

The Tapmatic Non-Reversible Tapping Attachments can be used for all kinds of machine tapping—on radial drills, turret lathes, jig borers, and drill presses. The attachment is not manufactured with a reversing mechanism, so consequently the machine must be provided with some means for quickly reversing the spindle.

INSTALLING THE ARBOR IN TAPER MOUNT UNITS

Make sure that the taper mount of the unit and the arbor itself are clean and free of oil or grease. Then, with a twisting motion, insert the arbor into the tapping attachment. The twisting motion allows the air entrapped in the taper to be released. When the arbor is inserted completely, several sharp blows should be made on the tang with a lead hammer to make sure the arbor is seated firmly. It is important that this procedure be followed, as the taper may be damaged if slippage occurs. Occasionally, for large units, it may be necessary for the attachment to be pinned to the arbor. This may be done with a #4 Taper Pin.

INSERTING THE TAP

Insert the desired tap into the tap chuck of the attachment so that the back jaws will engage the square of the tap. Hand tighten the chuck nut first. Then, tighten the back jaws on those units with adjustable back jaws. The Model 20X has a fixed back jaw. Then, using the wrenches provided, tighten the chuck nut. This will assure true running of the tap.

TAPPING SPEEDS

This Tapping Attachment has been designed to operate properly at recommended tapping speeds. Please refer to chart for the recommendations for specific tap sizes.

SETTING THE PRE-SELECTIVE TORQUE CONTROL

This attachment has a spring loaded clutch. Driving torque adjustments are made by tightening or loosening the knurled cap at the upper end of the attachment. When the desired torque has been determined, the knurled cap may be locked in place by a set screw. Proper procedure when beginning tapping operation is to loosen the knurled cap so that all the graduations on the housing are visible. Then tighten cap progressively until the attachment will drive a sharp tap. If later during the operation the clutch slips, it is evident that the tap is dull and should be immediately exchanged for a sharp tap, but the clutch should not be tightened further.

SETTING THE ADJUSTABLE DEPTH CONTROL

The X Model Non-Reversing Units incorporate adjustable self-feed in conjunction with the pre-selective torque control. By simply turning the depth control collar, No. 47X, you may reduce the standard amount of self-feed to whatever you require.

THROUGH HOLE TAPPING

Tapping with this tapping attachment does not require that the operator apply any lead pressure on the tap during the tapping operation. The free axial float in the attachment will automatically permit the tap to follow its own lead. The operator merely advances the tap so that it is brought to bear directly against the drilled hole. He then merely moves the machine spindle behind the lead of the tap until the desired depth is reached. Then, the machine spindle should be reversed and the operator should remember to stay ahead of the lead of the tap on the return stroke until the tap clears the hole.

BOTTOM HOLE TAPPING

For bottom hole tapping it is suggested that the tap spindle be allowed to release in neutral before hitting bottom. Set the machine stop so that the machine feed plus the attachment's self-feed, which is adjustable on this tap, will equal the desired thread depth. This simplifies the tapping operation. For the smoothest operation, it is best not to drive the tap to the bottom of a blind hole. The clutch is then only employed as a safety device to avoid tap breakage. If the clutch should slip before the tap reaches the desired depth, check to see that the hole is not lined with chips. If the hole is clear, then it is time to change the tap for a sharp one.

When the desired depth of thread is reached, the machine spindle should be reversed, and again the operator should remember to stay ahead of the lead of the tap on the return stroke until the tap clears the hole. It is best to stay within the limits of the axial float, both during entry and retraction of the tap.

The maximum amount of self-feed built into the X Model Non-Reversing Tappers is as follows: 20X - 1/2"; 40X - 3/4"; 60X - 3/4"; 80X - 1".

LUBRICATION

This Tapmatic Tapping Attachment requires a minimum of lubrication care. The ball bearing used in this attachment is of sealed variety and so requires no additional lubrication.

TAP LUBRICATION

To insure maximum tap life, the proper lubricant should be used. In high production tapping units, we recommend Tapmatic's Molecular Edge II. For hand applied cutting fluid applications, Tapmatic Cutting Fluid #1 for steel and other hard alloys, Tapmatic Cutting Fluid #2 for aluminum and magnesium.

