



SERVICE INFORMATION LETTER

SERVICE INFORMATION LETTER NO. 0152

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DATE: May 31, 2001

1. SUBJECT: Belt Tension Adjustment and Idler Pulley Alignment
2. MODEL: F-28A, 280, F-28C, 280C, F-28F, 280F, and 280FX
3. EFFECTIVITY: All serial numbers
4. BACKGROUND:

Enstrom recently received a report from an operator of a broken pylon. The failure occurred in the area adjacent to mounting bracket for the belt tension assembly bracket (Refer to Figures 1 and 2). A review of Enstrom's records indicates that other than this recent failure there have been three failures in this area in the last ten years. Enstrom believes the failures are not a chronic problem and were probably a result of either a rough belt or improperly adjusted belt tension and idler pulley adjustment.

This Service Information Letter provides a recommended one time inspection of the pylon adjacent to the belt tensioning assembly mounting bracket, an inspection check list for the belt tension assembly area for use during the 50 hour periodic inspection, and maintenance procedures for adjusting the belt tension assembly, "snubber roller", and idler pulley.

5. COMPLIANCE:
 - A. Enstrom recommends visually inspecting the pylon area adjacent to the belt tensioning assembly mounting bracket for cracks and other damage within the next 10 flight hours (Refer to Figures 1 and 2). If no damage is found, return the aircraft to service. If damage is found, repair in accordance with AC 43.13-1B or contact Enstrom Customer Service for specific repair instructions.
 - B. Inspect the belt tensioning assembly in accordance with the inspection checklist found in Table 1 of this Service Information Letter during the 50 hour periodic inspections.
 - C. If the belt tensioning assembly requires adjustment as a result of the inspections in paragraphs 5.A or 5.B, refer to paragraph 5.1 for the maintenance procedures for adjusting the belt tensioning assembly.

5.1. MAINTENANCE PROCEDURES:

- A. F-28A, F-28C, 280, and 280C Models:
 - 1. Rig/Adjust the clutch control for the belt tension assembly. Refer to Service Information Letter 0080A for maintenance procedures.
 - 2. Adjust the belt “snubber” roller using the following procedure.
 - A. With the belt tension clutch engaged, adjust the belt “snubber” roller so that it is parallel to the belt surface and has .25 - .38 in./6.4 - 9.7 mm clearance between the belt surface and the roller.
 - B. While checking/adjusting the track of the idler pulley, observe the belt “snubber” roller. While running the engine at 2900 RPM, there should be approximately .125 in./3.2 mm clearance between the belt surface and the roller. Adjust the roller as required to obtain the .125 in./3.2 mm clearance.
 - 3. Check/Adjust the idler pulley track using the following procedure (Refer to Figure 3).
 - A. Remove the upper cowling if not already accomplished.
 - B. Decrease the torque on the bolt at point 1. The bolt should not be “loose.”
 - C. Decrease the torque on the nuts at points 2 and 3. The nuts should not be “loose.”
 - D. Rotate the idler support shaft using a wrench so that point 3 is at the highest position. Then rotate the shaft approximately 75° towards the right side of the aircraft (clockwise looking forward).

WARNING

Use caution when adjusting the idler pulley track with the engine running and the belt drive system engaged.

- E. Start the engine and slowly engage the rotor system while observing the idler pulley track on the belt.
- F. When the clutch is fully engaged at idle, use a wrench and turn the idler support shaft until the pulley is tracked on the belt.

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- G. When the pulley is centered, tighten the bolt at the pylon strap (point 1) to 50-70 in-lbs/5.7-8.0 Nm.
 - H. Holding the idler support shaft with the wrench, tighten the forward idler shaft nut (point 2) to 600-780 in-lbs/68.2-88.6 Nm and then tighten the aft nut (point 3) to 290-410 in-lbs/33.0-46.6 Nm.
 - I. Increase the engine speed to 2000 RPM and check the idler pulley track. Adjust the track as required.
 - J. If the track is good at 2000 RPM, gradually increase the engine speed to 2900 RPM while observing the track. Adjust the track as required.
 - K. Inspect the assembly for security before reinstalling the cowling.
- B. F-28F, 280F, and 280FX Models:
- 1. Rig/Adjust the clutch control for the belt tension assembly. Refer to the F-28F/280F Series Maintenance Manual with 280FX Supplement for maintenance procedures.
 - 2. Adjust the belt “snubber” roller using the following procedure.
 - A. With the belt tension clutch engaged, adjust the belt “snubber” roller so that it is parallel to the belt surface and has .25 - .38 in./6.4 - 9.7 mm clearance between the belt surface and the roller.
 - B. While checking/adjusting the track of the idler pulley, observe the belt “snubber” roller. While running the engine at 3050 RPM, there should be approximately .125 in./3.2 mm clearance between the belt surface and the roller. If required, disengage the belt drive system and adjust the roller as required to obtain the .125 in./3.2 mm clearance. After final adjustment of the idler pulley track, loosen the aft nut on the “snubber” roller and allow the roller to self align on the idler straps. Torque the aft nut to 95-110 in-lbs/10.8-12.5 Nm.
 - 3. Check/Adjust the idler pulley track. Refer to the F-28F/280F Series Maintenance Manual with 280FX Supplement for maintenance procedures with the following additions.

