



SERVICE DIRECTIVE BULLETIN

SERVICE DIRECTIVE BULLETIN NO. T-053

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DATE: November 2, 2016

1. SUBJECT: Particle Separator Assembly, Rivet Inspection

2. MODEL: 480 and 480B

3. EFFECTIVITY: All S/N 5238 and prior, equipped with P/N ECD4066-1/-2;
 Excluding S/N 5220-5223, 5227-5230, 5236, and 5237 (In compliance at
 the time of manufacture)

4. BACKGROUND:

During factory installation of the air induction system, an installer detected faulty riveting in the particle separator assembly. It was observed that the rivet locking collars were incompletely engaged or missing. If a locking collar becomes detached, it could potentially enter the engine air intake.

This Service Directive Bulletin (SDB) requires inspection of the particle separator rivets for loose rivets and rivet locking collar condition, and sealing rivet heads or replacement of defective rivets, as required.

5. COMPLIANCE:

Within the next 10 hours, remove the particle separators (P/N ECD4066-1 and ECD4066-2) and inspect the rivet attachments for loose rivets or locking collars in accordance with paragraph 6. If the rivet is loose, the rivet is defective and must be replaced. If the rivet is secured but the locking collar is missing or loose and can be picked out, the rivet must be sealed.

Report the results of the inspection to Enstrom.

NOTES

Perform all maintenance in accordance with the TH-28/480 Series Maintenance Manual (MM).

P/N ECD4066-3/-4, supplied by an alternate manufacturer, is exempt from inspection.

6. PROCEDURE:

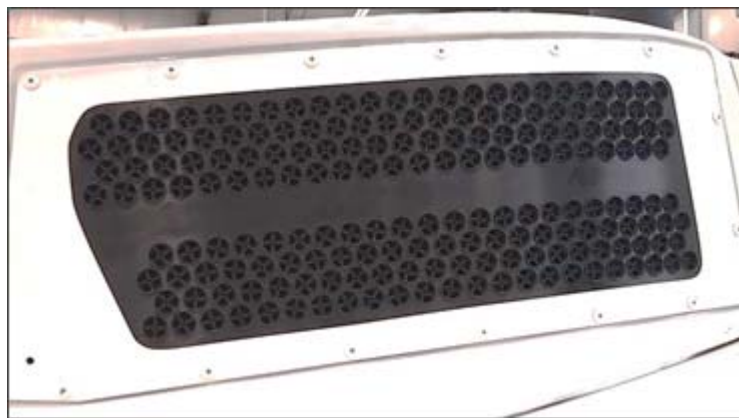
6.1 Refer to Figure 1 to determine which particle separator configuration is installed.

6.1.1 If the swirl tubes are arranged as shown in Figure 1a or Figure 1b, P/N ECD4066-1/-2 is installed, proceed to step 6.2.

6.1.2 If the swirl tubes are arranged as shown in Figure 1c, P/N ECD4066-3/-4 is installed, no further action is necessary.



a. P/N ECD4066-1/-2



b. P/N ECD4066-1/-2



c. P/N ECD4066-3/-4

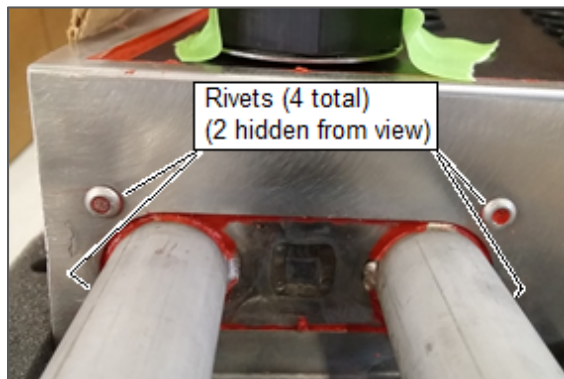
Figure 1. Particle Separator Configurations; ECD4066-1/-2 (a and b), and ECD4066-3/-4 (c)

- 6.2 Obtain clean felt or foam sheet pads (or equivalent) to cover the work space.

CAUTION

Ensure nothing is allowed to enter the induction system while the particle separators are removed.

- 6.3 Remove the two air particle separators (left and right sides) from the upper plenum/air inlet (para. 13-33, MM).
- 6.3.1 Cap or cover openings to the induction system to prevent FOD.
- 6.4 Place the particle separators on the prepared work space.
- 6.5 Cover the scavenge air inlet with tape or other suitable, clean material to prevent FOD from entering the particle separator body.
- 6.6 Locate the four rivets near the ejector pipes (Figure 2). Push the foam gasket away from the side of the particle separator body, as necessary.



**Figure 2. Particle Separator Rivets (2 rivets are hidden from view)
(Particle separator removed for clarity)**

- 6.7 Inspect for loose rivets and locking collar condition (Figure 3).
- 6.7.1 If the rivet is secured, but the locking collar is missing, the rivet must be sealed (Figure 3a).
- 6.7.2 If the rivet is secured and the locking collar is present, check the security of the collar engagement with a mechanics pick or similar hand tool (Figure 3b).
- 6.7.2.1 If the collar engagement is secured, the rivet is acceptable.
- 6.7.2.2 If the collar can be picked out, the rivet must be sealed.
- 6.7.3 If a rivet is loose, the rivet is defective and must be replaced.

