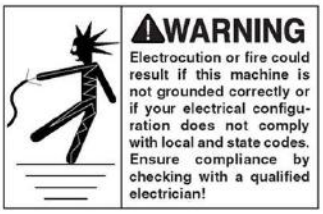
We are pleased to provide this manual with M12/M16/M24/M36 It was written to guide you through assembly, safety considerations, and general operating procedures



MACHINE DATA SHEET

Model	KZ-M12V/U	KZ-M16V/U	KZ-M24V/U	KZ-M36V/U	KZ-M48
Tapping Dia	M3-M12	M3-M16	M6-M24	M6-M33	M12-M48
Working area	Horil100mm Verti330mm	Horil100mm Verti330mm	Horil200mm Verti400mm	Horil300mm Verti400mm	Horil300mm Verti400mm
Spindle speed	0-1000rpm	0-312rpm	0-200rpm	0-156rpm	50-200rpm
Orientation	Vertical /Universal	Vertical /Universal	Vertical /Universal	Vertical /Universal	Vertical /Universal
Motor	AC220V/110V 50-60HZ	AC220V/110V 50-60HZ	AC220V/110V 50-60HZ	AC220V/110V 50-60HZ	AC220V/110V 50-60HZ
Tap holders	ISO/DIN/JIS	ISO/DIN/JIS	ISO/DIN/JIS	ISO/DIN/JIS	ISO/DIN/JIS
Power	600W	600W	1200W	1200W	1200W
Weight	32KG	32KG	50KG	50KG	100KG

SAFETY INSTRUCTION



For your own safety, read though entire manual before operating the machine.

- Chinldren not easy to touch machine.
- Not exposed in the Dust Flammable and explosive environment.
- Always secure the work piece to the table before operating the machine!
- Wear safety goggles when operating this machine.
- Do not wear jewelry or loose clothing when operating.
- Tie hair back before operating machine.
- Removing the tool or weight from the arm will allow the arms to extend rapidly, possibly causing damage or injury.
- Keep away from Rotating tools and the spindle.
- Do not exceed the torque or weight limitations for the unit. Doing so will void the warranty and possibly cause damage or injury.
- Metal chips and shavings are very sharp and can quickly cause cuts when clean them from the machine. Protect youself by waering golves, using a thick or foled bag, wiping them slowly
- Do not alter or modify the motor or tapping unit by yourself.
- Keep hands free of pinch points on the tapping unit when operating.

INVENTORY

KZ-M12	
A: Machine main body	one pc
B: Base Mount	one pc
C: Power cord	one pc
D: DIN Tap holder M3 M4 M5 M8 M10 M12	one set
E: Tap holder wrench	one pc
F: Goggles	one pc
G: Gloves	one pair
H: M10 Hex Key	one pc
I: M10 Nuts	Four pcs
J: Manual Instruction	one pc

KZ-M16	
A: Machine main body	one pc
B: Base Mount	one pc
C: Power cord	one pc
D: DIN Tap holder M3 M4 M5 M8 M10 M12 M14 M16	one set
E: Tap holder wrench	one pc
F: Goggles	one pc
G: Gloves	one pair
H: M10 Hex Key	one pc
I: M10 Nuts	Four pcs
J: Manual Instruction	one pc

KZ-M24	
A: Machine main body	one pc
B: Base Mount	one pc
C: Power cord	one pc
D: DIN Tap holder M6 M8 M10 M12 M14 M16 M18 M20 M24	one set
E: Tap holder wrench	one pc
F: Goggles	one pc
G: Gloves	one pair
H: M10 Hex Key	one pc
I: M10 Nuts	Four pcs
J: Manual Instruction	one pc

KZ-M36	
A: Machine main body	one pc
B: Base Mount	one pc
C: Lifting arm	one set
D: DIN Tap holder M6 M8 M10 M12 M14 M16 M18 M20 M24 M27 M30 M33	one set
E: Tap holder wrench	one pc
F: Goggles	one pc
G: Gloves	one pair
H: Power cord	one pc
I: M10 Hex Key	one pc
J: M10 Nuts	Four pcs
K: Manual Instruction	one pc

