

>>> Service Letter

Experimental

Number: L11-01 C
Supersedes Revision B

Date: 12/1/2014

Subject: INSTALLATION OF THE SUPERIOR REMOVABLE STYLE ROLLER LIFTER BODY

Application:

This Service Letter is applicable to XP engines that are using the Superior style roller lifter which is removable without the disassembly of the crankcase.

Compliance:

At any time the Superior removable style roller lifters are installed, serviced, or inspected. *Note that the removable style roller lifter is not necessarily subject to mandatory replacement in the event of a prop strike. Inspect the assemblies as described in this service letter.*

NOTE: *If the removable style roller lifter body is to be retrofitted into an earlier style crankcase, certain modifications to the case must be made to accommodate the removable style roller lifter. See modification drawings on pages 7 and 8.*

WORK INSTRUCTIONS

The New Generation Roller Lifter Assemblies can be installed after cylinders are assembled to the engine

PRE-ASSEMBLY INSPECTION

Ensure that parts supplied as part of the kit are as per the respective packing list or Bill of Materials for the specific part number and configuration called for on the Work Order.

The New Generation Roller Lifter Assemblies can be installed after cylinders are assembled to the engine

Roller Lifter: The following criteria apply to the in-process inspection performed by assembly personnel:

-Free Rotation: The roller is free to move and has no internal binding, rubbing, or Interference.

-Contamination/Corrosion/Foreign Objects: Assembly is free from any contamination, corrosion, foreign objects or debris that would be detrimental to the intended performance.

-Roller Axle Shaft Fit: The roller axle shaft must be a tight fit in the lifter body ears. Ensure there is no movement or looseness of the shaft within the lifter ear mounting.

- New Generation Roller Lifter Assembly:

- o Lifter Internal Bore: Ensure that the bore is clean and free of debris
- o Finish: Inspect step seat inside lifter bore and on hydraulic unit for uniform finish
- o Snap Ring: New Generation Roller Lifter does not use a snap ring and the hydraulic unit (SL78290) is removable

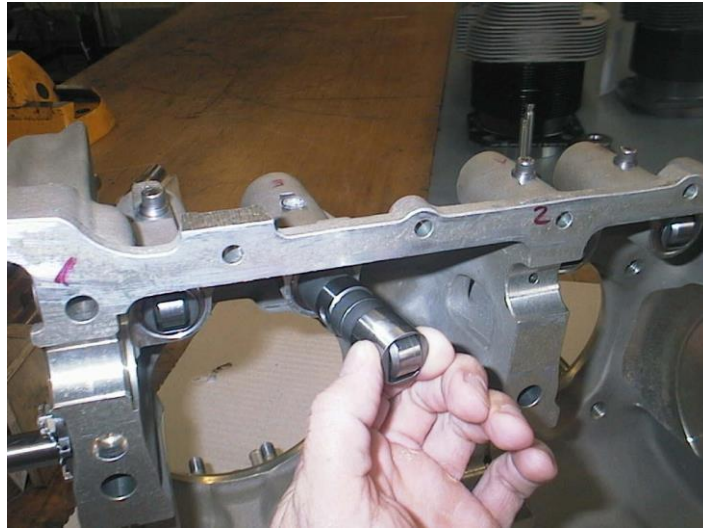


Figure 1

Crankcase: Areas to be inspected for purposes of roller lifter assembly are as follows:

Ensure that there is no contamination within the lifter bore on the crankcase. This verification is to be performed on all bores.

The threads in the crankcase where the cylindrical guide bolts are installed are to be clean and free from any debris or contamination. Any debris or contamination is to be removed and the threads cleaned prior to guide bolt installation.

Ensure that the cylindrical guide bolts and crankcase have compatible threading. Prior to testing compatibility, clean both sets of threads with a quick drying solvent.

ASSEMBLY

Insert the roller lifter into the bore and ensure a continuous and unobstructed travel throughout the length of the bore. In the case of an interference or obstruction due to a burr/impact deformation, remove with fine grit sandpaper, Scotchbrite® or a sharp deburring tool. Ensure minimal metal removal.

➔ **Note:** *The New Generation Roller Lifters can be installed later after the crankcase halves and the cylinders have been assembled together.*

Apply a thin film of pre-lube oil to the roller and body of the roller lifters. Additionally, apply a thin film to the bore.

