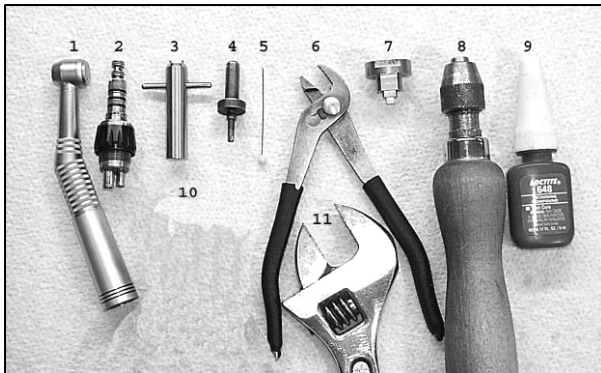


KAvo 630B & 640B – PB (PUSHBUTTON) REPAIR PROCEDURE



1. Kavo 630B – PB Handpiece
2. Kavo Coupler
3. Kavo PB Back Cap Removal Tool (10112)
4. Auto-Chuck Protector Punch (00024 & 00024A)
5. Push Pin
6. Small Channel Lock Pliers
7. Head Reamer
8. Hand-held Collet (00036)
9. Loctite® 680 Retaining Compound
10. Cutters (Pictured in STEP 5)
11. Adjustable Wrench

The KaVo 630B and 640B – PB are popular, well-engineered handpieces. The 640B has a fiber optic lighting component.

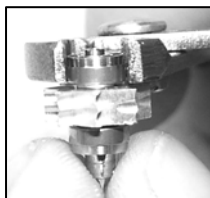
STEP 1 Try to determine the problem before opening the handpiece. Insert a high speed bur, checking that it inserts smoothly and tightens securely. Twist the bur manually to feel how smoothly it turns. Attach it to your air hose and run the handpiece (if you can). Check that air pressure is at 38 p.s.i.. 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 Using the Kavo PB back cap removal tool (10112), 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. This is done so the relationship between the impeller and spindle is not disturbed. 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* (or you will have bearings everywhere including, your eye). 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 and thus its balance. 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 4

In order to get a better grip on the inner bearing race with the jaws of the fish skimmers, it is helpful to cut small grooves on opposite sides of the 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

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.



STEP 6

Remove the o-rings from inside the back cap (left) and from the handpiece head.