Recommended Tapmatic Tapping Speeds

Size	Cast Iron and Bronze	Plastic and Aluminum	Steel	Stainless Steel	Brass	(Feet/Min)
1/8-30	2000	2000	2000	1800	2000	8000
1/8-28	2000	2000	2000	1800	2000	8000
1/8-24	2000	2000	2000	1800	2000	8000
1/8-20	1500	2000	2000	1800	2000	8000
1/8-18	1500	2000	2000	1800	2000	8000
1/8-16	1500	1500	1700	1500	2000	8000
1/8-14	1500	2000	1800	1500	2000	8000
1/8-12	1500	1500	1700	1500	2000	8000
1/8-10	1500	1500	1700	1500	2000	8000
1/8-8	1500	1500	1700	1500	2000	8000
1/8-6	1500	1500	1700	1500	2000	8000
1/8-3/8	1500	1500	1700	1500	2000	8000
1/8-1/2	1500	1500	1700	1500	2000	8000
1/8-3/4	1500	1500	1700	1500	2000	8000
1/8-1	1500	1500	1700	1500	2000	8000
1/8-1 1/8	1500	1500	1700	1500	2000	8000
1/8-1 1/4	1500	1500	1700	1500	2000	8000
1/8-1 1/2	1500	1500	1700	1500	2000	8000
1/8-1 3/4	1500	1500	1700	1500	2000	8000
1/8-2	1500	1500	1700	1500	2000	8000
1/8-2 1/8	1500	1500	1700	1500	2000	8000
1/8-2 1/4	1500	1500	1700	1500	2000	8000
1/8-2 1/2	1500	1500	1700	1500	2000	8000
1/8-2 3/4	1500	1500	1700	1500	2000	8000
1/8-3	1500	1500	1700	1500	2000	8000
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1/8-6 1/8	1500	1500	1700	1500	2000	8000
1/8-6 1/4	1500	1500	1700	1500	2000	8000
1/8-6 1/2	1500	1500	1700	1500	2000	8000
1/8-6 3/4	1500	1500	1700	1500	2000	8000
1/8-7	1500	1500	1700	1500	2000	8000
1/8-7 1/8	1500	1500	1700	1500	2000	8000
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1/8-7 3/4	1500	1500	1700	1500	2000	8000
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"X" MODELS NON-REVERSING

PART NUMBERS FOR ORDERING PARTS

IDENT. NO.	PART NAME	20X	40X	60X	80X
1X (85T)	Housing	9001B (1)	1001B (1)	—	—
1X (100N4)	Housing	1001G (1)	1001G (1)	—	—
1X (85J7)	Housing	1001E (1)	1001E (1)	—	—
1X (100N3)	Housing	—	—	1001C (1)	—
1X (85J7)	Housing	—	—	—	1001D (1)
1X (85J7)	Housing	—	—	—	1001E (1)
2X (85J7)	Housing	—	—	—	1001F (1)
2X	Clutch Adjustment Cap	1000A (2)	1000A (2)	1000A (2)	1000A (2)
3X	Spring Plate	1000B	1000B	1000B	1000B
4X	Driver Pins	1000C (3 set)	1000C (3 set)	1000C (3 set)	1000C (3 set)
5X	Lock Set Screw	1000D (3)	1000D (3)	1000D (3)	1000D (3)
5X	Lock Set Screw Plug	1000E (3)	1000E (3)	1000E (3)	1000E (3)
5X	Clutch Spindle	1000F	1000F	1000F	1000F
6X	Upper Spring Hanger	1000G	1000G	1000G	1000G
7X	Clutch Sleeve	1000H	1000H	1000H	1000H
8X	Clutch Bearing	1000I	1000I	1000I	1000I
11X	Thrust Ring	1000J	1000J	1000J	1000J
14X	Drive Spindle	1000K	1000K	1000K	1000K
15X	Back Jaw Retainer Screw	1000L (2 req'd)	1000L (2 req'd)	1000L (2 req'd)	1000L (2 req'd)
16X	Back Jaw or Tap Jaw	1000M	1000M	1000M	1000M
17X	Rubber Plug Collar (Small)	1000N or 1000O	1000N or 1000O	1000N or 1000O	1000N or 1000O
17X	Rubber Plug Collar (Large)	1000P	1000P	1000P	1000P
17X	Tap Chuck Nut	1000Q	1000Q	1000Q	1000Q
18X	Spring Ring	1000R	1000R	1000R	1000R
21X	Adjustable Thrust Bearing	1000S	1000S	1000S	1000S
22X	Clutch Spring (Large)	1000T (3 set)	1000T (3 set)	1000T (3 set)	1000T (3 set)
23X	Clutch Spring (Small)	1000U (3 set)	1000U (3 set)	1000U (3 set)	1000U (3 set)
24X	Cushion Spring	1000V	1000V	1000V	1000V
25X	Spring Cap Driver	1000W	1000W	1000W	1000W
26X	Drive Pin	1000X (3 set)	1000X (3 set)	1000X (3 set)	1000X (3 set)
27X	Guide Spindle Bearing	1000Y	1000Y	1000Y	1000Y
30X	Return Spring	1000Z	1000Z	1000Z	1000Z
31X	Drive Spindle Bearing	1000A	1000A	1000A	1000A
32X	Impact Ring	1000B	1000B	1000B	1000B
34X	Guide Spindle Nut	1000C	1000C	1000C	1000C
35X	Spring Housing	1000D	1000D	1000D	1000D
36X	Spring Bearing Hanger	1000E	1000E	1000E	1000E
41X	Clutch Driver	1000F	1000F	1000F	1000F
42X	Primary Internal Clutch Plate	1000G	1000G	1000G	1000G
43X	Internal Clutch Plate	1000H	1000H	1000H	1000H
44X	External Clutch Plate	1000I	1000I	1000I	1000I
45X	Clutch Disc	1000J	1000J	1000J	1000J
46X	Bearing Retaining Ring	1000K	1000K	1000K	1000K
47X	Depth Control Collar	1000L	1000L	1000L	1000L
47XA	Depth Control Screw	1000M	1000M	1000M	1000M