WARNING

Use caution when adjusting the idler pulley track with the engine running and the belt drive system engaged.

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- A. Decrease the torque on the bolt and nuts at points 1 thru 3. The bolt and nuts should not be “loose.”
- B. Rotate the idler support shaft using a wrench so that point 3 is at the highest position. Then rotate the shaft approximately 75° towards the right sided of the aircraft (clockwise looking forward) before starting the engine and engaging the belt drive system..

5.2. PARTS: Refer to the F-28/280 Series Illustrated Parts Catalog.

6. SPECIAL TOOLS: N/A

7. ESTIMATED MAN-HOURS:

1 Man-Hour for belt tension assembly inspection/adjustment and for idler pulley alignment.

8. WARRANTY: Per Enstrom warranty policy.

9. WEIGHT CHANGE: N/A

10. LOG BOOK ENTRY: As required for maintenance entries.

11. REPETITIVE INSPECTION:

Use the information in Table 1 to supplement the inspection checklists found in the applicable maintenance manual for each model aircraft during 50 hour periodic inspections.

Table 1. Periodic Inspection Criteria

Nature of Inspection	Frequency
1. Inspect belt tension assembly for:	
a. Proper extension of piston with clutch engaged (measurement: 1.63 - 1.75 in./41.1 - 44.5 mm).	50 Hours
b. Worn bushings in side plate slots.	50 Hours
c. Microswitch for proper operation at over-center position.	50 Hours
d. Bushing in bellcrank at pylon for looseness	50 Hours
e. Security of clutch engagement cable.	50 Hours
f. Security of all attaching hardware.	50 Hours
g. Cracks in the adjacent pylon structure.	50 Hours
2. Inspect idler pulley assembly for:	
a. Looseness in idler yoke shaft rod end bearing.	50 Hours
b. Cracks and security of idler support bracket and yoke casting.	50 Hours
c. Evidence of idler pulley out of track.	50 Hours
d. Worn or loose idler yoke support bushings.	50 Hours
e. Proper clearance of belt "snubber" roller (clutch engaged)	50 Hours
f. Security of all hardware	50 Hours

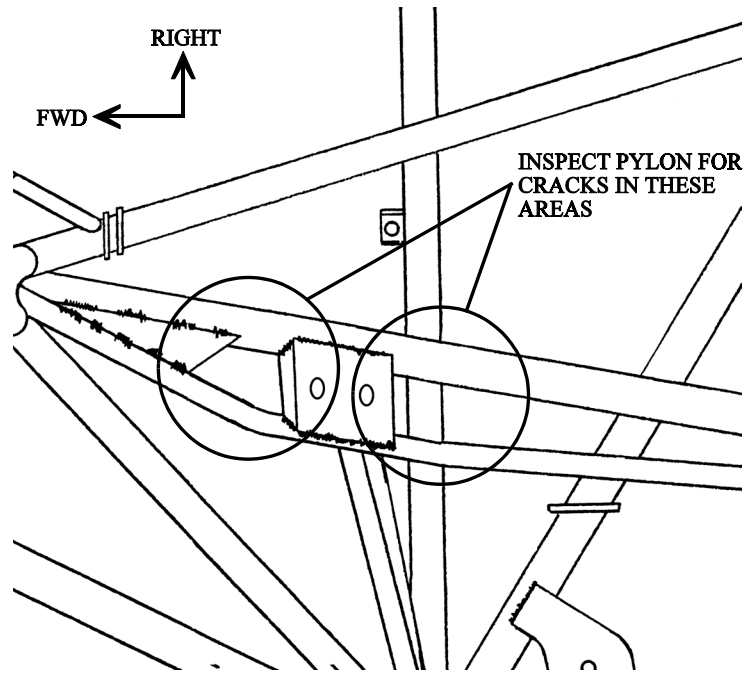


Figure 1. Pylon (Viewed from Top)

