Service Instruction SI-0015

Technical Portions FAA Approved

Epic Aircraft, LLC ◆ 22590 Nelson Road ◆ Bend OR 97701
Phone: 541-318-8849 ◆ Fax: 541-382-5125 ◆ Web: www.epicaircraft.com

Subject: Steering Damper Binding

ATA-Code: 32-20

Labor: 4.0

Effectivity: K007

Affected Model(s): E1000

Due: Before the next flight.

Compliance: Recommended ☐ Mandatory ☒

Recurrence: No

1 BACKGROUND AND PURPOSE:

It has been found on E1000 S/N K007 that the threaded portion of the steering damper end caps is contacting the housing when threaded in, which causes them to become misaligned with the shimmy damper rod. This misalignment causes the steering damper to bind and the nose wheel centering device to become ineffective.

This Service Instruction gives the procedure to rework the steering damper end caps to eliminate the binding.

2 REFERENCES:

Epic E1000 Aircraft Maintenance Manual P/N SK05000000

3 WARRANTY:

For aircraft under warranty, parts and labor will be covered by Epic Aircraft, LLC if the work is performed within the compliance period and by a properly certificated Airframe and Power Plant mechanic or FAA approved repair station.

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4 TOOLS:

No.	Description	Qty	Epic Aircraft Supplied	Customer Supplied
1.	Common hand tools.	AR	☐	☒

5 PARTS/MATERIALS:

No.	Part Number	Description	Qty	Epic Aircraft Supplied	Customer Supplied
1.	MS24665-132	Pin, Cotter, Cad Steel Ø .062 x .50	2	☐	☒
2.	MIL-PRF-83282	Hydraulic Fluid	AR	☐	☒
3.	MS20995C32	Safety Wire, .032 DIA.	AR	☐	☒
4.	-	Chemical conversion coating conforming to MIL-DTL-5541.	AR	☐	☒

6 INSTRUCTIONS:

1. Set the BATT 1 and BATT 2 switches to OFF.
2. Remove external electrical power from the airplane (refer to Epic E1000 Aircraft Maintenance Manual, PN SK05000000, chapter 24-40).
3. Remove the steering damper from the airplane (refer to Epic E1000 Aircraft Maintenance Manual, PN SK05000000, chapter 32-20).
4. Rework the steering damper endcaps as follows:
   a. Remove the safety wire from the endcaps.
   b. Remove the endcaps.
   c. Remove 0.020” of material from the inboard chamfer of the threaded portion of each endcap (refer to Figure 1).
   d. Apply a conversion coating to the reworked area as follows:

Caution: Abrasives containing iron such as steel wool, iron oxide, rouge, or steel wire are prohibited for all cleaning operations. Treated parts that have become soiled shall be cleaned with materials that will remove the soil without damaging the base metal, the part, or the conversion coating.

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i. Prior to coating, the base metal shall be mechanically or chemically cleaned using 225S (phosphoric acid) cleaner diluted with 2 parts water, such that a water break-free surface is obtained after rinsing. While the aluminum surface is still wet, rinse thoroughly with clear water or wipe with a clean damp cloth. Allow surface to air dry or wipe dry with a clean cloth.

ii. Apply chemical conversion coating conforming to MIL-DTL-5541 to cleaned aluminum non-electrolytically by spray, brush, or immersion for two to five minutes. Apply only an amount that can be coated and rinsed before the solution dries. Flush surface with cold water, or mop with a damp synthetic sponge rinsed occasionally in clean water. Allow surface to dry before painting.

Note: Chemical conversion coating (chromic acid) per MIL-DTL-5541 is amber in color and is not to be diluted.

Note: Make sure to thoroughly clean all shavings from each endcap before assembly.

e. Install each endcap in the steering damper body and torque to 19-21 ft-lbs.

f. Safety wire the endcaps together across the steering damper body.

g. Remove the servicing plug and service the steering damper as follows:

i. Completely fill the damper body with MIL-PRF-83282 hydraulic fluid.

ii. Fully cycle the damper with the fill plug removed until there are no visual air bubbles at the fill hole.

iii. Install fill plug and torque to 12-15 in-lbs.

iv. Cycle the steering damper to ensure it moves freely.

5. Install the reworked steering damper in the airplane (refer to Epic E1000 Aircraft Maintenance Manual, PN SK05000000, chapter 32-20).

