

## Safety and Operation Instructions NC150



### Safety Precautions and Instructions

**To avoid serious injury and ensure best results for your application, please read carefully all operation and safety instructions for your Tap Driver, as well as all other safety instructions that are applicable, especially those for your machine tool.**

**Proper Clothing:** The rotating spindle of a machine 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. Steel-toed boots should also be worn in any machine environment.

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



**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.

**On machining Centers:** Automatic tool changes should only be made on enclosed machines.

**The tap driver can become hot to the touch after operation. Use caution when removing from the machine or handling.**

**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.

**Be aware of any other applicable safety instructions or requirements.**

### Check List For Good Tapping

1. **Never** use this unit before reading all safety instructions for this tool as well as the machine it is to be used on.
2. Is tap sharp and of correct design for current job?
3. Is tap in proper alignment with the drilled hole?
4. Is machine speed correct?
5. Is machine feed correct?
6. Is machine stop set properly so tap releases in neutral rather than bottoming in work piece or fixture?
7. Is drilled hole the correct size?
8. Is clearance plane when tap exits the hole sufficient to allow the tap to clear the hole before moving to a new position?



## Programming Procedure NC150 Self Releasing Tap Driver

*Thank you for purchasing a Tapmatic NC150 model. Please read this instruction sheet carefully before using the attachment.*

This tool may be used on machines with reversing spindles like machining centers, cnc lathes or even conventional lathes and mills.

### THREE MODES OF USE

There are three possible modes of use for the NC150.

**1. Synchronized or Rigid Tapping Mode:** Simply use the synchronized tapping cycle on your machine

**2. Tension Float Mode:** If your machine has a tapping cycle that is not synchronized, you can rely on the holder's tension float to compensate for the difference between machine feed and the actual tap pitch feed. We recommend using a feed rate of 95 to 98% of the tap pitch feed rate for feed in and out of the hole.

**Example: M30X1.5 at 200 RPM**

Tap Pitch Feed Rate= 1.5 mm/rev

98% Feed= 1.5 X .98 = 1.47 mm/rev

Or...

Tap Pitch Feed Rate= 1.5 X 200 RPM=300 mm/min

98% Feed= 300 X .98= 294 mm/min

**Example: 1 1/4-12 at 120 RPM**

Tap Pitch Feed Rate= 1 / 12= .083 inch/rev

98% Feed= .083 X .98= .0816 inch/rev

Or...

Tap Pitch Feed Rate= 120 RPM / 12= 10 inch/min

98% Feed= 10 X .98= 9.8 inch/min

Use the above feed rates for both feed in and reverse out of the hole. Reverse immediately without dwell. Tapping depth is controlled by the machine.

**3. Tension Float with Release Mode: This mode is used to control tapping depth independently of the machine spindle.**

**CAUTION: The release feature can not be used for through holes.**

On some machines it may be difficult to control tapping depth by stopping the machine spindle. This can be true especially on conventional lathes and milling machines. The NC150 has a release feature that stops the taps feed into the hole when the holder is extended by 9mm or .350" in tension. We call this distance the **Self Feed Distance**.

To use this mode, set the machine feed stop position 9mm or .350" shallower than the desired tapping depth. Pause or dwell the machine feed at this shallow position while the machine spindle continues to rotate and the tap will continue to go deeper into the hole the self feed distance of 9mm or .350. Once the tap holder has extended the self feed distance, the drive will release in neutral and the tap will stop. You can hear a clicking sound when the drive releases in neutral. Then reverse the machine and feed out of the hole to **Clearance Plane 12mm above the hole.**

**IMPORTANT: Be sure to feed out to 12mm clearance plane when using Tension Float with Release Mode.**

We recommend using 95 to 98% Feed rates as described in Tension Float Mode.

**Example: M30X1.5 at 200 RPM To Depth 40mm**

Use 98% Feed Rate= 294 mm/min

Feed with machine spindle to depth 40mm-9mm= 31mm

Dwell for 2.5 seconds and the tap will go 9mm deeper into the hole, and then the tap driver will release and the tap will stop.

Reverse machine spindle and feed back out of the hole to a clearance plane 12mm above the hole at 98% Feed Rate.

