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Safety and Operation Instructions

Scribing Tool for CNC Machines

Mark It While you Make It!

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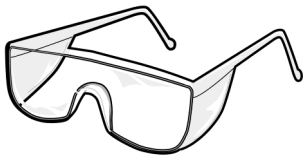
Safety and Operation Instructions for *ScribeWriter® Force II*

WARNING: To Avoid Serious Injury And Ensure Best Results for Your Application, Please Read Carefully All Operator and Safety Instructions provided for your ScribeWriter Force II, 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 moving. Areas of operation include the immediate point of machining and all transmission components including the marking tool. 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 MARKING.

1. Never use this marking tool before reading all safety instructions for this tool, as well as the machine it is to be used on.
2. Is the tool correctly inserted into the holder/collet and secured?
3. Is the force setting adjusted correctly? See instructions.
4. Is machine feed correct?
5. Has the tool length been correctly defined?
6. Is work piece held rigidly against rotation and upward movement?
7. Were possible collision areas checked and eliminated?

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1. All-in One Overview

Advantages, Function and Characteristics

The *ScribeWriter Force* II marking tool was designed as a simple device for permanent marking of parts.

In addition to marking miscellaneous materials – starting with plastics, Aluminum and nonferrous metal to hardened steel (max. HRC 62) – this tool can be used on all CNC-operated machines like machining centers, lathes and robots.

Due to the deflection of the stylus (carbide marking pin), surface variations of almost 5mm can be marked. The compression of the stylus against the work piece, or in feed depth, can be less than 1mm but must not be deeper than 5mm.

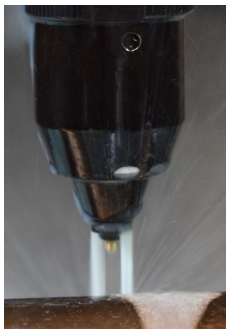
Neighboring tools and collision areas in the machine's tool magazine will normally not pose a problem thanks to the compact design. No rotation is necessary, which makes it easy to perform automatic tool changes.

The feed rate depends on the material, marking depth and the machine's abilities to correctly produce the desired contours.

Using external flood coolant / lubrication, or internal coolant up to 50 bar, results in the longest life for the carbide stylus and can also improve marking results. Internal coolant pressure also increases marking force.

The *ScribeWriter Force* II permanently marks alphanumeric text, symbols, dates and serial numbers, batch codes, logos and graphics. Different fonts and sizes can be brought up in straight line, angled, concaved, circular, mirrored or reflected.

Advantages at a glance:



- For use on CNC machines with revolver or automatic tool change or even robots.
- Available with 16mm, 20mm, 25mm and 1" straight shank, modular assembly with other various shanks like SK, CAT, BT, or HSK.
- Easy programming directly at the machine, from programmer's workplace or through engraving software.
- The stylus is made from carbide with a wear resistant coating. The internal coolant capablity provides optimal lubrication. The result is longer life for the stylus.
- Easily adjustable marking force. Mark soft materials or hardened steel without the need to disassmble and change springs, thanks to the unique flexure technology used at setting (H) when marking the hardest materials.
- A smooth surface height variation of almost 5mm may be marked without adjusting the marking plane. The recommended compression range is from less than 1mm up to 5mm maximum.

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2. Set-up Guide

Tool preparation / adjustment of marking force

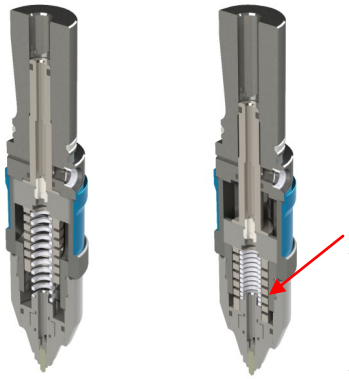
The marking force, or pressure applied by the stylus against the work piece, is controlled by the pre-load setting of the tool and the distance that the stylus is compressed against the part.

By turning the knurled sleeve, the preload force can be increased or decreased, as indicated by the reading of the reference numbers.

Please note that scribing is not a deep marking process. Increasing the marking depth can result in more burrs.

Setting 0-7 for marking all kinds of materials

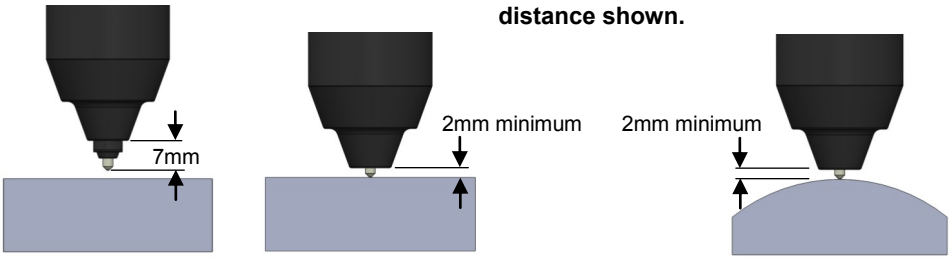
Setting H for marking harder materials



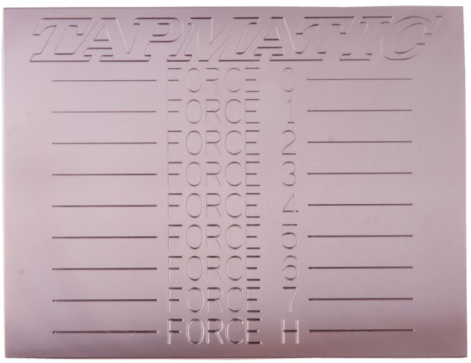
Unique flexure technology for higher marking force without the need to change springs.

