

**TELEDYNE CONTINENTAL® AIRCRAFT ENGINE**  
**MANDATORY SERVICE BULLETIN**

**Category 1**  
**MSB09-1A**  
**Technical Portions FAA**  
**Approved**

**The Subject Matter Of This Service Bulletin Is Incorporated  
 In Whole Or In Part In An FAA Issued Airworthiness  
 Directive**

**SUBJECT: CYLINDER REPLACEMENT**

**BACKGROUND:** As of the date of this Bulletin, Teledyne Continental Motors (TCM) has identified the cause of cracks in 35 cylinders manufactured from November 1, 2007 to January 30, 2009. TCM has determined that the EQ3 cylinder head casting tool used in the manufacturing process created an area of reduced thickness that may result in a crack after prolonged operation. This crack manifests itself in the area between the upper sparkplug bore and the fuel injector/primer nozzle bore. The cracked cylinders returned to date have occurred on engines from high use fleet operations with occurrence times ranging from approximately 430 to 1,300 total hours. Replacement cylinders conforming to proven production history will be provided.

While there have been no accidents or incidents related to this cylinder head crack, TCM has elected to replace all cylinder assemblies with the EQ3 head casting. TCM will provide warranty assistance for this purpose through December 31, 2009.


**REVISION A:** TCM has identified a group of approximately 300 cylinders produced in August and September 2006 that were made from the EQ3 tooling. TCM is issuing this Revision A to MSB09-1 to incorporate this information in three key changes to the MSB. They are:

1. Update the Engine Models Affected list to include a more complete model list.
2. Adds Table 1A to list additional engine serial numbers that may be affected by this bulletin.
3. Adds Table 2A to list additional cylinder serial numbers that may be affected by this bulletin.

**PURPOSE:** This Mandatory Service Bulletin (MSB) is issued to require inspection to identify the EQ3 cylinders and to require the further inspection and replacement of those cylinders in order to ensure a timely and orderly retirement of the EQ3 cylinders.

This MSB has been divided into two sections to aid all parties in complying with its requirements.

**Section 1** provides the details on cylinder inspection and replacement:

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**Step 1:** Provides instructions to determine if your cylinders have been manufactured with the EQ3 head.

**Step 2:** Provides cylinder inspection and replacement instructions based on the total hours in service.

**Section 2** contains tables listing engines and cylinders that may have EQ3 heads installed. These engines and cylinders were shipped from November 1, 2007 through January 30, 2009.

In addition, a group of approximately 300 cylinders produced in August and September of 2006 were made from the EQ3 tooling. Suspect engines and cylinders containing that group are provided in Tables 1A and 2A.


**COMPLIANCE:** Identify all potentially affected cylinders, listed in Tables 1, 1A, 2, and 2A, within the next twenty (20) flight hours but in no case later than April 30, 2009. If any cylinder has the EQ3 head, notify TCM to schedule a replacement. All EQ3 cylinders must be replaced no later than December 31, 2009.

For cylinders with 400 hours or more total time in operation, Step 2 (Cylinder Inspection Instructions) must also be completed within twenty (20) hours of operation or by April 30, 2009, whichever is earlier, and every fifty (50) hours of operation thereafter until cylinder replacement.

Tables 1, 1A, 2, and 2A are believed to contain the cylinders produced by the EQ3 tooling. However, to assure that all EQ3 cylinders have been found, any engine or cylinder that has been purchased from TCM since August, 2006, for an engine model listed in MODELS AFFECTED, should be inspected even if not listed in Tables 1, 1A, 2, or 2A. The inspection should take place no later than the next maintenance event such as an oil change, annual or 100 hour inspection, but in time for replacement for all EQ3 cylinders no later than December 31, 2009.

**WARNING**

IF A CRACK IS PRESENT THE CYLINDER MUST BE REPLACED IMMEDIATELY. TO SUPPORT REPLACEMENT AT AN AUTHORIZED CENTER, A REPOSITIONING FLIGHT OF NOT TO EXCEED FIVE (5) HOURS IS AUTHORIZED IF NO FUEL OR COMBUSTION STAINING IS FOUND AT THE SUBJECT LOCATION. IF SUCH INDICATIONS ARE FOUND, CONTACT TCM BEFORE FURTHER FLIGHT.

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**MODELS AFFECTED:**

O470-G, K, L, R, S, M, U; IO470-C, D, E, F, H, L, M, N, S, U, V, VO; TSIO470-B, C, D; IO520-A, B, BA, BB, C, CB, D, E, F, J, K, L, M, MB; TSIO520-AF, B, BB, C, CE, D, DB, E, EB, G, H, J, JB, K, KB, L, LB, M, N, NB, P, R, T, UB, VB, WB; IO550-A, B, C, D, E, F, L; IOF550-B, C, D, E, F, L..

**SECTION 1**

**GENERAL**

The EQ3 head casting cylinder assemblies are identified by a four (4) fin relief at the bottom lower left hand portion of the cylinder head (as installed on the engine) and a depression cast EQ3 in the cylinder head rocker boss (overhead) area as shown in Figures 1 and 2. These cylinders are to be replaced in accordance with the guidelines set forth in this bulletin and based upon applicable engine model and aircraft manufacturer procedures. All EQ3 cylinders must be replaced no later than December 31, 2009.


**STEP 1 - EQ3 CYLINDER HEAD IDENTIFICATION AND REGISTRATION**

For all engines and cylinders identified in Tables 1, 1A, 2, and 2A of this MSB: confirm affectivity in accordance with the following instructions.

