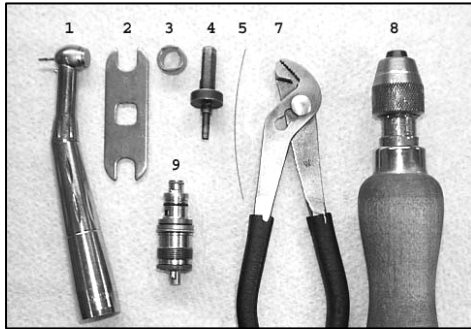


STAR VISTA 430K & 430SWL – PB (PUSHBUTTON) REPAIR PROCEDURE



1. Star Vista 430SWL – PB (Pushbutton) Handpiece
2. Star Vista PB Back Cap Wrench (60111B)
3. Star Vista PB Back Cap Wrench (60111A)
4. Auto-Chuck Protector Punch (00024 & 00024A)
5. Wire Reamer
6. Cutters (pictured at STEP 5)
7. Small Channel Lock Pliers
8. Hand-held Collet
9. Star Swivel Coupler (60517)

The Star Vista 430K – PB (not shown) and the 430SWL – PB have an almost identical turbine assembly as their Jacobs chuck counterparts. The only difference is that the impeller/ spindle combo and back cap are different (as would be expected). The following repair procedure, therefore, should be followed when converting a 430K or SWL – Jacobs chuck style handpiece to a 430K or SWL – PB.

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 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.

Note: Determine if the handpiece is a Lube-Free Star before repairing.

DISASSEMBLY

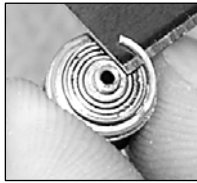


STEP 2

Twist in a counterclockwise direction to unscrew the back cap and remove the turbine assembly.



The pictures to the left show the two different back cap wrenches that can be used to open any of the Star Vista – PB style handpieces. Most repair techs prefer to use the one shown above left (60111B). They are able to get more torque using the pliers and it is less likely to slip off the back cap, than if using the wrench (60111A) shown below left.



STEP 3

Remove the two Star bearing retaining clips (60104A) on both ends of the turbine assembly by slipping a single edged razor blade under the clip and gently prying it off. Also, remove the o-rings and washers from the flanged bearings.

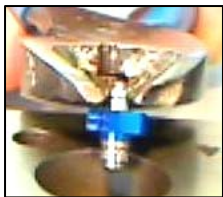


STEP 4

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 a trashcan and *wear eye protection*. 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 to the left.



STEP 5

The inner race of the bearings must now be removed. First, inspect the inner race to determine if it has a groove. If one does not exist, you must create two small notches 180 degrees apart using a high speed bur. Next, use a pair of 6" cutters and grab the inner race. Hold the assembly over the largest hole in your work block and carefully press the spindle through the inner race being held by the cutters. Remember, when removing the rear inner race, use the (00024A) hollow punch & when removing the front inner race, use the (00024R) round punch inserted into the bur opening.



TIP: Many repair techs will modify the jaws of the cutters, as seen in the picture to the left, so that they can get a better grip on the inner bearing race. This modification can be done using a high speed handpiece and cutting bur.

The following picture is the exploded view of the Star Vista 430K & 430SWL – PB handpieces.

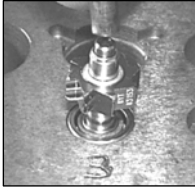


Picture Number	Part Number	Description
1	60104A	Star Bearing Retaining Clip
2	404075	Star O-Ring – Green
3	60104B	Star Bearing Front Washer
4	60104C	Star Bearing Front Spring Washer
5	60103C-NH 40409B	Star Vista 430 Steel Bearing or Star Lube-Free Ceramic Bearing
6	60182PB 60182PB-A 60182PB-S 60116	Star Vista Spindle/Chuck Combo Timken Spindle/Chuck Combo Sable Spindle/Chuck Combo Impeller
7	60104D	Star Bearing Rear Washer
8	60183	Star Vista Pushbutton Back Cap
9	60182Z	Star Front Slinger Washer

STEP 6 Set the old o-rings aside (the old bearings are already in the trash). Clear any debris or water deposits from the water line, using a wire reamer. 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.

***TIP:** The back cap has a small green o-ring on it – DO NOT REMOVE IT – unless it is obviously damaged. It can survive many dips in the ultrasonic cleaner. The replacement part (60183A) available if necessary.*

REASSEMBLY



STEP 7

Place a new bearing (60103C-NH or 40409B) into hole #3 of the work block, with the flange facing upwards, closest to the ram of the press. Position the front end of the spindle/ chuck combo squarely over the center of the bearing. Using the auto-chuck protector punch, press the spindle/ chuck combo through the bearing until the bearing is snug against the impeller. Be careful not to press too hard, as the position of the impeller should not be moved.

STEP 7A

Press the 60182Z slinger washer onto the front of the spindle. You can start the slinger washer installation using your thumb but must finish by placing the front of the spindle into hole #7 on your work block. Then, using your (00024A) hollow punch, slowly press the spindle into the washer until the washer and front bearing touch.



STEP 8

Place another new bearing (60103C-NH or 40409B) into hole #3 of the work block, with the flange facing upwards, closest to the ram of the press. Position the back end of the spindle/ chuck combo squarely over the center of the bearing. Using the auto-chuck protector punch, press the spindle/ chuck combo through the bearing until the bearing is snug against the impeller. Again, be careful not to press too hard, as the position of the impeller should not be moved.



STEP 9

The picture on the left shows the completely reassembled turbine assembly. Once the bearings and impeller have been pressed onto the spindle, follow the exploded view to place the washers, o-rings and clips onto the flanged bearing in the proper order.

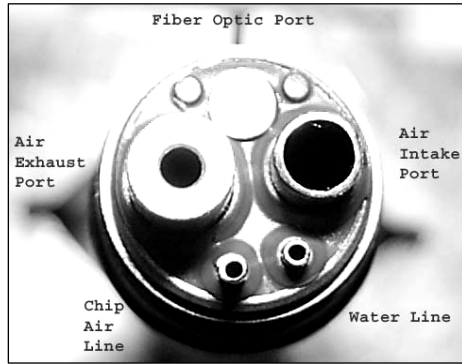


STEP 10

Insert the reassembled turbine into the head of the handpiece and tighten the back cap down snugly. Depress the pushbutton back cap and insert a high speed bur. Ensure that the chuck is holding the bur securely.

STEP 11

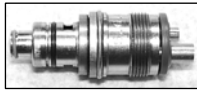
Test the handpiece by rotating the bur between your thumb and forefinger. The rotation should be smooth and easy, without drag.



TIP: At first it may not feel as smooth as it should. Squirt a one second blast of The Dentist's Choice "Once a Day" lubrication into the air intake port. 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 not work, it melts. Remember when testing

for torque, a Star Vista 430K and 430SWL - PB will stop at about 6oz of pressure. 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!



STEP 12

If the handpiece seems to be lacking in torque, check the o-rings on the swivel coupler (if it was received with the handpiece) before tearing the handpiece apart again. Sometimes these can wear out, causing air leaks and degrading performance. A kit containing the two replacement o-rings is available (404076).