



SERVICE DIRECTIVE BULLETIN

SERVICE DIRECTIVE BULLETIN NO. 0117
Revision 4

Revision 4 removes paragraph 6.2 (data transferred into SIL 0074, latest revision).

Revision 3 expands the number of models affected by the contents of this SDB, adds additional steps and safety information for checking the drive belt, clarifies the inspection of potential contact areas, adds new Figures 3, 4a and 4b, updates paragraphs 6.1, 6.1.1, 6.1.3 and 13.3, and adds paragraphs 6.1.4 and 6.1.5.

Revision 2 changes the repetitive inspection interval, and adds Figure 2, paragraphs 6.1.1, 13.2, and 13.3.

Revision 1 clarifies the inspection requirements and revises the adhesive type and process.

DATE: November 21, 2023

1. SUBJECT: Main Rotor Drive Belt
2. MODEL: F-28A, 280, F-28C, F-28C-2, F-28C-2R, 280C, F-28F, F-28F-R, 280F,
 and 280FX
3. EFFECTIVITY: All S/N
4. BACKGROUND:

Enstrom has received reports of precautionary landings caused by unraveling of the outer edge of the main rotor drive belt on turbine aircraft. These belts are similar construction to the belts used on piston aircraft (part number 28-13302-() (F-28C and 280C) and 28-13321-() (F-28A, 280, F-28F, 280F, and 280FX)). The belt was manufactured by PIX Transmission Limited (PIX). These belts have the Kevlar cord exposed along the edge surface of the belt.

This SDB provides instructions for sealing the edges of the main rotor drive belt.

5. COMPLIANCE:

Within the next 5 hours and every 10 hours thereafter until the belt is sealed in accordance with paragraph 7, inspect the main rotor drive belt for exposed or unraveling cord in accordance with paragraph 6. Seal the main rotor drive belt edges at the next 100 hour/annual inspection in accordance with paragraph 7.

Also, within the next 5 hours and at every 50 hours, inspect the drive belt for possible contact with the idler straps. Track the idler pulley in accordance with the maintenance manual (F-28A/F-28C, Page MM-8-3; 280/280C, Page MM-8-2; and F-28F/280F Series, Para. 11-5, B).

6. INSPECTION:

WARNING: The belt should be removed before further flight if an entire cord is beginning to emerge from the belt or is loose. Repair the belt in accordance with paragraph 7.

NOTE: Perform all maintenance in accordance with the applicable F-28/A/C, 280/C, or F-28F/280F Series Maintenance Manual.

NOTE: Belts may have had the edges sealed prior to installation at the factory.

NOTE: Loose fabric threads (Figure 5) are not significant. The threads may be trimmed but do not require sealing.

6.1 Inspect the belt for sealed edges, checking for any loose or protruding cord. See the example shown in Figure 1.

6.1.1 If the belt edge was previously sealed but the belt edge has deteriorated as shown in Figure 2 or if any loose or protruding cords are found, remove the belt and send back to Enstrom for warranty. Install a new airworthy belt.



Figure 1. Sealed belt edge

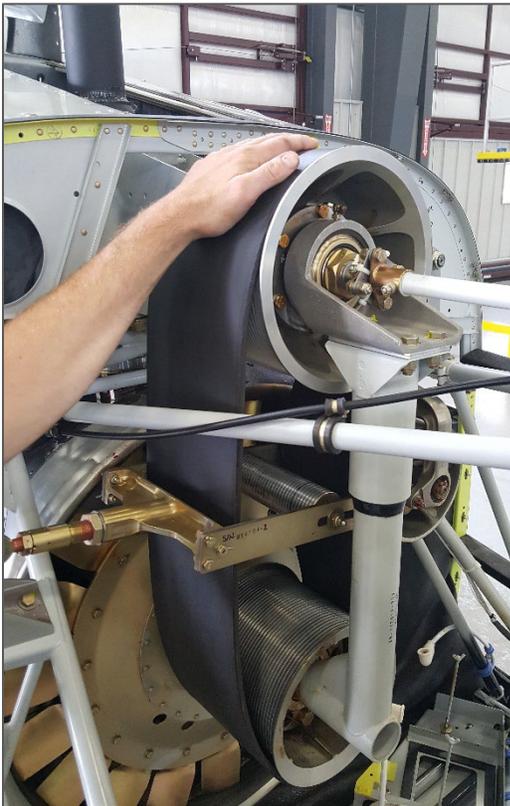


Figure 2. Deteriorated sealed belt edge (Turbine model drive system shown)

- 6.1.2 If the belt edge was previously sealed but portions of adhesive are missing, seal the exposed cord edges in accordance with paragraph 7. Continue the belt inspection requirements as follows before proceeding with repairs.