➔ **Note:** *While applying pre lube to the area, pay close attention to avoid pre-lube from contaminating threads within which the cylindrical guide bolts are to be installed.*

Prior to assembly of the roller lifter and cylindrical guide bolts, ensure that the channel and threaded hole line up as shown in Figure 2

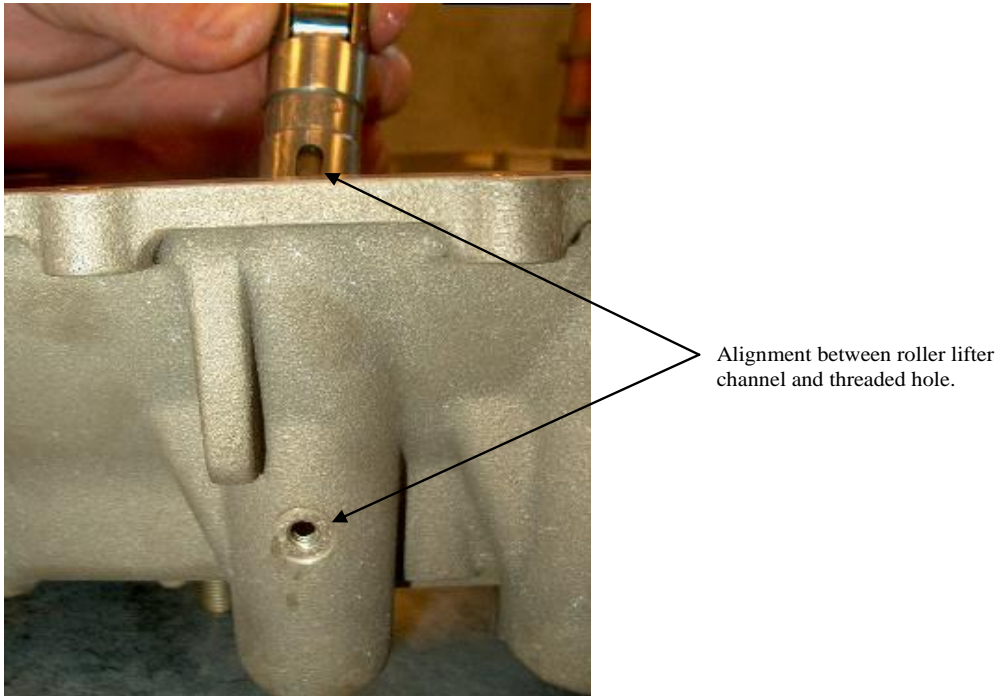


Figure 2

Assemble the cylindrical guide bolts and spacers prior to application of Loctite® as shown in figure 3.

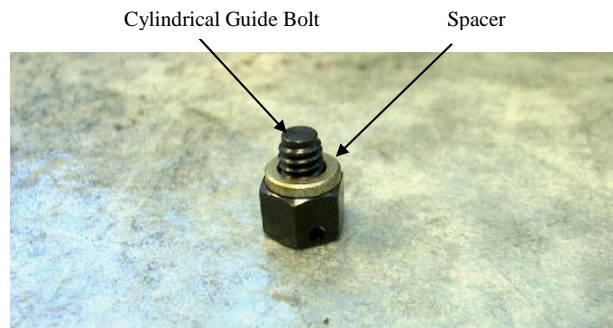


Figure 3

Apply Loctite® 271 to the threads ensuring that the fluid enters threads, but not so much as to have the fluid flow from the bolt.

CAUTION: When using Loctite® 271, only apply a thin film to about 3 or 4 threads, depending on thread size and the threaded length. If any drops collect on the thread or if Loctite® fluid escapes from the threaded connection, this is an indication that it has been used too generously. This should be avoided.

Insert cylindrical guide bolts into the crankcase one at a time and tighten to 50 inch pounds torque.

Post Assembly Inspection/Verification and safety:

Move the roller lifters throughout their travel and ensure that there is no binding, rubbing, or obstructions.

Any rotational movement by the roller lifters is not allowed.

Place camshaft and rotate it within its specified location and ensure that there is no contact between the roller lifters and camshaft lobes.

Safety wire cylindrical guide bolts in pairs as shown in Figure 4.

