

DATE: April 9, 2015

Service Bulletin No. 619
Engineering Aspects are
FAA Approved

SUBJECT: Hardness Check for Rocker Arm, Part Number LW-15014

MODELS AFFECTED: O-320-H2AD, O, LO, TO, LTO-360-E1A6D

TIME OF COMPLIANCE: Refer to Table 1

NOTICE: Incomplete review of all the information in this document can cause errors. Read the entire Service Bulletin to make sure you have a complete understanding of the requirements.

This Service Bulletin is in response to a single field report of one excessively worn rocker arm found during an investigation of reported engine roughness. Results of material analysis at Lycoming Engines show that the rocker arm had not been case hardened, as required, during manufacturing.

As a precaution, a hardness check using the procedure herein is to be completed per the schedule in Table 1 on all rocker arms P/N LW-15014, received or installed in an affected model engine that could have shipped from the Lycoming factory between December 21, 2012 and March 13, 2015

Table 1
Compliance Schedule to Complete Hardness Check on Rocker Arms P/N LW-15014

Time of Compliance:	Immediately on all rocker arms P/N LW-15014 in spares inventory.	Next scheduled maintenance event, not to exceed 50 hours on rocker arms installed on:
		<ul style="list-style-type: none"> • Engines identified in Table 2 with less than 300 hours time in service • Affected engine models with less than 300 hours time in service since installation of rocker arms that could have shipped from the Lycoming factory between December 21, 2012 and March 13, 2015



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Table 2
List of Affected Engine Serial Numbers

Engine Model	Engine S/N	Engine Model	Engine S/N	Engine Model	Engine S/N
O-320-H2AD	L-1737-76T	O-320-H2AD	L-2343-76T	O-320-H2AD	L-6355-76T
O-320-H2AD	L-1830-76T	O-320-H2AD	L-2557-76T	O-320-H2AD	L-6498-76T
O-320-H2AD	L-2230-76T	O-320-H2AD	L-2690-76T	O-320-H2AD	L-8473-76T
O-320-H2AD	L-2254-76T	O-320-H2AD	L-2914-76T	O-320-H2AD	L-8474-76T
O-320-H2AD	L-2314-76T	O-320-H2AD	L-3832-76T	O-320-H2AD	RL-442-76T
O-320-H2AD	RL-1036-76T	O-320-H2AD	RL-4777-76T	O-360-E1A6D	RL-534-77T
O-320-H2AD	RL-2071-76T	O-320-H2AD	RL-5182-76T	LO-360-E1A6D	L-104-72T
O-320-H2AD	RL-2269-76T	O-320-H2AD	RL-6110-76T	LO-360- E1A6D	L-375-72T
O-320-H2AD	RL-2484-76T	O-320-H2AD	RL-6660-76T	LO-360- E1A6D	L-404-72T
O-320-H2AD	RL-2519-76T	O-320-H2AD	RL-7649-76T	LO-360- E1A6D	RL-167-72T
O-320-H2AD	RL-2597-76T	O-360-E1A6D	L-327-77T	LO-360- E1A6D	RL-537-72T
O-320-H2AD	RL-2612-76T	O-360-E1A6D	L-414-77T	LTO-360- E1A6D	L-273-74T
O-320-H2AD	RL-3902-76T	O-360-E1A6D	RL-294-77T	LTO-360- E1A6D	L-285-74T
O-320-H2AD	RL-4149-76T	O-360-E1A6D	RL-326-77T	TO-360- E1A6D	L-162-73T
O-320-H2AD	RL-4418-76T	O-360-E1A6D	RL-415-77T		

Required Action

Complete the “Hardness Check” on any rocker arm, P/N LW-15014, identified in Table 1.

Hardness Check

This check can be completed on each uninstalled rocker arm individually or with the rocker arm installed in the engine.

For uninstalled rocker arms:

1. Hold the rocker arm securely.
2. With firm hand pressure, apply the flat single bastard cut, fine file and move it across the edge of the rocker arm as shown in Figure 1.
3. During filing if the rocker arm does not feel like filing aluminum or soft metal and there are no shavings after 10 passes with the file, the rocker arm is hardened.



Figure 1
Apply File Across Edge of a Rocker Arm

NOTICE: If the rocker arm is not hardened, it will have a feel similar to filing aluminum or any soft metal. File shavings are also an indication of a non-compliant rocker arm.

4. If there are file shavings, remove the rocker arm from the spares inventory and contact Lycoming Field Service by phone at 570-327-7222 or 877-839-7878.

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For rockers arms installed in the engine:

1. Disconnect power to the engine.
2. Make sure the engine is cool to the touch.
3. Remove the rocker box cover (Figure 2) and gasket from the cylinder head. Discard the gasket.
4. Take precautions to collect any metal filings that could come from a non-hardened rocker arm.
5. Clean the exposed surface on the rocker arm with Scotch-Brite™ or equivalent and a clean shop rag.

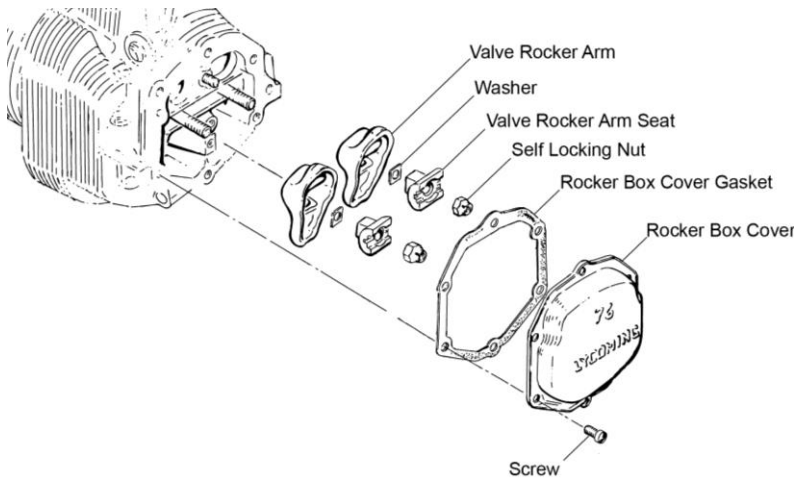


Figure 2
Rocker Arms



Figure 3
Apply File Across Edge of a
Rocker Arm Installed on the Engine

6. With firm hand pressure, apply the flat single bastard cut, fine file and move it across the edge of the rocker arm as shown in Figure 3.
7. With each pass of the file in the same location on the rocker arm, look in and around the rocker arm for any file shavings from the rocker arm. Collect and remove any metal shavings. Complete this step nine more times and collect any file shavings.
8. During filing, if the rocker arm does not feel like filing aluminum or soft metal and there are no shavings after 10 passes with the file, the rocker arm is compliant:
 - A. Install the rocker box cover with a new gasket on the cylinder head.
 - B. Torque the rocker box cover screws to 50 in.-lb. (6 Nm).
 - C. Record the Hardness Check results for each rocker arm in the engine logbook.
9. If there are file shavings, remove the rocker arm from the engine and contact Lycoming Field Service by phone at 570-327-7222 or 877-839-7878.
10. Replace the non-compliant rocker arm with a compliant rocker arm per instructions in the applicable Lycoming Overhaul Manual or Operator's Manual.

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