

# TAPMATIC

Safety and Operation Instructions

## NSM Tension Compression Tap Holders

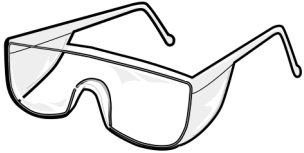
NSM2, 4, 6 & 8

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**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**

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### 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?

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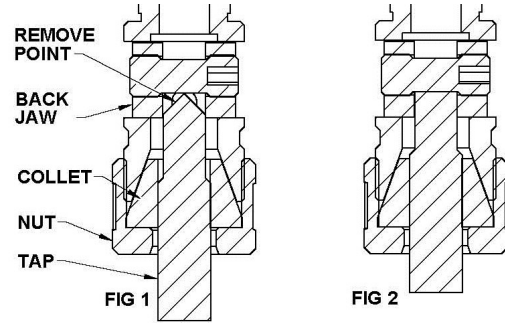
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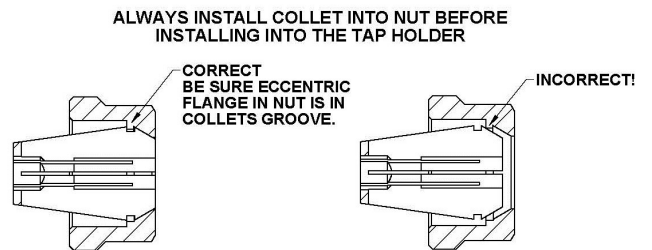
NSM2, 4, 6 & 8

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

**Inserting the Tap Rubber Flex Spindle:** If the tap you are using has a male center as in FIG 1, the point should be ground off so that the tap square will be engaged by the back jaws as shown in FIG 2. After removing the point, insert the 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 with hex key. Then using the wrenches provided, tighten chuck nut. This will ensure true running of the tap.



**Inserting the Tap ER Steel Collet Spindle:** Select the proper square drive steel collet for the tap, (collets must be ordered separately). Insert the collet into the nut as shown correctly in the figure at left. After installing collet in nut, then thread nut onto tap holder chuck. Then tighten collet nut firmly using the wrenches. **Important:** Tap may slip or pull out of collet if clamping nut is not tightened firmly and this could result in tap breakage or damage to tool. Be sure to use square drive, "GB" collets.



**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 NSM Tap Drivers have **No Neutral** (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 NSM 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.

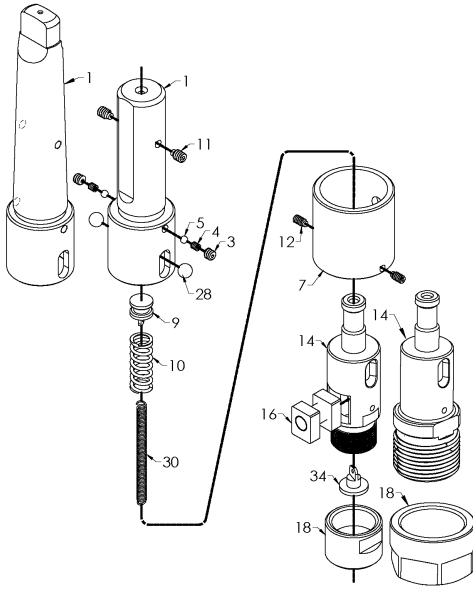
**TAP LUBRICATION:** To insure maximum tap life, the proper lubricant should be used. For an all purpose, safe, economical, and ecological tapping fluid we recommend Dry-Cut Minimum Quantity Lubricant.

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### NSM2, 4, 6 & 8



#### 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 or pins #5. Remove screws #11.
3. Slide out drive spindle #14. Remove back jaw #16.
4. Using threaded spring puller, insert puller through spindle into spring hanger #34. Pull out spring puller stretching spring and unhook return spring #30 using the hook provided with wrenches.

