

KaVo POWERtorque LUX 646B – PB (Pushbutton) Repair Procedure



Tools needed to properly repair this handpiece:

1. Kavo Coupler
2. Kavo 647B/649B Back Cap Removal Tool (10129)
3. Auto-Chuck Protector Punch (00024 & 00024A)
4. Small Channel Lock Pliers
5. One Pair of Dykes
6. KaVo Impeller Setting Tool (00045)

The **KaVo 646B** is a new KaVo handpiece. It came out in 2006 and you should now start seeing them out of Manufacturers warranty. Lube is required on this handpiece.



Notice that the KaVo 646B has a Glass Fiber Optic Rod and a single port water spray. If there is a water problem, you can try clearing it with your Smart Cleaner tool, (part# 00082) or you can use a small thin wire to dislodge any debris.

FIRST ...

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 40-45 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.



OEM KaVo Turbine DISASSEMBLY ONLY

STEP 1

Using the Kavo PB back cap removal tool (10129), twist in a counterclockwise direction to unscrew the back cap and remove the turbine assembly. Be sure to remove the old o-rings from both the head assembly and the back cap.

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



STEP 2

Instead of breaking the bearings off the spindle, you can simply press the spindle through the bearings and impeller.

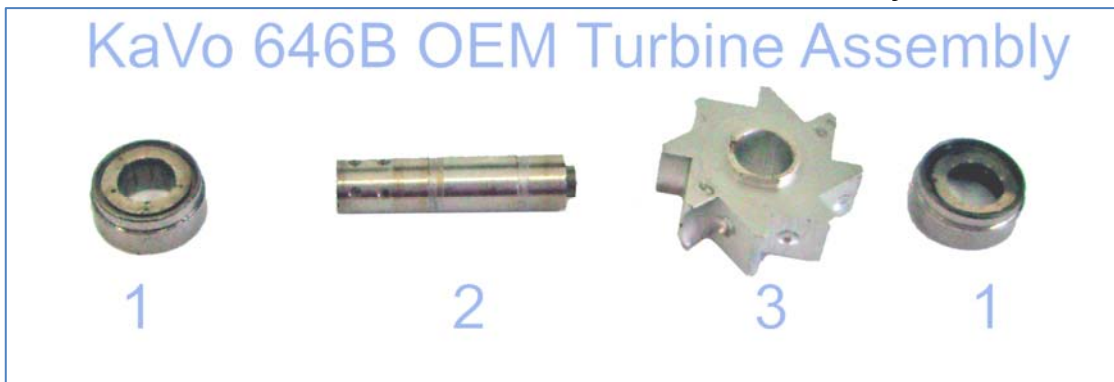
Place the rear bearing of the turbine into the hole just above the Large hole in your work block. The open end of the spindle should now be pointed up. Simply insert your 00024R punch into the spindle opening and carefully press the spindle out.

This will leave you with the spindle and rear bearing, a naked impeller and a loose front bearing. Now place the spindle/bearing assembly into Hole #2 in your work block and press the spindle out of the rear bearing. Be sure to use your 00024A auto-chuck protector punch for this part of the disassembly.



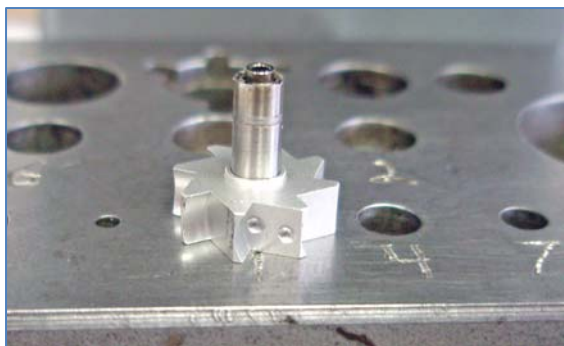
Your Disassembled KaVo 646B turbine should now look like the picture to the left.

OEM KaVo 646B Turbine Assembly ONLY



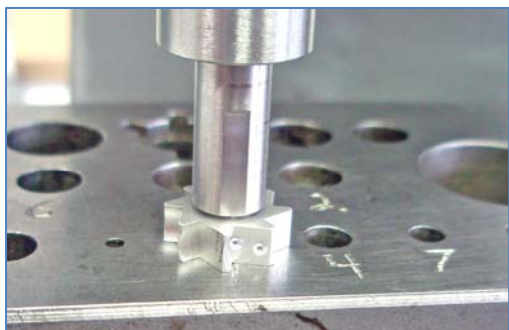
Picture Number	Part Number	Description
1	10101ANG or 10101ACER	KaVo NHBB Bearing or KaVo Ceramic Bearing
2		KaVo OEM 646B Spindle
3		KaVo OEM 646B Impeller
4	Not Pictured	KaVo O-Rings (10106)

REASSEMBLY (OEM Turbine Only)



STEP 1

Original Turbine Only: Place your impeller over Hole #1 in your work block as shown at left. Then, manually slip the front of the spindle down into the impeller.



STEP 2

Original Turbine Only: Now slide the KaVo side of the 00045 impeller setting tool over the spindle, (as pictured at left). Slowly press down on the tool until it makes contact with the impeller as shown. Your Spindle/Impeller assembly should now be ready for bearing installation.