Inspect all potentially affected cylinders, within the next twenty (20) flight hours, but no later than April 30, 2009. Verify affectivity of all engine models and cylinders in accordance with Tables 1, 1A, 2, and 2A and the MODELS AFFECTED section. The engine serial number is located on the engine data plate and the cylinder serial number is located on the crankcase side of the top portion of the cylinder head as installed on the engine (Reference Figure 3).

**Note: For affected cylinders with 400 hours or more total time in operation, STEP 2 is also required.**

- A. For engine models identified in MODELS AFFECTED, use the engine log book to determine if a cylinder replacement has occurred with a cylinder produced between November 1, 2007 and January 30, 2009. If cylinder replacement(s) are verified to have occurred, proceed to “Cylinders Installed on an Engine” below. If no such cylinder replacements have occurred, no further action is required. Make an engine logbook entry recording the results of this inspection and compliance with this MSB.
- B. For those engines and cylinders listed in Tables 1, 1A, 2, and 2A, or cylinders requiring further inspection in accordance with STEP 1.A above, proceed as follows.
- C. For any of the engines listed in MODELS AFFECTED that may have been shipped or had a cylinder replaced since August, 2006, proceed as follows.

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**CYLINDERS INSTALLED ON AN ENGINE:**

**NOTE: All cylinders must be checked for affectivity. Depending on manufacturing date and/or maintenance practices an engine may have any number between zero and six of the affected cylinders.**

1. Open or remove the engine cowling in accordance with the airframe manufacturer’s instructions to the point necessary to allow visual access to the cylinders on both sides of the engine (Figure 4).
2. Access the area of the cylinder head casting as shown in Figure 5. This area is visible as you look down at the cylinders in their mounted condition from above the engine compartment.
  - a. Look for a 6 digit part number casting mark such as “649166” or similar. In addition to the casting mark number, there may be a letter indicator such as AE, AD or similar. (Reference Figure 5)
  - b. If a number casting mark is present, it indicates the cylinder head assembly is not covered by this MSB and no further action is required. . Make an engine logbook entry recording the results of this inspection and compliance with this MSB.
  - c. If a number casting mark **is not** present, then the cylinder may be covered by this MSB. Verify the EQ3 cylinder S/N as shown in Figure 3 is present and listed in Table 2. If so, proceed to completion and registration and **STEP 2**.

**CYLINDERS NOT INSTALLED ON AN ENGINE:**

1. Cylinders with a depression cast EQ3 in the cylinder head rocker boss area as shown in Figure 2 are covered by this MSB and must be exchanged.
2. Contact TCM in accordance with the completion and registration section below.


***“CAUTION”: DO NOT INSTALL EQ3 CYLINDERS ON ANY ENGINE.***

**COMPLETION AND REGISTRATION**

1. Upon completion of the required inspection, if no EQ3 cylinders are identified, reinstall or replace all items that have been removed to perform this inspection in accordance with the applicable manufacturer’s instructions. Tighten all loosened or removed hardware in accordance with the applicable manufacturer’s instructions. Make an appropriate logbook entry stating findings and compliance with this MSB.
2. If EQ3 cylinders are identified:
  - a. Complete the Customer Information form located at the end of this bulletin.
  - b. Proceed to **STEP 2**.

**STEP 2 – CYLINDER INSPECTION AND REPLACEMENT INSTRUCTIONS**

**A. For affected cylinders less than 400 hours total time in operation:**

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1. No detailed inspection is required beyond those provided in the applicable TCM maintenance and overhaul manuals and/or the applicable airframe manufacturer's maintenance manual. Reinstall or replace all items that have been removed to perform this inspection in accordance with the applicable manufacturer's instructions. Tighten all loosened or removed hardware in accordance with the applicable manufacturer's instructions. Make an appropriate logbook entry stating findings and compliance with the MSB. Contact TCM to schedule a replacement cylinder. All EQ3 cylinders must be replaced no later than December 31, 2009.

**B. For affected cylinders with 400 hours or more total time of operation**

The following inspection must also be accomplished. Additional inspections are required at each fifty (50) hour interval until the cylinder is replaced.

**WARNING**


**IF A CRACK IS PRESENT THE CYLINDER MUST BE REPLACED IMMEDIATELY. TO SUPPORT REPLACEMENT AT AN AUTHORIZED CENTER, A REPOSITIONING FLIGHT OF NOT TO EXCEED FIVE (5) HOURS IS AUTHORIZED IF NO FUEL OR COMBUSTION STAINING IS FOUND AT THE SUBJECT LOCATION. IF SUCH INDICATIONS ARE FOUND, CONTACT TCM BEFORE FURTHER FLIGHT.**

1. Remove the engine cowling and cooling baffles in accordance with the airframe manufacturer's instructions to the point necessary to allow visual access to each affected cylinder's upper spark plug area.
2. Remove the ignition lead from the top spark plug. Remove the top spark plug.

**NOTE: Visual evidence of a crack in the inspection area between upper spark plug bore and fuel injection nozzle/primer port as indicated in Figure 6 does not require further verification with a dye penetrant inspection.**

3. Install a protective cap in the top spark plug bore to prevent contamination from entering the cylinder bore area.
4. Using a flashlight and a 10x power magnifying glass, perform a detailed visual inspection of the area between the fuel injector nozzle boss and the upper spark plug. (Reference Figures 6 and 7)
5. If crack indications are found, proceed to step 12(a) below.
6. If no crack indications are noted during the visual inspection or if the mechanic has any questions concerning the presence of cracks in the affected area, proceed to step 7 below.