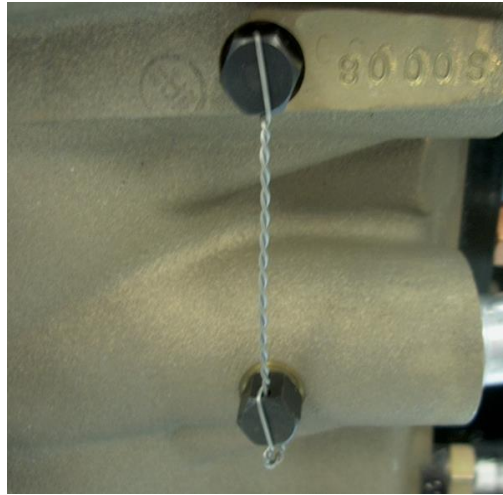
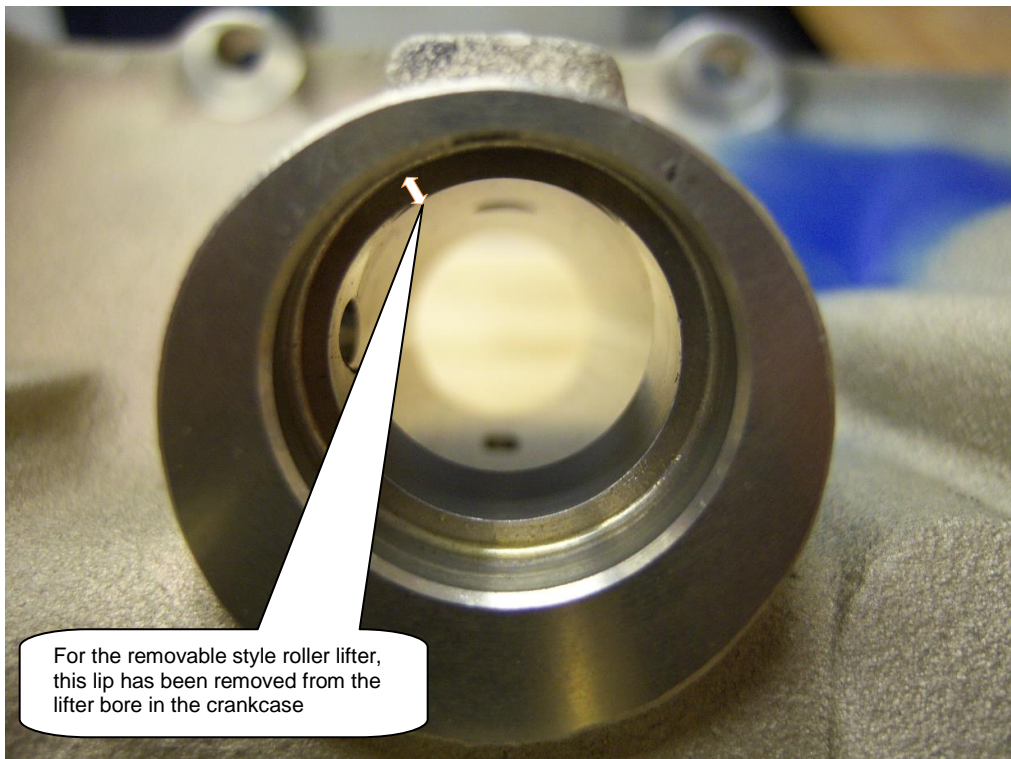
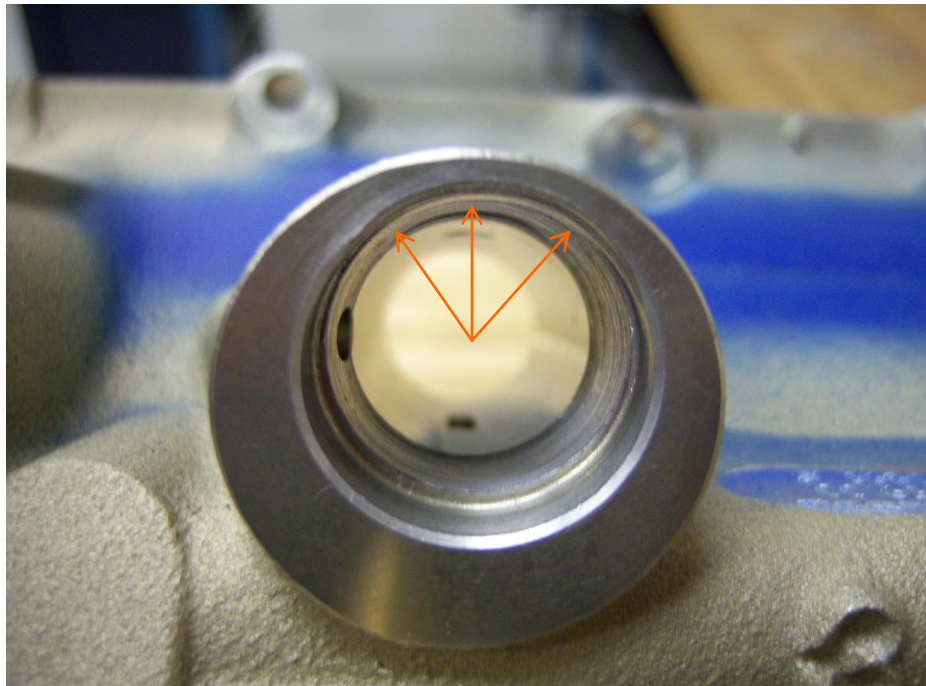


