



Safety and Operation Instructions

SM Tension Compression Tap Holders

SM2, 4, 6 & 8

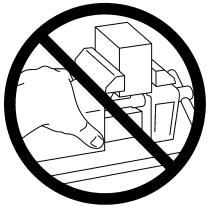
WARNING: To Avoid Serious Injury And Ensure Best Results for Your Tapping Operation, Please Read Carefully All Operator and Safety Instructions provided for this tapping attachment as well as all other safety instructions that are applicable, especially those for your machine tool.

1. Proper Clothing: the rotating spindle of a machine tool can snag loose fitting clothing, jewelry or long hair. Never wear jewelry, long sleeves, neckties, gloves or anything else that could become caught when operating a machine tool. Long hair must be restrained or netted to prevent it from becoming entangled in rotating spindle.

2. Proper Eye Protection: Always wear safety glasses with side shields to protect your eyes from flying particles.



3. Proper Work Piece Fixturing: Never hold the work piece or the vise it is held in, by hand. The work piece must be clamped firmly to the table of the machine so that it cannot move, rotate or lift.



4. Always Be Aware Of The Potential Hazards Of A Machining Operation: sometimes working with your machine can seem routine. You may find that you are no longer concentrating on the operation. A feeling of false security can lead to serious injury. Always be alert to the dangers of the machines with which you work. Always keep hands, body parts, clothing, jewelry and hair out of the areas of operation, when the machine spindle is rotating. Areas of operation include the immediate point of machining and all transmission components including the tapping attachment. Never bring your hand, other body parts or anything attached to your body into any of these areas until the machine spindle is completely stopped.

5. Be aware of any other applicable safety instructions / requirements

CHECK LIST FOR GOOD TAPPING.

1. Never use this unit before reading all safety instructions for this attachment as well as the machine it is to be used on.
2. Is the tap sharp and of correct design for current job?
3. Is tap in proper alignment with drilled hole?
4. Is machine speed correct?
5. Is machine feed correct?
6. Is machine stop set properly so tap does not bottom in work piece or fixture?
7. Is work piece held rigidly against rotation and upward movement?
8. Is drilled hole the correct size?
9. Is clearance between the drilled hole and tap sufficient at start position to allow the tap to clear the hole upon retraction?
10. Is the proper cutting fluid or coolant being used for lubricating the tap?
11. If a bottom hole is being tapped is there sufficient chip clearance?

TAPMATIC

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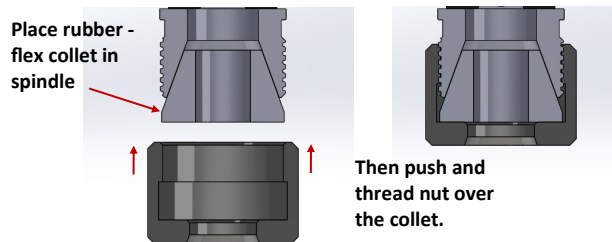
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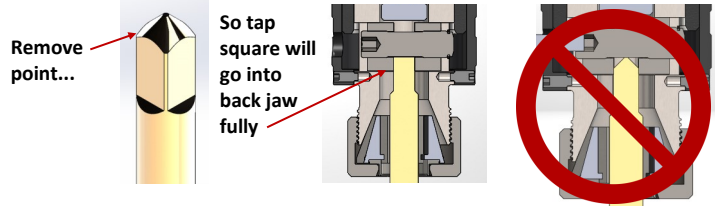
These SM positive drive units are for use on machines with reversible motors and are offered with either a rubber-flex or steel collet spindle.

Rubber Flex Collet Tap Holders

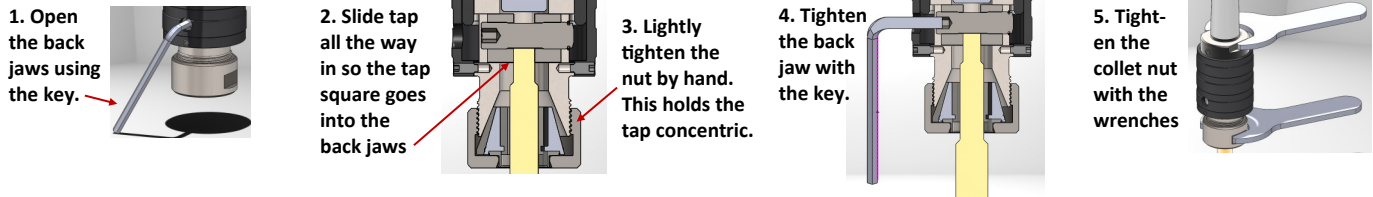
Installing a Rubber Flex Collet into the tap chuck nut:



If the tap has a male center, it should be ground off:



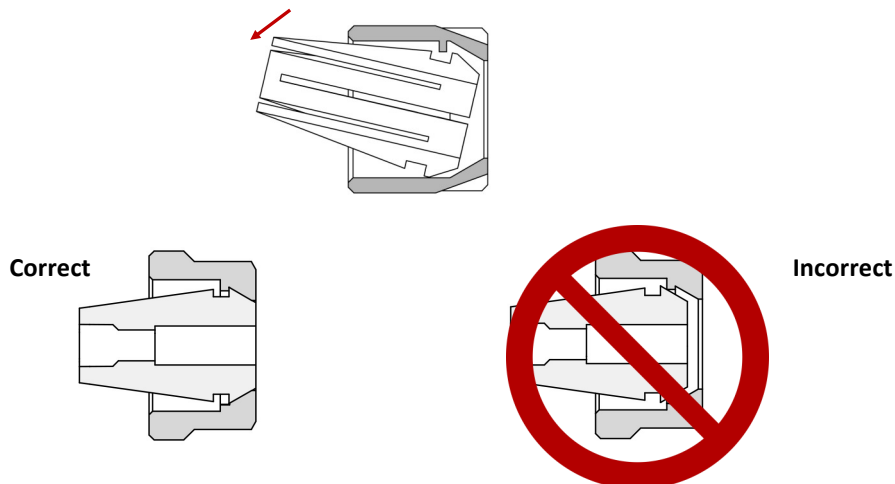
Tightening the back jaws and the nut:



Note: In order to insure the tap runs concentrically, and avoid damage to back jaws or collet, it is important to follow the above steps.

ER Steel Collet Tap Holders

Installing an ER collet into the clamping nut. Always install the collet into the nut first. Make sure lip inside the nut goes into the collet's groove. After installing collet in nut, then thread the nut onto the tap holder spindle.



Be sure to use "GB", square drive ER collets. These are sold separately for the specific tap shank diameter and square.



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THROUGH HOLE TAPPING: Easily performed by setting the machine feed correctly for the thread pitch or slightly slower. Then stop, reverse, and retract when desired depth is reached.

BOTTOM HOLE TAPPING:

CAUTION! It should be noted that the SM Tap Drivers have **No Neutral** or release position. The machine spindle rotation **must be Stopped/Reversed** to stop tap from advancing further into the hole.

CONTROLLED DEPTH TAPPING: Set machine feed correctly for thread pitch or slightly slower. Then reverse and retract when desired depth is reached. The SM series tools feature a collapsible hard-start. The hard-start ensures that the tap will begin cutting consistently from the same axial position at each hole location resulting in accurate tapping depth control. If sufficient force is applied in compression against the hard start, it will collapse, putting the tap holder into a standard compression mode.

PROGRAMMING:

1. Utilize tapping cycle of machine.
2. Set machine feed at tap pitch or slightly slower, for example 95% of tap pitch feed rate.
3. Clearance plane (minimum standard amount recommended by machine builder for tension-compression tapping.
4. For through holes or blind holes with sufficient chip clearance, machine feed to desired depth, reverse and retract.

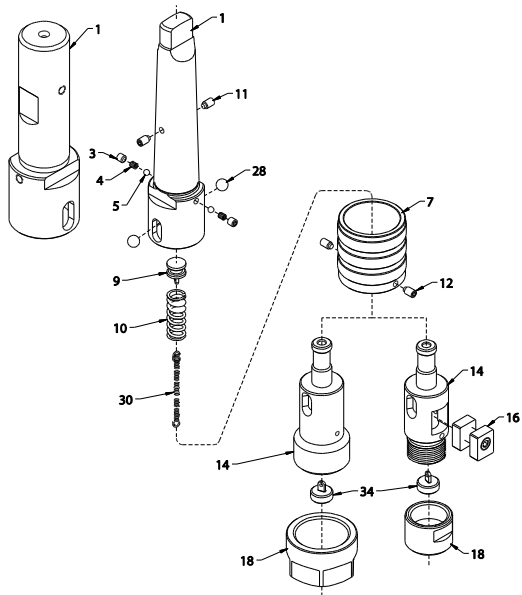
TAP LUBRICATION: To insure maximum tap life, the proper lubricant should be used.



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Instructions for Disassembly

1. Remove tap chuck nut #18, remove set screws #12, slide outer sleeve #7 forward being careful not to lose drive balls #28.
2. Remove set screws #3, springs #4 and balls #5. Remove screws #11.
3. Slide out drive spindle #14. Remove back jaw #16.

Instructions for Reassembly

1. Replace any damaged or worn parts. Reverse above procedure to reassemble. Screws 11 hold spring hanger 9 in place.
2. Adjust set screws #3 to achieve proper hard start setting but be careful not to over tighten the screws because this can prevent free movement of the tension compression float.

