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MANDATORY

Service Bulletin

Subject:

Cargo Door Forward Slide, operating rod and handle.

Applicability:

Table 1 – Applicability

AIRCRAFT	SERIAL NUMBER(s)
GA8 & GA-TC320	All GA8 Serial Numbers

Amendments:

- Issue 1: Initial Issue, 1 Jun 2005 .
- Issue 2: Background amplified. 13 Sep 2005.
- Issue 3: Service Bulletin was rewritten in total. GippsAero Reference GAE11#843.
- Issue 4: Inspection of operating rod and requirement for handle with integrated stop added. Template updated. GippsAero Reference GAE11#2371.

Background:

Following an in-flight cabin door separation from a GA8 & GA8-TC320 aircraft the initial investigation report found that excessive wear of the forward cargo door slide could have been a contributing factor. **PART A** of this Service Bulletin gives inspection and serviceability criteria of the Cargo Door Forward Slide and adds redundancy.

Further investigation identified that over rotation of the door handle may lead to failure of the Cargo Door operating rod and door opening inflight. **PART B** of this Service Bulletin provides a visual inspection of the operating rod serviceability. Later built GA8 aircraft have handles with an integral stop to prevent over rotation. **PART C** of this Service Bulletin requires installation of a door handle with an integral stop.

Compliance:

PART A

ACTION 1:

For Aircraft with a TTIS greater than 500 Hours: Within 20 Flight Hours of receipt of Issue 3 of this Service Bulletin

For Aircraft with a TTIS less than 500 Hours: No later than 520 Total Flight Hours

ACTION 2:

Each periodic inspection.

PART B1 and B2

For all Aircraft, within 50 Flight Hours or 2 calendar months, whichever is sooner, on receipt of Issue 4 of this Service Bulletin.

PART C

For all Aircraft, within 150 Flight Hours or 6 calendar months, whichever is sooner, on receipt of Issue 4 of this Service Bulletin.

Approval:

The modification described in this Service Bulletin has been approved pursuant to Aircraft Civil Aviation Safety Regulation 21.095 (1998).

Weight and Balance:

Negligible effect on weight and balance.

Parts:**Table 2: PART A Kit Number SB-GA8-2005-23-01**

Item	Part Number	Description	Qty
1	GA8-521022-149	Forward Cargo Door Slide	1
2	GA8-521022-151	Backing Plate	1
3	MS24694-S65	Structural Screw	2
4	AN3-11	Bolt	1
5	AN960-10L	Washer thin	1
6	AN310-3	Castle nut	1
7	MS24665-132	Split pin	1
8	GA8-521022-153	Forward Slide Gauge	1

Table 3: PART B Kit Number SB-GA8-2005-23-02

Item	Part Number	Description	Qty
9	GA8-521012-29	Actuating Rod	1

Table 4: PART C Kit Number SB-GA8-2005-23-03

Item	Part Number	Description	Qty
10	GA8-521012-51	Door Handle	1
11	GA8-521022-159	Handle Bush	1

Parts Availability:

Parts can be obtained directly from GippsAero.

Tel: +61 (0)3 5172 1200

Fax: +61 (0)3 5172 1201

Email: aircraft.parts@mahindraaerospace.com

Accomplishment Instructions:

GENERAL NOTES:

Ensure the aircraft is prepared for maintenance and that appropriate safety precautions are taken when performing work outlined in this Service Bulletin.

Unless otherwise specified, reference to the GA8 Service manual as well as FAA AC43.13-1B & FAA AC43.13-2B should be made when carrying out the procedure prescribed in this Service Bulletin. In case of discrepancy between the Service Manual and the AC, the Service Manual takes precedence.

When carrying out work outlined by this Service Bulletin, care is to be taken to ensure damage to surrounding structure and installations does not occur.

Torque all fasteners in accordance with the GA8 Service Manual unless stated otherwise. Values are for dry (unlubricated) threads unless shown otherwise.

WARNING:

IT IS THE RESPONSIBILITY OF ALL PERSONNEL TO ENSURE WORK HEALTH AND SAFETY REQUIREMENTS ARE MET AT ALL TIMES. ALL PERSONNEL MUST COMPLY WITH ALL WORK HEALTH AND SAFETY REQUIREMENTS AS DEFINED OR RECOMMENDED BY:

- EQUIPMENT OEM INSTALLATION AND OPERATION MANUALS;
- AIRCRAFT MAINTENANCE AND OPERATION MANUALS;
- ASSOCIATED AIRCRAFT MODIFICATION INSTRUCTIONS;
- RELEVANT NAA REGULATIONS AND ADVISORY DOCUMENTATION;
- ORGANISATION MANUALS, INCLUDING NAA ENDORSED OPERATIONAL AND MAINTENANCE MANUALS; AND
- RELEVANT LOCAL, STATE AND FEDERAL GOVERNMENT REQUIREMENTS.