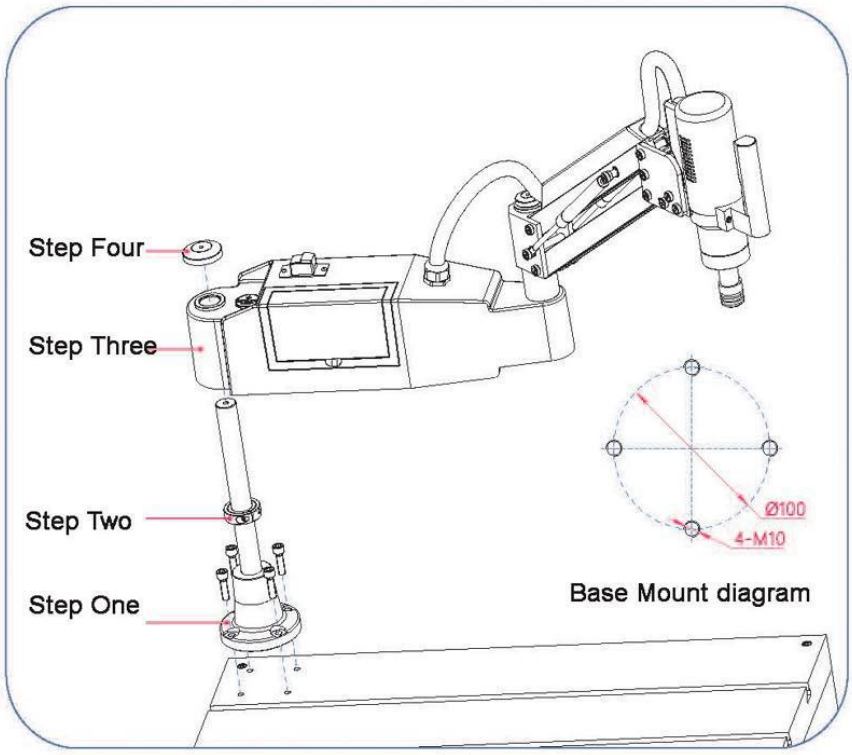
INSTALLATION

1.Use Four M10 bolts to fix Base Monunt, if not with our working table drill and tap 4 bolt holes on a flat smooth table or work bench. (See base Mount diagram as below)

2. Secure the base mount and fix the positioning nuts at the suitable height

3. Slide the Control unit Mount onto the shaft of the base mount

4. Tighen the shaft cover



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Pls note: That working table or mounting surface must be lagged to the floor and secure before installation.

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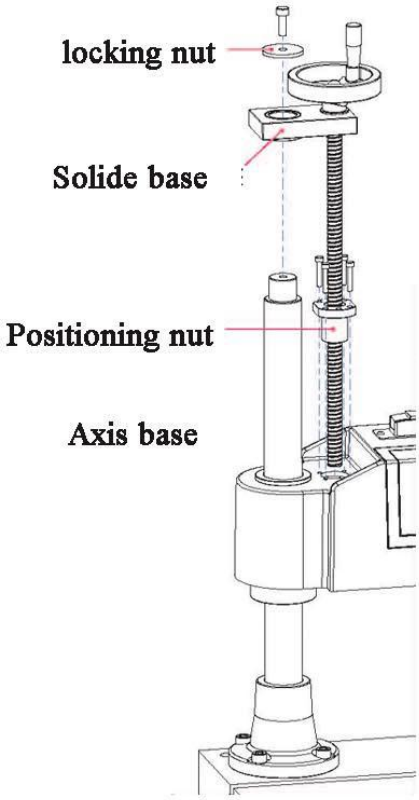
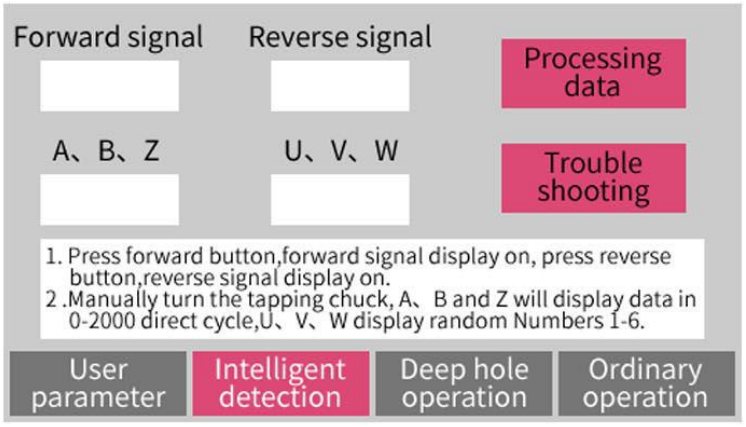
LIFTING ARM INSTALLATION



That Lifting arm is equipped for M36 &M48 electric tapping machine

1.Inserting Lifting screw rod into hole on the arm, turn hand wheel to adjust positioning nut at desired height (Positioning Nut prohibited to take out of screw rod)
2. When positioning nut at desired height Make Solid base onto the Axis base tightly.
3. Then Tighten the locking nut and washer in the top of Axis base, to make sure machine go up and down smoothly when turn hand wheeel, if not, loosen locking nut and readjust until go smoothly

Test Run



Test run the machine to make sure it works properly before proceeding with operations

1. Connect the machine to power
2. Turn the electric tapping machine ON
3. Press forward BUTTON, forward signal display on, press reverse BUTTON, reverse signal display on, if not signal, pls check.
4. Manually turn the tap holder, A.B and Z display data 0-2000, U.V and W display rane 1-6, if not range pls check.

OPERATIONS

Installing/Changing Taps

Install tap/uninstall tap

Select the correct tap holder for the tap size required, insert the tap into the holder by pressing the locking ring, Seat the top square into the tap holder until contact tightly release the locking ring. when changing tap, the same pressing the locking ring, can get taps out.

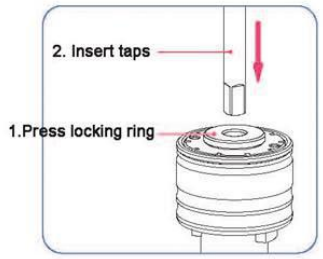


Photo 6

Install Tapp holder/Change Taps

Push up on the collar of the quick change chuck then Insert the tap holder into the chuck and turn the tap holder until the “ears” of the holder locate the slots of the chuck, then pull down collar to lock the holder into position. To change tap holder, pushing up on the collar of chuck.and grip the tap holder, that holder will drop down.