Figure 4

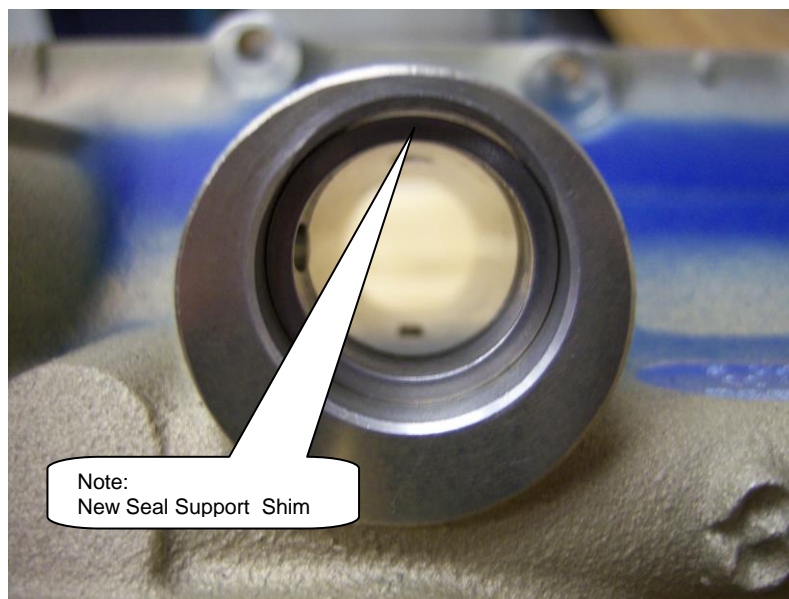


Standard Lifter Bore



Modified Lifter Bore

The lifter bore has been extended until it exits the crankcase.
This removed part of the shroud seal support in the upper third of the hole.

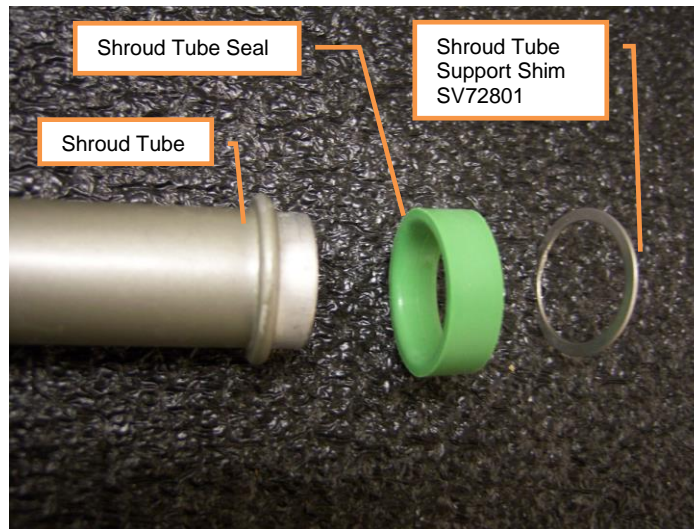


Modified Bore with New Seal Support Shim Installed

The seal hole will be slightly out of round at the top to provide clearance to remove the lifter body without disassembling the engine, but the shroud tube pressure on the seal and support shim will expand the seal out to provide sealing of this area.