WARNING:

READ THE APPLICABLE MATERIAL SAFETY DATA SHEET (MSDS) FOR ANY MATERIAL/CONSUMABLE USED DURING THE ACCOMPLISHMENT OF THIS SERVICE BULLETIN AND EMPLOY ANY RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE) CONTAINED THEREIN.

PART A - ACTION 1:

1. Open the door handle so that the door swings out to gain access to the Forward Cargo Door Slide Assembly, see Figure 1 below.

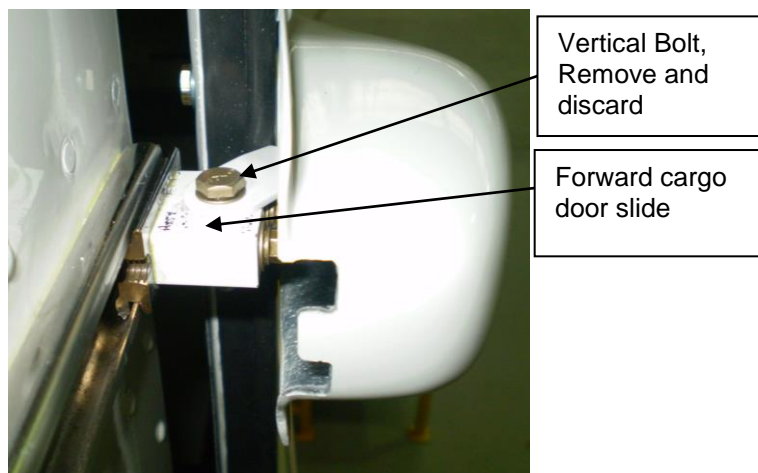


Figure 1: Forward Cargo Door Slide with door swung open.

2. Remove the Forward Cargo Door Slide, by removing the vertical bolt and sliding the slider out of the track. On earlier versions of the Airvan it would be necessary to remove the Nylon Track End as shown in Figure 2 below to be able to remove the slider.



Figure 2: Nylon Track End

3. Figure 3 below shows how a worn part normally looks and where to measure the groove width. The TOP and BOTTOM profile differs on a worn part and as such both the top and bottom slide grooves are to be measured with a calliper.

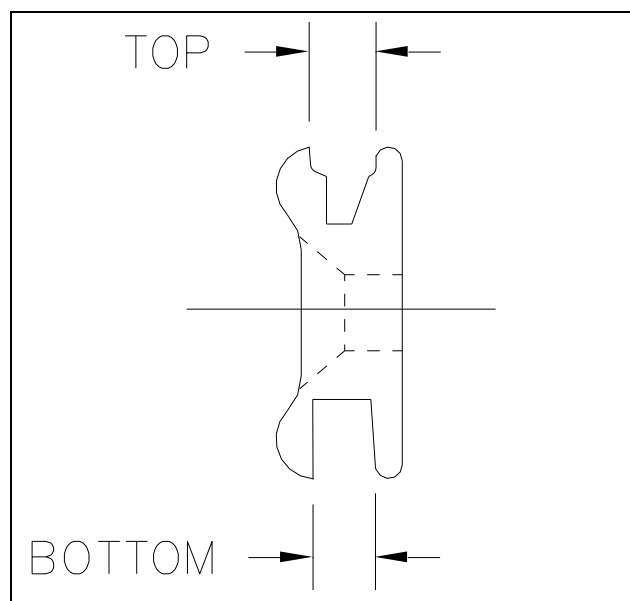


Figure 3: Worn slider indicating where to measure.

4. Measure the groove width and if the groove is wider than 0.145" at any point along the slider or if the part is cracked or excessively worn a new slider, Item 1, must be fitted.
5. Irrespective of Item 1, Items 2 to 7 MUST be fitted as shown in Figure 4 and listed in below.