STEP 3

Original Turbine Only: After cleaning the spindle of any old Loctite, apply a small amount, (as shown) to both the front and rear of the spindle, right where the bearings will sit once assembled.



STEP 4

Original Turbine Only: Place a new KaVo bearing, face down, into Hole #2 on your work block. Next, insert the front (open end) of the spindle into the bearing. Lastly, using your auto-chuck protector punch (00024A), carefully press the spindle into the bearing until the impeller makes contact with the bearing.



STEP 5

Original Turbine Only: Now place another KaVo bearing face down into Hole #2 of your work block. Now, insert the back button side of the spindle into the bearing as shown at left. Lastly, using your round punch (00024R), carefully press the spindle into the bearing until the impeller makes contact with it.



STEP 6

Original Turbine Only: Your newly assembled OEM turbine with 2 new 10106 O-rings (pictured at left) should now be ready for installation into the handpiece.



STEP 7

Original Turbine Only: First, install the O-rings into the head and back cap of the handpiece. Second, place the turbine into the back cap (as shown at left). Finally, Insert the turbine into the head and screw the back cap into the head using your 10129 back cap tool. Lubricate and test.

Look to the next page for AFTER-MARKET turbine Assembly and Disassembly

KaVo 646B After-Market Turbine Repair Instructions



STEP 1

After-Market Turbine only: Using your 10129 KaVo back cap tool. Unscrew the cap in a counter-clockwise direction. Once unscrewed, remove the turbine and o-rings from the head of the handpiece.

Step 2

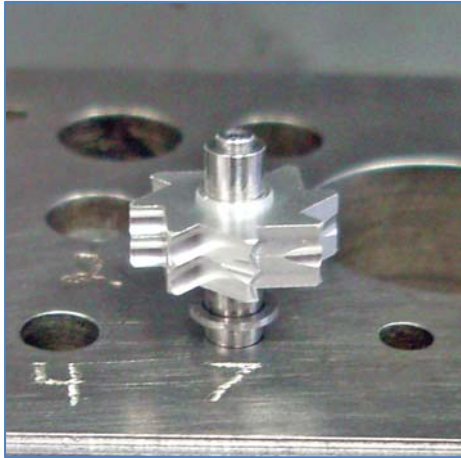
After-Market Turbine only: Place the front bearing into Hole #2 of your work block. Using your Auto-Chuck protector punch (00024A), press the spindle through the turbine assembly, thus disassembling it.

Please follow **STEP 1** and **STEP 2** from the OEM turbine repair instructions above, to correctly install your impeller back onto the spindle.



Picture Number	Part Number	Description
1	10106 or 10106S	KaVo O-Ring or KaVo O-Ring (Sable)
2	10101ANG or 10101ACER	KaVo NHBB Bearing or KaVo Ceramic Bearing
3	40410D	.015" Spacer Washer
4	10116PBL	KaVo LargeSpindle/Chuck Combo

Reassembly (After-Market Turbine Only)



STEP 1

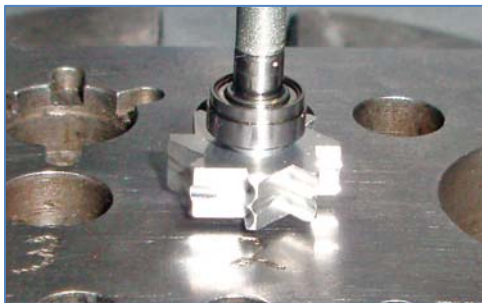
After-Market Turbine Only: Manually (with your fingers), push the 40410D spacer washer onto the front of your 10116PBL spindle. You should be able to push it 1/8" to 1/4" before it stops. Then, place the front of the spindle into Hole #7 on your work block as shown.

Next, place the KaVo side of your 00045 impeller setting tool onto the back of the spindle. Carefully press the spindle into the 40410D spacer washer until the impeller and washer make contact with each other.



STEP 2

After-Market Turbine Only: Place a new KaVo bearing, face down, into Hole #2 on your work block. Next, insert the front (open end) of the spindle into the bearing. Lastly, using your auto-chuck protector punch (00024A), carefully press the spindle into the bearing until the 40410D spacer makes contact with the bearing.



STEP 3

After-Market Turbine Only: Now place another KaVo bearing face down into Hole #2 of your work block. Next, insert the back button side of the spindle into the bearing as shown at left. Lastly, using your auto-chuck protector punch (00024A), carefully press the spindle into the bearing until the impeller makes contact with it.



STEP 6

After-Market Turbine Only: Your newly assembled OEM turbine with 2 new 10106 O-rings (pictured at left) should now be ready for installation into the handpiece.



STEP 7

After-Market Turbine Only: First, install the O-rings into the head and back cap of the handpiece. Second, place the turbine into the back cap (as shown at left). Finally, Insert the turbine into the head and screw the back cap into the head using your 10129 back cap tool. Lubricate and test.

You are now ready to test your KaVo 646B Handpiece repair. Remember to test the water spray as well, insuring a fine mist and complete bur coverage during use.