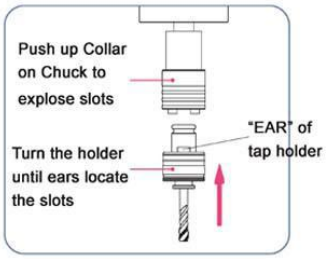


Photo7

We have ISO/DIN/JIS/ANSI tap holder to meet various country standard.

OPERATIONS

Tapping Operation

1.Position the tapping head vertically above the workpiece, no obstacle that interferes with the downward path of the tap holder

2. As Photo 8,Turn the tapping machine ON

3. As Photo 9, Actuating by click “Enter” interface,

3. There are two tapping cycle model available

One is Tapping cycle by manual,as Photo 10, depress “Forward BUTTON” to tap, after work then depress “Reverse BUTTON” to tap reverse.

The other is Tapping cycle automatic, just depress ”Forward BUTTON” to start tap then reverse automatically, no need depress “Reverse BUTTON”

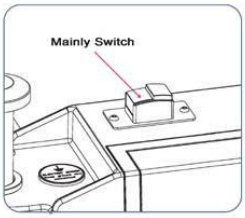


Photo8

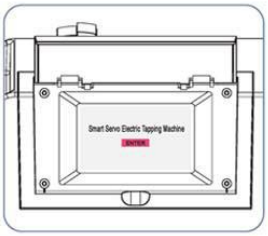


Photo9

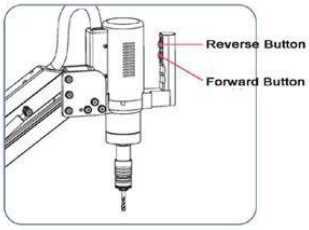


Photo10

Orientable Head Operation

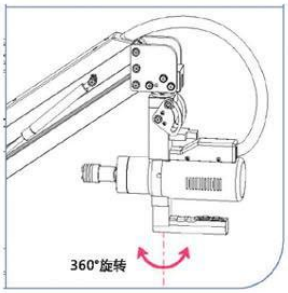
1.Vertical Operation:

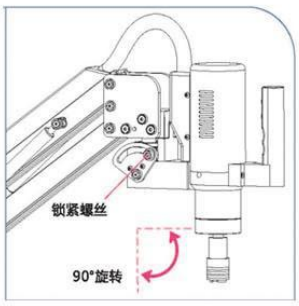
Factory Default is Vertical tapping

Before tapping, make sure tapping axle is perpendicular to working table.

2. Horizontal Operation

Loosen the Locking nut to adjust the position of the tapping head in horizontal direction and ensure perpendicular to workpiece, then Locking Nut is tightly fixed aligned to the workpiece





OPERATIONS

Operation attention

When tapping a through hole remember that the tap will protrude on the bottom side of the workpiece,make sure sufficient learence below the workpiece to allow tap to break through and not hit the work surface,
Our tap holder with torque clutch, that will ratchet and stop the tap from turning when tap reach the bottom of blind hole.

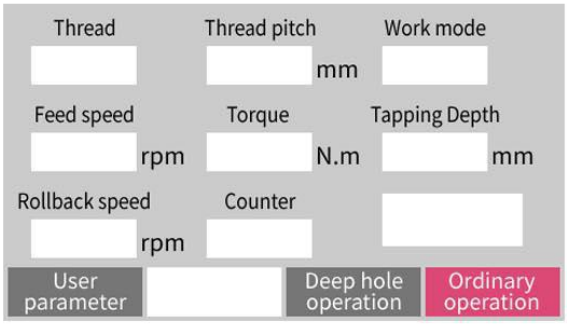
At the M48 Tapping machines equipped with a "double-speed motor 50/200 (rpm)", the speed is changed by turning of the "motor slide collar" .
Speed at 50rpm: set the collar notch at LOW
Speed at 200rpm: set the collar notch at FAST

Nevertheless, adjust the turning direction, tapping speed according to materials properties tapped,
When working in the hard steels and taps close to their maximum capacities, it is advisable to reduce the cutting speed to 80%

Troubleshooting

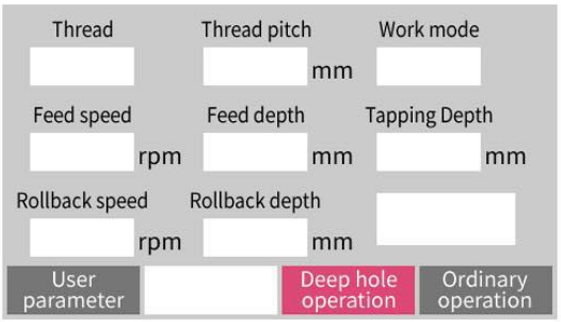
Code	Analysis	Method
E-001	Over current	Check tap head perpendicularity, if driver and motor normal, if tap seized
E-002	Over voltage	Voltage overtension
E-004	Over current	Curent persistentl anomaly
E-008	encoder abnormal	Check Encoder line connection
E-010	overrun	Check UVW Test if ok, forward speed , motor and encoder connect
E-037	Incoder Error	Find signal interference and far away
E-150	:communication checkout	Check Encoder line connection
E-200	Servo communication timeout	Check line and Encoder line connection
E-220	Password error	Retry with password, or contact with us
E-312	Torque proteciton error	Close Torque protection or increase value