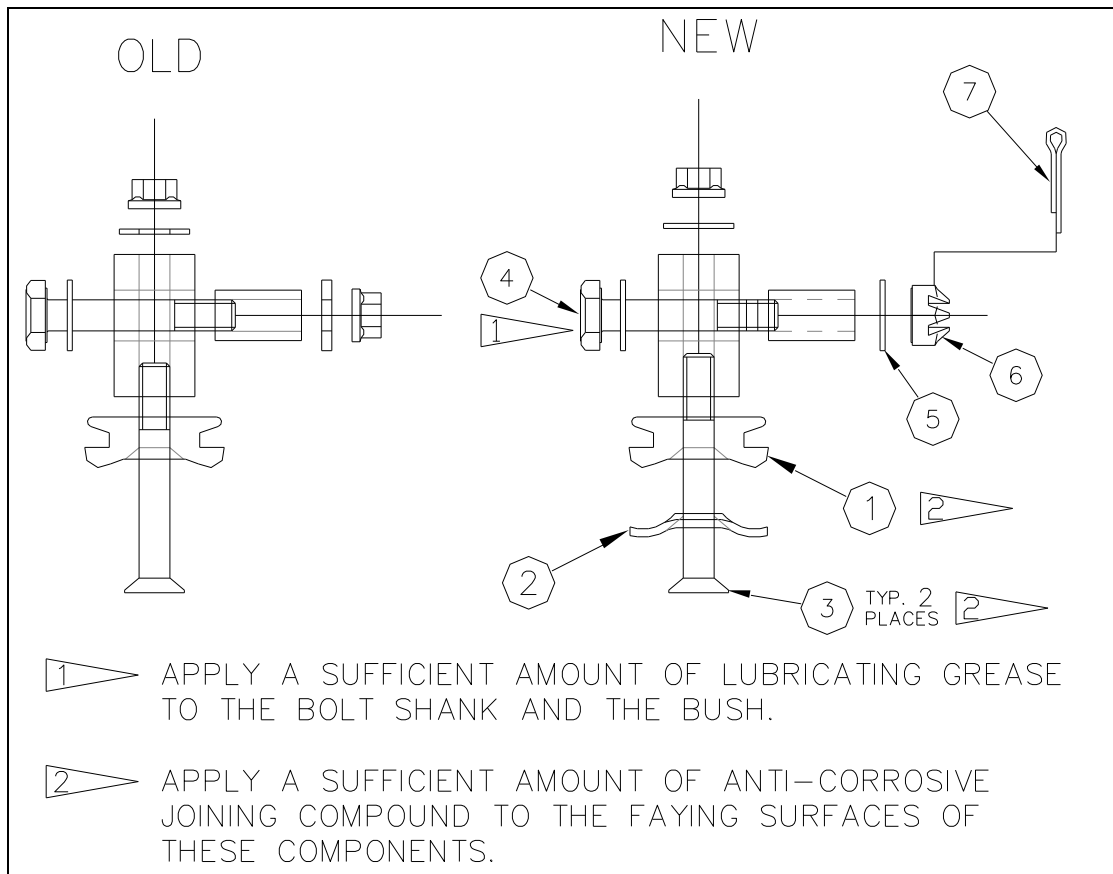


Figure 4: Old (left) and New (right) Forward cargo door slide.

Table 5: Part numbers for the new assembly and the parts it is replacing.

ITEM	OLD ASSEMBLY	NEW ASSEMBLY	QTY
1	GA8-521022-149	GA8-521022-149 (If old part is worn)	1
2	-	GA8-521022-151	1
3	MS24694-S64	MS24694-S65	2
4	AN3-10A	AN3-11	1
5	AN960-10	AN960-10L	1
6	MS21042-3	AN310-3	1
7	-	MS24665-132	1

- Reinstall new slider assembly and refit the Nylon Track End if it was removed.

PART A - ACTION 2:

1. Open the door handle so that the door swings out to gain access to the slider (see ACTION 1, Para 1)
2. Try to insert the Forward Slide Gauge (Item 8, Table 2) between the slider and the track as shown in Figure 5 and Figure 6 below. Standard Feeler gauges made up to 0.098" (0.023"+0.024"+0.025"+0.026") may also be used.