## Adjustment for Tension Resistance

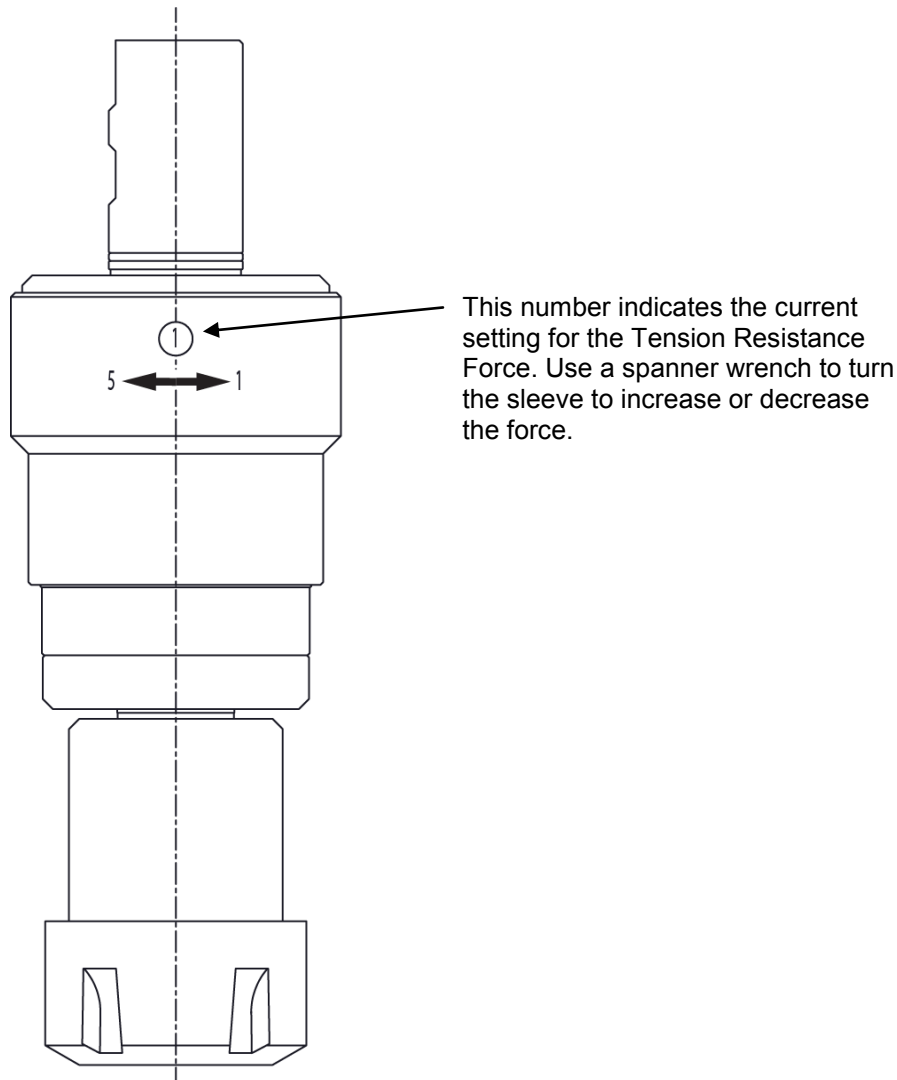
### When is it necessary to adjust the tension resistance of the holder?

Some taps that have been designed for rigid tapping applications, may have a tendency to not follow their pitch exactly if they are used in a tap holder that allows tension float. In order to cut threads correctly they need a resistance force to restrain them from pulling ahead of the pitch. The resistance force needed with these kinds of taps can increase as the taps become larger.

### Adjusting the Tension Resistance Force

The NC150 has a sleeve that can be turned with a spanner wrench to incrementally increase the tension resistance force. For most applications setting number 1 can be used. If you find that you are having difficulty producing a good thread, you can increase the resistance force to position 2, 3, 4, or 5.

Below is a drawing showing the adjustment feature.



## Installing the Tap

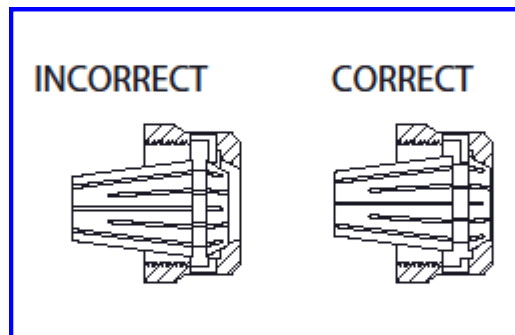
Please use square drive collets size ER50GB.

**Be sure to put collet into nut as shown at right, before installing nut on to threads.**

Insert the tap and tighten securely using wrenches.