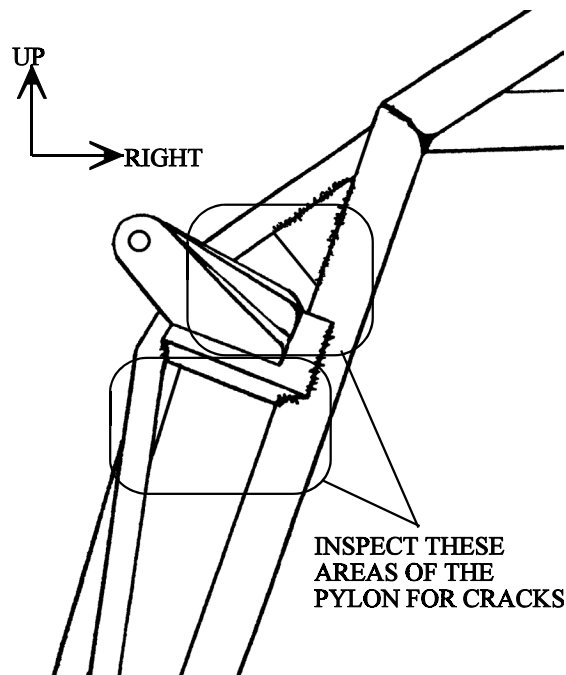


Figure 2. Pylon (Viewed from Back)

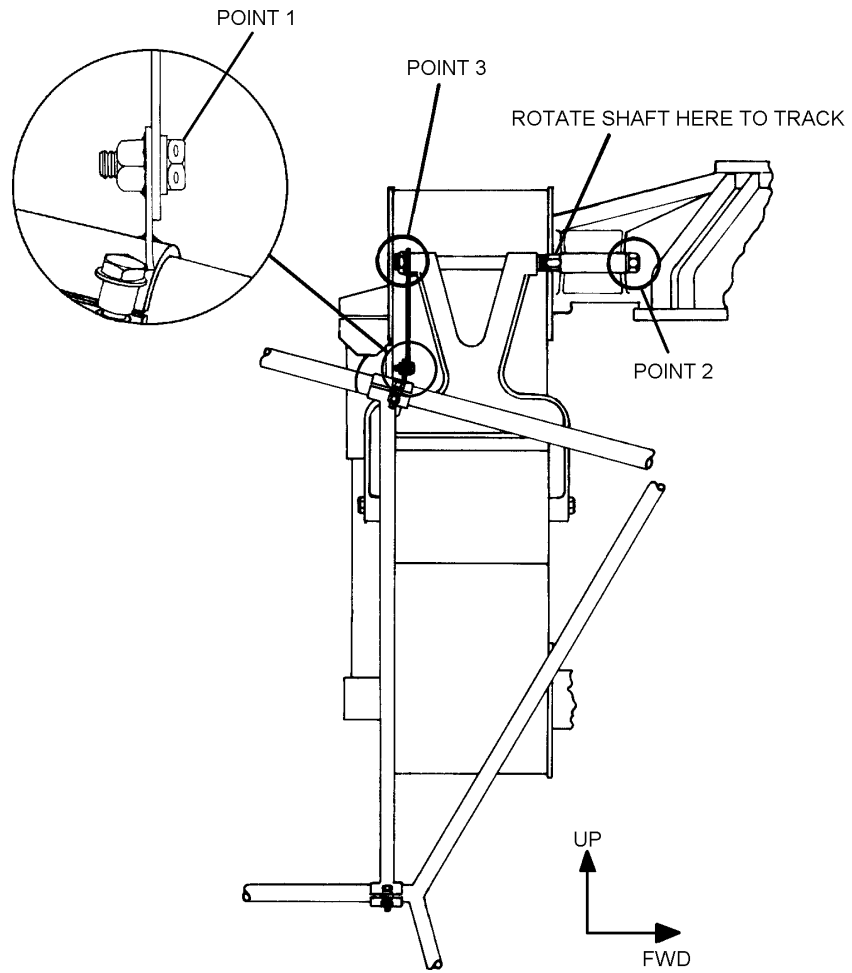


Figure 3. Idler Pulley Tracking (Viewed from Right)