Tapping Interface



Ordinary Operation

1.Thread: Metric/Inch Thread switchable.
2.Thread Pitch: When Thread enter, will automatic generate Standard Thread Pitch and you can also set desired pitch.
3.Work Mode
Normal: suitable for normal thread work
Track: sutiable for big thread, will automatic adjust speed according to load.
4.Feed speed: tapping speed parameter.
5.Rollback speed: Reverse tapping speed parameter.
6.Torque: When Thread enter, will generate Standard Torque Protection value, that workable just when turn on"Torque Protection",
****
Please note: you have to set Toque value customize according to materials properties such as hard steels and stainless steel, you needto increase torque value and lower cutting speed to achieve desired result.
****
7.Counter: Counting workpiece synchronization
8.Tapping depth: Tapping Depth paramter
9.Manual/Auto: Change over Manual/Automatic tapping



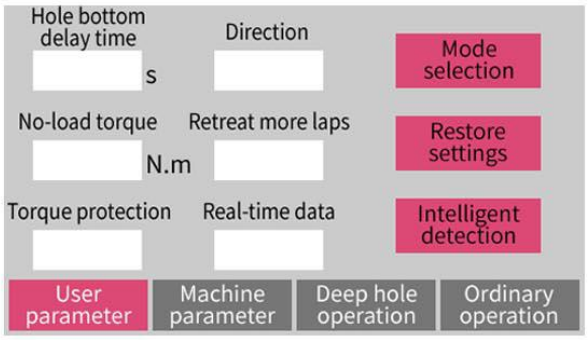
Deep hole Operation

A deep hole is defined by its depth-to-diameter ratio (D:d), and typically holes greater than 10:1 are considered deep holes.

1.Thread: the same as Ordinary
2.Thread Pitch: the same as Ordinary
3.Work mode: the same as Ordinary
4.Feed speed: the same as Ordinary
5.Rollback speed: the same as Ordinary
8.Tapping Depth: the same as Ordinary
6.Feed depth: single tapping depth
7.Rollback depth: single tapping reverse depth

One deep hole tapping cycle including:
First tapping depth=Feed depth
reverse depth=Rollbaak depth
Second tapping depth=Feed Depth+Rollback depth
reverse depth=Rollbaak depth

Tapping Interface



User parameters

1.Hole bottom delay time: delay time parameter when taps reaching set depth, range 0-10s.
2. Direction: Motor rotation direction (closewise or anticlockwise)
3. No-load torque (Details refer to RIGHT)
4.Retreat more taps: To ensure tap reverse smoothly, tap reverse more cycles than tap forward
3.Torque protection: Preset standard break torque limits to protect taps
5.Real-time data: tapping process data will be displayed synchronization
7. Mode selection Tapping & Tightening work
8. Restore settings: restore factory settings
9. Intelligent detection. (Refer to later)

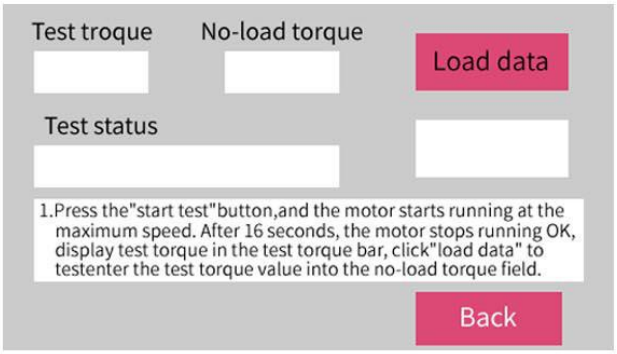
****

Pls note taht Machine parameters always not allowded to revise.