WARNING: Do not grip edge of belt to rotate. Gripping the edge may result in fingers being pinched in bottom pulley, causing serious injury.

- 6.1.3 With the clutch disengaged, slowly rotate the belt around the diameter of the upper pulley by placing a hand flat against the belt surface, as shown in Figure 3. Check for protruding cord around the circumference of the upper and lower pulleys on both the forward and aft sides of the belt.



Proper Method –
Hand flat against belt surface



Improper Method –
DO NOT grip edge of belt

Figure 3. Proper and Improper Belt Rotation

- 6.1.4. While checking for loose cord, inspect areas where the belt comes into close contact with adjacent structures such as the lower pulley assembly. The presence of rubber residue at these points may indicate breakdown of the belt. Refer to Figures 4a and 4b for examples.
- 6.1.5 If the belt edges are sealed and the condition of the existing adhesive is satisfactory and there is no loose or protruding cord, no further action is required.



Figure 4a. Inspection point – Center pulley, forward edge

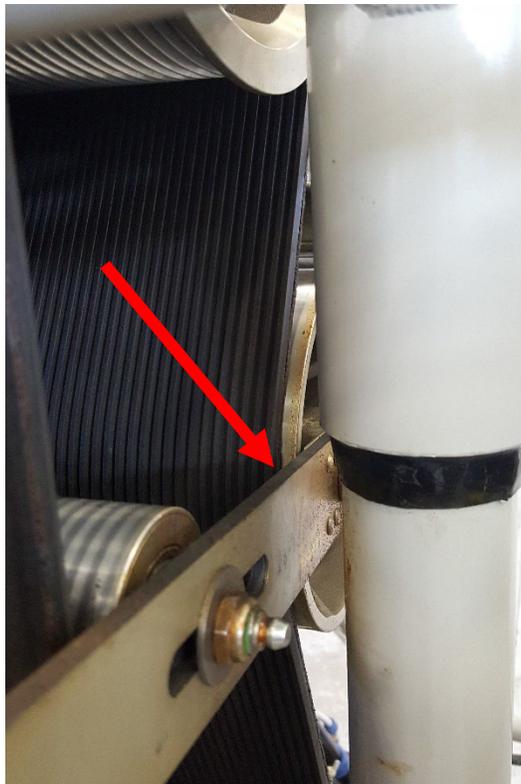


Figure 4b. Inspection point – Center pulley, aft edge

6.2 [deleted – Refer to SIL 0074, latest revision]