**NOTE: Dye-penetrant inspection must be performed by a properly qualified mechanic in accordance with the manufacturer's instructions. Use "Magnaflux®"**


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**Portable Spotcheck Kit” or equivalent. These kits can be purchased through most aviation industry distributors.**

7. Using Dye-penetrant “Cleaner/Remover”, thoroughly clean the area between the upper spark plug bore and fuel injection nozzle/primer port as shown in Figure 7.
8. Spray the “Penetrant/Dye” onto the clean/dry area indicated in Figure 7. Allow the “Penetrant/Dye” enough time to set in accordance with the manufacturer’s instructions.
9. Remove and clean the area in which the “Penetrant/Dye” was applied in accordance with the manufacturer’s instructions.
10. Spray the “Developer” onto the clean/dry area indicated in Figure 7. Allow the “Developer” enough time to dwell in accordance with the manufacturer’s instructions for the determination of the existence of a crack.
  - a. If a crack is present, its appearance and location will be similar to that shown in Figure 8.
  - b. Refer to Step 12, below, for required actions in either a “No Crack Present” or a “Crack Present” case.
11. Repeat steps 2 through 7 on all remaining identified EQ3 head casting cylinder assemblies.
12. Complete the following based on the results of the inspection.
  - a. Preceding Inspection Reveals No Cracks
    - i. If required, clean the area thoroughly to remove the Developer. Remove the protective cap from the spark plug bore. Prepare the previously removed spark plugs for re-installation in accordance with the spark plug manufacturer’s maintenance instructions. Reinstall each spark plug in its previous location. Torque the spark plug to 300 – 360 in/lbs.
    - ii. Install the ignition lead and torque 5/8” B-nut to 90 – 95 in/lbs and 3/4” B-nut to 100 – 120 in/lbs.
    - iii. Reinstall all items that have been removed to perform this inspection. Tighten all loosened or removed hardware in accordance with the applicable manufacturer’s instructions.
  - b. Preceding Inspection Reveals Cracks
    - i. If a crack is verified and fuel or combustion staining was noted in the inspection area, contact TCM before further flight.
    - ii. Contact TCM via one of the means listed below and on the Customer Information Form to schedule replacement of the affected cylinder(s).
    - iii. If a crack is verified but no evidence is found of fuel or combustion staining, then the engine may be operated for up to five (5) hours for the purpose of relocating the aircraft to a cylinder replacement location.

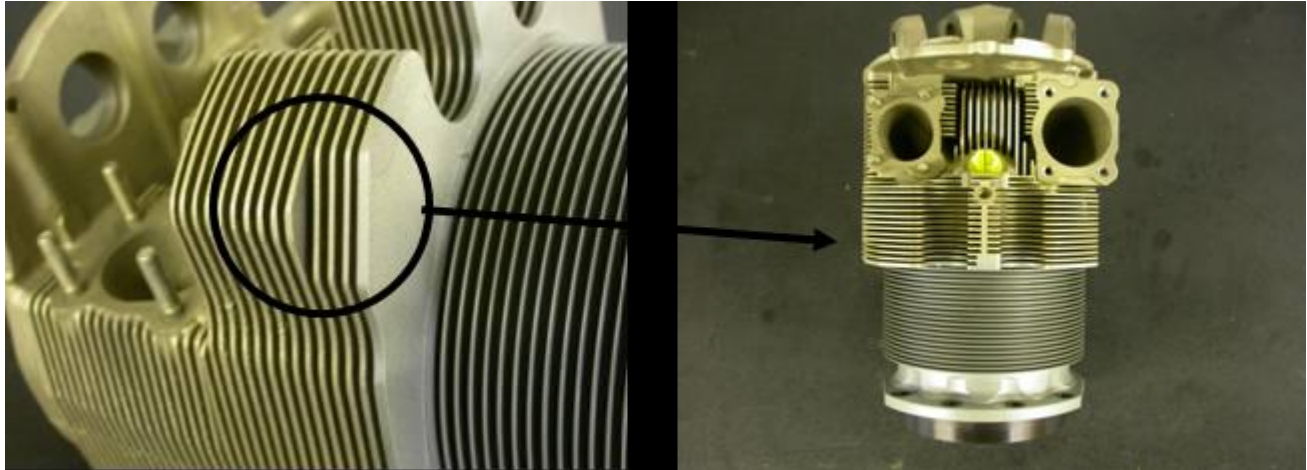
**WARNING**

**IF A CRACK IS PRESENT THE CYLINDER MUST BE REPLACED IMMEDIATELY. TO SUPPORT REPLACEMENT AT AN AUTHORIZED**

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**CENTER, A REPOSITIONING FLIGHT OF NOT TO EXCEED FIVE (5) HOURS IS AUTHORIZED IF NO FUEL OR COMBUSTION STAINING IS FOUND AT THE SUBJECT LOCATION. IF SUCH INDICATIONS ARE FOUND, CONTACT TCM BEFORE FURTHER FLIGHT.**

**NOTE:** Replacement cylinders will be readily identified by both the “NT” indented casting mark located in the cylinder head rocker arm boss region and by the absence of a four (4) fin relief. These replacement cylinders can also be identified by having a serial number sequence of AC09BA001 and higher.




