Bimba Ultran® Slide Rodless Cylinder Repair Instructions

CAUTION!

The magnets used in the Ultran product line are of an extremely high strength and brittle material. Caution should be used in handling these magnets.

If the magnets are cracked due to impact fractures during the repair process, they will repel each other and fly apart.

During the repair of the product, be sure your fingers do not get between the piston and the carriage. The magnets on both these parts will attract each other and could cause injury.

NOTES

- Cleanliness of the internal parts is imperative for maximum life of the slide unit.
- Parts that have been repaired should be covered or bagged until needed for finished assembly.
- Any high grade of bearing grease should be used for lubrication purposes.

Tools required:

knife or wire cutters

hex driver

arbor press

screwdriver

retaining ring pliers

torque wrench

plastic bags or clean containers to hold parts during the repair

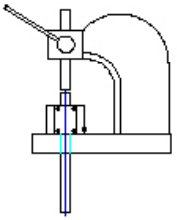
lubricant

NOTE on Arbor Press: Using an arbor press is the safest and preferred way to perform some of the operations in these instructions. Pressing through the body's length is necessary, so the arbor press must have its table a distance from the floor that is equal to or greater than the stroke of the cylinder. A proper repair is unlikely if these warnings are not followed.

SLIDE REPAIR INSTRUCTIONS

Refer to Figure 1 for Steps 1–7

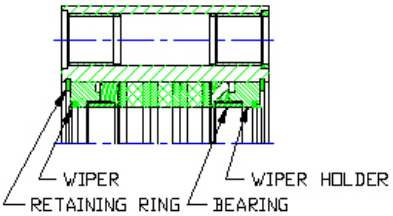
Figure 1:



1. Remove air pressure and fittings.
2. Wipe down and clean the unit.
3. Remove the four cap screws that fasten the end blocks to the guide rods.
4. Remove the end blocks and the guide rods keeping the carriage, body and piston together as a unit.
5. Remove any grease, dirt or oil from the individual pieces.
6. Place the carriage, body and piston assembly in an arbor press. Using a non–magnetic rod or shaft, press on the piston to uncouple it from the carriage magnets. Do not let the body slip out of the carriage during this operation.
7. Remove the carriage from the body leaving the piston inside the body. Place body and piston aside.

Refer to Figure 2 for Steps 8–12

Figure 2:



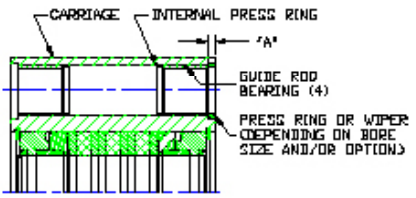
8. Remove retaining ring, wiper holder and bearing from the center hole on the carriage. Repeat for both ends.
9. Insert new bearings into both ends.
10. Noting the orientation of the wiper lip, remove the old wiper from wiper holder and insert new wipers with the same orientation.
11. Insert the wiper holder into carriage.
12. Assemble the retaining ring into its groove in the carriage.

Refer to Figure 3 for Steps 13–17

13. Plug the center hole of the carriage (both ends) with a clean rag or cloth to prevent bearing contamination.
14. Pry out the four guide shaft wipers or press rings (depending on bore size and/or option) with a screw driver or similar tool.
15. Press out the four guide shaft bearings using care not to disturb the internal press rings.
16. For the 3/4” thru 2” bore sizes, press in the new guide shaft bearings to the bottom of the counterbore using an arbor press. For the 5/16” thru 9/16” bore sizes, press the bearing into the dimension shown in the chart.
17. Press in the new wipers or press rings, depending on bore size and/or options.

Note: *The Ultran guide shaft bearings were upgraded in the second half of 2000. All new repair kits shipped after September 2000 will contain the new style shaft bearings, which utilize internal press rings. If the Ultran assembly being repaired does not have internal press rings, be sure to add them before pressing the bearings in place.*

Figure 3:



BORE	"A"
007	.130
01	.130
02	.130

Refer to Figure 4 for Steps 18–21

18. Remove the piston from the body.
19. Using cutters, cut the seal and pull it out of the groove. Be careful not to scratch the surfaces of the groove.
20. ***The new piston bearing configuration is non–repairable***. If the Ultran being repaired has split piston bearings, it should be sent to the factory for new style piston bearings, or a new piston assembly should be ordered. Contact your distributor for details.
21. Using the same insertion tool as Step 13, slip the seal into its groove. Be sure the seal is oriented so the lip faces *away* from the bearing.

Figure 4:

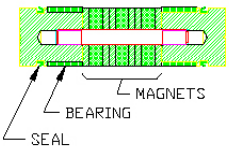
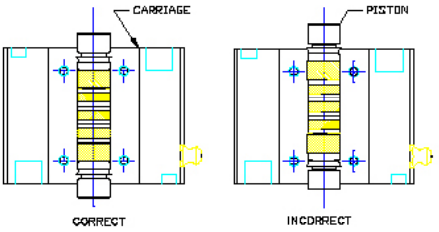


Figure 5:

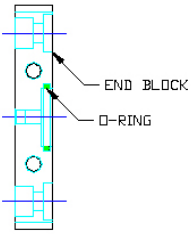


Refer to Figure 5 for Step 22

22. Place the piston on top of the carriage and note its position. The ends of the piston should extend beyond the ends of the carriage equally. If they do not, turn the piston end for end. This orientation of the piston and carriage must be maintained for the rest of the assembly.

Refer to Figure 6 for Steps 23–25

Figure 6:



23. Remove the body O–ring tube seal from the large hole in both end blocks.
24. Clean the end blocks and the O–ring groove of any grease or contaminants.
25. Lightly lubricate the new O–rings. Stretch the O–rings slightly and place them in the grooves by hand.
26. Apply a coating of lubricant to the inside surface of the tube. Best performance will be achieved when the lubricant is applied evenly over the whole surface.
27. Insert the tube through the center hole in the carriage.
28. Apply a coating of high grade bearing grease to the piston and insert it into the tube. Use your fingernail to deflect the lip of the seal to insert it in the tube. Again note that the orientation of the piston to the carriage must be maintained as described previously.
29. Place the assembly back in the arbor press and with the shaft used before, re–couple the piston with the carriage.
30. Lightly lubricate the four guide rod bearings in the carriage by hand or with a swab. Insert the two guide rods through the bearings in the carriage.
31. Attach one end block to the guide rods. Insert the tube into the large hole in the end block. Press firmly on the tube to seat it in the O–ring. Tighten the cap screws finger tight only.
32. Install the second end block onto the guide rods and tube body. Fasten with the two cap screws, finger tight.
33. Slide the carriage to one end of its stroke and tighten the cap screws at that end to the torque specifications listed in the chart.
34. Repeat process for opposite end.

Bore Size	Torque ft–lb (N–m)	Bore Size	Torque ft–lb (N–m)
007 (8mm)	1.6 (2.17)	09 (27mm)	20.1 (27.25)
01 (12mm)	2.1 (2.85)	12 (32mm)	50.8 (68.9)
02 (14mm)	5.8 (7.86)	17 (38mm)	50.8 (68.9)
04 (18mm)	5.8 (7.86)	31 (50mm)	179 (242.7)
06 (22mm)	12.5 (17)		

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