

HW – 322 Micro Air Needle Tool Instructions

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 that it is designed for. 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

Short description of HW-322:

This model is pneumatic tool with a fast moving internal flying piston with a tungsten carbide tip 1.3 mm in diameter. It has two springs of different strengths, hard and soft that provide versatility in the action of the tool. It is shipped with the soft spring installed for finer work. The body of the 322 is hand made with high quality steel by a German craftsman. It's comprised of 3 assembled sections.

1. The head with the tip secured in the middle.
2. The middle section hand piece that must be turned opposite the end piece so the tip in the piston will sit properly.
3. The end part of the hand piece and end section hose connector with on/off air flow switch that runs the piston.

Technical Data:

Weight without air hose - 95 g

Dimensions without air hose 18x140 mm

Air hose with pressure regulator

System pressure with the soft spring - 0.5 bar - 1.4 bar (7.25 - 20 psi)

System pressure with hard spring - 1.0 bar - 1.8 bar (14 - 26 psi)

Air consumption with the soft spring near 1.0 bar = 17 liter per minute

Air consumption with the hard spring near 1.4 bar = 20 liter per minute

Beats per minute = 35,000 x

Functions of the HW-322:

The tip is floating in the tool simply supported and fixed through the head in the middle. Once the middle piece is screwed in, the tip is fixed and will not fall out. The piston moves through O-rings in the piston foot and through the spring. The outcome of this is a high hitting rate and, at the same time, a short stroke. Because the piston goes back and forth through the coils, it only goes so far forward and then is pulled back by the power of the spring. For example, at 0.5 bar the piston does not shoot as far forward as it does at 1.5 bar. The middle section of the hand piece and the end piece of the tool are turned to adjust to different pressures to achieve the desired action. The inside of this part of the tool could change from slight impact all the way to a hard hit impact.

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

The HW-322 has a push-in-fitting and must be connected to an in line pressure regulator (supplied with the tool) because of its maximum operation pressure of 4.2 bar! The pressure regulator has the female side of the push button 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 first release the pressure in the line. 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 compressed air should be filtered. In line filters are available at www.grainger.com or other pneumatic tool suppliers. **Do not put oil directly into the line and do not oil the tool.** The device is lubricated by the residual moisture of the compressed air and the O-ring lubricant.

Beginning operation:

Shortly before you begin preparing, get familiar with the tool. The tool has already been set up with the soft spring, making it easier to adjust. Just be sure that the hose is attached properly and the pressure regulator is set on 1 bar. Now turn the middle part until there is a visible 2 mm gap between the middle and the end pieces. Now start the HW-322 and the piston will begin to run, but it will not yet move the tip. Now turn the tool slowly from the middle until the gap is closed and you will hear when the hitting point is reached, the frequency and sound will change. If you should happen to turn it too far, nothing will happen to the tool, it will just stand still. You must then unscrew the middle and it will start up again to the desired frequency of beats.

Springs:

The 322 is set up with the soft spring for delivery and the hard spring is enclosed with it. Both springs have different characteristics. The soft spring requires 0.5 – 1.4 bar of pressure. The hard spring requires 1 – 1.8 bar of pressure.

Changing the springs:

Hold the tool with the bit facing up and unscrew the middle piece, then the spring can be changed and the middle piece can be screwed back on.

Fitting the tip:

Do not over tighten the head but it should be snug with the provided wrench. Insure that the three O-rings on the metal rod are sitting at the base of the tip.

Care:

To avoid getting oil on the fossil, run the tool as dry as possible. Don't oil the tip or put oil in the air line. Occasionally take it apart and rub it with a clean towel. The piston should also not be oiled.

It could be that while in use, the frequency occasionally changes. This is generally because there is more or less moisture and contaminants in the compressed air line. First try to adjust the setting slightly. If this does not correct the problem, the O-ring in the piston foot may not be functioning properly. When the performance becomes bumpy or uneasy, the O-rings in the piston foot should be cleaned and lubricated with a small amount of O-ring gel or Vaseline (which is less preferred but okay).

Building and taking apart the O-ring in the piston foot:

Hold the tool with the tip up, with the middle part unscrewed. Now take out the spring, the piston will pull up and the O-rings can be taken out. Then you can clean the piston and the flange. Smear the O-rings with a small amount of O-ring gel and wipe off excess. Put them back in the end piece or on the piston foot. Now stick the piston into the body of the tool. Put the spring back and screw in the middle hand piece.

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