Installation of Standard shroud tube and seal



Installation of shroud tube, seal and New Seal Support Shim in Superior crankcases Modified for the Superior Removable Roller Lifters

Instructions for installing the shroud tube seals on engines modified for the Superior removable Roller Lifter bodies:

- 1-Install Seal Support Shim part # SV72801 in the crankcase lifter bore shroud tube seal hole.
- 2-Install shroud tube seal.
- 3-Install shroud tube.
- 4-Note: The Dry Clearance between the rocker foot and the valve stem tip for the Superior removable style roller lifter style engine is .028 to .080.

Table of Limits for XP Engine Specific Roller Lifter Features

Tappet Clearance for XP Engine Roller Lifter

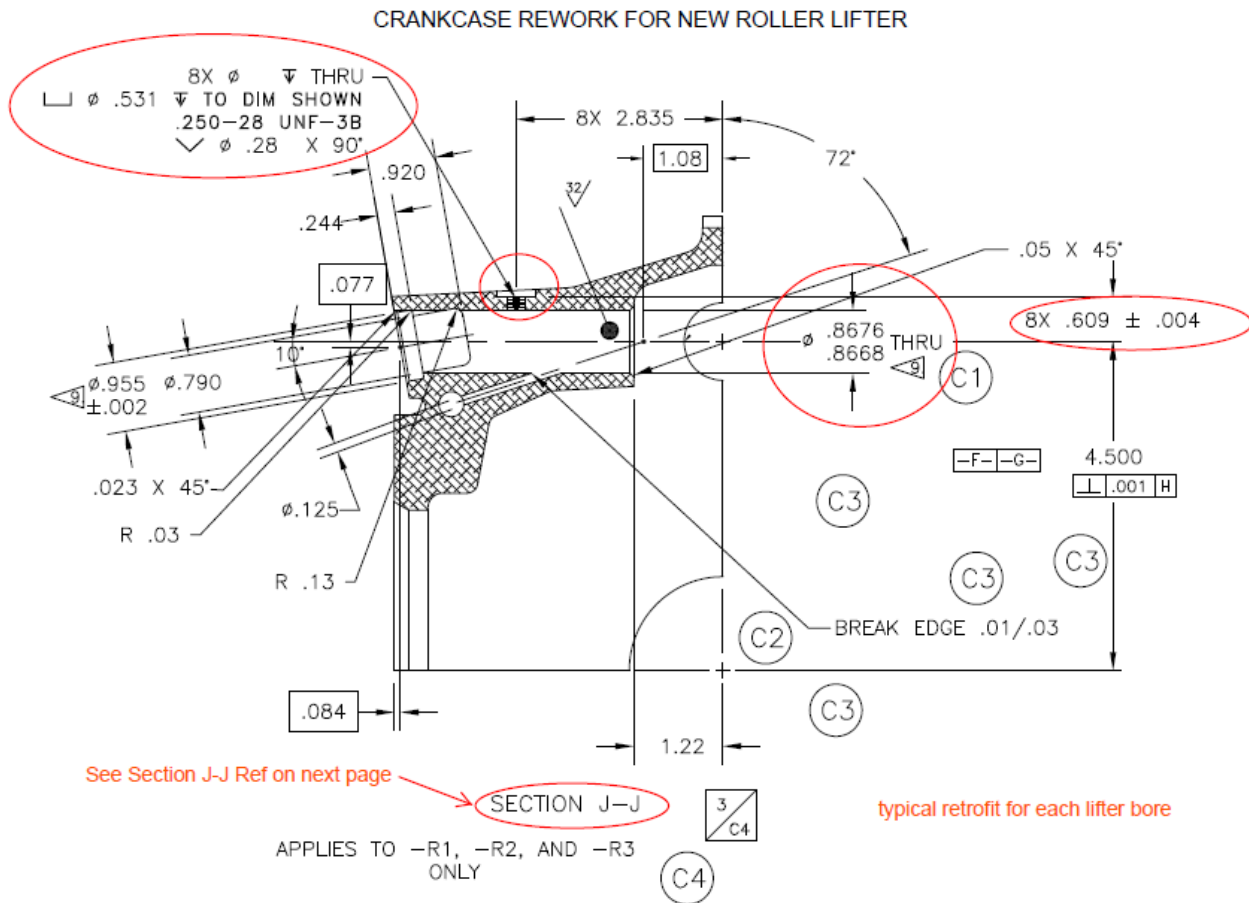
The dry clearance between the rocker foot and the valve stem tip is .028 to .080 (inch).