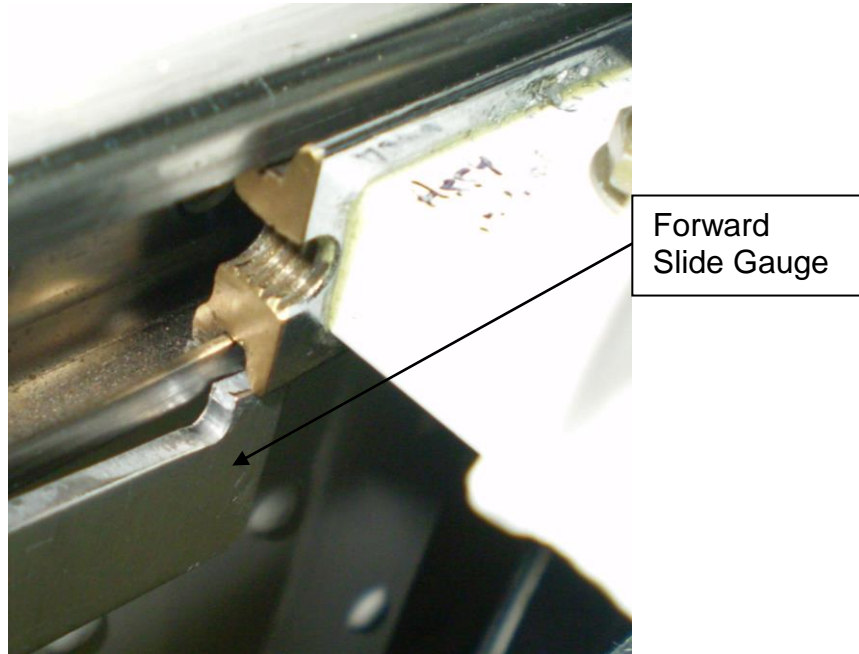


Figure 5: Checking with the Forward Slide Gauge (all four corners require checking)

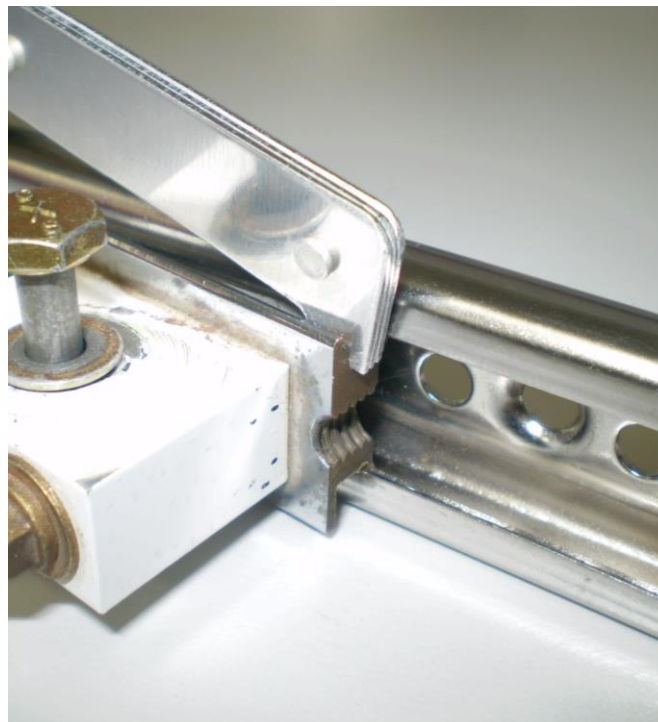


Figure 6: Forward Slide Gauge inserted between the slide and track, indicating a worn part. (Removed from aircraft for clarity only, checking can be done while installed)

3. If it is possible to fit the Forward Slide Gauge or feeler gauge between the track and slider (as shown in Figure 6 above) at any of the four corners carry out ACTION 1 Para 2 to 4.

OR

4. If Item 8 (or standard feeler gauge) is unavailable, carry out the inspection under ACTION 1 Para 2 to 4.

PART B1

1. Remove Rear Mechanism Cover, refer to Figure 7.
2. Inspect threaded stud at the end of the operating rod, refer to Figure 8. If there is any indication of bending then either replace the operating rod with Item 9 from Table 3 or locally modified rod detailed in Part B2 using the following steps.
3. Disconnect the rod ends from the handle and pivot arm. Remove the forward rod end and pull out the operating rod.
4. Install the operating rod through frame bush prior to installing forward Rod End. Install rod ends and connect to the handle and pivot arm.

Note:

*Minimum thread engagement to be not be less than the rod end check hole.
Perform functional check to ensure the door operates correctly*

5. With the door handle held fully open / against the stop, check that the operating rod does not hard foul against the rear door handle pivot post, refer to Figure 9. If required rework the rear door handle pivot post.
6. Reinstall the Rear Mechanism Cover, refer to Figure 7.