SM2 Wrench Set

Rubber-Flex Spindle

28062 (5/8" Wrench) 2pc

27221 (2.5mm Key)

ER16 Spindle

28100 (ER16 Wrench)

28062 (5/8" Wrench)

SM4 Wrench Set

Rubber-Flex Spindle

28097 (31/32" Wrench) 2pc

27223 (3mm Key)

ER20 Spindle

28117 (ER20 Wrench)

28097 (31/32" Wrench)

SM6 Wrench Set

Rubber-Flex Spindle

28131 (1 5/16" Wrench) 2pc

27224 (4mm Key)

ER25 Spindle

69917 (ER25 Wrench)

28131 (1 5/16" Wrench)

SM8 Wrench Set

Rubber-Flex Spindle

28200 (2" Wrench) 2pc

27228 (6mm Key)

Ident. No.	Part Name	SM2	SM4	SM6	SM8
1	Body Inch Straight Shank	SM-2001A-.625 (5/8")	SM-4001A-.750 (3/4")	SM-6001A-1.0 (1")	SM-8001A1 (1 1/2")
1	Body Metric Straight Shank	SM-2001A-016 (16mm)	SM-4001A-016 (16mm)	SM-6001A-020 (20mm)	SM-8001A (25mm)
1	Body Metric Straight Shank	SM-2001A-020 (20mm)	SM-4001A-020 (20mm)	SM-6001A-025 (25mm)	SM-8001A2 (32mm)
1	Body Metric Straight Shank		SM-4001A-025 (25mm)		
1	Body Morse Taper	SM-2001B (#2 Morse)	SM-4001B (#2 Morse)	SM-6001B (#3 Morse)	SM-8001B1 (#3 Morse)
1	Body Morse Taper				SM-8001B (#4 Morse)
3	Screw	SM-2003 (2)	SM-4003 (2)	SM-6003 (2)	SM-8003 (2)
4	Hard Start Spring*	697204 (2)	697404 (2)	SM-6004 (2)	58336 (2)
5	Hard Start Ball	68239 (2)	68439 (2)	60328 (2)	60528 (2)
7	Outer Sleeve	SM-2007	SM-4007	SM-6007	SM-8007
9	Upper Spring Hanger	SM-2009	SM-4009	SM-6009	SM-8009
10	Compression Spring*	697210	61526	SM-6010	SM-8011
11	Set Screw	SM-2008 (2)	SM-4002 (2)	SM-6002 (2)	SM-6002 (2)
12	Set Screw	SM-2008 (2)	SM-2008 (2)	SM-6008 (2)	SM-6008 (2)
14	Drive Spindle Rubber Flex	SM-2013	SM-4013	SM-6013	SM-8013
14	Drive Spindle ER collet	SM-2016	SM-4020	SM-6025 (ER25)	
16	Back Jaw*	603161	56516	50716	50916
17	Rubber Flex collet small**	21600	22100	24100	26100
17	Rubber Flex collet large**	21700	22200	24500	26200
18	Rubber Flex nut	50318	56518	50718	50918
18	ER nut	69518 (ER16)	70018 (ER20)	69918 (ER25)	
28	Drive Ball	60328 (2)	60528 (2)	60728 (2)	60928 (2)
30	Return Spring*	SM-2011	SM-4011	SM-6011	SM-8011
34	Spring Hanger	SM-2012	SM-4012	SM-6012	SM-8012

* These items are considered normal wear replacement parts. ** Please order collets separately.



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REPAIR POLICY

MAINTENANCE

When your SM holder is not in use, please be sure to dry it, if wet from coolant, and apply oil to prevent corrosion.

Repair Service is available at:

Attention:

Repair Department
Tapmatic Corporation
802 Clearwater Loop
Post Falls, ID 83854

To Expedite Repair: Return tool direct to Tapmatic corporation. Tapmatic will inspect the tool and advise you of the repair costs prior to proceeding with the repair.

IMPORTANT: Be sure to return the tool complete with the collet nut, and if applicable the back jaw and if a reversing unit, include stop arm. Otherwise, we will add these missing parts to every non-warranty repair.

Cost Notification: Tapmatic will E-mail a cost notification to you, soliciting your approval before repairs are completed.

If it is determined that a tapping attachment cannot be repaired, at the customer's request, Tapmatic will return the disassembled parts. We are not able to reassemble tapping attachments using damaged or worn out parts.

Optional Return Procedure: Tools may also be returned for repair through your local Tapmatic Distributor. They will ship the tool to us and include instructions for the repair and return. You may already have an open account with them, which facilitates the handling of invoicing.

Priority Service: Tapmatic services tapping attachments returned for repair in the order in which they are received. All tools will be evaluated and repaired within three weeks from the date they arrive subject to receiving the customer's approval to proceed with the repair.

Priority is given to the tools shipped to us by overnight or second day.

If a repair is sent to us by UPS ground or similar service it can also be given priority. Just call and let us know if you need priority service and advise if you would like the tool returned to you by overnight or second day. In the interest of fairness, to all our customers, we ask that you approve return shipment by overnight or second day before we agree to upgrade your repair order to priority service. Typical turnaround, not including shipping time, for priority repairs is 5-7 days subject to receiving the customer's approval to proceed with the repair.

If we can answer any questions, please call our toll free number: 800 395 8231.

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