Maximum compression into the work piece is 5mm.

Please use care to not program closer than the 2mm minimum distance shown.



Curved surfaces can be followed without adjustment of the Z axis, but please remember the maximum compression is 5mm.



Example in 4140 Pre-Heat Treated Material (30 HRC), 2mm compression at each setting.

3. Programming

Spindle rotation is not used for scribing.

The feed rate possible depends on the machine capability. Feed rates can be increased as long as the required marking shape is being achieved. Faster feed rates reduce marking depth.

As a starting point we recommend compression into the work piece of 1 to 2mm. Greater compression is possible up to 5mm maximum.

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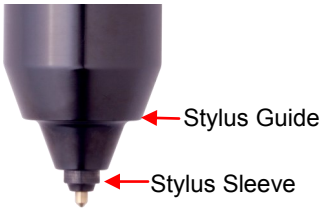
4. Maintenance

The *ScribeWriter Force* II does not require any special maintenance. We recommend cleaning and applying a corrosion protective spray at regular intervals and if the tool will be stored for a long time.

Changing the Stylus



Using the small wrench provided, unscrew the stylus sleeve, and then pull it out of the stylus guide.

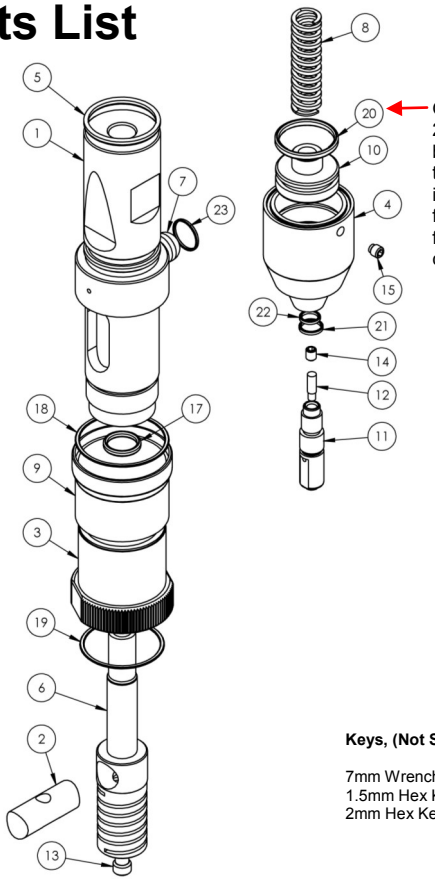
Increase force setting to highest (H) to help when removing or installing stylus sleeve.

Use the 1.5mm hex key provided, to remove the retaining screw from inside the stylus sleeve. Then remove and replace the stylus. The thread for the screw is a spirolock but for extra security we recommend applying 1 drop low strength Loctite 222MS.

There are two standard stylus points available.
7361608 (90° with 0.6 R)
7361611 (60° with 0.3 R)

Special points available on request.

5. Parts List



Optional O-Ring 20 is not required but may be added to 10 for increasing the marking force that results from the internal coolant pressure.

Keys, (Not Shown)

7mm Wrench	28000
1.5mm Hex Key	27220
2mm Hex Key	27222

Ident No.	Description	Part No.
1	1" Housing	73610
1	16mm Housing	736105
1	20mm Housing	736104
1	25mm Housing	736103
2	Adjustment Dowel	73603
3	Adjustment Sleeve	73604
4	Stylus Guide	73605
5	O-Ring 2-019 (For 1" and 25mm)	82755
6	Flexure / Scale	73630
7	Magnification Lens	73611
8	Spring	73612
9	Identification Sleeve	73606
10	Stylus Holder	73602BN2
11	Stylus Sleeve	73602BN3
12	Stylus (90° Point)	7361608
12	Stylus (60° Point)	7361611
13	Screw Pin	73658
14	Retaining Screw M3.5	73665
15	Lock Screw M4	823585EH
16	Flexure / Scale O-Ring 2-010	70414
17	Housing O-Ring OR1501000	73631
18	Sleeve O-Ring OR1002800	73657
19	Styl. Guide O-Ring OR1002600	73654
20	Styl. Holder O-Ring 2-017	71783
21	Styl. Sleeve O-Ring OR1000600	73652
22	Styl. Sleeve O-Ring OR1000500	73653
23	Magnifier O-Ring OR1000950	73613

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Repair Service is available at…. **Attention:** **Repair Department**
Tapmatic Corporation
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Or through your local distributor.

To Expedite Repair: Return tool direct to Tapmatic Corporation. Tapmatic will inspect the tool and advise you of the repair costs by Fax or E-mail before the repair is completed.

Cost Notification: Tapmatic will FAX or E-mail 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

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