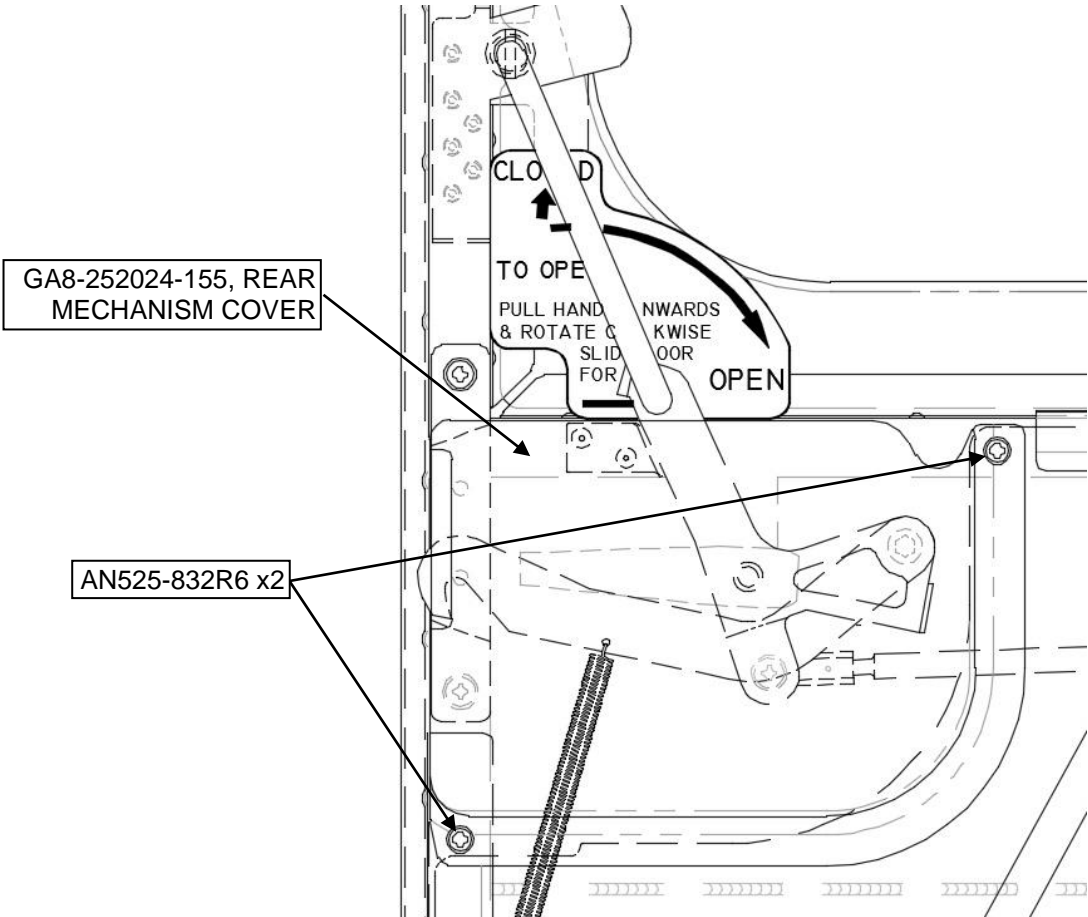


Figure 7: Rear Mechanism Cover

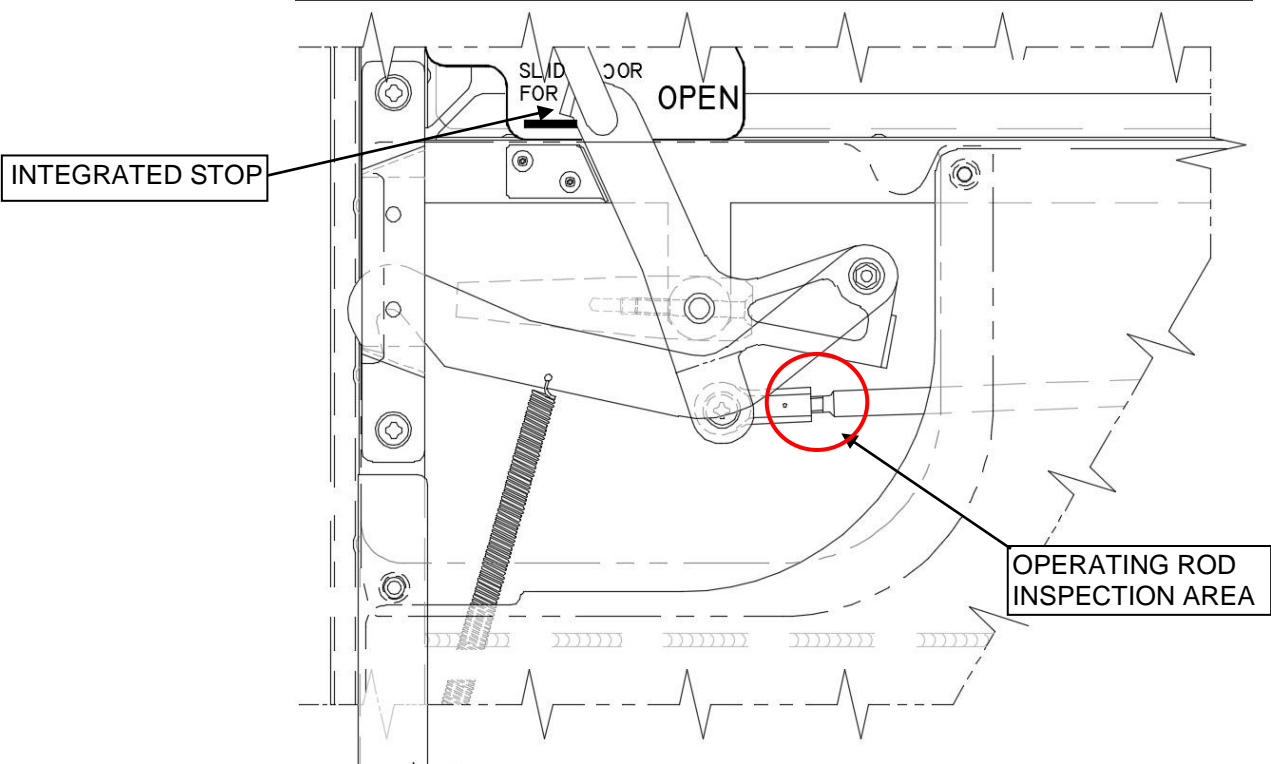