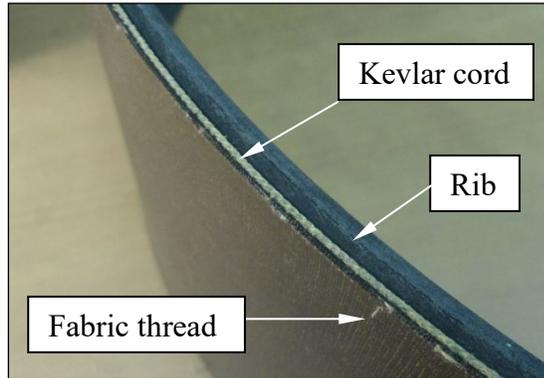


Figure 5. Visible Kevlar cord on the belt edge

6.3 Inspect the belt edge for exposed cord. See the example shown in Figure 5.

6.3.1 Seal any portion of the Kevlar cord that is exposed greater than 40% of the cross section thickness (Figure 6).

6.3.2 The belt edges may be sealed in accordance with paragraph 7 and then returned to service.

6.3.3 For belts with cord exposure less than 40%, the belt may be returned to service. No further action is required.

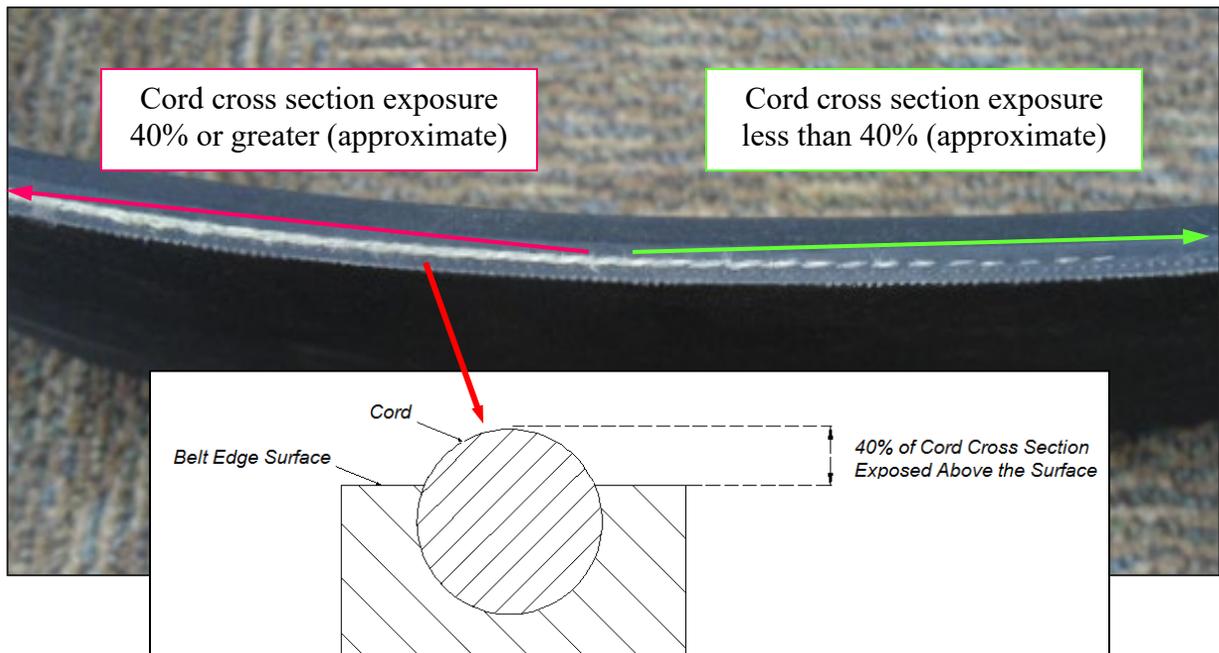


Figure 6. Cord exposure limits

7. PROCEDURE:

NOTE: The materials listed in paragraph 7.1 can be procured from a local source.

7.1 Authorized Materials

Denatured alcohol
3M 847 Nitrile High Performance Rubber and Gasket Adhesive
Clean shop cloths

7.2 Surface Preparation

7.2.1 Clean the belt surface using a cloth wetted with solvent (ref. 7.1).

7.2.2 Trim loose fabric threads on fabric backing only.

7.3 Adhesive Application

7.3.1 Prepare the 3M 847 adhesive in accordance with the manufacturer's instructions.

7.3.2 Apply a bead of 3M 847 on the belt edge surface ensuring the exposed Kevlar cord is covered with adhesive (*Figure 7*).

7.3.3 Remove any adhesive from the rib edge and the back of belt using a clean cloth wetted with solvent (ref. 7.1).

CAUTION: Failure to remove excess adhesive from the rib edge or from the back of belt may impair smooth belt operation.

7.3.4 Allow the adhesive to dry for three hours, turn over and repeat the application for the edge on the other side of the belt.

7.3.5 Hang the belt on a rack and allow the adhesive to cure for a minimum 12 hours.



Figure 7. Sealed belt edge surface

8. SPECIAL TOOLS: N/A
9. MAN-HOURS: 3 hours (belt sealing only)
10. WARRANTY: Per Enstrom Warranty Policy
11. WEIGHT CHANGE: None
12. LOG BOOK ENTRY: Record modification in the maintenance log book.
13. REPETITIVE ACTION:
 - 13.1 Inspect the drive belt in accordance with paragraphs 6.2 and 6.3 every 10 hours for exposed or unraveling cord until the belt edge is sealed in accordance with paragraph 7.
 - 13.2 At every 50 hours, inspect the condition of the sealed belt edge.
 - 13.3 At every 50 hours, inspect the drive belt for possible contact with adjacent structures and implement necessary adjustments to prevent contact in accordance with F-28F/280F Series Maintenance Manual, Paragraph 11-5, B (A and C models would also apply). In addition, inspect for loose or protruding cord on both the forward and aft edges of the drive belt around the circumference of the upper and lower pulleys.