

DREX[®]-TOOLS

AND GROUP ITALIA SRL

DIAMOND BURNISHING TOOL MS2300-CS

INSTRUCTIONS MANUAL

MID121006-ING

DIAMOND BURNISHING TOOL MS2300-CS**Main Features**

The roller burnishing tool MS2300-CS is suitable for an ultra smooth finish of workpieces in special carbon steel, alloy steel, stainless steel, cast steel and other materials with a maximum hardness of 40 HRC, and gives the following advantages: eliminates grinding and polishing, provides a very smooth finish, increases the surface hardness, improves resistance to corrosion, provides a greater hold. Thanks to its configuration it must be used for the roll burnishing of linear workpieces. It can roll burnish up to a distance of 2,2 mm from the shoulder.

The tool incorporates a stem diamond holder made to appropriately hold a rounded diamond, the diamond compresses on the surface to be roll burnished and consequently the internal spring adjusts to the correct compression.

Any type of coolant can be used for the tool.

Do not use the tool without coolant.

Preparation of the workpiece

The preparation of the workpiece is important to obtain a good roll burnishing finish. Lathed or grinded surfaces with a maximum roughness of 2-2.5 μm , with a regular distance of peaks and valleys are ideal for pre-rolling, and can obtain a roughness of 0,056 / 0,225. It's possible to roll burnish materials with a greater hardness but this increases the final roughness. Scratches or tears caused by previous operations are extremely difficult to roll burnish. Do not roll burnish pieces with interrupted surfaces. Another important factor is the stability of the machine, the work piece must not fluctuate more than 0.05 mm.

Adjustment and Use**Adjusting the tool**

Hold the tool holder part no. 4 and tighten the screw part no. 3 load the spring part. no. 5.. The load increases clockwise and decreases by turning it counterclockwise. After adjusting the compression of the spring tighten the screw part. no.3.

WARNING: max. compression limit is 5 mm

TABLE 1

Material	Speed m/min	Advancement mm/turns	Roughness before roll burnishing Ra	Roughness after roll burnishing Ra
X	100-200	0,08	2,5	0,2
Stainless Steel	100-200	0,10	2,5	0,2
Cast iron	100-200	0,10	2 - 3	0,6
Alluminium and other alloys	100-200	0,10	2	0,04

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Installation on the machine

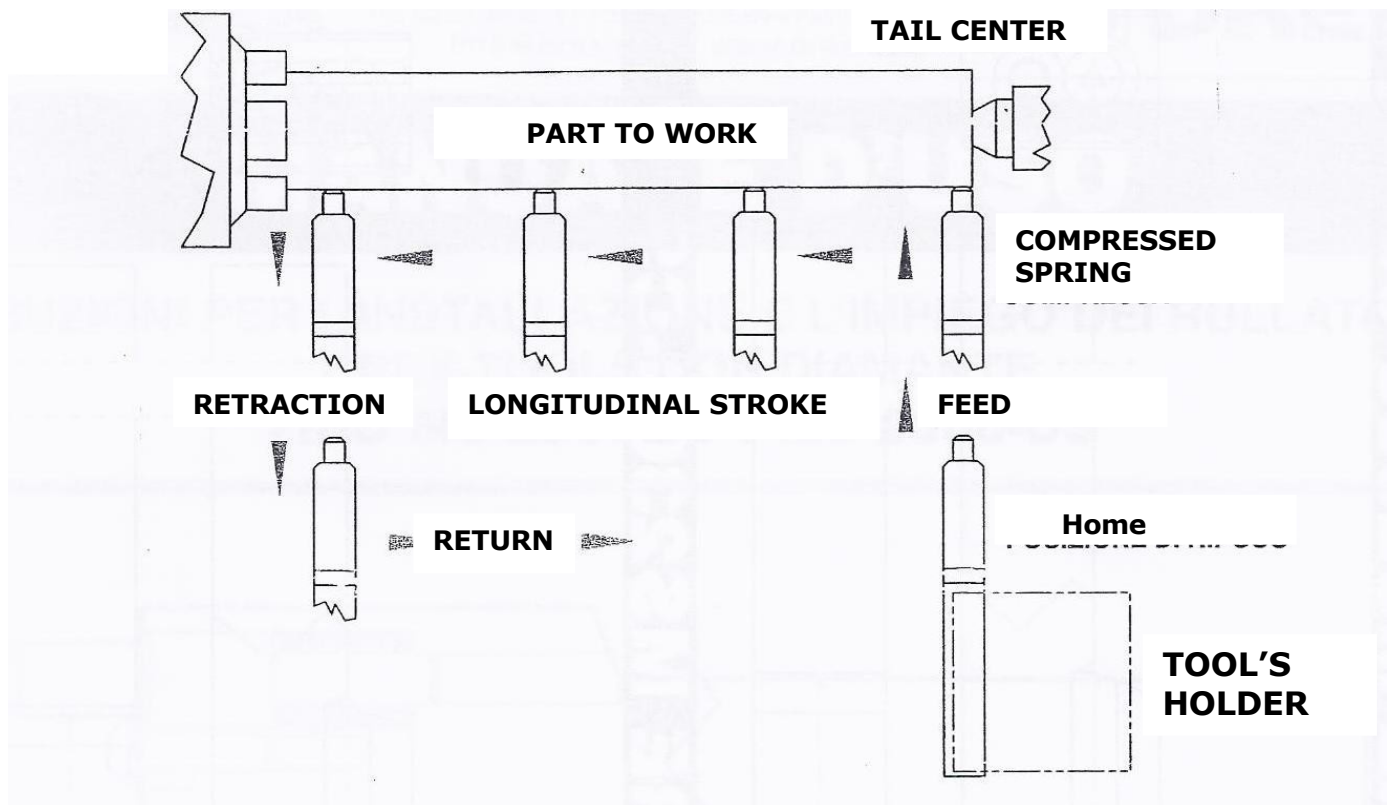
Position the tool on the turret so that the diamond is placed at the center of the workpiece respecting a tolerance of $+ 0,02 / 0$ mm.