**FIGURE 1**  
**Cylinder Head Casting Four (4) Fin relief Location**


**SECTION 2**

**TABLE 1**  
**Possible EQ3 Cylinder Equipped Factory Engines**


Engine Model	Engine Serial Number
0470K (Rebuilt)	049560 - 049562
0470L (Rebuilt)	832925 - 832936
0470R (New)	466902 - 466915
0470R (Rebuilt)	834219 - 834266
0470S (New)	464643 - 464645
0470S (Rebuilt)	819195 - 819207
0470U (New)	470902 - 470907
0470U (Rebuilt)	834458 - 834498
I0470C (Rebuilt)	295611 - 295615
I0470F (Rebuilt)	833666 - 833678
I0470L (New)	468685 - 468689
I0470L (Rebuilt)	298347 - 298372
I0470N (New)	458199, 458200
I0470N (Rebuilt)	096841 - 096844

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Engine Model	Engine Serial Number
I0470S (Rebuilt)	109430 - 109432
I0470V (New)	455812
I0470V (Rebuilt)	171360 - 171362
I0520BA (Rebuilt)	822977 - 823000, 836650
I0520BB (New)	580226 - 580232
I0520BB (Rebuilt)	830218 - 830250, 836900 - 836910
I0520C (Rebuilt)	831016 - 831048
I0520CB (New)	576414 - 576424
I0520CB (Rebuilt)	831830 - 831869
I0520D (New)	581599 - 581613
I0520D (Rebuilt)	832577 - 832634
I0520E (Rebuilt)	215988 - 215993
I0520F (New)	579399 - 579413
I0520F (Rebuilt)	835185 - 835267
I0520J (Rebuilt)	216546 - 216548
I0520K (Rebuilt)	224180
I0520L (New)	577309 - 577319
I0520L (Rebuilt)	295480 - 295500 835900 - 835926
I0520M (Rebuilt)	826223, 826225, 826230, 826231, 826234 - 826237
I0520MB (Rebuilt)	829201 - 829212
I0550A (Rebuilt)	817109
I0550B (New)	688601 - 688639 690427 - 690448, 690451 690478 - 690481 690495 - 690553 690570 690624 - 690635
I0550B (Rebuilt)	834721 834732 - 834790
I0550C (New)	688375 - 688400 690151, 690152 690190 690198 - 690217 690224 - 690231 690252 - 690284 690318 - 690358 692439
I0550C (Rebuilt)	817108 833538 - 833565 833570 - 833584 833590 - 833600 833604 - 833606 833609 - 833611 833614, 833615
I0550D (New)	680099 - 680109 680113 - 680119
I0550D (Rebuilt)	833226 833250, 833253 833255 - 833287 833290 - 833297

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Engine Model	Engine Serial Number
	833300 - 833315
	833319, 833320
I0550E (New)	681149, 681150
I0550F (New)	679602 - 679615
I0550F (Rebuilt)	824211 - 824246
I0550L (New)	678010 - 678012
I0550L (Rebuilt)	289227 - 289241
TSI0520AF (New)	525105
TSI0520AF (Rebuilt)	245264
TSI0520B (Rebuilt)	176861
TSI0520BB (Rebuilt)	287688
TSI0520C (New)	501657 - 501659
TSI0520C (Rebuilt)	178652 - 178659
TSI0520CE (New)	530186 - 530191
TSI0520E (Rebuilt)	826357 - 826359
TSI0520EB (New)	510851, 510852
TSI0520EB (Rebuilt)	815210 - 815216
TSI0520H (New)	506915, 506917
TSI0520H (Rebuilt)	217497 - 837151
TSI0520J (Rebuilt)	825255, 825256
TSI0520JB (New)	533002, 533003
TSI0520K (Rebuilt)	224611
TSI0520LB (Rebuilt)	815518 - 815522
TSI0520M (New)	532378
	532381 - 532404
	532406 - 532411
	532413 - 532416
	532418
	532423 - 532427
	532429
TSI0520M (Rebuilt)	830756 - 830781
TSI0520N (Rebuilt)	228649
TSI0520NB (Rebuilt)	822443 - 822458
TSI0520P (New)	513959
	513960
TSI0520P (Rebuilt)	278946 - 278955
TSI0520R (New)	522840 - 522856
	522858 - 522860
	522862, 522864, 522865, 522867
	522869 - 522871
TSI0520R (Rebuilt)	289626 - 289630
	289632, 289633,
	289635 - 289638
	289640 - 289643
	289645 - 289649
	289651, 289653, 289654
TSI0520T (New)	515445, 515446
TSI0520T (Rebuilt)	829573 - 829587
	829589
TSI0520UB (New)	527615 - 527620
TSI0520UB	809479
	809481 - 809484
	809487

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Engine Model	Engine Serial Number
TSI0520VB (New)	529134 - 529142
TSI0520VB (Rebuilt)	832103 832105 - 836163 836165, 836167, 836170, 836171, 836173, 836175, 836176, 836178 836180 - 836183 836185, 836186
TSI0520WB (New)	518961 - 518964

