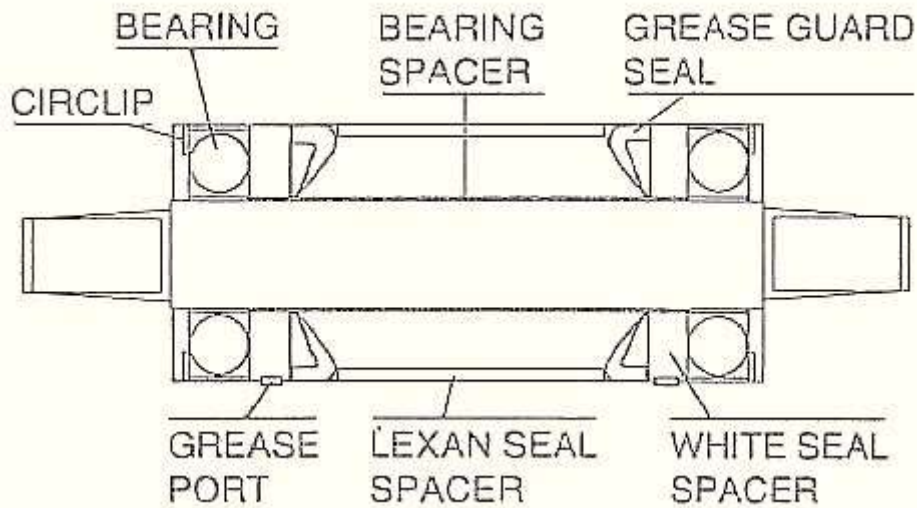


# MERLIN<sup>®</sup> TITANIUM

## Grease Guard Bottom Bracket Manual



### Spindle Tool Kit:

- Removal tool with 8x1 mm stud
- 5/8-inch x 12 nut
- Stepped steel washer
- Two steel sleeves: 1 5/16 and 4 3/4 inches

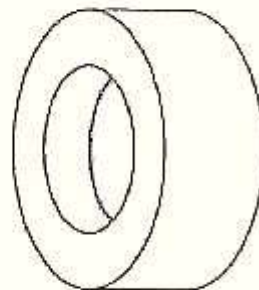
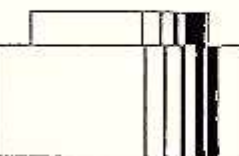
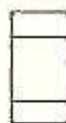
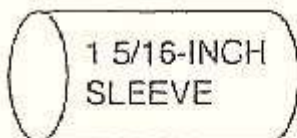
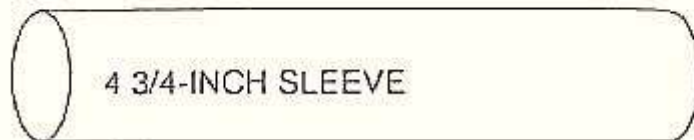
### Bearing Installation Kit:

- Two aluminum blocks
- Two steel washers for spindle bolts
- Six 0.093" shims
- Six 0.020" shims

### Tools Needed:

- Circlip pliers (i.d. type)
- Two 5/8-inch open-end wrenches
- 3/8-inch (approx.) aluminum dowel or drift
- Two 14-mm open-end wrenches
- Bench vise

### REMOVAL TOOL



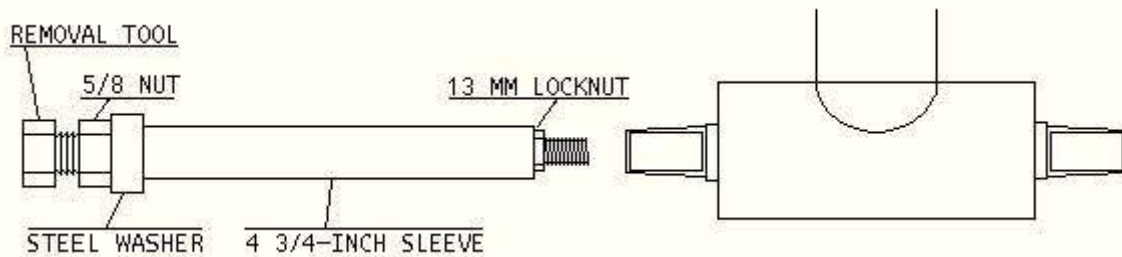
ALUMINUM BLOCK

STEPPED  
STEEL  
WASHER

SHIMS

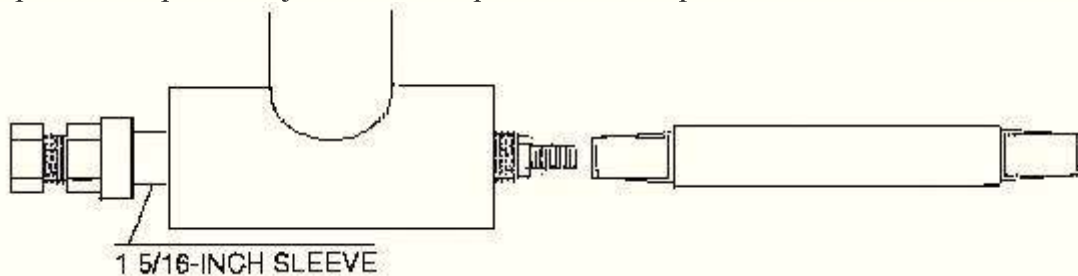
### Spindle Removal:

- Remove Crankarm bolts, if present.
- Run the 5/8-inch nut to the head of the removal tool.
- Put the stepped steel washer on the tool.
- Put the 4 3/4-inch sleeve on the tool.
- Thread the tool into the spindle and tighten.
- Tighten the nut against the washer and sleeve.
- Hold the 5/8-inch nut and turn the spindle tool counterclockwise. The sleeve will press against the bearing and extract the spindle.