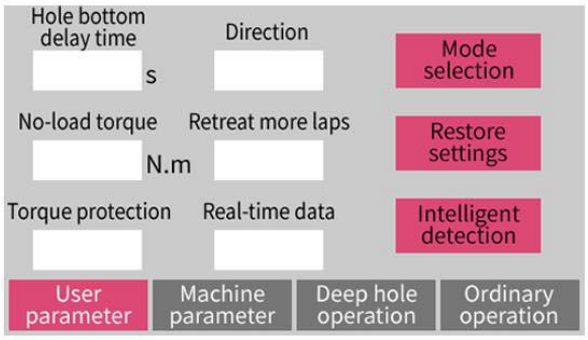
****

Workpiece saving for involking

Machine can restore 20 workpiece parameter for next directly application



Tapping Interface



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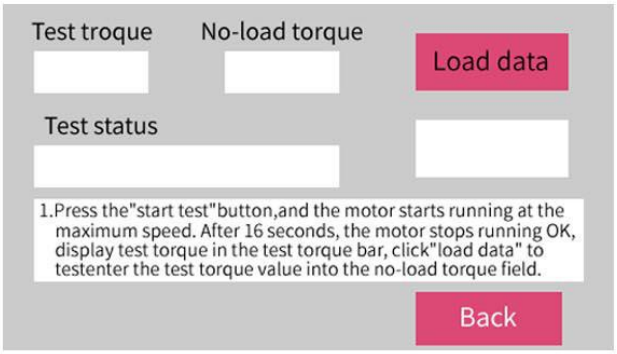
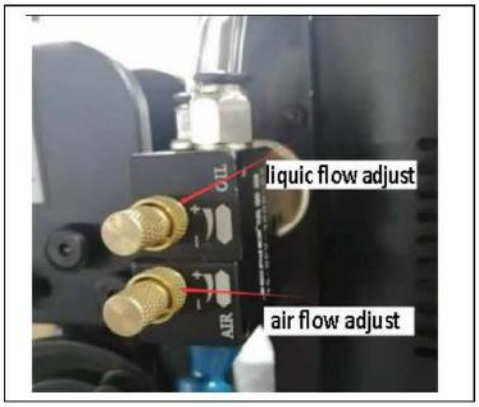
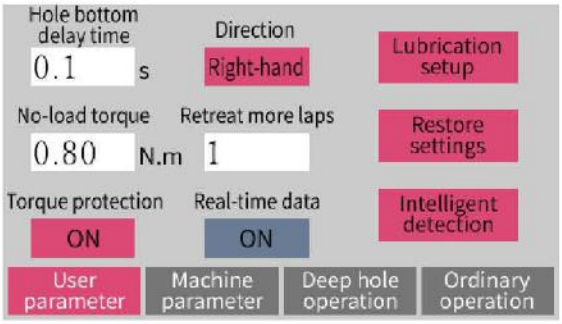


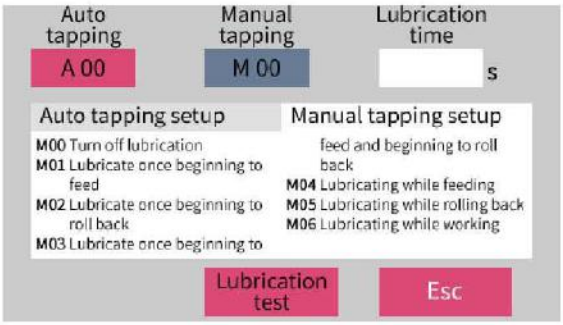
INTERFACE OF LUBRICATION

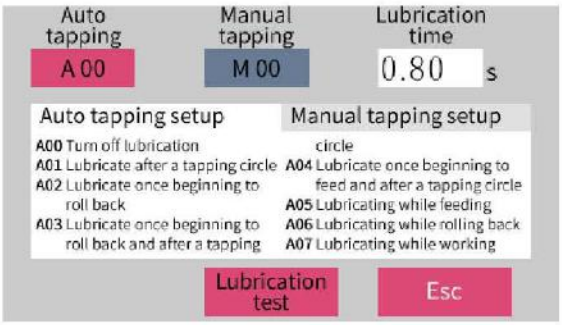
Auto lubrication setup

We implement Auto lubrication system in our tapping machine,this Oil Mist spray can achieve lubrication function in our tapping work with Lower energy consumption
to remove iron fillings and cool down workpice temperature









Manual tapping lubrication

1.**M00** Turn off lubrication
2.**M01** Lubricate once beginning to feed
3.**M02** Lubricate once beginning to roll back
4.**M03** Lubricate once beginning to feed and beginning to roll back
5.**M04** Lubricate while feeding
6.**M05** Lubricate while rolling back
7.M06 **Lubricate while working**

Auto tapping lubrication

1.**A00** Turn off lubrication
2.**A01** Lubricate after a tapping cycle
3.**A02** Lubricate once beginning to roll back
4.**A03** Lubricate once beginning to roll back and after a tapping cycle.
5.**A04** Lubricate once beginning to feed and after a tapping cycle
6.**A05** Lubricate while feeding
7.**A06** Lubricate while rolling back
8.**A07** Lubricate while working

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You can push "Lubrication test" button to test if lubrication working normal, and adjust air flow and fluid flow according to your requirement

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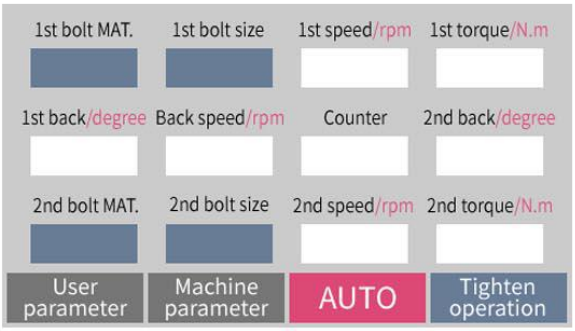
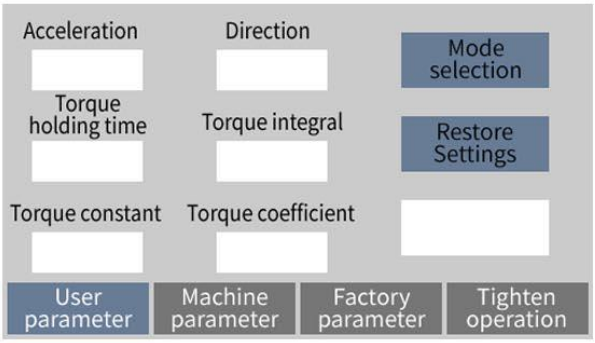
TIGHTENING INTERFACE