**Table 1A**  
**Revision A Possible EQ3 Cylinder Equipped Factory Engines**

Engine Model	Engine Serial Number
0470K (Rebuilt)	049554
0470L (Rebuilt)	832916 - 832918
0470R (Rebuilt)	834174, 834175, 834181, 834184
0470S (Rebuilt)	819179
0470U (New)	470892, 470893
0470U (Rebuilt)	834414, 834415, 834421, 834426
I0470F (Rebuilt)	833658 - 833660
I0470L (New)	468679
I0470L (Rebuilt)	298324, 298326 - 298334
I0470N (Rebuilt)	096832, 096833
I0470S (Rebuilt)	109426
I0470U (Rebuilt)	118471 - 118473
I0470V (Rebuilt)	171355
IO520A (Rebuilt)	832167, 832168
IO520BA (Rebuilt)	822948, 822949, 822952
IO520BB (New)	580221
IO520BB (Rebuilt)	830172 - 830177
IO520C (Rebuilt)	830976 - 830986, 830995
IO520CB (Rebuilt)	831779 - 831782, 831786
IO520D (New)	581596
IO520D (Rebuilt)	832533 - 832538
IO520E (New)	556649
IO520F (Rebuilt)	830610 - 830614, 830620, 830647
IO520K (Rebuilt)	224177
IO520L (New)	577299 - 577301
IO520L (Rebuilt)	295431 - 295439, 295441, 295443
IO520M (Rebuilt)	826203 - 826206
IO520MB (Rebuilt)	829177 - 829181
IO550A (New)	682060
IO550B (New)	688644 - 688648 688494 - 688497 688500 - 688505, 688513 690409
IO550B (Rebuilt)	834670 - 834673, 834675
IO550C (New)	688264, 688265, 688269 - 688272 688290 690165 - 690170 690173

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Engine Model	Engine Serial Number
I0550C (Rebuilt)	833467 - 833473
TSI0520B (Rebuilt)	176860
TSI0520C (Rebuilt)	178643 - 178645
TSI0520CE (New)	530183
TSI0520E (Rebuilt)	826348
TSI0520G (Rebuilt)	216062
TSI0520M (New)	532331
TSI0520M (Rebuilt)	830731, 830732, 830734
TSI0520P (Rebuilt)	278942
TSI0520R (New)	522813,522814
TSI0520R (Rebuilt)	289602
TSI0520T (Rebuilt)	829555
TSI0520UB (Rebuilt)	809471, 809473
TSI0520VB (Rebuilt)	832026
	832028 - 832031
	832041
TSI0520WB (New)	518957 – 518958
TSIO520WB (Rebuilt)	822622 - 822624


**TABLE 2  
Possible EQ3 Cylinders**

Cylinder Part	Engine Models	Cylinder Serial
655467A1,A3,A5,A7, A8	O470-G,K,L,R,S,M IO470C	AC07KA001 through AC09AB999
EQ7020, EQ7093		
655468 A1, A3, A5,A6, A7, A8, A9	O470-U IO470-D,E,F,H,L,M,N,S,U,V,VO	
EQ7027, EQ7094	TSIO470-B, C, D	
655469A1,A6, A7, A8	IO520-A,B,BA,BB,C,CB,D,E,F,J,K,L,M,MB	
EQ6989, EQ7048	IO550-A,B,C, IOF550-B, TSIO520-AF,CE,UB	
655470A1,A3, A4	TSIO520-B,BB,C,D,DB,E,EB,G,H,J,JB,K,KB,	
EQ7053	TSIO520-L,LB,M,N,NB,P,R,T,VB,WB	
655471A1,A3, A4	IO550-D,E,F,L IOF550-D,E,F,L ,	
EQ7089		
655472A1,A3, A4	IO550-B,C	
EQ7088		
655484A1,A4, A5	IO550-B,C, IOF550-B,C	
EQ7350		
655485A1,A3, A4	IO550-D,F,L	
EQ7309		

**Cylinder Serial Number Explanation**

ID	YEAR	MONTH	SERIAL
AC	07	K	A001

**ID = AC is the component identification code for cylinder.**

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**Year = 07 represents 2007**

**Month = K is the month code for November ( A = January, etc)**

**Serial = Begin with A001each month, After A999, will go to B001, etc.**

**Table 2A**

**Revision A Possible EQ3 Cylinders**

Cylinder Part	Engine Models	Cylinder Serial
655467A1,A3,A5,A7, A8 EQ7020, EQ7093	O470-G,K,L,R,S,M IO470C	AC06GC044 through AC06HC702
655468 A1, A3, A5,A6, A7, A8, A9 EQ7027, EQ7094	O470-U IO470-D,E,F,H,L,M,N,S,U,V,VO TSIO470-B, C, D	
655469A1,A6, A7, A8 EQ6989, EQ7048	IO520-A,B,BA,BB,C,CB,D,E,F,J,K,L,M,MB IO550-A,B,C, IOF550-B, TSIO520-AF,CE,UB	
655470A1,A3, A4 EQ7053	TSIO520-B,BB,C,D,DB,E,EB,G,H,I,JB,K,KB, TSIO520-L,LB,M,N,NB,P,R,T,VB,WB	
655471A1,A3, A4 EQ7089	IO550-D,E,F,L IOF550-D,E,F,L ,	
655472A1,A3, A4 EQ7088	IO550-B,C	
655484A1,A4, A5 EQ7350	IO550-B,C, IOF550-B,C	
655485A1,A3, A4 EQ7309	IO550-D,F,L	