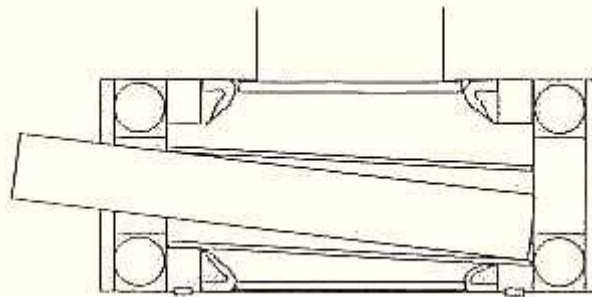
### Spindle Installation:

- Make sure the bearing spacer inside the BB shell is not cocked or displaced.
- Run the 5/8-inch nut to the head of the spindle tool. Put the stepped steel washer on the tool. Put the 1 5/16-inch sleeve on the tool.
- Push the tool through the bottom bracket, leaving bearings and spacers intact.
- Thread the spindle onto the tool and tighten. Do not lubricate the surface of the spindle.
- Tighten the nut against the sleeve.
- Hold the 5/8-inch nut and turn the spindle tool counterclockwise. The sleeve will press against the bearing and pull the spindle into place. Adjust the lateral position of the spindle with the short steel sleeve.



### Bearing Removal:

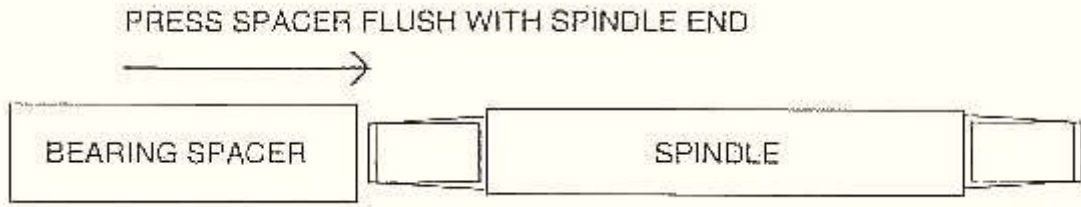
- Remove the spindle.
- Remove the bearing circlips.
- Using a 3/8-inch dowel (approximate size), push the bearing spacer down out of the way and punch out the bearings evenly. Be careful not to damage the bearing spacer, clear Lexan seal spacer, or grease ports inside the shell.



### Bearing Installation:

- Remove and clean the seals. Remove the metal bearing spacer. Do not attempt to remove the clear Lexan seal spacer.
- Reinstall the two black WTB Grease Guard seals (one on each side) with the writing on the inside against the Lexan spacer.
- Reinstall the two white spacers (one on each side) with the gaps facing the Grease Guard ports.

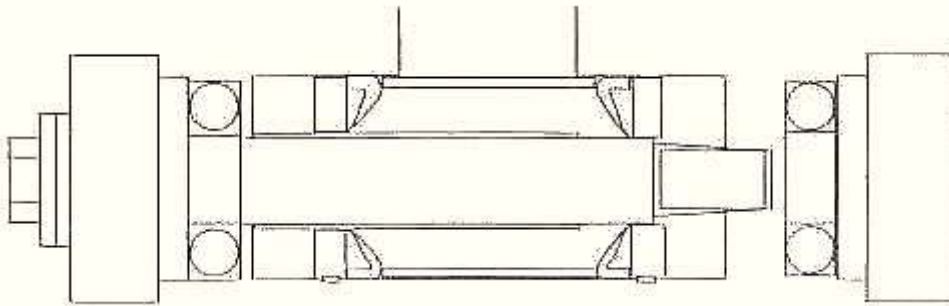
- Using a vise, press the bearing spacer onto the drive side of the spindle, flush with the spindle end. Do not lubricate the spindle or spacer before installation.



- Using the aluminum block, one bearing (open side facing in), and the appropriate shims (if necessary; see table), press the bearing spacer and the bearing the rest of the way onto the spindle. This will center the spacer.



- Place a 3/8-inch washer onto the aluminum block (and shims, if present) and install the 14-mm spindle bolt. Snug the bolt by hand.
- Slide the spindle into the shell from the drive side. Be careful not to bend back the lips of the black grease seals.
- Put the other bearing onto the spindle, open end facing in. Place the aluminum block onto the bearing and press the bearing into the shell by hand to start it into place. Then install shims, if necessary (see table), a 3/8-inch washer, and the spindle bolt.



- With two 14-mm wrenches, hold the drive-side spindle bolt and tighten the left spindle bolt to press the bearings into place.
- Remove the bolts, shims, washers, and blocks.
- Replace the circlips. Grease the bearings.

<b>Bearing Installation Table</b>	
<b>Spindle Length</b>	<b>Block and Shims</b>
113 mm	Aluminum block only
119 mm	Aluminum block 1x0.093" 1x0.020"
122.5 mm	Aluminum block 2x0.093"
125 mm	Aluminum block 2x0.093" 3x0.020"
130 mm	Aluminum block 3x0.093" 3x0.020"

If you require further assistance, [contact us directly](#).