Tightening Operation

1.Bolt MAT: Bolt materials
2.Bolt size: Bolt size
3.1st speed: tighening speed
4.1st torque: will auto generate torque value
5.1st back degree: reverse degree
6.Back speed: reverse speed
7.2nd back degree
8.2nd bolt MAT
9.2nd bolt size
10.2nd speed
11.2nd torque
12.Counter: counting finished workpiece
13.Auto/Manual Switch
****

Pls not that always normal tightening no need 2nd bolt setup, just keep speed 0

****

User Parameter

1.Acceleration: Controll machine accelerated speed, small value. acceleration slow
2. Direction:Machine tapping direction clockwise or anticlockwise
3.Torque holding time: After Spindle rotation pausing, lock Axis time
4.Torque intergal: Fault value 80 not allowed to change
5. Torque constant: Fault value 2 not allowed to change
6.Torque coefficient: Rectify torque value
7.Model selection:Tapping /Tightening
8.Restore to factory settings
****

Machine paramter: not allow to change to avoid affect machine performance
Factory paramter not allow to change to avoid affect machine performance

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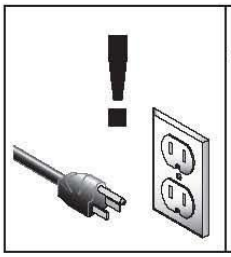
MAINTENANCE



⚠WARNING
Always disconnect power to the machine before performing maintenance. Failure to do this may result in serious personal injury.

Schedule

Daily maintenance

1 Be sure clean and maintenance work after turn off the power switch and pull out the plug,otherwise there will be dangerous.
2) Don't wet the machine otherwise easy to cause a short circuit.
3) Use a brush,dry cloth and other cleaning tools clean the machine in regular time,don't use the hair dryer.
4) When the machine is dirty,please wipe it by dry cloth.It's easy rust if met water. Prohibit to you gasoline,alcohol and other organic solvent to clean the machine.

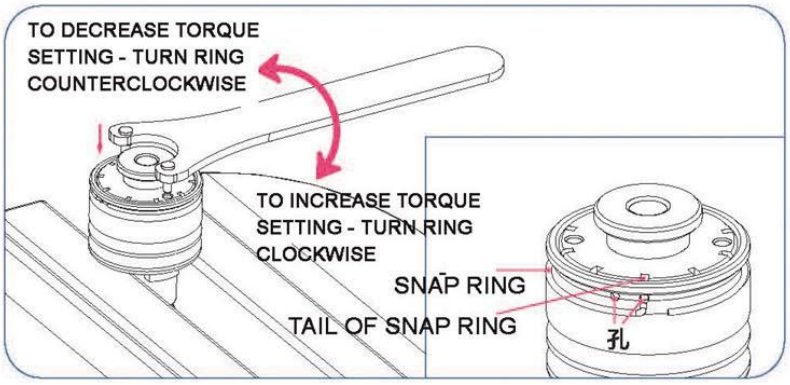
ADJUST TAP HOLDER TORQUE SETTINGS

The torque holders are factory preset near the standard break torque limits. When the tap reaches the bottom of the hole, resistance will cause the torque holders safety clutch to ratchet and stop the tap from turning,

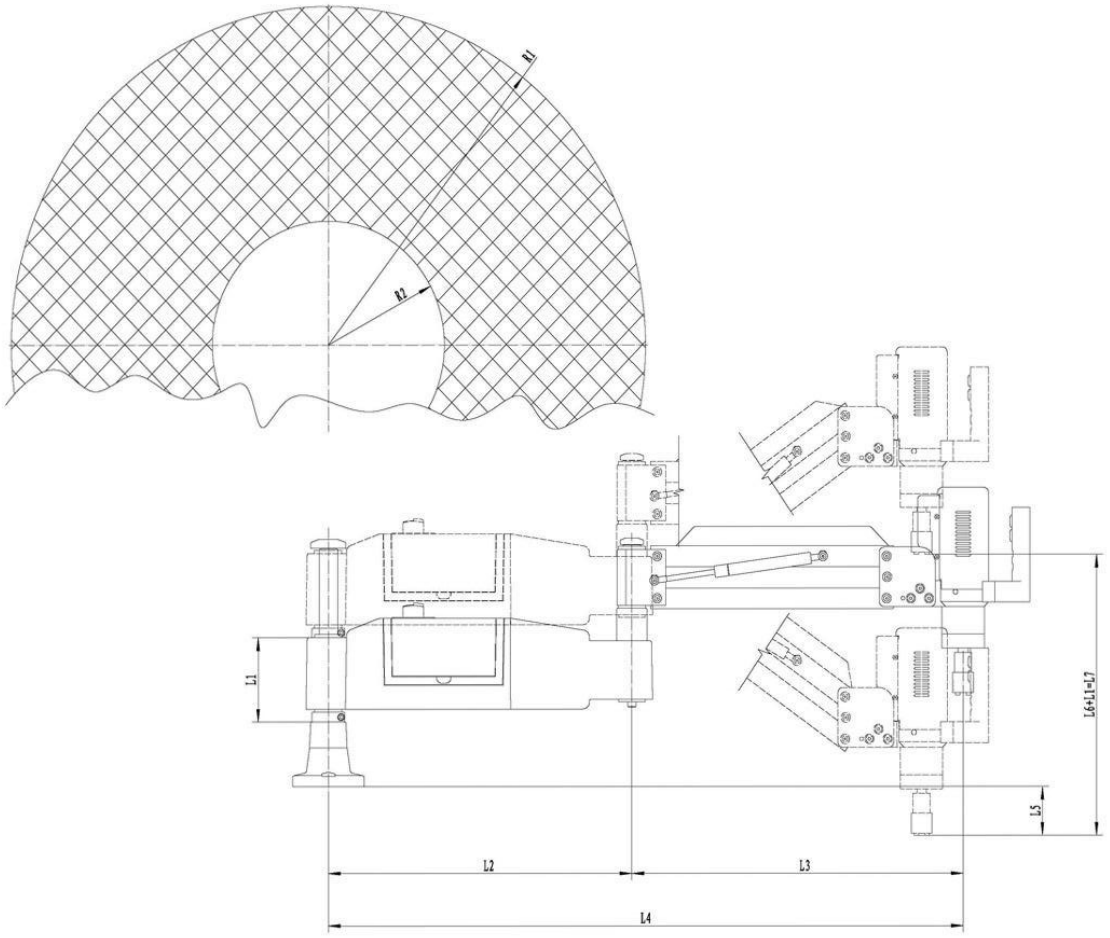
When tap hardened steel,an increase in the torque settings may be required, When tap soft materials or plastics,a decrease in torque setting need.