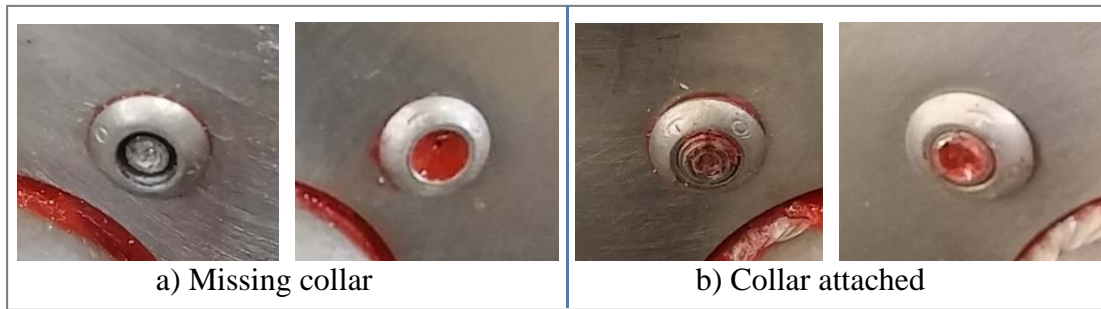


Figure 3. Locking Collar Condition Examples

- 6.8 Replace a defective rivet as follows.
- 6.8.1 If the required riveter tools are available, the rivet may be removed and replaced with P/N CR3853-4-02 rivet. See paragraph 8 for required Special Tools. Contact Enstrom to obtain the rivet replacement procedure.
- 6.8.2 If the Special Tools are not available, the particle separator must be sent to Enstrom for rivet replacement. See paragraph 14.
- 6.8.3 If sending the particle separator to Enstrom, skip paragraph 6.9.
- 6.9 Seal a rivet as follows. (Recommended products are listed in paragraph 7, Parts, *Consumable Materials*.)
- 6.9.1 Pick out any remaining locking collar and red RTV sealant.
- 6.9.2 Abrade the rivet head surface and an area of ½ inch diameter around the rivet with a Scotch-Brite™ pad (or equivalent).
- 6.9.3 Remove residue with a cloth dampened with a solvent and wipe dry.
- 6.9.4 Apply a bead of adhesive/sealant around the perimeter of the rivet and over the head of the rivet (1/16-1/8”/1.5-3 mm thick min.) (Figure 4). Follow the adhesive manufacturer’s instructions or technical data for application and cure requirements.
- 6.9.5 Smooth the bead and remove any excess.
- 6.10 After rivet replacement and sealant application is accomplished, inspect the particle separator in accordance with paragraph 13-34 (MM). Shake out any FOD from the particle separators through the ejector pipes.
- 6.11 Remove the protective caps or covers that were installed when the particle separators were removed.
- 6.12 Install the particle separators in accordance with paragraph 13-36 (MM).



Figure 4. Sealed Rivets

7. PARTS:

NOTE: Procure rivets only if riveting tools are available. (Reference paragraphs 6.8 and 8.)			
<i>Part Number</i>	<i>Description</i>	<i>Quantity</i>	
CR3853-4-02	Rivet, Blind (CHERRYMAX®)	1-8, A/R	
<i>Consumable Materials</i>	<i>Recommended</i>	<i>Quantity</i>	<i>Reference Paragraph</i>
Abrasive	Scotch-Brite™ (green)	1 pad	6.9
Adhesive/Sealant	PR-1440B, PR-1776M, or equivalent	A/R	6.9
Protection, Work Surface	Clean cloth or felt, foam sheet pad, or equivalent	A/R	6.2
Solvent	Citra-Safe, Extreme Simple Green, or equivalent	A/R	6.9
Tape	Masking tape, painters, or equivalent	A/R	6.5

8. SPECIAL TOOLS:

Mechanics picks (or dental pick)	
NOTE: If available at your authorized repair facility, the following tools would be necessary for accomplishing the rivet replacement. If not available, send the particle separator assembly to Enstrom. (Reference paragraphs 6.8 and 14.)	
<i>Tool Number</i>	<i>Description</i>
G704B and H781-456	CHERRYMAX® Pneumatic Riveter and Offset Pulling Head
---OR---	
G800 with 704A12-12 and H781-456	CHERRYMAX® Hand Riveter with 12-inch Extension and Offset Pulling Head

9. MAN-HOURS: 2 hour (inspection); 4 hours (sealing); 6-8 hours (complete rivet replacement)
10. WARRANTY: Per Enstrom Helicopter Warranty policy
11. WEIGHT CHANGE: None
12. LOG BOOK ENTRY: Enter compliance with this SDB in the aircraft maintenance records.
13. REPETITIVE ACTION: None
14. SHIPMENT AND RETURN:
 - 14.1 Attach a tag to the particle separator with the following information:

Attn: **Enstrom Product Support (Reference SDB T-053)**

Aircraft S/N _____

Owner _____

Point of Contact _____

Address _____

Phone _____

Email _____
 - 14.2 Ship the package to:

ENSTROM HELICOPTER CORPORATION
Attn: Product Support (Ref. SDB T-053)
2209 22nd Street
Menominee, MI 49858
 - 14.3 Upon receiving back the particle separators, continue with paragraph 6.10.