#### Instructions for Reassembly

1. Replace any damaged or worn parts. Reverse above procedure to reassemble.
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.

| NSM2 Wrench Set         | NSM4                  | NSM6                   | NSM8                   |
|-------------------------|-----------------------|------------------------|------------------------|
| 28062 (5/8" Wrench) x 2 | 28075 (3/4" Wrench)   | 28131 (1 5/16" Wrench) | 28156 (1 9/16" Wrench) |
|                         | 28097 (31/32" Wrench) | 28097 (31/32" Wrench)  | 28200 (2" Wrench)      |
| 27050 (.05 Key)         | 27078 (5/64" Key)     | 27156 (5/32" Key)      | 27218 (7/32" Key)      |
| 27062 (1/16" Key)       | 27062 (1/16" Key)     | 27078 (5/64" Key)      | 27156 (5/32" Key)      |
| 27093 (3/32" Key)       | 27125 (1/8" Key)      | 27125 (1/8" Key)       |                        |
| 29080 (#10 Hook)        | 29085 #5 Hook         | 29085 (#5 Hook)        | 29081 (#1 Hook)        |

| Ident. No. | Part Name                  | NSM2                 | NSM4                 | NSM6                 | NSM8                 |
|------------|----------------------------|----------------------|----------------------|----------------------|----------------------|
| 1          | Body Inch Straight Shank   | 697201 (5/8")        | 697401 (3/4")        | 697601 (1")          | 6978015 (1 1/2")     |
| 1          | Body Metric Straight Shank | 697201M (16mm)       | 697401M (20mm)       | 697601M (25mm)       | 6978015M (32mm)      |
| 1          | Body Metric Straight Shank | 69720120 (20mm)      |                      |                      |                      |
| 1          | Body Morse Taper           | 697201MT2 (#2 Morse) | 697401MT2 (#2 Morse) | 697601MT3 (#3 Morse) | 697801MT3 (#3 Morse) |
| 1          | Body Morse Taper           |                      |                      |                      | 697801MT4 (#4 Morse) |
| 3          | Screw                      | 56105 x 2            | 51330 x 2            | 697603 x 2           | 697803 x 2           |
| 4          | Hard Start Spring*         | 697204 x 2           | 697404 x 2           | 697604 x 2           | 58336 x 2            |
| 5          | Hard Start Ball or Pin     | 68239 x 2            | 68439 x 2            | 60328 x 2            | 60528 x 2            |
| 7          | Outer Sleeve               | 697207               | 697407               | 697607               | 697807               |
| 9          | Upper Spring Hanger        | 697209               | 697409               | 697609               | 697809               |
| 10         | Compression Spring*        | 697210               | 61526                | 697610               | 697810               |
| 11         | Set Screw                  | 697202 x 2           | 50315 x 2            | 50315 x 2            | 50315 x 2            |
| 11         | Set Screw                  |                      |                      | 51330 x 2            | 51330 x 2            |
| 12         | Set Screw                  | 697208               | 697202 x 2           | 50315 x 2            | 50315 x 2            |
| 12         | Set Screw                  |                      |                      | 51330 x 2            | 51330 x 2            |
| 14         | Drive Spindle Rubber Flex  | 697214               | 697414               | 697614               | 697814               |
| 14         | Drive Spindle ER collet    | 697216 (ER16)        | 697420 (ER20)        | 697625 (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 x 2            | 60528 x 2            | 60728 x 2            | 60928 x 2            |
| 30         | Return Spring*             | 697230               | 697430               | 507301               | 697830               |
| 34         | Spring Hanger              | 68206                | 68206                | 68406                | 68806                |

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



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NSM2, 4, 6 & 8

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## REPAIR POLICY

### MAINTENANCE

When your NSM holder is not use, please be sure to dry it, if wet from coolant, and apply oil to prevent corrosion. We recommend spraying with Prolong SPL 100.

### 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, by United parcel Service and enclose the following statement with your purchase order. "Authorization given to repair and return tool if total repair cost does not exceed 40% of the cost of a new tool." Tapmatic will still send you cost notification for the actual charges prior to repairing the tool, and we will call to request credit card information for invoicing.

**IMPORTANT:** Be sure to return the tool complete with the tap chuck 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 FAX 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.