Torque Limit for XP Engine Roller Lifter Guide Alignment (Set) Screw in top of crankcase
Apply Loctite 271 to the screw and torque to 50 inch-pounds

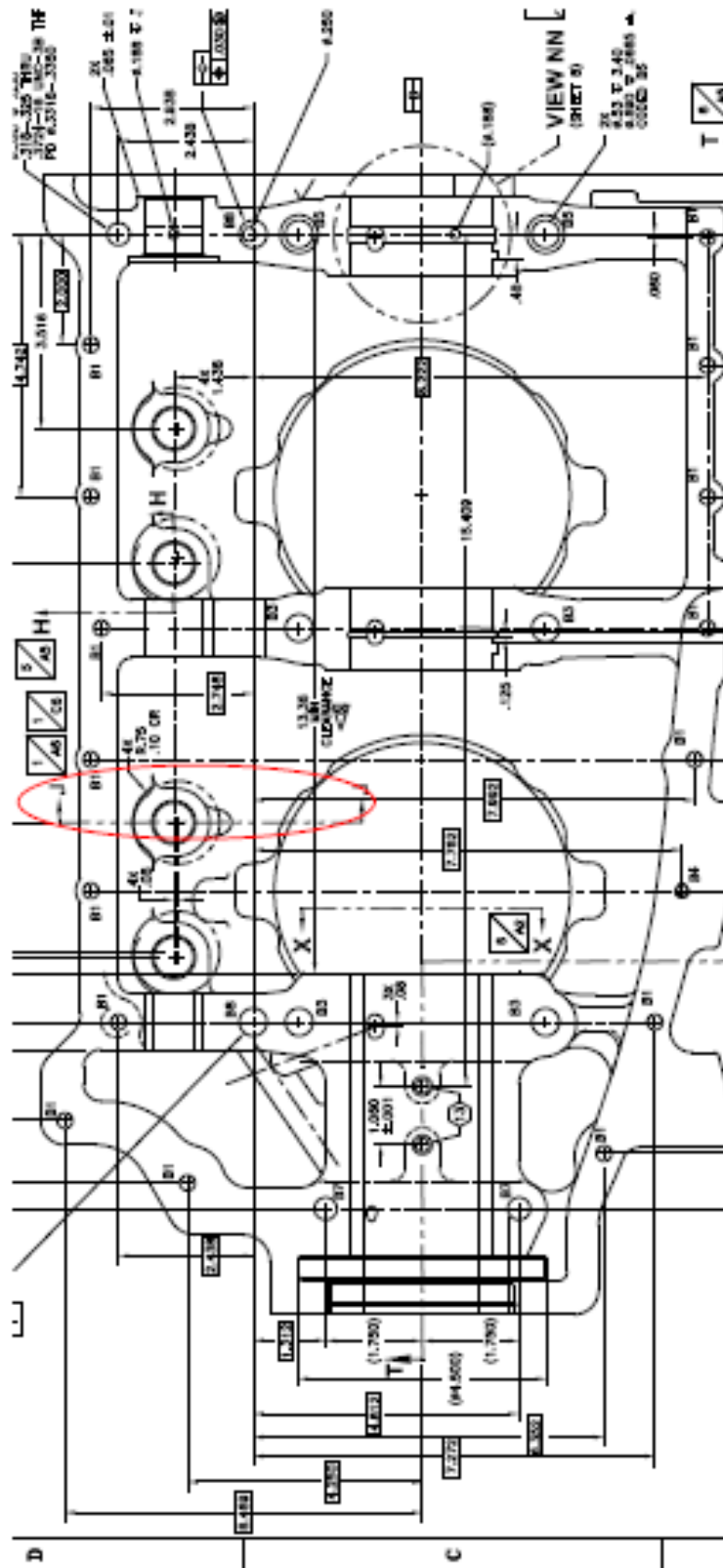
Refer to Superior Service Letters L08-01 for additional information on original non-removable style maintenance.

Retrofitting an older style crankcase to accommodate the removable style roller lifter body

The removable style roller lifter's body OD is larger than the older style bodies. Modifications to each crankcase half are required per the sketches below:



Continued on next page



**Inside of Crankease Half for Reference of J-J Section
(to be performed on both halves)**