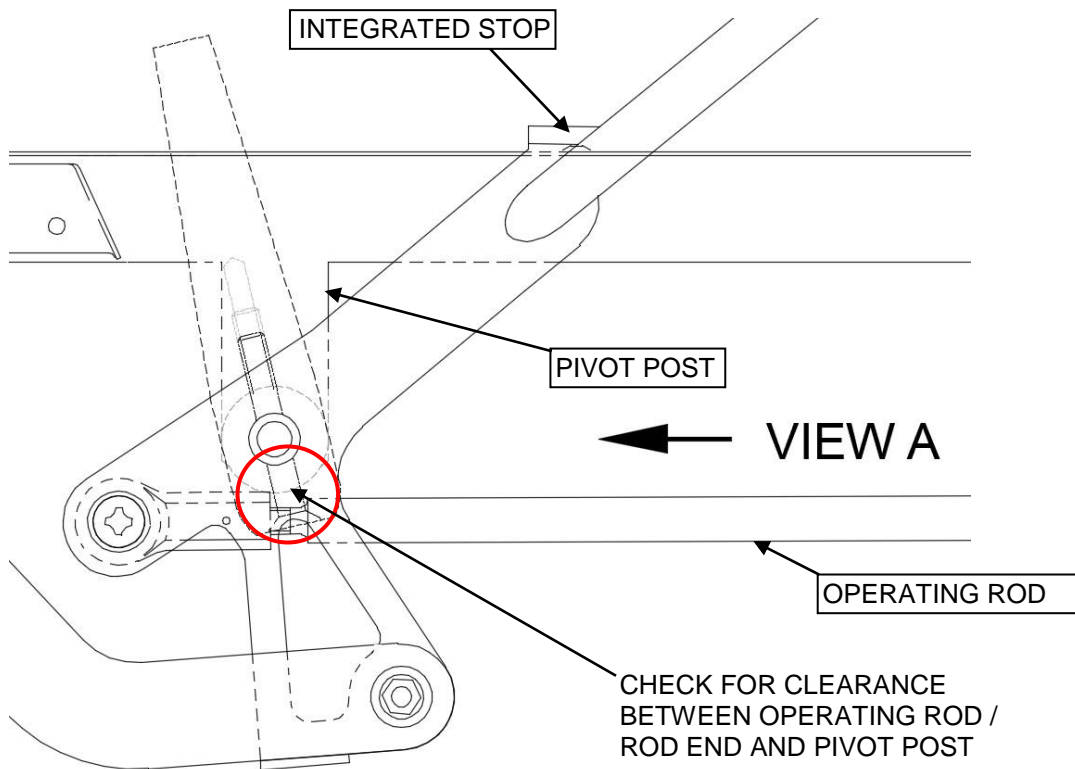
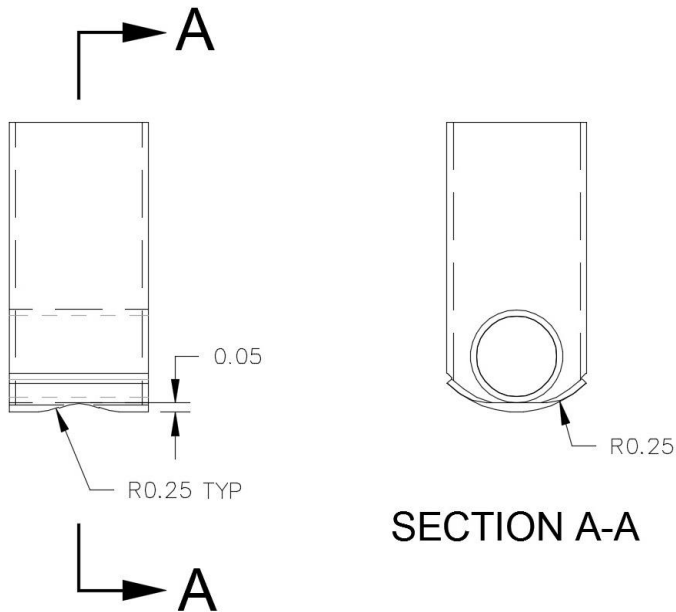


