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STAINLESS STEEL MOPAR SHAFT ROCKER SYSTEM INSTALLATION

<i>COMPONENTS</i>	<i>QTY</i>
ROCKER ARMS – 17-4 STAINLESS STEEL WITH SILICONE BRONZE BUSHINGS	16
CHROMOLY HARDENED SHAFTS	2
7/16”-20 CUP END ADJUSTERS FOR 5/16” BALL-END PUSHRODS	16
7/16”-20 12PT VALVE LASH LOCK NUTS	16
3/8” HOLD DOWN STUDS, WASHERS & 12 PT FLANGE NUTS (BIG BLOCK): 6 SHORT, 4 LONG	10
5/16” HOLD DOWN STUDS, WASHERS & 12 PT FLANGE NUTS (SMALL BLOCK): 10 STAND-ARD	10
STEEL ROCKER ARM SHAFT SPACERS	8
SHIM KIT (16 EACH – 0.015” & 0.030” THICK)	32
WIDE SHAFT HOLD DOWNS	4
NARROW SHAFT HOLD DOWNS	6
PUSHROD LENGTH CHECKERS, BALL-END PUSHRODS	2
PRW – CMD EXTREME PRESSURE LUBE #3	1
PRW BLUE THREADLOCKER	1

TOOL REQUIREMENTS:

3/8” drive ratchet handle – SAE sockets
SAE Set of Hex Keys (Allen wrenches)
3/8” drive 12-pt socket set & Flat Blade Screwdriver
7/16” 12-pt Open/closed box end wrench

3/8” Thread chaser tool
Disposable aluminum baking pan
5W-30W lubricating oil
Torque wrench

PRW SHAFT ROCKER ARM SYSTEM PREPARATION:

- 1) Confirm that all parts are included by comparing to the parts list.
- 2) Make certain that you have all the tools necessary to complete the project.
- 3) Assembly lube and/or lubricating oil should be readily available for installation.

QUICK TIPS:

- All pushrods in a set do not wear evenly or uniformly. Over time each will wear in a unique fashion as it “mates” with the individual rocker arm that it is paired with. Consequently, old pushrods should be replaced when new rocker arms are installed.
- Make sure rocker arms and other components are well lubricated. Proper lubrication of all parts can help prevent premature wear and/or permanent damage. Extreme Pressure has been included for that purpose.
- Check for any interference between rockers and valve covers.
- Always use hardened shafts. Stock or unhardened shafts will result in premature wear and rocker arm failure.
- Make sure oil holes on shafts are facing DOWN TOWARD the valve springs.

INSTALLATION:

Step 1: After removing the rockers and other components from the package thoroughly wash each piece, and then blow dry. If the shafts are fitted with removable threaded hex plugs, remove and confirm there are no machining chads or other debris present. Reinstall the plugs when finished, and torque to 18-20 lbs ft.

Step 2: Totally submerge the rockers in engine oil for approximately 10 minutes then “tamp” dry. Apply assembly lube to the rocker arm bushing prior to installation to assure added lubrication during startup.

Step 3: Disassemble the old rocker arm assemblies and set aside for reference. When new rocker arm system installation has been completed, dispose of the old rockers properly. Inspect the heads, looking for any damage, included burrs in the shaft mounting holes. It would be advisable to use the 3/8” thread chaser tool to clean the threads in each hole. Guard against any carbon or steel chards from falling into the lifter valley or crankcase that may cause damage to engine bearings or other moving components.

Step 4: Begin assembly by mounting rocker arms, washers and spacers onto the shaft. Install the thick spacers between each pair of intake and exhaust rockers. Thin spacers are installed between the hold down clamp and the adjacent rocker arm.

Test Fit Installation:

Place a large hold down saddle clamp on one of the long hold down studs and insert into the end of the shaft, then install finger tight in the head, then repeat for the other end. Install small hold down clamps on the short hold down studs in the three interior holes and tighten with a flat-blade screwdriver into the head. No need to overtighten.

Be certain to use the thin spacers provided between the rocker arm and clamp and/or to align the roller tip over the valve stem. *Test fit the assembly making certain that there is 0.015” - 0.020” clearance between the hold downs and/or spacers and each rocker arm; assuring that no friction or binding occurs.*

You must check again after final installation and the hold downs are torqued into place. The older OEM MOPAR cylinder heads may require some modification to the hold downs to assure proper alignment.

Using the appropriate size 12-pt socket on the torque wrench, torque each hold-down washer and flange nut to 15 - 17 foot-pounds. Recheck rocker arm side-play to assure there is no friction between the rocker arms and other components.