The tool comes with a rounded diamond, also consider the section of surface that won't be roll burnished. To leave no trace of the initial mark you can start in the middle of the diamond. The execution can be done in both directions.

Bring the diamond in contact with the piece, point "0", advance with the turret of 0,1-0,2 mm in order to give pressure to the tool, insert the advancement and roll burnish the surface portion required, when finished stop the advancement and move the tool away from the work piece.

This operation must be performed with the workpiece in rotation to avoid damage to the diamond.

MACHINE CHUCK OR COLLET



Disassembly and Reassembly

To disassemble the tool, proceed as follows:

Remove the anti-rotation pin part. not. 9 loosen the screw part. 3, remove the diamond part. n. 2, the spring part.5-6.

To reassemble the tool follow the same procedure in the opposite way.

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DIAMOND BURNISHING TOOL MS2300-CS**Problems, causes and remedies**

Control the roughness before and after roll burnishing.

If after roll burnishing spiral marks with a constant pace appear this means that the load is too low. While, if the surface shows signs of cleavage this means the load is too high.

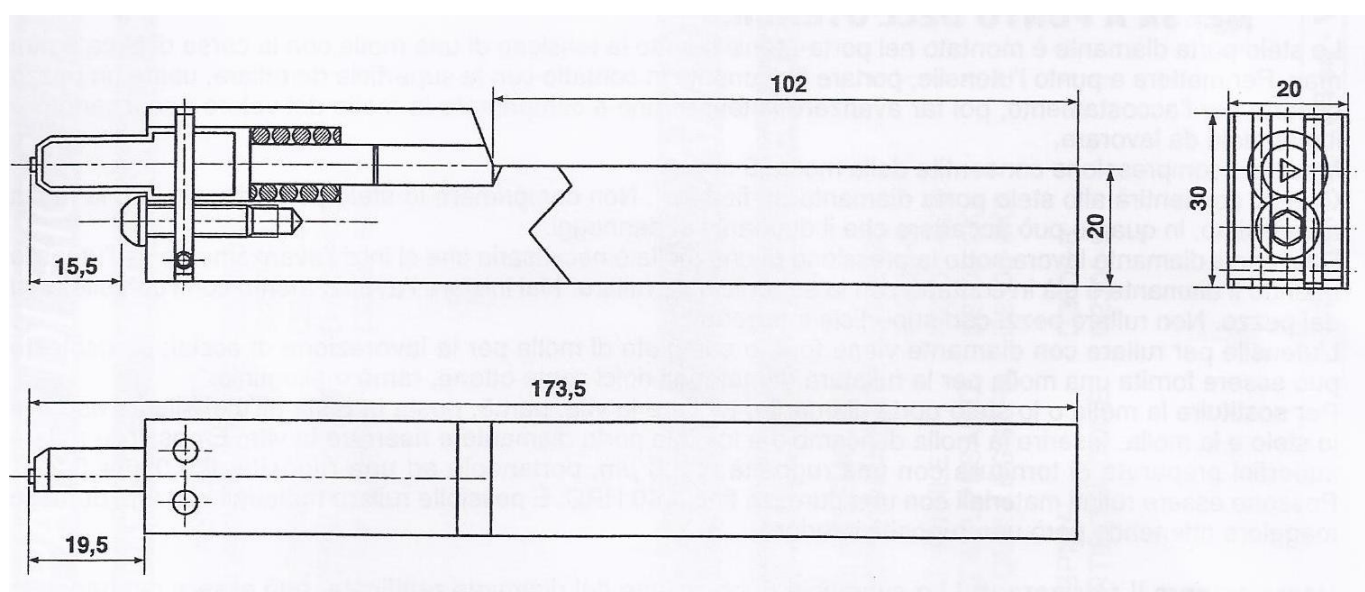
Problem	Cause	Remedy
Poor finish	<ul style="list-style-type: none">- Diamond's worn out- Feed Is too fast- Load is too light- Load is too high- Uneven surface-	<ul style="list-style-type: none">- Substitute the diamond- Lower the feed- Increase the load- Decrease the load- Lower the rotation speed
Scratches/spiral marks on the surface	<ul style="list-style-type: none">- Diamond's worn out- Diamond's damaged- Cutting chips are on the surface before/during roll burnishing- Scratches present on the workpiece	<ul style="list-style-type: none">- Substitute diamond- Substitute diamond- Clean the workpiece before burnishing-always- Use machinery liquid- Roll burnish pieces without scratches

