Midwest Stylus – PB (Pushbutton)
OEM Turbine Repair Procedure

1. Midwest Stylus Handpiece
2. Back Cap Tool (40408XGT)
3. Auto-Chuck Protector Punch (00024A)
4. Spindle Punch (00024&00024R)
5. Coupler (same as XGT Coupler)
6. Dykes (Wire Cutters)

The Midwest Stylus PB Handpiece has been available since 2003. It is available in both standard lube type and maintenance free (EasyCare) style. The EasyCare no lube type will have a Red Stripe on the bottom of the handpiece.

STEP 1 Try to determine the problem before opening the handpiece. Insert a high speed bur, checking that it inserts smoothly and tightens securely. Twist the bur manually to feel how smoothly it turns. Attach it to your air hose and run the handpiece (if you can). Check that air pressure is at 38-40 p.s.i.. Listen for the appropriate pitch at full speed and for a smooth rundown. Check the water spray – it should be a fine mist. Attempt to cut a shell to test the torque. Disassemble the handpiece following the instructions below.

DISASSEMBLY

STEP 2
Using the 40408XGT back cap removal tool, twist in a counterclockwise direction to unscrew the back cap and remove the turbine assembly.

TIP: *Sometimes the cap is very tight. Be very careful not to let the tool slip and strip or scratch the back cap.*

STEP 3
Instead of pressing the bearings off the spindle, they must be broken off. To do this, grip the turbine assembly as seen in the picture to the left. Position the assembly over your work surface and *wear eye protection* (or you may have bearings everywhere including, your eye). READ TIP BELOW

Tip: Be very careful that the small channel lock pliers do not make any contact with the impeller, as this could damage it and/or disturb its position on the spindle. Also ensure that the channel lock position on the pliers will not allow them to close all the way. If the pliers can fully close, it is very likely that when the bearing breaks, the pliers will collapse onto and damage the spindle. Once the bearings have been removed, the inner races of the bearings will be left on the spindle, as seen in the picture below.

STEP 4

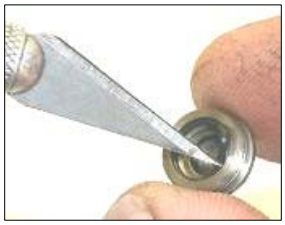
In order to get a better grip on the inner bearing race with the dykes, it is necessary to cut small grooves on opposite sides of the inner race. Using a high speed handpiece and a cutting bur, as seen in the picture to the left, lightly score grooves on opposite sides of the bearing race. *It is very important that the bur does not contact and damage the impeller or cut through the bearing race and damage the spindle.*

STEP 5

The inner race of the bearings must now be removed. First, carefully grip the newly cut grooves in one of the inner races with your dykes (pictured at left). Next, hold the spindle over the large hole in your work block (pictured below left). Using the auto-chuck protector punch, (00024A), slowly press the spindle down through the inner race.

Important note: There is a spacer washer on the rear side of the impeller, between the impeller and the bearing. Do Not Lose This. You will need it during reassembly.

TIP: *Pull up just slightly with the pliers while carefully pulling the ram of the press down. This will assist in the ease of removal of the inner races. Call the corporate office for assistance in this procedure if you have not performed it before.*



STEP 6

Remove the o-rings from inside the back cap (left) and from the handpiece head using a pin or Exacto knife.

STEP 7
Set the old o-rings aside. Place all the parts into the ultrasonic cleaner until they are clean. Get new parts from inventory. Always remember to thoroughly dry everything after it has been cleaned in the ultrasonic cleaner.

The above picture is the exploded view of the Midwest Stylus OEM – PB Turbine. The turbine assembly is the same for the Standard lube type and EasyCare style assemblies.

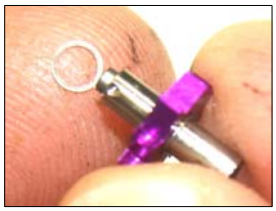
Picture Number	Part Number	Description
1	40511	Stylus O-Ring
2	40518	Front Spacer Washer
3	40516	Midwest Stylus Maintenance Free Bearing
4 None None	N/A 40519 40510	Original Stylus Chuck/Spindle Aftermarket Chuck/Spindle/Impeller Combo(Not Pictured) Aftermarket Complete Turbine (Not Pictured)
5	40410B 40410C	Bearing Spacer Washer .0085" must use 1 40410B & 1 40410C to replace a lost .0085" wahsher.
None	40510MW	OEM Midwest Stylus Turbine

REASSEMBLY

STEP 8
Take your original chuck/spindle combo. Insert your new 40516 bearing into hole #3 on your work block with the rear of the bearing facing up (as shown).

STEP 9
With the bearing properly inserted into hole #3 on your work block, carefully insert the bur opening end of the spindle into the bearing.

Make sure you have lined the spindle up properly to avoid pressing it at an angle.



STEP 10
Now use the auto-chuck protector punch to press the spindle into the bearing. Carefully press until the bearing, and impeller all touch. Do not over press as you will start to press the spindle through the impeller and mess up the spindle position.

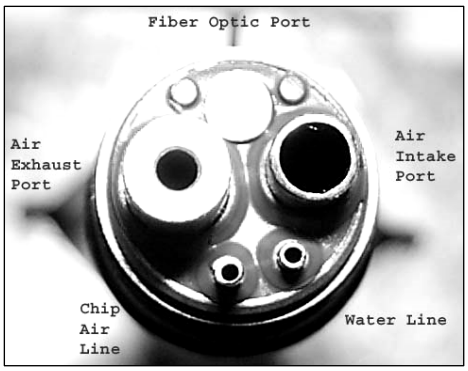
STEP 11
Next, place the other 40516 bearing into hole # 3 with the rear of the bearing facing up. This time, place the spacer washer on the spindle and insert the button end of the spindle into the bearing (Pictured at left and above).

STEP 12
Using the 00024R punch, (shown at left) carefully press the spindle into the bearing until the bearing, spacer and impeller all touch. Then stop and be careful not to over press the spindle together as it will result in damage to the components.

STEP 13
Place the 40410C front spacer onto the bur opening end of the spindle. Then place this assembly directly over hole #7. Using the 00024A auto-chuck protector punch, press the turbine into the spacer until the spacer and front bearing make contact.

STEP 14
Place the new 40511 O-Rings into the head and back cap.

STEP 15
Insert the newly assembled turbine into the back cap (as shown at left). Then screw the back cap into the head of the handpiece (below, left). Test to see that you have correctly assembled the turbine by placing a bur in the chuck and testing.



TIP: *At first it may not feel as smooth as it should. Squirt a one second blast of The Dentist's Choice "Euro Lube" lubrication into the air intake port of the coupler. Put the handpiece on "air". Hold it at 38 p.s.i. for about 30 seconds. It should start to wind up to full speed. It will whine when it is at full power.*

When testing the handpiece, flip the water on to make sure the water lines are clear. Always test for torque or cutting power. Use a seashell for testing the handpiece. A piece of plastic does <u>not</u> work, it will melt. Remember when testing for torque. If it is not running properly it will stop the instant you touch something hard. If it cuts well and sounds good, it is done!