NOTE: Big block rockers are offset, make sure to place the rockers in the proper order to match with intake and exhaust valves.

NOTE 2: Over the years, various cylinder head designs by Chrysler/Mopar require “shims” to properly locate the rocker arms on the shaft. Shims from .015” and larger may be needed. Shims are included in the kit to be used for this purpose.

NOTE 3: When installing aftermarket roller lifters, the increased height of the lifter may cause geometry issues. Valve stem installed height may combine to create unusual pushrod angles that must be compensated with 210 pushrod end to avoid interference with the rocker arm adjuster cup at full lift. Geometry must also be checked to assure that pushrods do not come in contact with any stationary engine parts during rocker arm articulation. This is particularly important when using OEM cylinder heads and/or larger diameter pushrods.

Step 5: Install the pushrods. Make sure the pushrod is properly seated in lifter.

Step 6: Using the hex key or hex driver, and 7/16” 12-pt Open/closed box end wrench, loosen the pushrod adjusters. Position the rocker assembly onto the head, and hand thread the 3/8” 12-point bolts into the head. Using a 9/16” 12-pt socket on the 3/8” drive ratchet handle, tighten the hold down bolts evenly.

Step 7: Using hex key wrench, turn all the pushrod adjusters down until the ball end enters and sets on the pushrod cup. Do not tighten beyond this point!!

Step 8: Repeat this procedure for the other cylinder bank.

Step 9: Hand turn the crank clockwise (facing the front of the engine) until the #1 cylinder exhaust valve starts to open.

Step 10: Now, set the intake valve by tightening down the pushrod adjuster with the hex key wrench until there is no end-play in the pushrod. This will bring you to zero lash. Tighten the adjuster one more full turn, then tighten the lock nut using the 7/16” 12-pt Open/closed box end wrench, holding the adjuster from turning with the allen wrench.

Step 11: Next, hand turn the crank clockwise until the intake pushrod has reached maximum lift and is between one half and two-thirds of the way down.

Step 12: Then adjust the exhaust valve using the same procedure as described in step #10 for the intake valve.

Step 13: MECHANICAL LIFTERS - When using mechanical lifters, use the same procedure, but instead of zero lash, use the clearance specified by your cam manufacturer’s instruction sheet.

Step 14: Before installing valve covers, check for proper clearance between the rocker arms and the valve covers. Prime the rocker system using a drill and related oil pump driver shaft. Alternatively, you may wish to pour limited amounts of engine oil over rocker arms to insure proper lubrication on initial startup. Finally, replace the valve covers on the heads.

TORQUE SPECIFICATIONS

5/16"-24 12PT SHAFT HOLD DOWN FLANGE NUTS	26-30 FT-LBS WITH OIL
3/8"-24 12PT SHAFT HOLD DOWN FLANGE NUTS	31-35 FT-LBS WITH OIL
7/16"-20 12PT VALVE LASH LOCK NUTS	14-16 FT-LBS WITH OIL

WARNING:

1. Do not re-tap rocker body adjuster hole. Doing so will damage the rocker arm beyond repair!
2. Do not over-tighten adjuster nuts or modify adjuster counterbore!
3. Do not degrease rockers and/or run without proper lubrication.
4. Do not run valve lash adjusting screw out past two threads from seated position!
5. Do not allow pushrods to come in contact with cylinder head!
6. Do not run with rough or damaged pushrod tips!
7. Do not loosen shaft bolts under spring loads!

Limited Warranty

PRW warrants that all of its products are free from defects in material and workmanship, and against excessive wear for a period of (1) one year from the date of purchase. This limited warranty shall cover the original purchaser.

PRW's obligation under this warranty is limited to the repair or replacement of its product. To make a warranty claim, the part must be returned within (1) one year of purchase to the address listed below, freight prepaid. Items covered under warranty will be returned to you freight collect.

It is the responsibility of the installer to ensure that all of the components are correct before installation. PRW assumes no liability for any errors relative to tolerances, component selection, or installation.

There is absolutely no warranty on the following:

- i. Any parts used in racing applications, or;
- ii. Any product that has been physically altered, improperly installed or maintained, or;
- iii. Any product used in improper applications, abused, or not used in conjunction with the proper parts.

There are no implied warranties of merchantability or fitness for a particular purpose and no warranties which extend beyond the description of the face hereof.

PRW will not be responsible for incidental and consequential damages, property damage or personal injury damages to the extent permitted by law. Where required by law, implied warranties or merchantability and fitness are limited for a term of (1) one year from the date of original purchase. This warranty may give you specific legal rights. You may also have other legal rights, which vary from state to state.