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## *HW – 1 Pneumatic Air Scribe Tool Instructions*

HW-1 Pneumatic Air Scribe engraver. Even running tool with 3 springs of different hardness for various applications. It is good for beginning preparators, students or someone with small hands. Do NOT oil the tool. Don't use the device doing "scraping motions" but only for "dozing" or "pushing" motions.

**Use security eyeglasses, ear and respiratory protection while working with the air scribe!  
Position you body ergonomically supporting each joint, wrist, elbow, shoulder, back, etc.**

Let the tool do the work. Don't force it. Don't hold it too tight to prevent fatigue and injury.

The tool will operate for many years if it is used properly.

## **Please read the following instructions carefully before you use the tool**

### Technical Data:

Weight without flexible tube: 2 oz.

Dimensions without flexible tube: diameter 11 mm, length 140 mm

Operation pressure: 5.5 bar - 8 bar (80 - 115 psi)

HW-1 tool is supplied with hard spring installed and two additional springs of different hardness (light and medium) also provided. Choice of fine needle holder with 1.3 mm diameter steel needle installed with 5 replacement steel needles included - OR - hard metal needle holder with 2 mm diameter tungsten carbide needle.

### Extra Needle Holders:

1. Fine needle holder with 1.3 mm diameter steel needle installed and 5 replacement steel needles included.
2. Hard metal needle holder with 2 mm diameter tungsten carbide needle. Standard length protrudes about 10 mm from the holder. Also available in extended lengths by special order.

### Connecting and Disconnecting the push button (blue plastic ring) tube fitting

The tool has the female side of the push button (blue collar) fitting installed. The hose supplied with the tool is fitted with the male side of the fitting. To connect insert into the ball valve pushing gently until it stops.

To disconnect the push button release the air pressure in the line then apply equal pressure on both sides of the blue collar using your thumbs (V shaped object such as tweezers also can be used to apply equal pressure on both sides of the collar) and gently pull the fitting with the hose away from the released collar. **Don't use pliers or other aggressive tools which could damage the plastic collar.**

The tool should be connected to a pressure regulator with filter. DO NOT put oil in the line. The desired working pressure must be adjusted at the pressure regulator. Use the ball-valve only for turning the air scribe on and off but not for regulating the pressure!

The compressed air should be filtered. In line filters are available at [www.grainger.com](http://www.grainger.com) or other pneumatic tool suppliers. The device is lubricated by the residual moisture of the compressed air and the O-ring lubricant.

### Maintenance:

If you use the air scribe daily, the needle holder should be removed at least once a week.

1. Unscrew the head and take the piston out of the head. Remove the spring.
2. Wipe the shank with a clean rag.
3. The O-ring should be cleaned and lubricated slightly with O-ring gel or Vaseline (less desirable but OK). The O-ring will function better and longer. Do not use oil that contains fat to lubricate the O-ring.

The O-ring will dry rapidly from the compressed air and the needle socket may tend to stutter. If this happens repeat steps 1-3 above. Parts generally will clean sufficiently by wiping with a clean rag but may be cleaned with brake cleaner that leaves no residue, if necessary.

### Doing the Preparation:

For preparation the operation pressure should correspond to the kind of work, for example 5.5 bar (80 psi) for fine work, up to 8 bar (115 psi) for rough work. Steer the air scribe with slight pressure. Don't strip off lots of material at one time and avoid using the needle as a lever with prying motion. Steer straight not side to side. It is good to avoid side to side motion because, over time, this will wear on the bushing causing the needle to vibrate.

### Needles:

The fine (1.3 mm diameter) steel needle is tempered, which means it is hard and elastic to prevent the slim needle from breaking off. The steel needle is softer than the tungsten carbide (2 mm diameter) needle. Use the carbide needle for the preparatory work as far as possible and then the steel needle for finest preparation and finishing. That is, refinish the ridges and fine details with the steel needle.

### Changing the steel and carbide metal needle:

Don't change the needle while the head is connected, otherwise the spring will be damaged.

1. Unscrew the front half that contains the needle holder, needle and spring.
2. Tap gently to remove the needle holder from the barrel.
3. Grip the needle holder and pull out the needle with a flat nose pliers or universal pliers.
4. Insert a new needle into the needle holder pushing against a piece of wood for resistance.

### Troubleshooting

1. The air scribe doesn't start, only air is released: Check the air pressure. It should be between 5.5 and 8 bar (80-115 psi). If that is not the problem, open the head a quarter twist when the device is running and then close it.
2. The air scribe stumbles running intermittently: Clean the needle holder, lubricate the O-ring as instructed above. In case of further malfunction change the O-ring.
3. If the needle breaks below the Teflon bushing of the needle holder it will be necessary to return the needle holder to The Stone Company. The Teflon bushing and tip will be replaced for a small charge. Please notify The Stone Company by phone or e-mail prior to sending. It is good to have backup needle holders on hand to use while repairs are being done. We make every effort to return as quickly as possible.

**We wish you good luck doing your preparations and always use security eyeglasses please!  
And think in terms of ergonomic body positions!**

**Link to demonstration video online at  
<http://stonecompany.com/tools/tools.html>**

