

DENTAL HANDPIECES

Ken Walston January 22, 2015

METHODS

Dental hand pieces are used in woodworking to enhance wood, glass, stone and other materials by engraving, carving and piercing the surface. These handpieces use standard dental burs of different sizes and turn at over 350,000 rpm. The speed helps in consistent and smoother lines and cutting control. Slower speeds can get affected by soft and hard grains in the wood.

Most handpieces are designed to operate on air with pressures at about 30-35 psi. Higher pressures can often damage the handpiece and should be avoided.

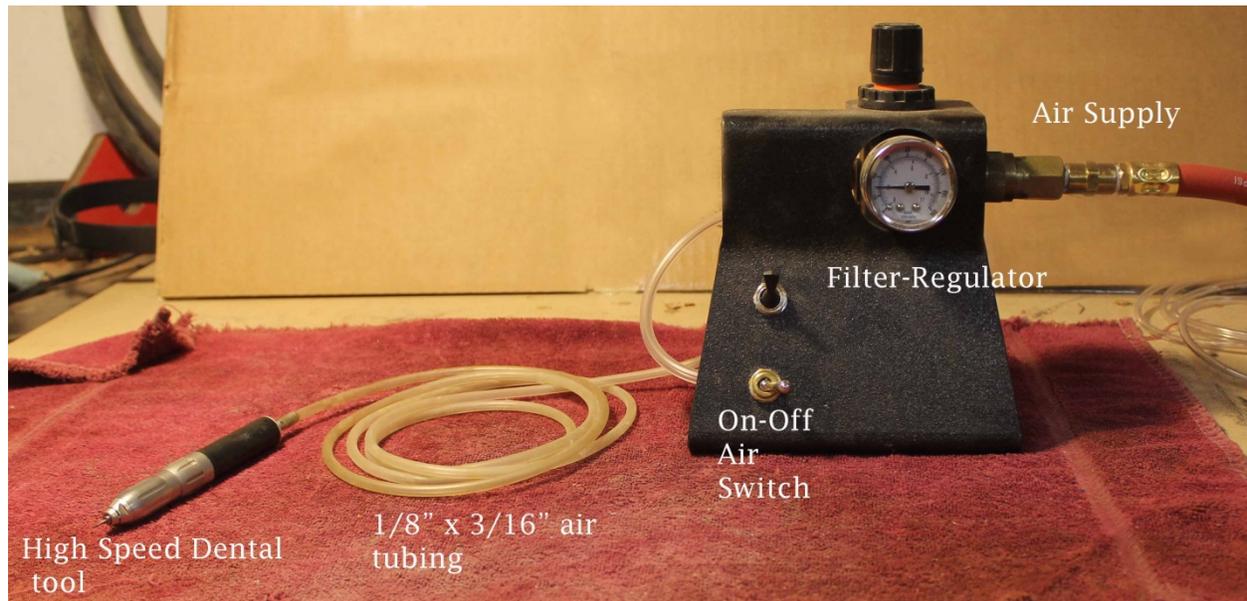


Some handpieces do not need any lubrication while other need to be lubricated often, each day of use. I have found that lubrication with oil collect some wood dust and requires more often cleaning of the handpiece. I prefer to use “liquid teflon lubricant” or Teflon suspended in a liquid solvent the quickly evaporates after application. I have found several brands at Lowes (about \$5) and Home depot in their lubrication area of the store. A few drops in the air inlet to the hand piece will do the job.



Dental handpieces do wear out and the “turbine” or “cartridge” will need to be replaced or repaired at some point.

SETUP



HANDPIECES SUPPLIERS

I am not attempting to list the entire supplier list but only those I have used.



NSK Presto handpiece – one of the most popular tools for wood carving – designed for engraving and piercing not normally used in dental work. This is a straight inline handpiece.

Here are suppliers that I know about.

- Russ Larsen - utahhandpiecerepair.com , Spanish Fork, Utah 84660, 801-798-6364 Sells and repairs handpieces – New handpiece is currently about \$370.
- TreelineUSA <http://www.treelineusa.com/power-carving/pneumatic-tools> - Provo, Utah. Handpiece \$385, complete kit \$499.
- J. Paul Fennell - www.jpaulfennell.com/Tools.html - Scottsdale, Arizona – call for price.

Dental Handpieces used in a dental office normally cost \$300 - \$1,500 each. They have a 90 deg head.



I have used some less expensive handpieces from China – cost about \$18 delivered.

They have worked very well for me and my use. I ordered from Ebay and received them in about 3-4 weeks time.

Here are some words to search for on ebay and then links that are available today. Make sure you get a “4-hole” handpiece.

