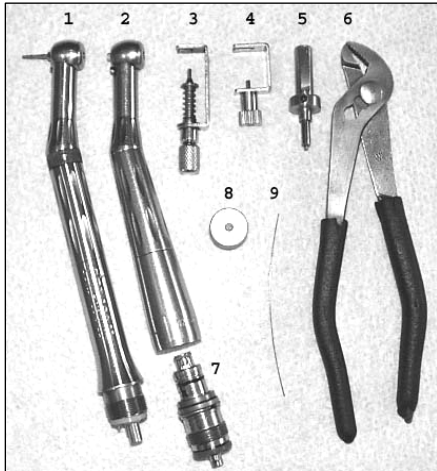


STAR VISTA 430K & 430SWL – JC (JACOBS CHUCK) REPAIR PROCEDURE



1. Star Vista 430K – Jacobs Chuck Handpiece
2. Star Vista 430SWL – Jacobs Chuck Handpiece
3. Bur Wrench – Hex Style (30104H)
4. Bur Wrench – Square Style (30104S)
5. High-Speed Spindle Punch (00024 & 00024R)
6. Small Channel Lock Pliers
7. Star Swivel Coupler (60517)
8. Star Jacobs Chuck Back Cap Removal Tool (60111)
9. Wire Reamer

Both of these handpieces are very popular with dentists. They are both light weight and have a small head. A common complaint, however, is that they have limited torque when compared with other handpieces. The only difference between the Star Vista 430K and 430SWL Jacobs Chuck is that the “SWL” model attaches to the air hose using a swivel coupler. A good sales point to remember is that these handpieces can easily be modified to a pushbutton auto-chuck system. To convert one of these handpieces to a pushbutton style, disassemble the turbine according to the disassembly procedures below. Then reassemble the turbine by following the repair procedure for the Star Vista 430K & 430SWL – PB, following this section.

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.

DISASSEMBLY

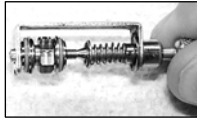


STEP 2

Remove the back cap using the Star Vista Back Cap Wrench (60111). Note: Sometimes, these back caps can be very tight. This can cause the tool to slip and scratch or strip the back cap. Therefore, it is advisable to keep pressure on the tool with a thumb and use a small pair of channel lock pliers to help twist the back cap off in a counter-clockwise direction.



TIP: A 3/32 inch Allen wrench can also be used to remove the back cap.



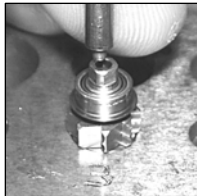
STEP 3

After removing the turbine assembly from the head of the handpiece, determine which type of chuck is being used – hex or square. Using the proper bur wrench, remove the chuck from the spindle.



STEP 4

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.



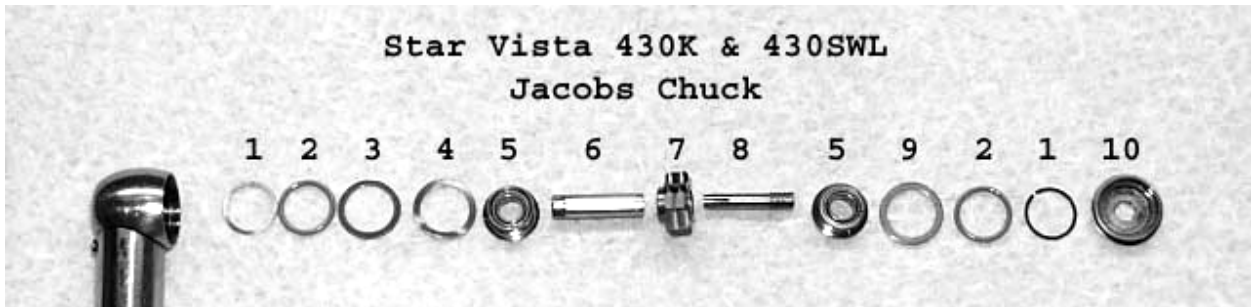
STEP 5

With the chuck removed, place the turbine assembly into hole #3 of the work block, with the chuck side down. Using the high-speed spindle punch (00024 + 00024R), place the punch tip into the bur hole. Using the press, push the spindle out of the bearings and impeller.

STEP 6

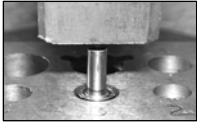
Set the old bearings and o-rings aside. Clear any debris or water deposits from the water line, using a wire reamer. Place all the parts into the ultrasonic cleaner until they are clean. Get new parts from inventory. Always remember to thoroughly dry everything before attempting reassembly.

The following picture shows the exploded view of the turbine assembly for both the Star Vista 430K and 430SWL.



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	Star Vista 430 Steel Bearing
6	60117	Star Vista Spindle
7	60116	Star Vista 430 Impeller
8	60108H 60108S	Star Vista 430 Chuck - Hex Star Vista 430 Chuck - Square
9	60104D	Star Bearing Rear Washer
10	60110	Star Vista 430 Back Cap

REASSEMBLY



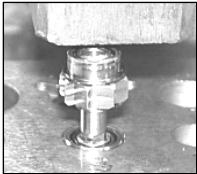
STEP 7

Place the rear bearing into hole #3 of the work block, with the flange down in the hole, farthest from the ram of the press. Place the bur end of the spindle into the bearing and press it through the bearing so that, the chuck end of spindle is flush with the inner race of the bearings.



STEP 8

Place the flanged side of the impeller squarely into hole #1 on the work block. Insert the bur end of the spindle into the impeller. Using the ram of the press, push the partially assembled turbine through the impeller until it is snug against the rear bearing.



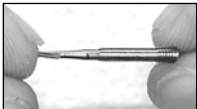
STEP 9

Place the front bearing into hole #3, with the flange facing upwards, closest to the ram of the press. Place the bur end of the spindle into the bearing. Using the ram of the press, press the partially assembled turbine through the bearing until the bearing is snug against the impeller.



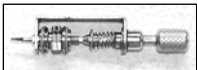
STEP 10

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 11

To help reinsert the chuck back into the spindle it is good practice to slip a high speed bur into the chuck first. The bur should have little or no resistance as it is inserted into the chuck. If there is a problem, try a new bur, clean the chuck or if nothing else helps, replace the chuck. This practice also helps ensure that a bur will be in place when the chuck is tightened.



Using the proper bur wrench (hex or square), screw the chuck into the spindle securing the bur at the same time.



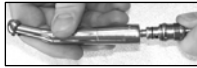
STEP 12

Reinsert the rebuilt turbine assembly into the head of the handpiece. Tighten the back cap snugly, using the back cap tool or a 3/32 inch Allen wrench.



STEP 13

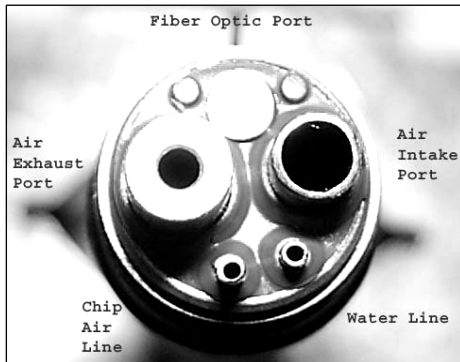
430K Only: On the neck of the 430K model there is a rotating collar that covers a lubrication port. Expose the hole by twisting the collar. Using a pen oiler, place one drop of oil into the hole and reseal the port.



STEP 14

430SWL Only: Before the 430SWL can be put on air, the swivel coupler must be screwed onto the air hose. Then, the air hose can be quickly snapped onto the handpiece.

STEP 15 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 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!