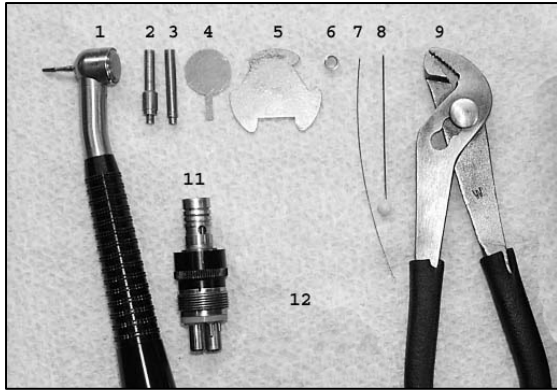


# LARES 557 TURBO – PB (PUSHBUTTON) REPAIR PROCEDURE



1. Lares 557 Turbo – PB Handpiece
2. Lares Assembly Tool (00024L2)
3. Lares Disassembly Tool (00024L1)
4. Lares Spindle Cleaner
5. Lares Back Cap Wrench
6. Radial Bearing Inner Race
7. Wire Reamer
8. Push Pin
9. Small Channel Lock Pliers
11. Lares Coupler
12. Cutter (pictured in STEP 5)

The Lares 557 Turbo – PB incorporates a pushbutton auto-chuck mechanism and uses a swivel coupler. Otherwise, it is exactly the same as the Lares - 330E – JC. Both handpieces seem to have the same design flaw, in that the front bearings often seem to fail prematurely. Despite this tendency, these are still frequently encountered handpieces.

Note: To convert a 330E into a 557 Turbo, follow the directions below and substitute parts as needed.

**STEP 1** Try to determine the problem before opening the handpiece. Insert a high speed bur (see Step 2 below), 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 hand piece (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



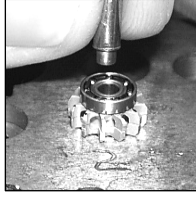
**STEP 2** Remove the back cap using the Lares back cap wrench. Unfortunately, these wrenches are only available to dentists who use this handpiece. Luckily, they usually have quite a few of them and will share one with you, if you ask nicely.



**STEP 3** Remove the turbine assembly from the head of the handpiece. (Original turbine assembly shown left.)

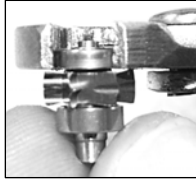


**STEP 4**  
**Original Turbine Only:**  
Remove the chuck from the back of the spindle. Be careful, there are many small spring washers and a spacer washer that can fall off and be easily lost.



### STEP 5

**Original Turbine:** Place the front bearing into hole #2 of the work block. Using the Lares disassembly tool (00024L1), press the spindle out of the bearings and impeller.



**Aftermarket Turbine:** With this turbine assembly, the bearings must be carefully broken off without disturbing the position of the impeller. 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.



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.



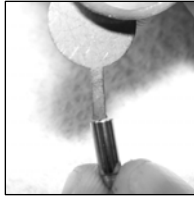
**TIP:** Many repair techs will modify the jaws of the cutters, as seen in the picture to the left, so that they can get a better grip on the inner bearing race. This modification can be done using a high speed handpiece and cutting bur.



### STEP 6

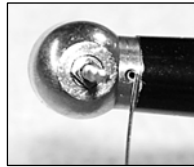
Remove the o-rings from the head and back cap.

Note: Sometimes, a small piece of the old o-ring breaks off and gets stuck in the groove. Lares handpieces are notorious for this but, it can happen with any handpiece. If a new o-ring is inserted over this material, it can cause it to bulge, restricting the turbine rotation. To remove all the micro-debris, run the tip of a curved dental pick around the inside edge of the o-ring groove a couple of times. Clean out the head and lines with a few sharp blasts from the air hose before putting all the parts in the ultrasonic cleaner.



### STEP 7

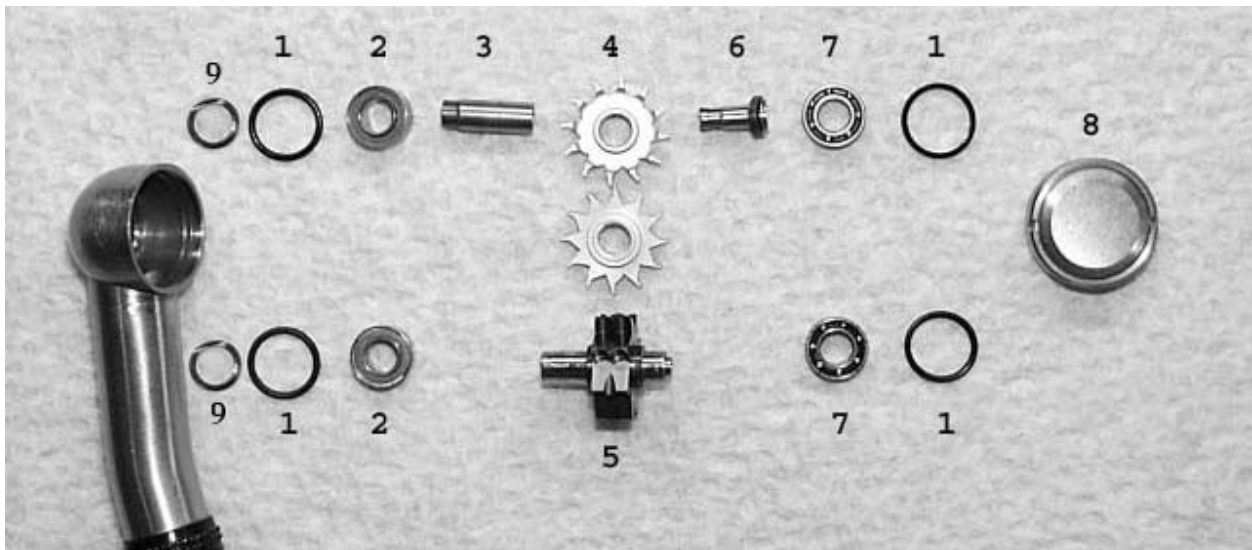
**Original Turbine Only:** Spray some Once-A-Day lubricant into the spindle. Then, insert the Lares spindle cleaning tool into the chuck end of the spindle as far as it will go and rotate it. This will loosen up any built up debris