Maintenance and care

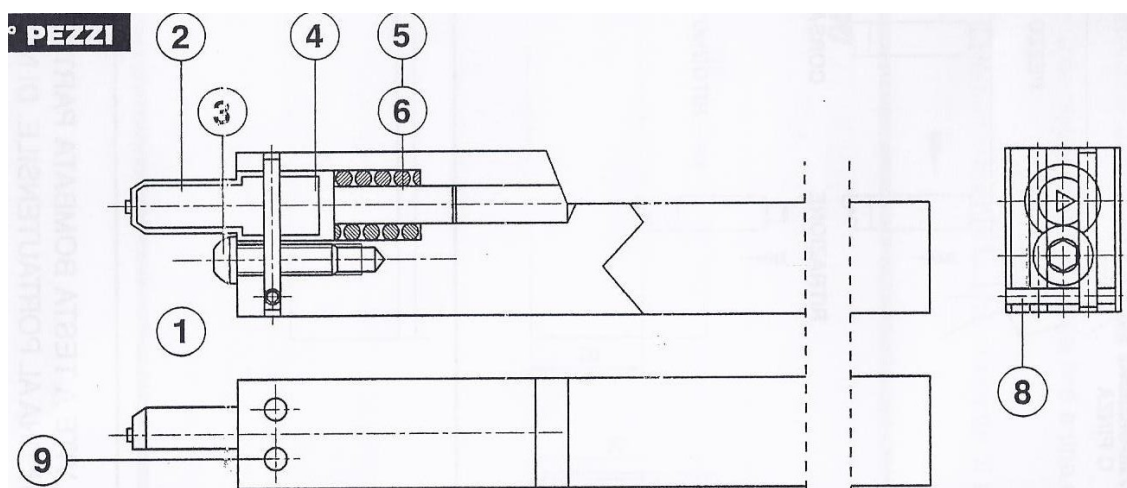
Follow the steps listed below for a longer tool life:

- Handle the diamond with care it could be damaged if left compressed against the work piece not in rotation
- Always use the tool with coolant (ideal emulsion at 10%)
- The diamond is subject to wear and should be replaced when you no longer obtain a good finish
- Replace the spring after one million usages.

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DIAMOND BURNISHING TOOL MS2300-CS**Dimensions**

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DIAMOND BURNISHING TOOL MS2300-CS**Parts List**

Pos.	Spare Part Name	Part Number	Pos.
1	Assembled Tool		
2	Diamond Stem	D375-CS	1
3	Screw	D2300-3	1
4	Holder	D2300-4CS	1
5	Light-Duty Spring	D2300-5XP	1
6	Heavy-Duty Spring	D2300-6XL	1
8	Screw	D2300-8	1
9	Pin	D2300-9	1

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