

# KaVo GENTLEmini LUX 4500B – PB (Pushbutton) Repair Procedure



Tools needed to properly repair this handpiece:

1. Kavo Coupler
2. 3-Notch Back Cap Removal Tool (70124A)
3. Auto-Chuck Protector Punch (00024 & 00024A)
4. Small Channel Lock Pliers
5. One Pair of Dykes
6. A Small straight pin or Exacto Knife

The KaVo 4500B is a relatively new handpiece. It came out in 2007 and you should now start seeing them out of Manufacturers warranty. Lube is required on this 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 Kavo PB back cap removal tool (70124A), 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 bb's everywhere). 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.



#### **STEP 4**

In order to get a better grip on the inner bearing race with the jaws of the dykes, 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**

The inner race of the bearings must now be removed. Grab hold of one of the bearing races with a pair of side cutters or dykes (as shown).



#### **STEP 6**

Now place the assembly over the large hole in your work block (shown at left). Once there, place the auto-chuck protector punch over the back of the spindle and press (below right). Then turn the spindle over and use the same technique on the other race.

**TIP:** *You may find this technique a little hard to manage with only two hands at first. Keep practicing, possibly on an old spindle. It is a very quick and safe way to remove inner races once you get the hang of it. Call us with any questions on this method.*



#### **STEP 7**

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

**STEP 8** Set the old o-rings aside (the old bearings are already broken and in the trash). Clear any debris or water deposits from the water line. 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.

# KaVo 4500B OEM or Sable Turbine



The following picture is the exploded view of the KaVo 4500B – PB turbine.

Picture Number	Part Number	Description
1	10106SR	O-Ring (Sable brand RED)
2	10216	KaVo Spring Washer Kit (Use 2 Small Washers)
3 No pic	101014500 10101DG	Myonic Bearing (Only if you're using the 10116R)
4 No pic No pic	10116R-SV 10116R-C 10116R	Sable 4500B Balanced Spindle Combo Balanced Spindle Combo Microtech version (must use 10101DG Bearing)
5	10113-4500B	KaVo 4500B Back Cap

## REASSEMBLY



### STEP 9

**Original or 10116R-SV or 10116R-B or 10116R-C Only:** An original & Sable spindle requires the 101014500 bearing on the rear of the turbine. Place this bearing face down into Hole #2 on your work block (Pictured at left).

**After-Market 10116R Only:** These require the 10101DG bearing on the rear of the spindle. Place the chosen bearing face down into Hole #2 of your work block.



### STEP 10

**Note:** Remember to always apply a small amount of Loctite to the OEM spindle to properly adhere the bearings to the spindle.

**Original and Aftermarket Turbine:** With the rear bearing in Hole #2 of the work block, use the auto-chuck protector punch to press the spindle into the bearing. Be sure that the bur opening end of the spindle is pointed up for this step (As pictured).



### STEP 11

**Original & Sable Turbine Only:** These spindles require the 101014500 bearing on the front of the turbine. Place this bearing face down into Hole #2 on your work block (Pictured at left). Then, use the auto-chuck protector punch to press the assembly into the front bearing.

**After-Market Turbines Only:** These require the 10101DG bearing on the front of the spindle. Place the chosen bearing face down into Hole #2 of your work block. Then, use the auto-chuck protector punch to press the assembly into the front bearing.

**This is a picture of a correctly assembled KaVo 4500B Turbine (Not including the Spring Washers)**



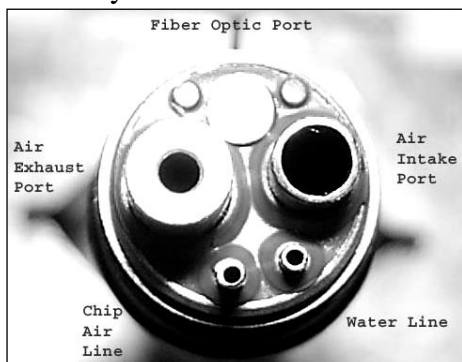
### STEP 12

Install the new 10106SR O-rings in the back cap and in the head of the handpiece. Then insert the 10216 Spring Washer Kit. Remember, Use 2 small washers (instead of 1 small and 1 large like in other KaVo models). Take note of the groove down in

the head. This is where 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.



**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 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 not work, it melts. 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!