### STEP 8

Set the old bearings and o-rings aside. Clear any debris or water deposits from the water line, using a wire reamer (left). 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 Lares 557 Turbo – PB. Both the original and aftermarket turbine assemblies are shown.



Picture Number	Part Number	Description
1	50110	O-Ring
2	50106B	Lares Front Bearing
3	N/A	OEM Spindle
4	50113	Impeller
5	50116PBS 50116PBS-A	Aftermarket Spindle/ Chuck Combo Timken Spindle/Chuck Combo
6	50111	Lares OEM Chuck
7	50106A	Lares Rear Bearing
8	50121	Lares Small Head Pushbutton Back Cap
9	40410E	Loading Spring

## REASSEMBLY

### STEP 9



**Original Turbine:** Place the rear bearing (50106A) into hole #2 of the work block, with the balls facing upwards, towards the ram of the press. Using the Lares assembly tool (00024L2), press the spindle into the bearing. The flange on the tool will catch the inner bearing race and stop, positioning the bearing perfectly on the spindle.



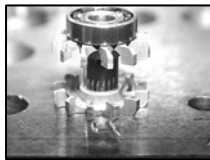
**Aftermarket Turbine:** Notice that the inner race of the rear bearing is slightly recessed when compared to the outer race. If pressure was applied to this outer race, the bearing would fall apart. Therefore, to press this bearing on, pressure must be applied to the inner race only. To do this, a used radial bearing's inner race must be used as a tool.

First, place the aftermarket spindle/ chuck combo into hole #7 of the work block. Carefully position the rear bearing (50106A) over the spindle, with the visible balls facing upwards, towards the ram of the press. Then, carefully place a used radial inner bearing race (using it as a tool) on top of the rear bearing's inner race. This is a bit of a balancing act and may require a few attempts to align it properly. Once aligned, slowly bring the ram of the press down onto the inner race "tool" and carefully press the bearing snugly against the impeller. The inner race "tool" will also be partially pressed onto the spindle when the bearing is pushed all the way on. Leave it in place until after the front bearing has been pressed on in Step 11.



### STEP 10

**Original Turbine Only:** Place the rear half of the impeller over hole #4 of the work block, with the teeth facing down towards the work block. Using the Lares assembly tool (00024L2), press the partially assembled turbine into the rear impeller, until the rear bearing is snug against the impeller.



Then place the front half of the impeller over hole #4 of the work block, with the teeth facing upwards, towards the ram of the press. Using the Lares assembly tool (00024L2), press the partially assembled turbine into the front impeller, until both halves of the impeller are snug against each other. Note: It is not necessary to align the impeller teeth. It should work perfectly well regardless of this alignment.

### STEP 11



**Original Turbine:** Place the front bearing (50106B), with the gold shield down, into hole #2 of the work block. Position the partially assembled turbine squarely over the front bearing. Using the Lares assembly tool (00024L2), push the partially assembled turbine into the front bearing until it is snug against the impeller.



**Aftermarket Turbine:** Place the front bearing (50106B), with the gold shield down, into hole #2 of the work block. Position the partially assembled turbine, with the inner bearing race tool still in place, squarely over the front bearing. Using the ram of the press, push the partially assembled turbine into the front bearing until it is snug against the impeller.



Once the assembly is tight, the bearing race tool needs to be removed. Secure the bur end of the spindle into the hand-held collet. Then, using the fish skimmers, pull the bearing race tool off the opposite end of the spindle.

**Note:** *Aftermarket turbines with one-piece impellers require a 40410E Loading Spring*

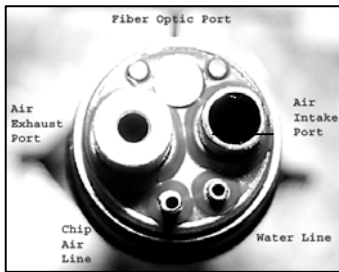


### STEP 12

Insert new o-rings (50110) into the head and the back cap. Slip the back cap onto the rear bearing on the turbine assembly. Next, insert the turbine into the head of the handpiece, as seen in the photo to the left. Carefully thread the back cap into the head, twisting in a clockwise direction. Use the Lares back cap wrench to tighten the back cap snugly.

### STEP 13

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. When testing for torque, a Lares 557 Turbo - PB will stop at about 6oz to 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!