**Cylinder Serial Number Explanation**


ID	YEAR	MONTH	SERIAL
AC	06	G	C044

**ID = AC is the component identification code for cylinder.**

**Year = 06 represents 2006**


**Month = K is the month code for November ( A = January, etc)**

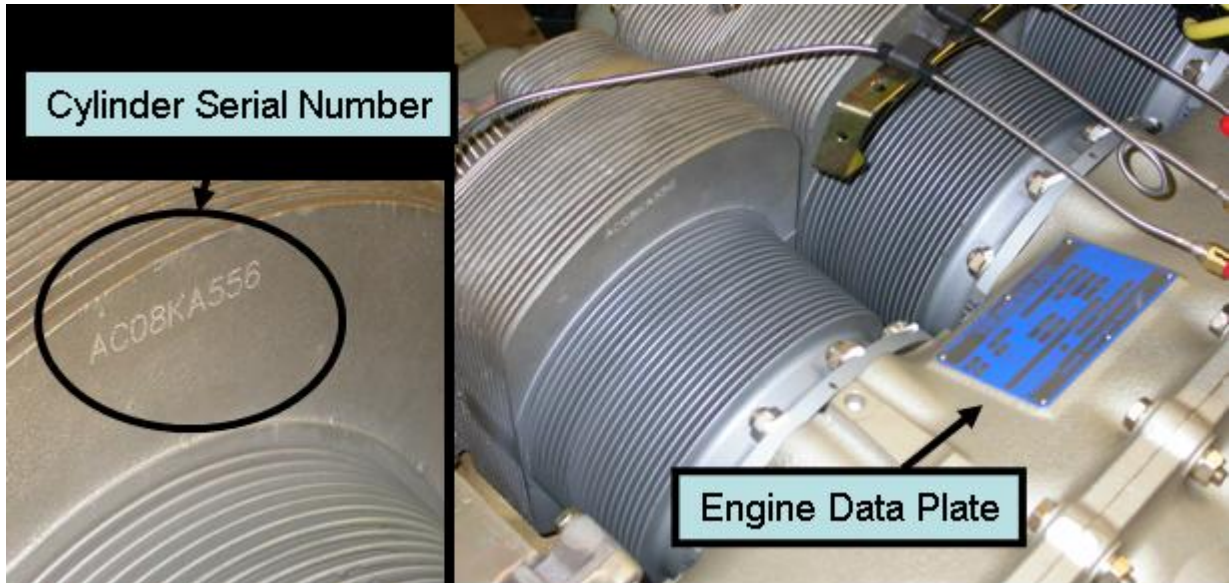
**Serial = Begin with A001each month, After A999, will go to B001, etc.**

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**FIGURE 2 Location of EQ3 Marking in the Cylinder Head Rocker Box Overhead Area**

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**FIGURE 3**

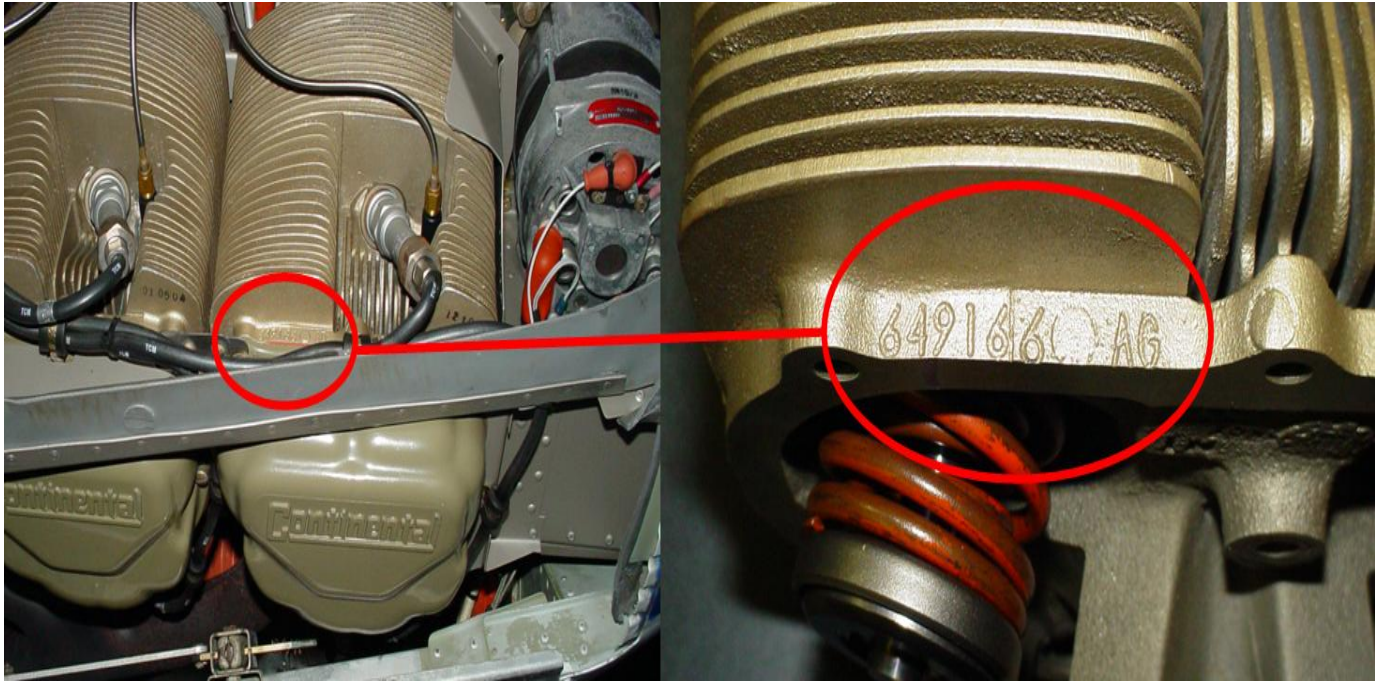
**Cylinder Serial Number and Engine Data Plate Locations**