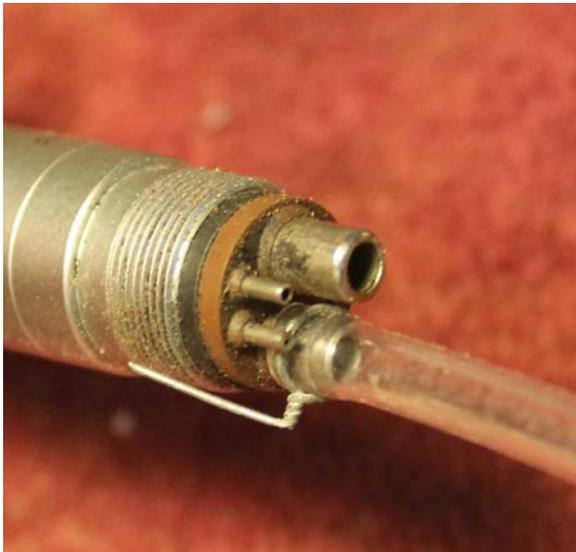
Dental NSK Style Standard Push button PANA MAX High Speed Handpiece **4 hole**. = **\$18**

Sandent Dental NKS Style Push button High Speed

Handpiece – **4 hole**. = **\$18**

http://www.ebay.com/itm/Dental-Standard-Head-Push-button-High-Speed-Handpiece-4-Holes-NSK-PANA-MAX-style-/121413506648?pt=LH_DefaultDomain_0&hash=item1c44cf1658

http://www.ebay.com/itm/Dental-High-Speed-Handpiece-Standard-Head-Push-Button-4-Holes-Sandent-NKS-style-/321574993370?pt=LH_DefaultDomain_0&hash=item4adf5cfdda



These 4 hole handpieces need an extra effort to connect the 1/8”x 3/16 air tubing to the air inlet.

Slide the tubing over the smaller of the two larger openings.

Hold the tubing in place with a small piece of wire twisted tight.

Filter Regulators

You will need a filter and regulator in your air supply. There are often in the same unit. It is also good to have an air on-off valve in the system. This will allow you to turn of the handpiece easily.

Dental Handpieces are very fine instruments and need filtered air and the correct pressure. Handpieces should operate on 30 – 35 psi and no more. More pressure can damage the handpiece.

Filter-regulators can be purchased from any store that sell air operated equipment. They cost from between \$15 and \$150.



Harbor freight has one for about \$13 = 1/4 in. Air Line Filter/ Regulator with Gauge – this does not include the switch or the adaptors to go from the 1/4” fitting to the 1/8” barb connection for the air tubing, and the connection to your air supply.



Here is a complete setup that works real well. This is the one I use.

You can also purchase this same item from Treelineusa in Provo, Utah.

<http://www.treelineusa.com/power-carving/pneumatic-tools/filter-regulator-switch-for-nsk-presto.html>

currently \$119 and does include the air on/off switch.



Similar set from Utah Handpiece repair.

<http://utahhandpierepair.com/product/air-filter-regulator/> => today \$109. This one includes the air tubing to go from the regulator to the handpiece but does not seem to have an air on-off switch. The company does sell one for about \$15.

Dental burs

The carving bits or dental burs are standard burs used by dentists. If you can get your dentist to part with his old used burs they are still sharp enough to be used on wood.

I order my burs from the ebay, they are not the best quality for a dentist but are less expensive and work very well in wood.

Here are the three standard burs I use and the words to search ebay for them.

Carbide Dental bur FG699L - About \$15 for 10. – small dia bur, used to the small details and for piercing.

Carbide Dental bur FG703 – About \$15 for 10. – larger dia bur, used to take out a wider path if enlarging a crack for inlay material.

Carbide Dental bur FG7901 – About \$6 each - used to sign you name on the wood item – very hard sharp point.

FG stands for Friction Grip and defines the dia as 1/16". This is the size that fits into the handpieces listed above.

There are lots of other burs, round, inverted cones etc. If you would like to know about these please contact me.

Other parts

Tubing.

The tubing is clear flexible tubing. It is 1/8" (ID) x 3/16 (OD) and about 6 ft long.

I purchased some from an ACE hardware store in Tucson for \$0.17 per foot. Pretty inexpensive.

Another source is on the internet from Utah Handpiece.

<http://utahhandpiecerepair.com/shop/> - The tubing is not listed on their website – you need to call and order over the phone.

On/Off Switch – 2 way toggle switch



The best price is from Utah Handpiece. - \$15 each.

<http://utahhandpiecerepair.com/product/air-switch/>

Replacement Cartridge – Turbine



For the NSK Presto there are about \$180 new from Utah Handpiece for from TreeLineUSA.

Utah Handpiece can repair this handpiece for about \$80.

For the low cost handpiece from China – you can Purchase a replacement for about \$15 on ebay. For me, I would rather purchase a new one for \$18.