There are two lock positions on the outside diameter of the holder designed to hold the tailof the snap ring. These two positions permit on adjustment range from one half to a full notch on the threoded ring. The tail of the snop ring must beinserted in the hole at either position and through a notch on the thread ring in order to lock in the adjusted torque setting

CAUTION: Never adjust the torque setting more than one notch at a time.



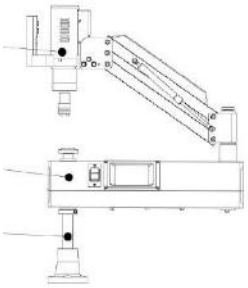
Servo Driven flex arm Vertical tapping machine

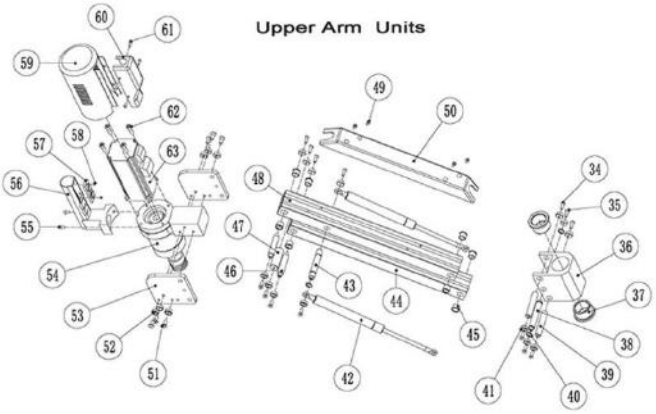


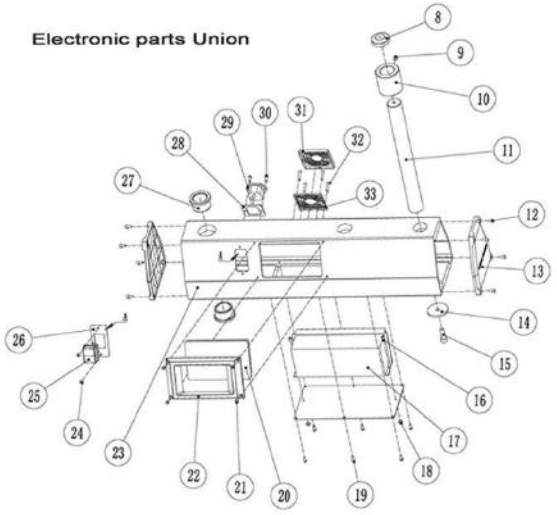
Model	R1	R2	L1	L2	L3	L4	L5	L6	L7
M24C/M36C	1180	370	160	550	630	1180	175	545	705
M16C	1045	330	130	500	545	1045	75	433	563

