



# FLOATING HYDRAULIC RACE BEARING

## INSTALLATION INSTRUCTIONS

Thank you for purchasing a Quarter Master release bearing. Please take a few minutes to read through these instructions before you install your new Quarter Master Floating Hydraulic Race Bearing.

### CAUTIONS:

- WEAR EYE PROTECTION!
- DO NOT USE DOT 5 SILICONE BRAKE FLUID. DOT 5 brake fluid will damage the o-rings.
- DO NOT OVER-EXTEND THE PISTON. Maximum travel is .445".
- DO NOT WASH SEALS WITH SOLVENT. Solvent may damage the seals. Use isopropyl alcohol or soap and water.

### MOUNTING:

- The release bearing is designed to operate with a 3/4" master cylinder and will work with Quarter Master, AP, Tilton and Ram 90 series multi-plate clutches.
  - Quarter Master offers a bearing retainer with an .800" support ring built in which will eliminate the need to shim the bolts. Contact your local Quarter Master distributor for more information.
  - The release clearance (with the piston completely compressed) should be between .100" and .125".
  - Bench bleed the master cylinder if possible (see the Bleeding section).
1. Install bearing retainer on the transmission.
  2. Install the ball stud in the bellhousing.
  3. Measure from the top of the bearing retainer bolt head to the transmission's face. This measurement should be .800". If not, shim the bolt heads using the 5/16" or 3/8" washers supplied.
  4. Place the release bearing onto the bearing retainer and measure from the face of the bearing to the transmission face. Record that number as the Overall Bearing Height.
  5. With the clutch installed, bolt the bellhousing to the engine.
  6. Using a straight edge, measure the distance from the diaphragm fingers to the face of the bellhousing. Record that number as Setup Depth. Refer to Figure 1.
  7. Subtract Overall Height from the Setup Depth and record that number as the Initial Clearance.
  8. Subtract the .100" Minimum Clearance from the Initial Clearance and record that number as the Shim Stack Height.
  9. Using a combination of shims to get as close to the Shim Stack Height as possible without going over, place the shims over the bearing and sleeve assembly and push it back into the piston.
  10. Remove the bellhousing and install it on the transmission.
  11. Install the release bearing on the bearing retainer, making sure to place the recess (located on the backside of the main body) over the ball stud.
  12. Install the bellhousing and transmission assembly on the engine.
  13. After installing your release bearing, double check your working clearance and inspect the ball stud to insure it is not keeping the release bearing up off the bolt heads.
  14. Install the 3/4" master cylinder.

### BLEEDING:

- Use either DOT 3 or DOT 4 compatible brake fluid.
  - Make sure that the master cylinder reservoir remains full of brake fluid during the bleeding operation.
  - A typical racing master cylinder stroke is 1.0".
1. Attach hydraulic lines.
  2. Fill the reservoir with brake fluid.
  3. Bleed the master cylinder and the release bearing to ensure no air is in the lines.

**PEDAL STOP:**

- Install a pedal stop to prevent over-stroking the clutch.
  - The best place for a pedal stop is at the pedal face.
1. Install a rigid pedal stop to allow near full stroke of the pedal.
  2. Slowly apply pressure to the pedal while applying a torque to the clutch, typically by trying to rotate the driveshaft.
  3. Set the pedal stop near the point where the release is felt.
  4. Adjust the pedal stop to allow approximately 1/4" more of pedal travel at the pedal face past the initial release point.

**MAINTENANCE:**

1. Check your working clearance and adjust as necessary. As the clutch wears, you may need to remove shims to maintain proper bearing-to-spring clearance.

**REPLACEMENT PARTS:**

- Refer to Table 1 for replacement piston and bearing part numbers.
- Seal Rebuild Kit is Q.M.I. P/N 710101.

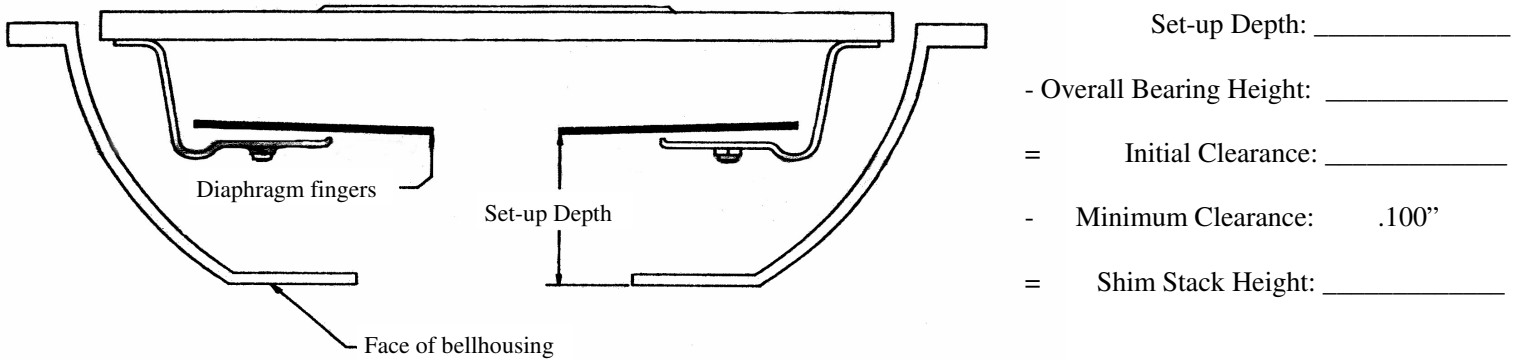


Figure 1: Set-up Depth Measurement

Table 1: Piston and Bearing Dimensions

Part Number Assy / Piston & Brg	Tube & Bearing Length (Typical)	Overall Bearing Height*	Dimension -A-	Dimension -B- Pivot Diameter
710100 / 710103	1.87"	3.035"	2.235"	2.000"
710200 / 710104	2.01"	3.135"	2.335"	1.750"
710300 / 710106	2.27"	3.035"	2.235"	2.000"
710400 / 710107	2.41"	3.135"	2.335"	1.750"

\* Assuming .800" bolt head to transmission face measurement.

Table 2: Typical Release Travel at Bearing

Quarter Master Clutches	Bearing Travel
4.5" Clutches	.120"
5.5" Clutches	.150"
7.25" Clutches	.140"
8.5" Clutches	.180"

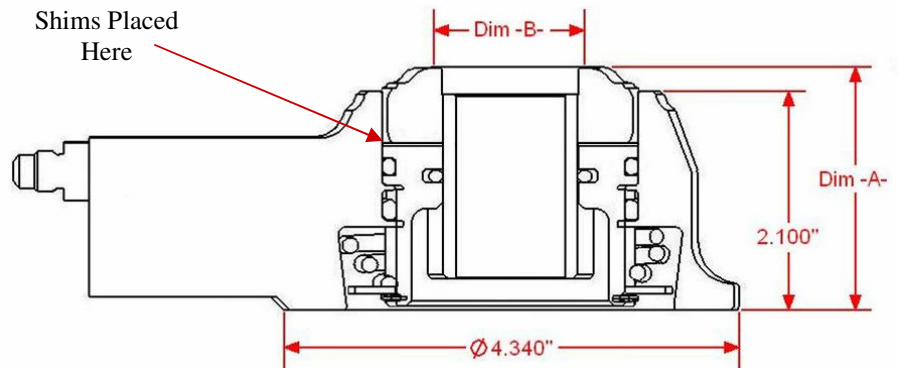


Figure 2: Side view of Race Bearing Assembly