

KNUCKLEHEAD

Complete Rocker Box and Arm Assembly Guide



Basic front cylinder head component layout



Front cylinder head lower tin formed proper to support brackets with 7/16 hardware.



Initial assembly of Rocker Arms with Shafts. Note the proper use of assembly lube.



Insert Rocker Shaft into Rocker Arm itself.



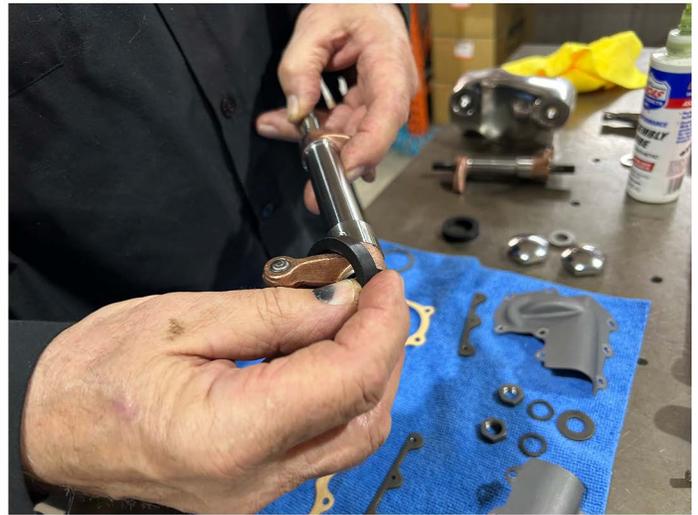
Rocker Arms and shafts ready for installation.



Rubber Seal Ready to Install.



Apply assembly lube to rocker arm journal to inner seal surface.



Next draw said seal over arm onto its respective journal.



View of rubber seal on rocker arm journal with proper assembly lube.



Follow said seal with proper installation of its support washer.



Outer view of Rocker Arm thrust washer with .007 shim installed over its respective lip. Its lip always faces the Rocker Box face inside to inhibit proper oiling.



Rocker Arm ready to install into its respective Rocker Box position.



Rocker Arm shaft is slid back to allow one to turn or angle arm into box.



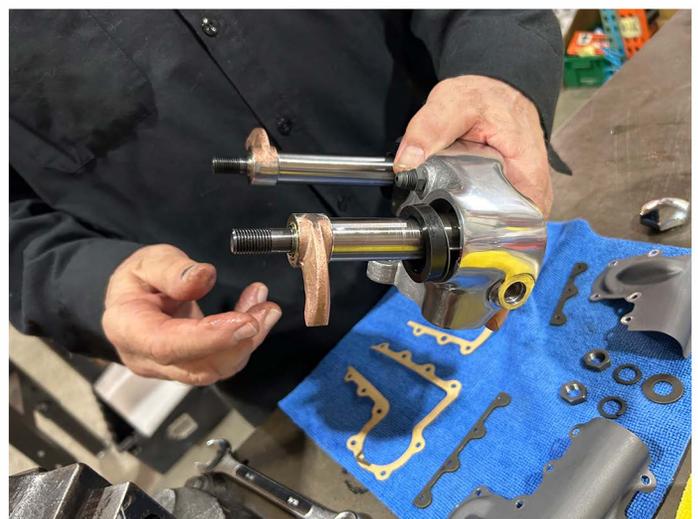
Another view of angle to allow proper installation into rocker box.



Continue installation of front intake Rocker Arm assembly into rocker box.



Again, said Rocker Arm is angled into its rocker box cavity with its respective shims,



Inside view of assembled front Rocker box with respective arms and shafts now ready for cylinder head its self.



Proper cleaning prep of rocker shaft ends with brake clean prior to applying sealant..



Prep each shaft end to receive sealant.



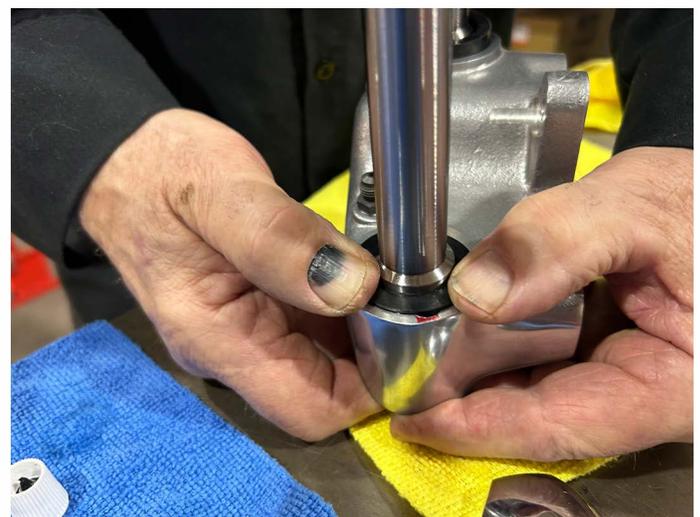
Apply a light film of sealant to left shaft end at cylinder head support bracket area only.