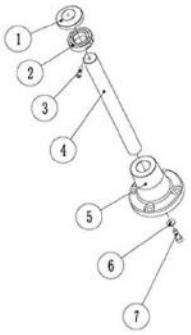
Standard Tap Dimensions

ISO(国标)			JIS(日标)			DIN(德标)		
Tap measure	Norm		Tap measure	Norm		Tap measure	Norm	
Dia xSquare	ISO529 (1)	ISO529 (2) ISO2283	Dia xSquare	JISB4430 (3)	Inches	Dia xSquare	DIN371 (4)	DIN374 (5) DIN376
2.24×1.80		M3.0	3.00×2.50	M1.0-M2.6		2.50×2.10	M1-M1.8	M3.5
2.50×2.00	M1.0-M2.0	M3.5	4.00×3.15		UNC 1/8"	2.80×2.10	M2-M2.5	M4.0
2.80×2.24	M2.2-M2.6		4.00×3.20	M3.0-M3.5	#5-#6	3.50×2.70	M3	M4.5-M5.0
3.15×2.50	M3.0	M4.0	5.00×4.00	M4.0-M4.5	#8	4.00×3.00	M3.5	
3.55×2.80	M3.5	M4.5	5.00×4.00		UNC 5/32"	4.50×3.40	M4.0	M6.0
4.00×3.15	M4.0	M5.0	5.50×4.50	M5.0-M5.5	#10	5.50×4.30		M7.0
4.50×3.55	M4.5	M6.0	5.50×4.50		UNC 3/16"	6.00×4.90	M4.5-M6	M8.0
5.00×4.00	M5.0		6.00×4.50	M6.0	UNC 1/4"	7.00×5.50	M7.0	M10
5.60×4.50		M7.0	6.10×5.00		UNC 5/16"	8.00×6.20	M8.0	
6.30×5.00	M6.0	M8.0	6.20×5.00	M7.0-M8.0		9.00×7.00		M12
7.10×5.60	M7.0	M9.0	7.00×5.50	M9.0-M10	UNC 3/8"	10.00×8.00	M10	
8.00×6.30	M8.0	M10-M11	8.00×6.00	M11	UNC 7/16"	11.00×9.00		M14
9.00×7.10	M9.0	M12	8.00×6.00		PT 1/8"	12.00×9.00		M16
10.00×8.00	M10		8.50×6.50	M12		14.00×11.00		M18
11.20×9.00		M13-M15	9.00×7.00		UNC 1/2"	16.00×12.00		M20
12.50×10.00		M16-M17	10.50×8.00	M14-M15	UNC 9/16"	18.00×14.50		M22-M26
14.00×11.20		M18-M21	11.00×9.00		PT 1/4"	20.00×16.00		M27
16.00×12.50		M22-M23	12.00×9.00		UNC 5/8"	22.00×18.00		M29-M32
18.00×14.00		M24-M26	12.50×10.00	M16		25.00×20.00		M33
20.00×16.00		M27-M30	14.00×11.00	M18	PT 3/8"	28.00×22.00		M34-M38
22.40×18.00		M31-M33	14.00×11.00		UNC 3/4"	32.00×24.00		M39-M42
25.00×20.00		M36	15.00×12.00	M20		36.00×29.00		M44-M50
28.00×22.40		M37-M42	17.00×13.00	M22	UNC 7/8"	40.00×32.00		M52
31.50×25.00		M44-M50	18.00×14.00		PT 1/2"	45.00×35.00		M55-M60
35.50×28.00		M52-M56	19.00×15.00	M24-M25				
40.00×31.50		M58-M65	20.00×15.00	M26-M27	UNC 1"			
45.00×35.50		M66-M75	21.00×17.00	M28				
			22.00×17.00		UNC 1 1/8"			
			23.00×17.00	M30	PT 3/4"			
			24.00×19.00	M32	UNC 1 1/4"			
			25.00×19.00	M33				
			26.00×21.00	M34-M35	UNC 1 3/8"			
			26.00×21.00		PT 1"			
			28.00×21.00	M36	PT 11/4"			
			30.00×23.00	M39				
			32.00×26.00	M42				
			35.00×26.00		PT 13/8"			
			38.00×29.00		PT 11/2"			









Num	Code	Description	Quantity
63	****	Servo motor	1
62		M6X30 Bolt	4
61		M4X8 Bolt	4
60		Rear Cover	1
59		Motor Cover	1
58		M3X10 Bolt	2
57	***	Motor Starting Button	1
56		Motor Grip	1
55		M4X20 Bolt	2
54	***	Reducer+Chuck	1
53		Retainer plate	2
52		M6 Bolt Washer	6
51		M6X30 Bolt	6
50		Wire Cover	1
49		M4X10 Bolt	4
48		Upper arm	1
47		Plate limits	1
46		Upper arm Spindle	2
45		Bearing	8
44		Upper arm	1
43		Damper Spindle	1
42	***	Damper	2
41		M5 Washer	14
40		Ø12 Circlip	4
39		Upper arm Spindle	2
38		Damper Spindle	1
37		Axis Bushing	2
36		Upper Arm Base	1
35		M5X30 Bolt	4
34		M5X25 Bolt	8
33		Dust inner Cover	1
32		M4X8 Bolt	4
31		Dust outer Cover	1
30		M4X8 Bolt	2
29		Socket	1
28		Socket Panel	1
27		Axis Bushing	2
26		Switch panel	1
25		Main Switch	1
24		M4X8 Bolt	2
23		Electronic equip cover	1
22		Screen Frame	1
21		M4X10 Bolt	4
20	***	LCD Screen	1
19		M4X8 Bolt	6
18		M4X8 Bolt	2
17	***	Motor Driver	1
16		M4X10 Bolt	2
15		M8X25 Bolt	1
14		Ø44X8 Washer	1
13		Side Cover	2
12		M4X10 Bolt	8
11		Upper arm axis	1
10		Axis bushing	1
9		M8X8 Socket Set screw	1
8		Axis Cover	1
7		M6X25 Bolt	1
6		Ø18X6 Washer	1
5		Base	1
4		Base Axis	1
3		M6X20 Bolt	1
2		Lifer positioner	1
1		Axis Cover	1