**FIGURE 4**


**Example of Top Down View with Cowling Removed  
Typical Engine Installation**

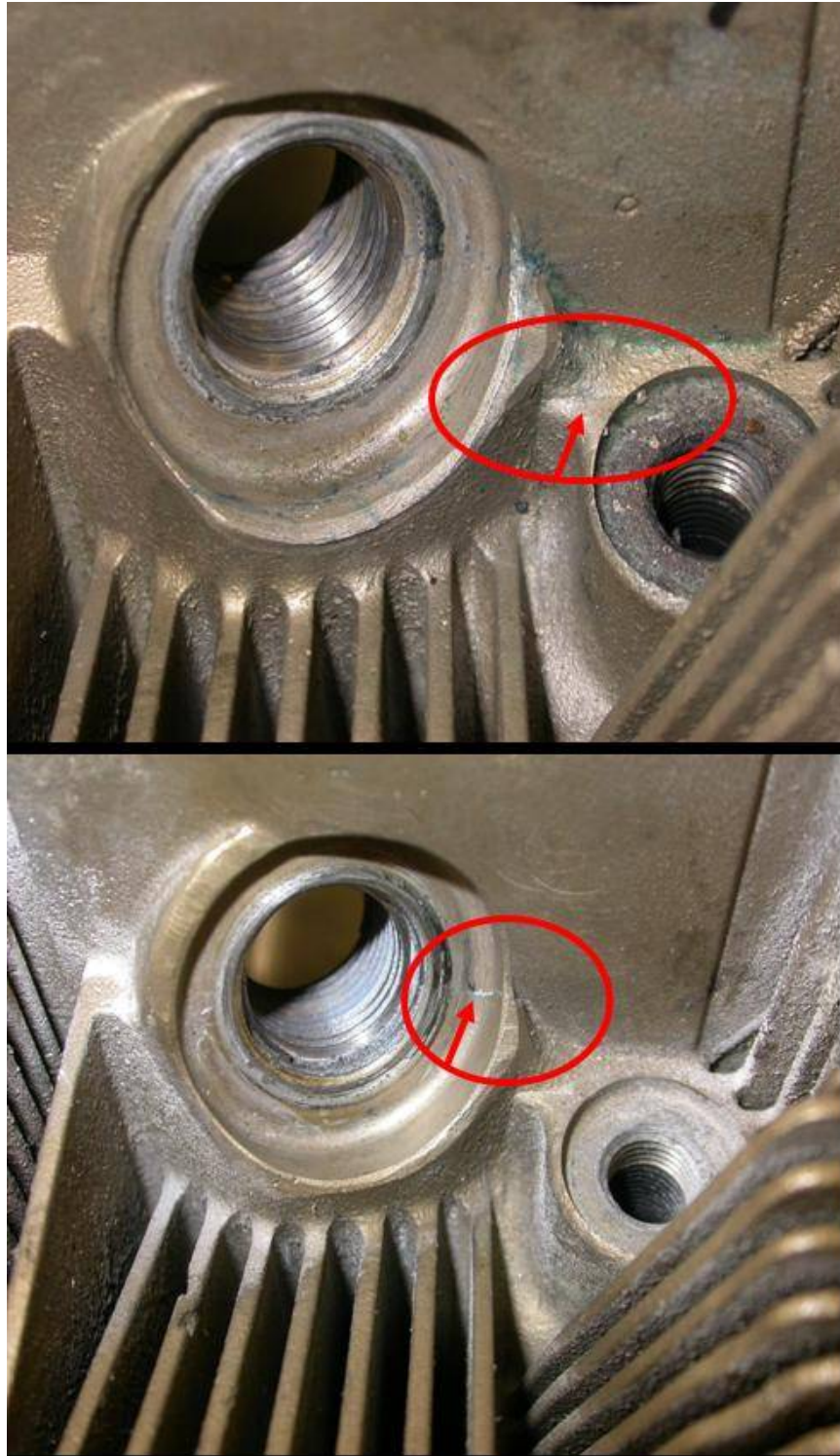
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**FIGURE 5**

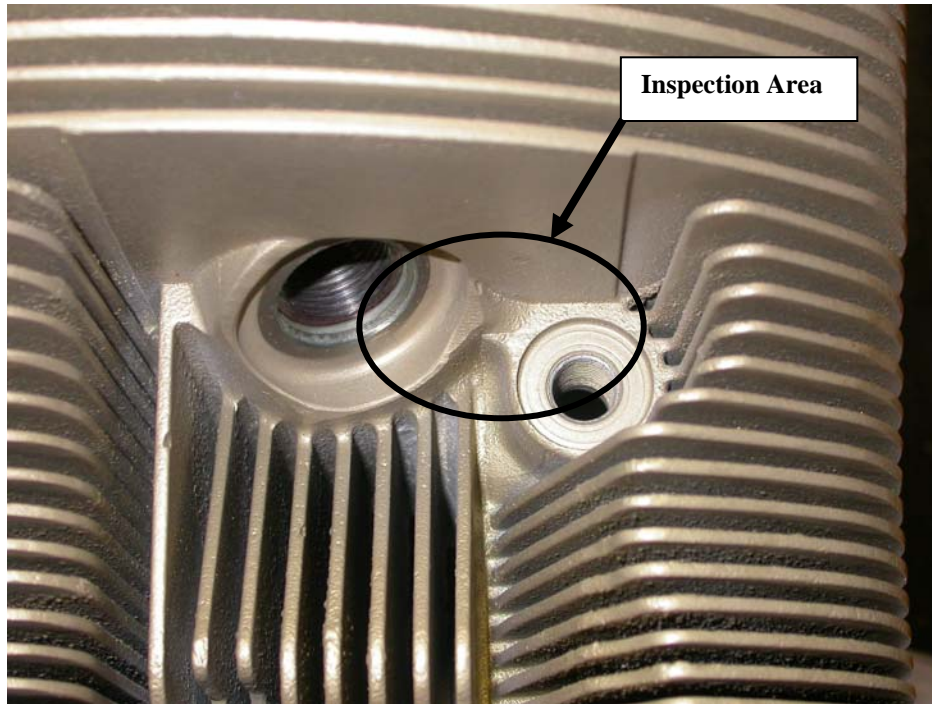
**Rocker Arm Boss (overhead view of cylinder in mounted condition)**