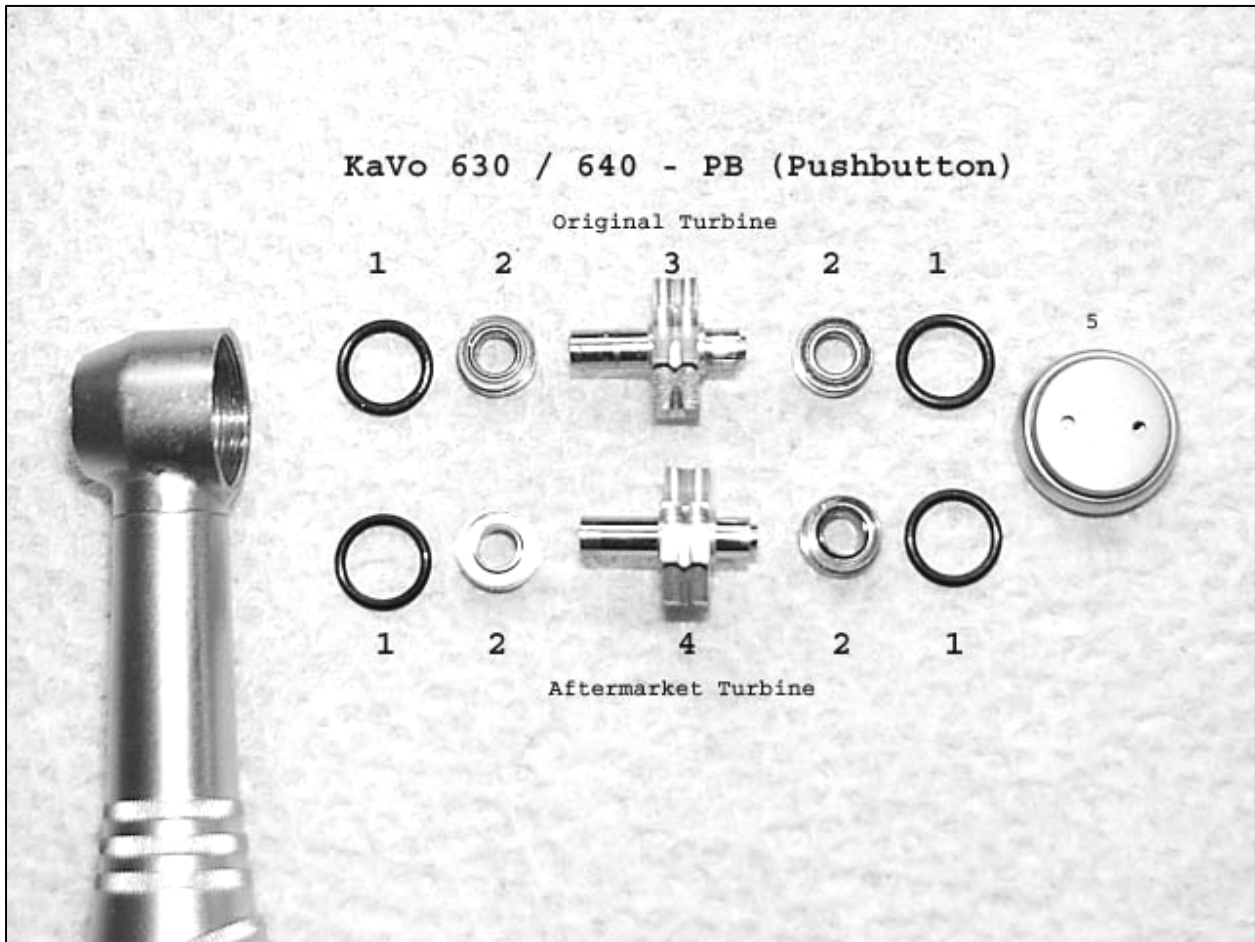


STEP 7

Next, check the head for any dents. If a dent is visible or suspected (by noticing wear or damage to the impeller), use the KaVo head reamer (00028A or 00028B). To do this, insert the tool all the way into the head. Next, using a crescent wrench for torque, twist the tool in a counterclockwise direction several times – this will push any dents back out. This tool only pushes dents out. It is not designed to cut or remove any material from the head. Make sure that the tool remains squarely and completely in the head when turning the tool with the crescent wrench. Finally, remove the tool and blast air into the head and the air, water and exhaust lines to thoroughly clean them.

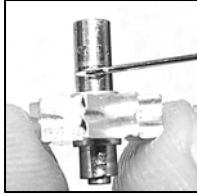
STEP 8 Set the old o-rings aside (the old bearings are already in the trash). Clear any debris or water deposits from the water line, using a wire reamer. Place all the parts into the ultrasonic cleaner until they are clean. Get new parts from inventory. Always remember to thoroughly dry everything after it has been cleaned in the ultrasonic cleaner.

The following picture is the exploded view of the KaVo 630B – PB handpiece. The turbine assembly is the same for the 640B-PB.



Picture Number	Part Number	Description
1	10106 10106S	KaVo O-Ring KaVo O-Ring (Sable Brand)
2	10101ANG 10101B 10102	KaVo Angular Bearing – Phenolic Ball Separator Barden Radial Bearing – Euro Bearing KaVo Radial Bearing – Phenolic Ball Separator
3	10107PBL	Original Complete Turbine Assembly
4	10116PBL 10116SL	After Market Chuck/Spindle Combo After Market Complete Turbine Assembly
5	10114 or 10114A	Large Pushbutton Back Cap (630B or 640B)

REASSEMBLY



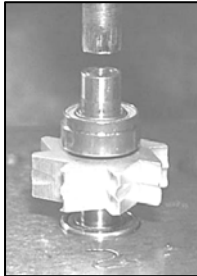
STEP 9

Original Turbine Only: An original spindle has a slightly smaller diameter than an aftermarket spindle. Because of this, the bearings on an original spindle must be held securely in place with a small amount of Loctite® 680 Retaining Compound. To do this, place a very small drop of Loctite® on the tip of a pin and spread it **thinly** (it will almost be invisible) onto the spindle where the bearing will sit. *Any extra Loctite® will almost certainly find its way into the bearing, causing it to fail.* Have the new bearing ready to be pressed on, as the Loctite® will dry in about 5 minutes in the open air.



STEP 10

Original and Aftermarket Turbine: Place the rear bearing into hole #2 of the work block, with the “step” where the o-ring will sit facing down, into the hole, away from the impeller. Use the auto-chuck protector punch to press the spindle into the bearing.



STEP 11

Apply a small amount of Loctite® to an original spindle, as in Step 9. Note: The aftermarket spindle does not require Loctite®. Place the front bearing into hole #2 of the work block, with the “step” where the o-ring will sit facing down, into the hole, away from the impeller. Use the auto-chuck protector punch to press the spindle into the bearing. Press firmly enough to properly seat the bearings, but do not move the impeller.



STEP 12

Reinstall the handpiece. This is where



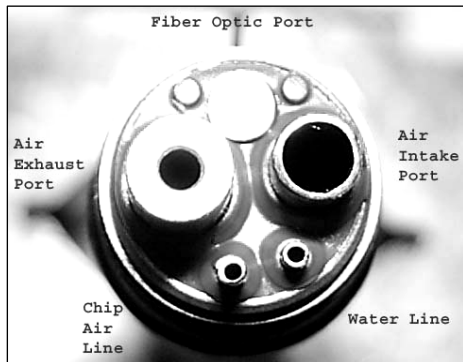
new o-rings in the back cap and in the head of Take note of the groove down in the head. the o-ring should be placed.



STEP 13

Place the back cap onto the rear bearing of the turbine assembly. It should slide on easily because of the bearing design, without having to apply any lubrication. Next, insert the turbine assembly into the head and tighten the back cap securely, in a clockwise direction. Depress the pushbutton back cap and insert a high speed bur. Ensure that the chuck is holding the bur securely.

STEP 14 Make sure the Loctite has had 15 to 30 minutes to set up before testing. Test the handpiece by rotating the bur between your thumb and forefinger. The rotation should be smooth and easy, without drag. Note: For an original spindle, if the rotation feels rough or gritty, it is very likely that too much Loctite® was used and some has seeped into the bearing(s). Try running the handpiece to see how it sounds and feels. But, if the rotation is still gritty or the rundown stops abruptly, the bearing(s) will have to be replaced again (see Steps 2 -11).



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 KaVo 630B and a 640B - PB will stop at about 6 - 8oz 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!