



Service Bulletin

FAA-PMA Replacement Parts

Title: **Cylinder Barrel Fillet Inspection**

SB No.: **10-11**

Page: 1 of 4

Technical portions are FAA DER approved by Airmotive Engineering Corp.



Issued: 2-18-11

Revision: 2

1.0 SCOPE AND APPLICATION:

Engine Components, Inc. (ECi[®]) has received a report of one cylinder barrel failure that resulted from a sharp fillet in the nut seat of a small production batch of AEC654966 (Class 73) cylinders., which are FAA PMA replacement cylinders for installation on Teledyne Continental Motors (TCM) GTSIO-520 and IO-550 engines identified in the chart below. There are potentially 48 cylinders in this production lot that may exhibit this defect.

Cylinder Class	Engine Model
73.0	TSIO-520-BE and GTSIO-520-F, K, L, M & N
73.0A	IO-550-G and IOF-550-G
73.0B	TSIO-550-A, B, C & E

2.0 AFFECTED SERIAL NUMBERS:

The production lot that is potentially affected by this defect were produced in 2004, and are:

Cylinder Assembly S/Ns
21721-1 thru -30
21923-1 thru -18

3.0 TIME OF COMPLIANCE:

Inspection should be performed within 50 hours of receipt of this bulletin.

4.0 BACKGROUND:

The original design data requires that the minimum fillet be .040. Due to improper installation of the cutting tool in production, the possibility exists that as many as 15 cylinders have similar fillets. To ensure continued operational safety, ECi has elected to require an inspection of two production lots that may be potentially affected with the same defect.

This inspection requires that each cylinder be inspected with a fillet radius gage at the nut seat. This inspection can be performed in situ while the cylinder is installed on the engine and should require removing the upper cowl to access the engines. There is some access difficulty for inspection of cylinders Number 3 and 4 so a radius gage with an



extension is shown in Photograph 3 and in use in Photograph 4. The radius gage and extension are provided by Engine Components, Inc.

5.0 INSPECTION PROCESS:

1. Remove the engine upper cowl to be able to observe the upper nut seats on the cylinder barrel flange.
2. If the cylinder documentation is unavailable, the cylinder casting number can be verified as AEC654960 as cast in the cylinder in the intake rocker recess.
3. With a mirror confirm and record the serial numbers of the cylinder assembly. The cylinder serial number is located on the side of the intake port as shown in Figure 1 below.

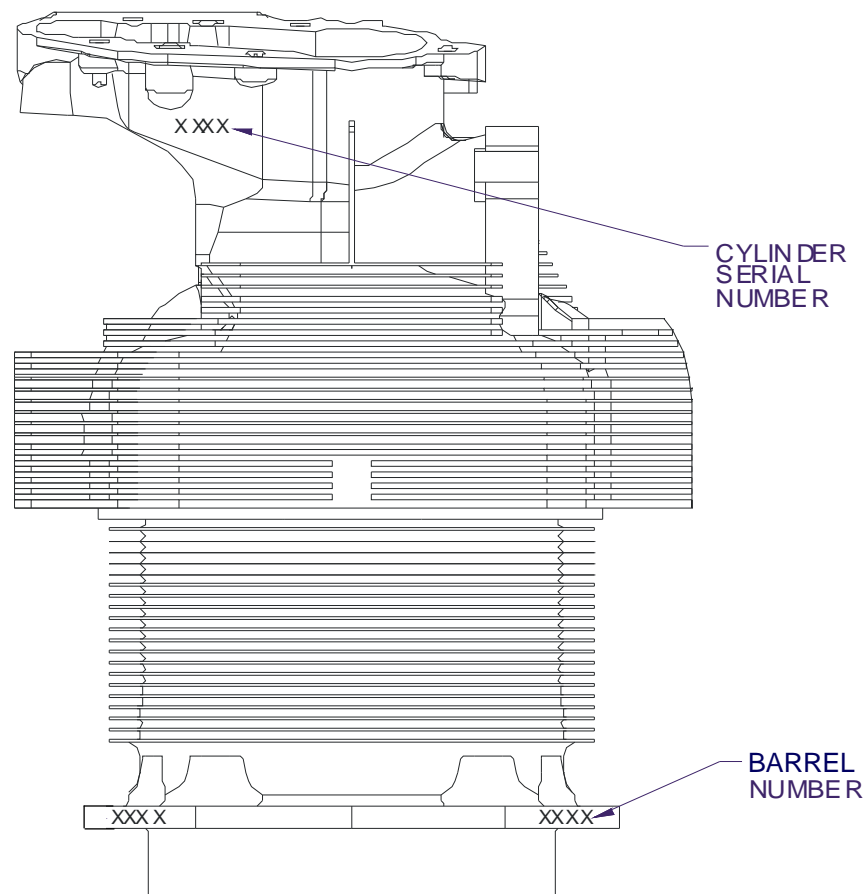


Figure 1: Location of markings for cylinder assemblies affected by this Service Bulletin

4. If the serial number is in the range identified in section 2.0, proceed with the inspection below. If the serial number is outside of this range, take no further action.



5. Using the .040 radius gage provided, visually inspect to ensure the fillet is correct as shown in Figure 2 and Photographs 2, and 3.
6. This inspection need only be accomplished at one point on the flange as the fillet will be consistent throughout the manufacture of a single barrel. If the fillet is too small, the cylinder must be removed from service. If the fillet radius is at least .040, then no further action is required. Annotate the engine logs that ECi SB 10-11 has been complied with.