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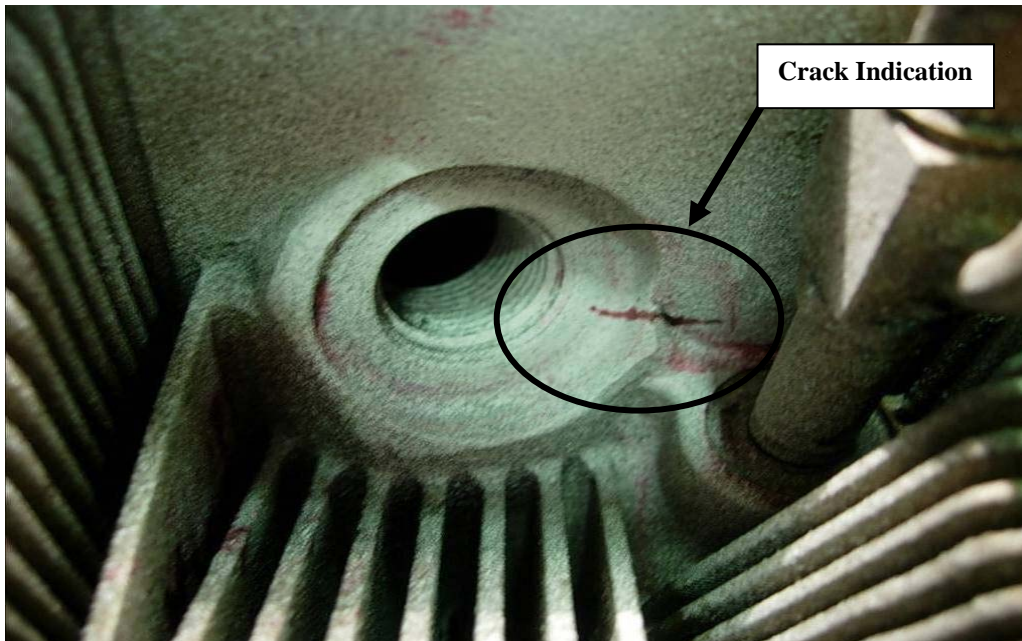


**FIGURE 6**  
**Typical Visual Crack Indications**


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**FIGURE 7**  
**Inspection Area Between Upper Spark Plug Bore and Fuel Injection**  
**Nozzle/Primer Port**




**FIGURE 8 Cylinder Head Crack Indication with Dye Penetrant**

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## Warranty

1. Initial Inspection:
  - a. Up to two hours labor at the posted shop rate will be paid to cover the initial inspection performed at 400 hours engine total time.
  - b. The inspection must be performed by a TCM FBO Services member.
  - c. The Compliance Sheet attached to this bulletin or the on-line Compliance Form must be filled out in full and returned to TCM to validate this warranty adjustment.
2. Cylinder Replacement:
  - a. Cylinder replacement will be performed at designated TCM Cylinder Replacement Program Centers.
  - b. TCM will pay for parts and labor associated with the cylinder replacements performed at the designated TCM Cylinder Replacement Program Centers provided that the work is completed on or before December 31, 2009.
3. For aircraft that cannot be flown to a TCM Cylinder Program Replacement Center, contact TCM Technical Customer Service at 888-826-5465 (251-436-8299) or [TCM.CYLINDER@TELEDYNE.COM](mailto:TCM.CYLINDER@TELEDYNE.COM) for assistance.

**NOTE: IN ACCORDANCE WITH THE TERMS OF THE APPLICABLE TCM WARRANTY POLICY, FAILURE TO COMPLY WITH THIS MSB ON OR BEFORE DECEMBER 31, 2009, VOIDS ANY AND ALL WARRANTIES COVERING PRODUCTS THAT ARE THE SUBJECT OF THIS MSB.**

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## MSB09-1 - Customer Information Form

Date:		Aircraft Registration Number:		
Engine Position (Circle one): Front    Rear    Left    Right				
Engine Model:		Engine Serial Number:		
Total Hours:	Total hours of operation annually:			
Customer Business/Contact Name:				
Address:				
City:		State:	Zip Code:	
Country:				
Contact Telephone:		E-Mail Address:		
Maintenance Facility:				
Address:				
City:		State:	Zip Code:	
Country:				
Contact Telephone:		E-Mail Address:		
Cylinder Verification/Inspection Information				
Cylinder Position	Serial Number	CYL HOURS	EQ3 Head Verified (Circle One)	Crack Present (Circle One)
#1			Yes / No	Yes / No
#2			Yes / No	Yes / No
#3			Yes / No	Yes / No
#4			Yes / No	Yes / No
#5			Yes / No	Yes / No
#6			Yes / No	Yes / No

This form can be submitted electronically through the TCM website, by facsimile or by phone.

1. Web site entry can be accomplished at: [www.tcmlink.com/cylinder](http://www.tcmlink.com/cylinder)
2. The form can be e-mailed to TCM.CYLINDER@TELEDYNE.COM
3. The form can be faxed to (251) 432-7352.
4. You can call in your information to (888)-200-7565 or (251)-436-8665

The form may be mailed to: PO Box 1436, Mobile, AL 36633-1436

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