Close up of sealant being applied.



Rocker box assembly ready for seals to be pressed into position.



Hand install each Rocker Arm seal into its rocker box cavity. Apply firm hand pressure to start each seal.



Next apply pressure with a flathead screwdriver.



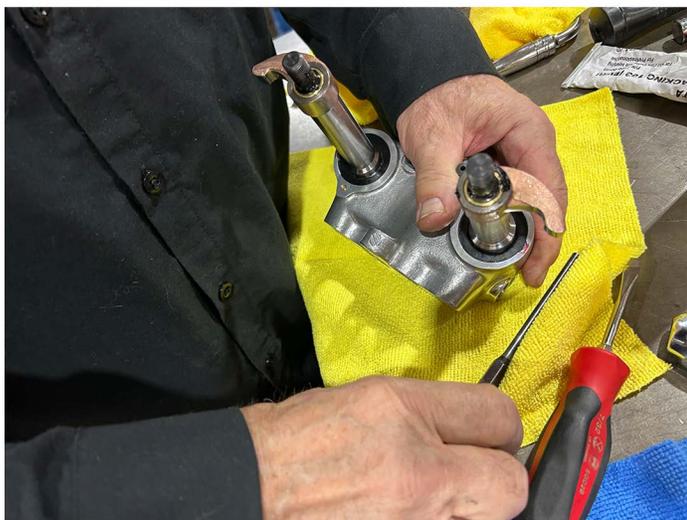
Each seal must be properly seated down against its washer into Rocker Box cavity.



Front exhaust Rocker Arm ready to receive the cylinder head.



The use of a flat drift to apply downward pressure to rubber seal works very well.



Rocker box assembly ready to install onto its respective cylinder head.



With each Rocker Arm turned upward for clearance, slide assembly into their support bracket ears.



Rocker Box assembly going into position. Note sealant on each shaft at lower tin to support ear.



Rocker Box assembly ready to receive each respective shaft hardware.



Front Intake shaft utilizes space in washer with lockwasher due to its long motor mount extension. Note that **ONLY intake shafts require this additional washer. Exhaust shafts only utilize the lock washer.**



Front exhaust shaft lock washer in place.



Front exhaust shaft nut installed with lock washer.



Rocker Box assembly going into position. Note sealant on each shaft at lower tin to support ear.



Rocker Box assembly ready to receive each respective shaft hardware.



Now properly tighten each rocker shaft nut. Front intake shown.



Tighten front exhaust proper!



Top view of assembled rocker arms. Once fitted temporarily remove to properly apply sealant to tin covers.



Prepare a small container to apply sealant with small brush as shown.



Evenly apply sealant to gasket surfaces as shown.

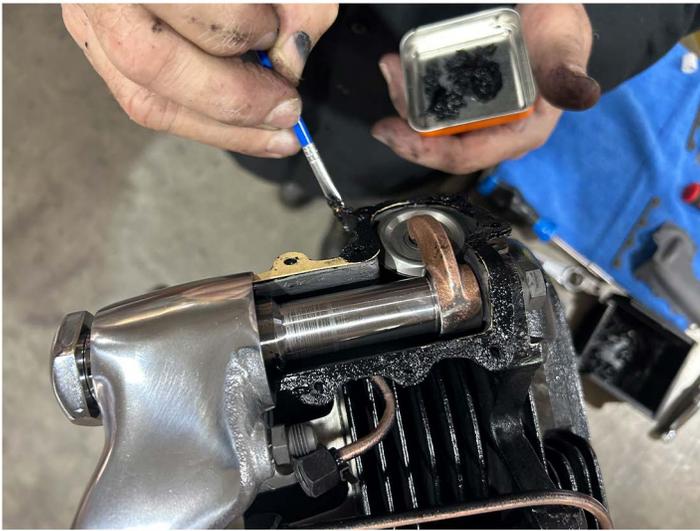


Another view of sealant being applied to lower tins. Note: must apply a light coat to end surfaces which contact rubber seal. Once all gasket surfaces are sealed, install completed rocker box assembly as shown for final time!



Apply paper gaskets to respective lower tin covers as shown.