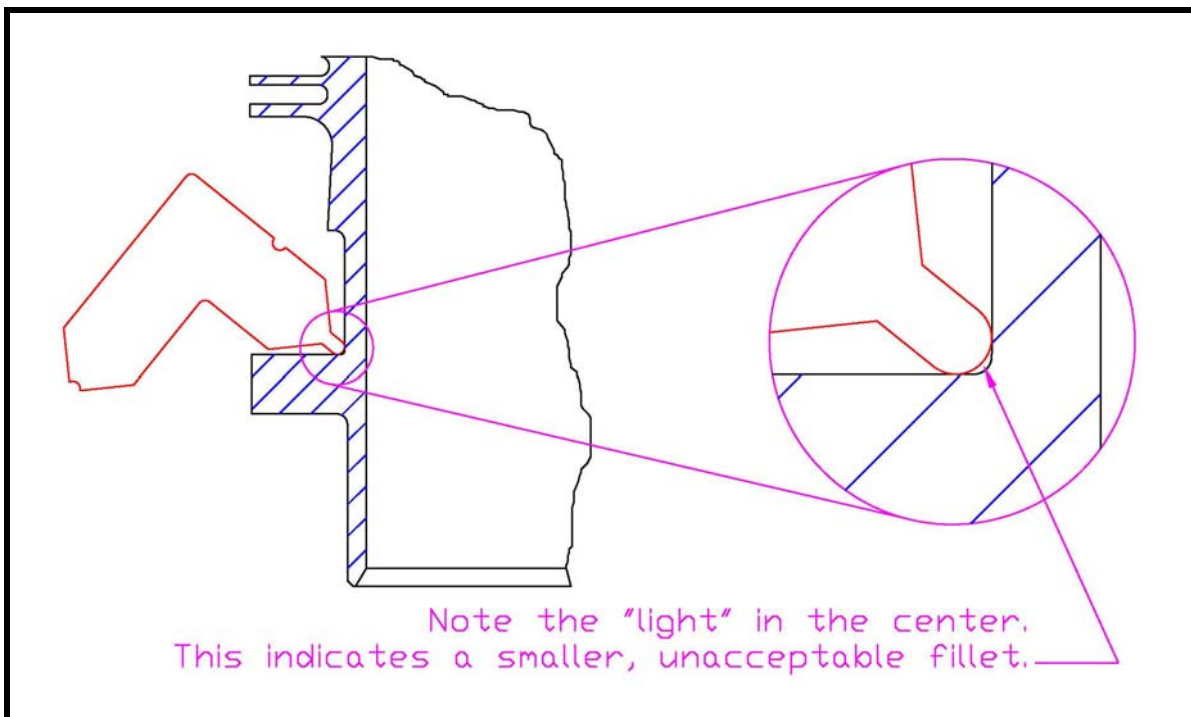


Figure 2: Drawing showing an unacceptable barrel fillet.



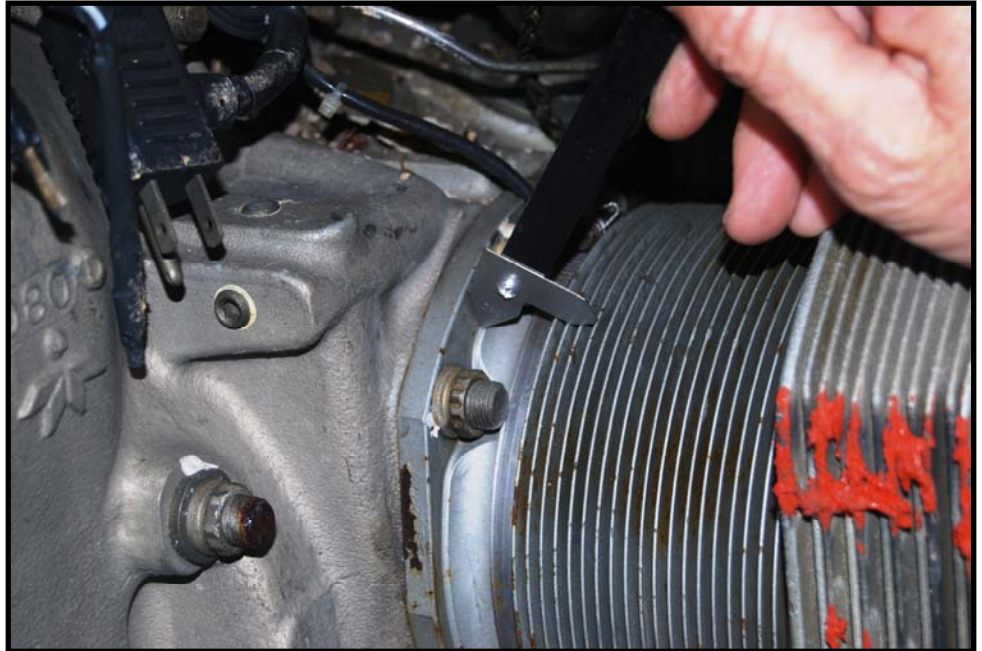
Photograph 1:

Radius Gage with Extension



Photograph 2:

Radius gage attached to an extension to aid in the inspection. This photograph shows an acceptable fillet.



Photograph 3:

Inspection of fillet on cylinder #4. The radius gage extension allows the gage to be positioned for inspection.



7. For those cylinders found to exhibit a fillet less than .040, remove and return to ECi for a replacement cylinder. Please contact ECi Customer Service at 800-ECi-2Fly (800-324-2359) for further information.