Figure 8: Rear Door Handle Mechanism - Inspection Areas



VIEW A (NOT TO SCALE)



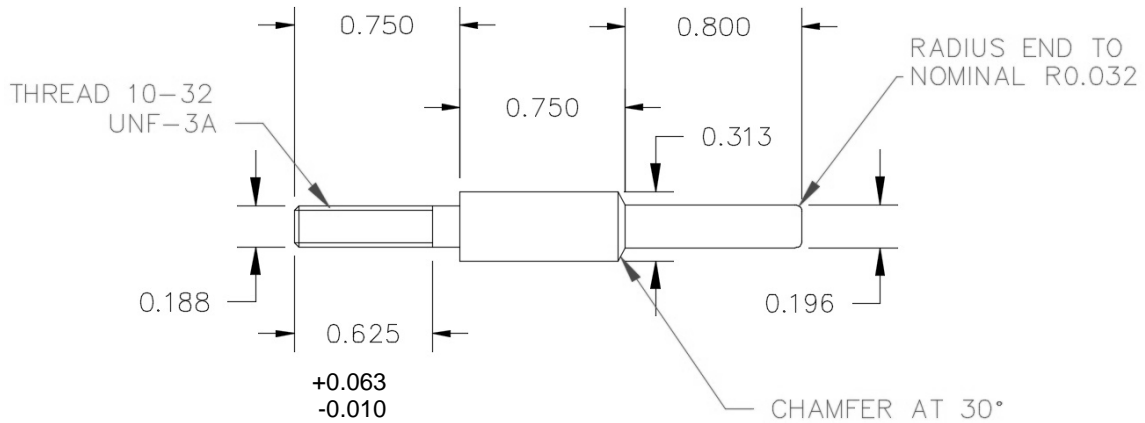
Notes:

1. Only Pivot post shown for clarity
2. Rework using blending guidelines of AC43.13-1B Chapter 6 Section 7 and 10
3. Ensure rod end and rod have a min clearance of 0.040in from pivot post
4. Restore surface protection IAW Service Manual

Figure 9: Rear Door Handle Pivot Post – Rework Area

PART B2

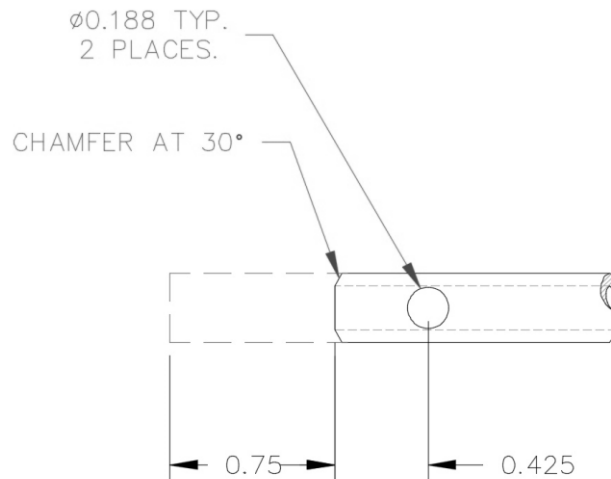
1. From 4130 Rod (MIL-S-67580.0500 manufactures 1 off Rod End Repair SB-GA8-20005-023-01, as shown in Figure 10.
2. Trim 0.75in from the end of the operating rod, chamfer at 30° and drill two Ø0.188in holes, refer to Figure 11.
3. Weld Rod End Repair SB-GA8-20005-023-01 to the trimmed rod, refer to Figure 12.