- (1) Housing only available as an assembly with idem. 60X and 80X.
 (2) Clutch Adjustment cap only available as an assembly with idem. 55X and 55XX.
 (3) Lock set screw comes with idem. 85XX.
 (4) Drive spindle available only with idem. 40XX.

INSTRUCTIONS FOR DISASSEMBLY

1. Remove stop ring (#20X) and unscrew clutch adjustment cap (#2X).
2. Hold unit in vertical position and remove adjustment thrust bearing (#21X) and spring plate (#2X).
3. Insert driver over clean receptacle and clutch springs (#22X & #23X) will drop out.
4. Remove tap chuck nut (#18X) and collar (#17X).
5. Remove back jaw retainer screw (#15X) and back jaws (#16X).
6. Unscrew guide spindle nut (#34X) and remove return spring (#30X).
7. For 60X and 80X thread spring puller (supplied with unit) into tapped hole in part (#34XX) then pull out and unhook from return spring (#30X).
8. Remove thrust ring (#11X).
9. Lift out drive spindle (#14X) and clutch sleeve (#7X) subassembly from housing (#1X).
10. All parts are now exposed for cleaning or further disassembly if necessary.

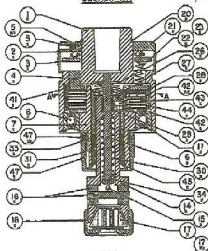
INSTRUCTIONS FOR ASSEMBLY

1. Clean and lubricate all parts thoroughly.
2. Insert impact ring (#35X), and drive spindle bearing (#31X) into clutch sleeve (#7X), then install in bearing retaining ring (#45X).
3. Press ball bearing (#32X) on to clutch sleeve (#7X).
4. Install depth control collar (#47X) on clutch sleeve (#7X), turn on all the way.

5. Insert drive spindle (#14X) and guide spindle bearing (#31X) into clutch sleeve subassembly, and insert drive pins (#22X) into holes through slots in upper part of clutch sleeve.
6. Place internal clutch plate (#42X) on clutch sleeve (#7X) then clutch disc (#44X), then external clutch plate (#43X), then another clutch disc (#44X), then internal clutch plate (#42X) and so forth until you have all plates and discs on clutch sleeve, then lineup and turn driving dogs so that you can slip clutch driver (#41X) over complete subassembly.
7. Place spring cup driver (#25X) in top of spring cup driver (#27X) and place cushion spring (#24X) in top of spring cup driver (#27X).
8. Insert complete clutch sleeve subassembly into housing (#1X), and tap in thrust ring (#11X).
9. Install return spring (#30X) and screw guide spindle nut (#34X) onto guide spindle (#14X). (Models 20X and 40X only)
10. For 60X and 80X, attach return spring (#30X) to spring hanger (#36X) and drop through guide spindle (#14X). Screw spring puller provided, into tapped hole in spring hanger (#36XX) and place spring bearing (#34XA) on spring hanger. Now using spring hook provided, hook return spring (#30X) and pull in over just enough to hook spring hanger (#36XX) with spring bearing mounted to it. Using spring puller, you now lower bearing and spring hanger into correct position.
11. Place back jaws (#16X) in drive spindle (#14X) and install back jaw retainer screw (#15X).
12. Insert collar (#17X) into tap chuck nut (#18X) and screw tap chuck nut onto drive spindle (#14X).
13. Insert clutch springs (#22X & #23X) into unit.
14. Place spring plate (#2X) on spring.
15. Place adjustment thrust bearing (#21X) on spring plate (#2X).
16. Screw on clutch adjustment cap (#2X).
17. Install stop ring (#20X).



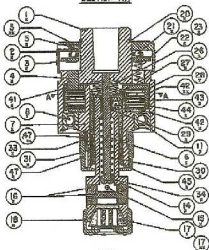
SECTION A-A



20X



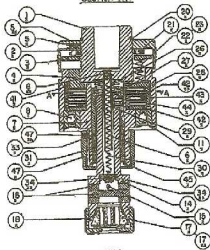
SECTION A-A



40X



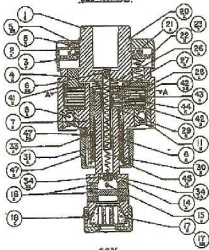
SECTION A-A



60X



SECTION A-A



80X