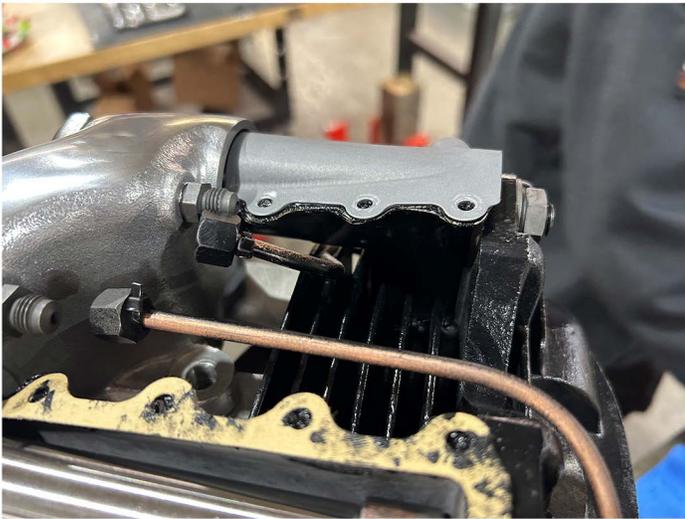
Upper view showing gaskets being placed into position.



Next apply an even coat of sealant to gasket surfaces as shown.



Place upper Rocker Arm tin cover into position as shown.



View of upper tin placed into proper position.



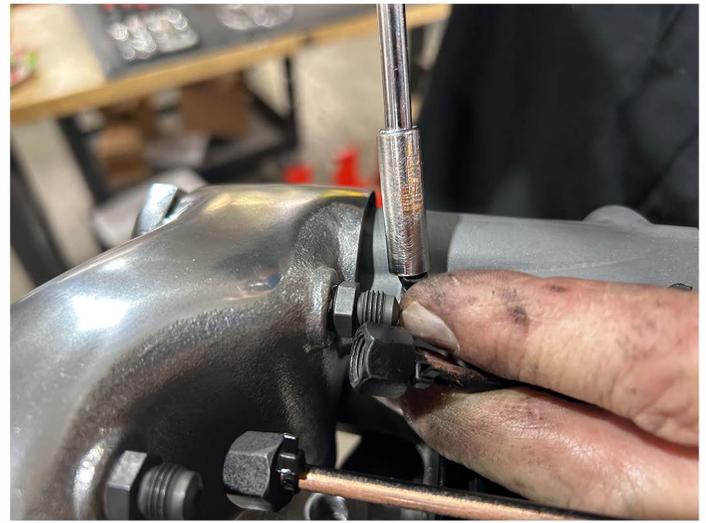
Utilize a leather pick or awl to align align upper and lower covers proper for respective fasteners.



Now seat screws into position as shown.



Draw screws partially down to hold positioning Do not fully tighten at this point.



Slowly feed screws inside to out. Again, do not tighten at this point.



View of outside screws being installed. Once all screws are properly in place tighten them down evenly. After all screws are tightened down, clean all outside surface with cloth and brake clean.



Final Knucklehead assembly phase will involve drawing said rocker boxes and rubber seals into said sealed upper and lower tins. Install rocker nuts as shown. Hand draw each chrome end nut as seen here.

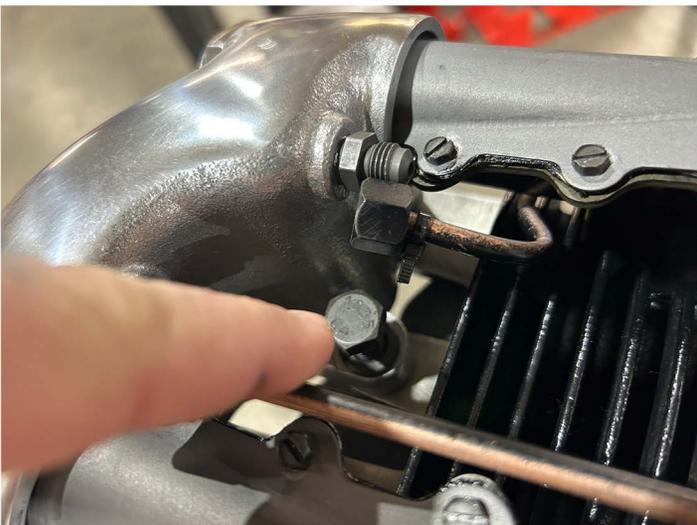


Once chrome end nuts are hand drawn against rocker boxes, prepare to tighten with socket and ratchet for final assembly.



Evenly draw each chrome end nut left to right until able to hand install each rocker box support bolt.

Each support bracket bolt must be hand installed as shown once end nuts are drawn in evenly.



In addition to outside support bolts being hand installed, top inside bolt must be threaded into position proper. Note chrome end nut being drawn in as support bolt is being installed.



Tighten all support bolts and end nuts once they have been hand installed.



Completed head ready for oil line final installation.