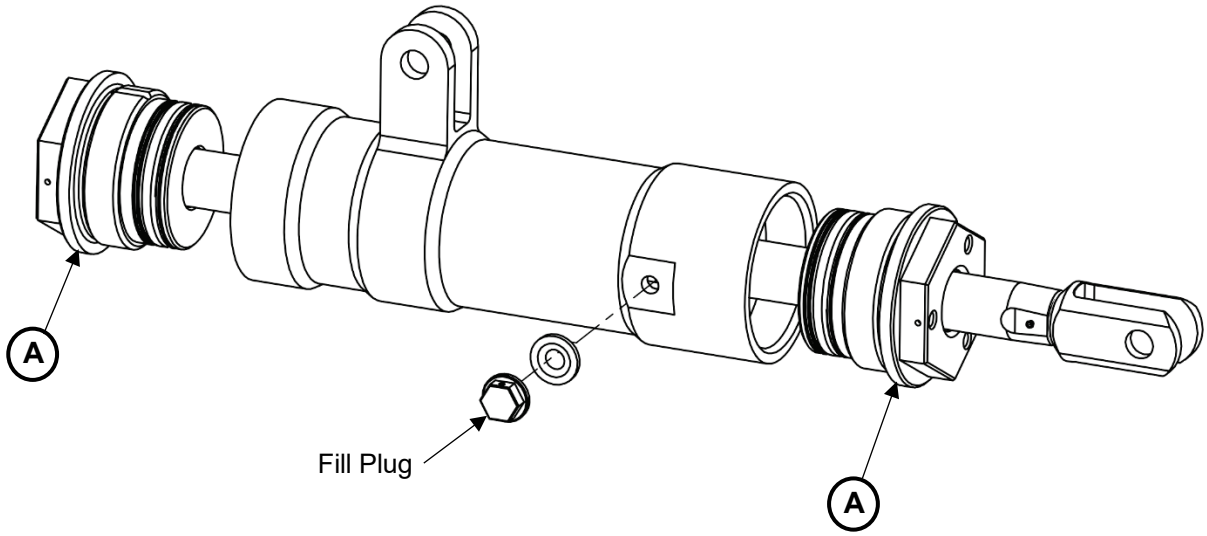
6. Raise the airplane using aircraft jacks. Ensure there is sufficient clearance from the ground to retract and extend the landing gear (refer to the Epic E1000 Airframe Maintenance Manual, PN SK05000000, Chapter 7-10).

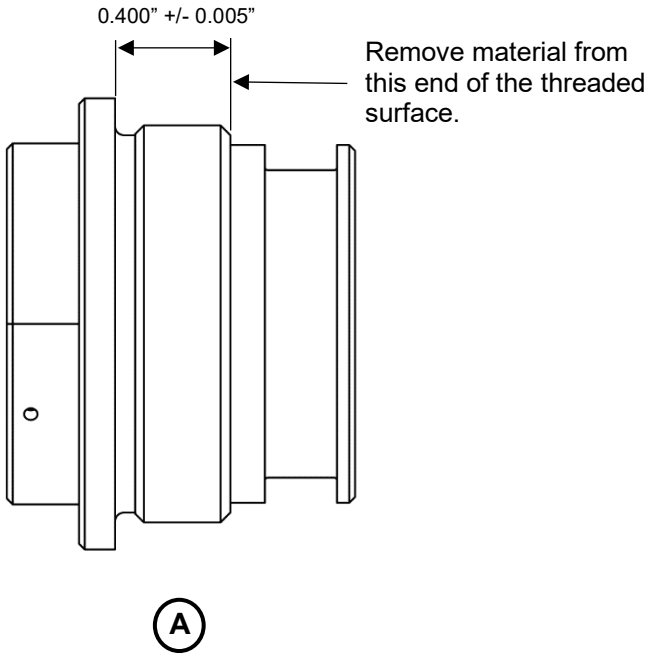
7. Make sure the nose wheel centering device works by rotating the nose wheel left and right and allowing it to return to center.

8. Lower the airplane and remove the aircraft jacks (refer to the E1000 AMM PN SK05000000, chapter 7-10).

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Figure 1: Steering Damper





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7 WEIGHT AND BALANCE:

N/A

8 PUBLICATIONS AFFECTED:

N/A

9 RECORD COMPLIANCE:

Make appropriate entry in airplane maintenance records.

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Appendix A: Compliance Letter

Please complete and mail this form to Customersupport@epicaircraft.com

This is to certify that I have completed the work in accordance with the Epic Aircraft, LLC Service Instruction.

Aircraft Owner Information:
Date: _____ Aircraft Serial Number: _____ Aircraft Reg. Number: _____ Owner's Name: _____
Maintenance Entity Information
Name of Shop Performing the work: _____ Name of Person(s) Performing inspection and/or work: _____ Phone Number: _____ Email: _____