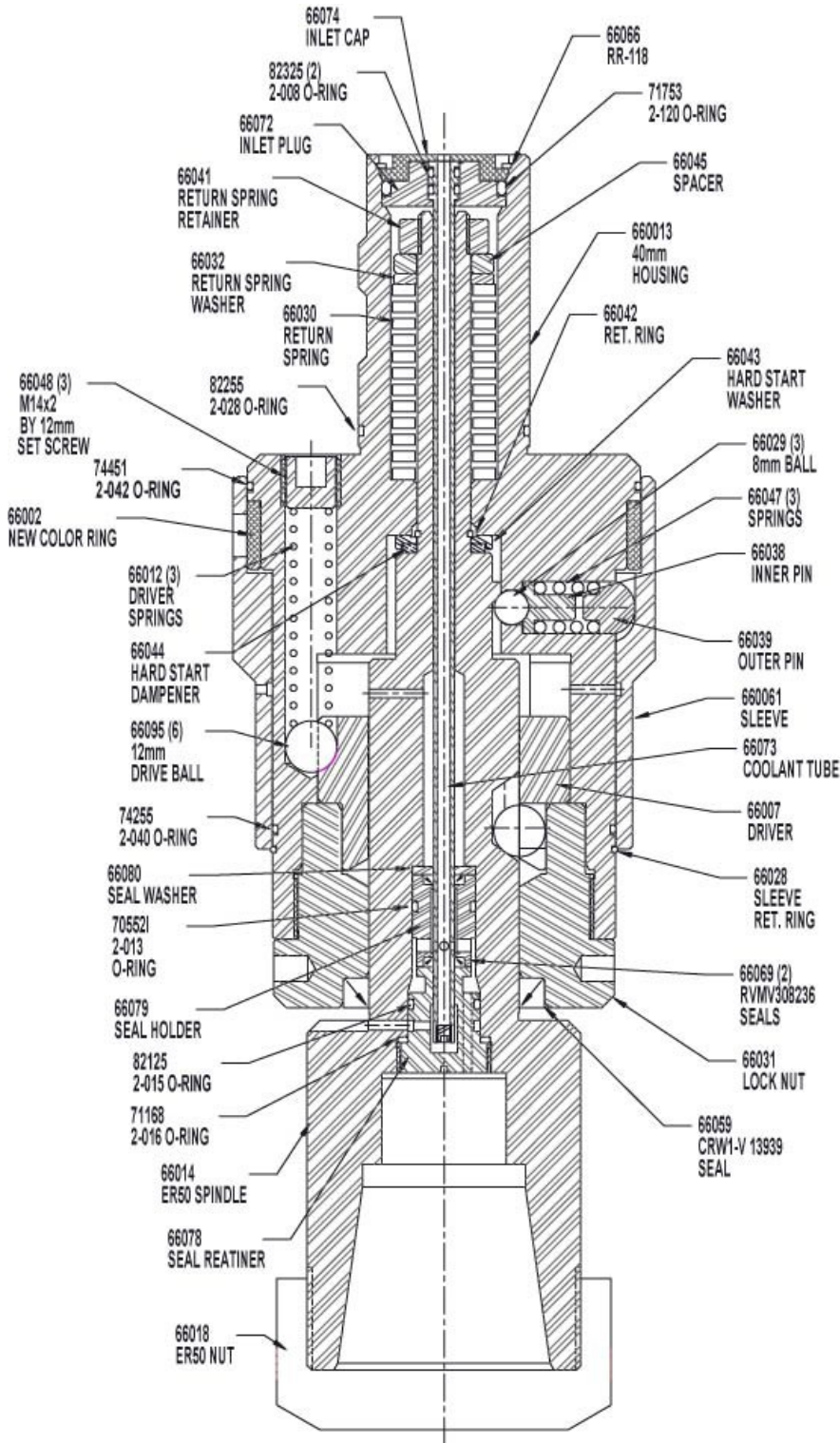
**Recommended tightening torque is 300 to 370 Nm max  
or 220 to 275 ft-lb**

**Reduce capacity by 25% if using roll form taps.**



## ER50 Spanner Wrench Part Number 71417

## NC150 PARTS



WRENCH  
71417 ER50 Spanner Wrench

### Disassembly

Step 1. Remove collet and nut.

Step 2. Remove retaining ring 66066, inlet cap 66074, coolant tube 66073, and inlet plug 66072.

Step 3. Using a tool similar to modified screw driver blade with U-cut, to remove return spring retainer 66041. **CAUTION Be careful when removing retainer as it may be under spring pressure.**

Step 4. Rotate spindle 66014 until you can pull spindle out in extension. Then unthread lock nut 66031 and slide parts out of the housing.

Step 5. Remove internal parts. Clean, replace parts as needed, lubricate with SPL100 and EP2 grease.

### Reassembly

Reverse procedure above.



**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 without notification if total cost does not exceed 40% of the cost of a new tool." Tapmatic will repair the tool and call to request credit card number for invoicing.

**Cost Notification:** Tapmatic will FAX a cost notification to you, soliciting your approval before repairs are completed. If it is determined that a tool cannot be repaired, at the customer's request, Tapmatic will return the disassembled parts. We are not able to reassemble a tool 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 tools 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 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 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 shipment by overnight or second day before we agree to upgrade your repair order to priority service. Typical turn around, not including shipping time, for priority repairs is 3 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**