NOTES:

1. NOT TO SCALE
2. Material Normalized 4130 Rod to MIL-S-6758, min diameter 0.3125in
3. Dimensions, inches
4. Tolerances: All Dimensions ± 0.025 except where stated
5. De-burr and radius corners and edges

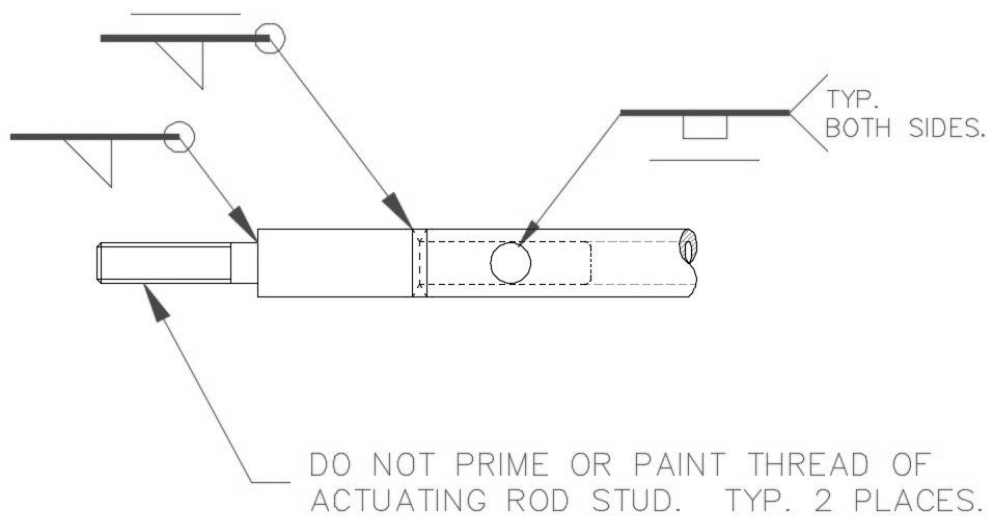
Figure 10: Rod End Repair Plug (P/N: SB-GA8-2005-23-01)



NOTES:

1. NOT TO SCALE
2. Dimensions, inches
3. Tolerances: All Dimensions ± 0.040
4. Remove paint 2.0in from trimmed end
5. De-burr and radius corners and edges

Figure 11: Operating Rod Trim



NOTES:

1. NOT TO SCALE
2. Weld in accordance with Cahp 51-20-00 of the GA Service Manual. Grind / finish all welds flush. Filler wire / consumable AWS 5.28: ER80S-B2 or equivalent
3. Apply primer 2.0in past the repair area that conforms to MIL-PRF-23377K (or later approved revision) or FEDSPEC-TT-P-1757B (or later approved revision). Apply topcoat of paint that conforms to MILPRF-85285E (or later approved revision) and matches the surround colour.
4. Using indelible ink, permanently part mark the modified operating rod as SB-GA8-2005-23-02

Figure 12: Rod Modification (P/N: SB-GA8-2005-23-02)

PART C

1. Remove Rear Mechanism Cover, refer to Figure 7.
2. Inspect rear door handle for integrated stop (bent over tab), refer to Figure 8 and Figure 9. Replace door handles without an integrated stop with Item 10 from Table 3.

Note:

Install screw to outer door handle with loctite 222 thread locking compound.

3. Check for excessive play in the handle. If required, replace the handle bush with Item 11 from Table 4.
4. Reinstall the Rear Mechanism Cover, refer to Figure 7.

Documentation

Update aircraft log book to reflect incorporation of this Service Bulletin.

Compliance Notice

Complete the Document Compliance Notice and return to GippsAero by fax or mail.

DOCUMENT COMPLIANCE NOTICE



A Mahindra Aerospace Company

Document:

SB-GA8-2020-23
Issue 4

Aircraft Serial Number: GA8-_____

The following parts of Service Bulletin SB-GA8-2010-23 Issue 4 have been incorporated in the above aircraft (tick as appropriate)

PART A

PART B

Date of Incorporation: _____

Signed

Print Name: _____

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