

Service Bulletin

- Service Bulletin:** SB 407-3010; Bell Helicopter Model 407 Air Conditioner Compressor Belt Tensioning Collar replacement
- Subject:** Removal & Replacement of the Compressor Belt Tensioning Collar.
- Date:** 30 August, 2004, Rev N/C
- Applicability:** Bell 407 Helicopter, Equipped with the Air Comm Corporation 407EC-201 Air Conditioning System, Kit Numbers: AC407-72 Through AC407-100.
- Reference:**
1. FAA / STC # SR00222DE, Bell Helicopter 407 Air Conditioning System.
 2. Compressor Installation Drawing 407EC-300 Rev V.
 3. Collar Assy. Belt Tension Drawing S-3010EC-5 Rev M
- Compliance:** At the discretion of the operator.

I. Background:

Field reports have indicated that cracks in the welds attaching the S-3010EC-13 Block to the S-3010EC-24 Plate have occurred on some S-3010EC-5 Collar Assemblies. These parts have been identified as having come from a particular lot of parts which were shipped in kits between 10/08/03 to 07/12/04.

The air conditioner kit serial numbers which are affected by this Service Bulletin are **only** those kits who's numbers fall between **AC407-72** through **AC407-100**.

The kit serial number can be found on the top of the S-3005EC-1 Compressor Mount at the base of the air conditioner compressor assembly.

II. Approval:

Technical aspects of this Service Bulletin are FAA / DER approved.

III. Purpose:

To replace the existing air conditioner Compressor Belt Tensioning Collar, P/N S-3010EC-5 Rev L, with P/N S-3010EC-5 Rev M, for the above listed Kit Numbers.

IV. Bill of Materials:

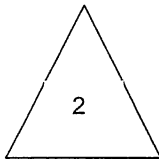
1. Items to be removed:

Item	Part Number	Description	Quantity
1	S-3010EC-5 Rev. L Kits Numbers: AC407-72 Thru. AC407-100 Only.	Compressor Belt Tensioning Collar	1

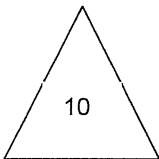
2. Items to be Installed:

Item	Part Number	Description	Quantity
1	S-3010EC-5 Rev. M	Compressor Belt Tensioning Collar	1

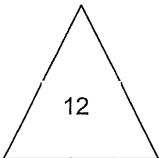
V. Notes:



Safety wire per MIL-P-8564 Para 3.3.7 using MS20995C-32 Safety Wire. (* Safety wire must be routed so that it does not contact spline or drive coupler).



Select a four (4) hole pattern on the S-3532EC-5 Drive Ring that will allow the S-3532EC-4 Drive Pulley to be torqued within the 200 – 300 in lbs. range.



Apply MIL-S-38249 Sealant (Pro-Seal 890 or eq.) to all faying surfaces of components mounted to the engine pan or aft firewall. Install all fasteners with wet coating of sealant.

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VI. Weight and Balance:

There is no change to the Weight and Balance to the aircraft, as the weight difference is negligible.

VII. Parts:

Parts associated with this Service Bulletin maybe obtained from the Air Comm Corporation Service Department at no charge:

Air Comm Corporation
Attn: Service Department
3300 Airport Road
Boulder, CO. 80301

Phone: 303-440-4075
Fax: 303-440-6355
E-mail: info@aircommcorp.com

NOTE

No warranty labor will be provided for the replacement of this part.

VIII. Accomplishment Instructions:

1. Removal of the Compressor Pulley and Drive Ring Assembly:

- A. Remove Compressor Drive Belt by loosening the Compressor Belt Tensioning Link.

CAUTION

Insure that the driveshaft assembly is supported prior to the removal of the retaining bolts to prevent damage to the driveshaft, and the driveshaft coupling.

- B. Remove the four Bolts from the tailrotor driveshaft coupling forward of the compressor drive pulley installation. (See Figure 1-1)

NOTE

It will be necessary to remove the Flywheel Assembly from the driveshaft on aircraft which have Serial Numbers prior to S/N 53443.

- C. Remove the safety wire from the (4) four S-3532EC-11 Bolts that retain the S-3532EC-3 Drive Ring to the S-3532EC-1 Pulley, and remove retaining bolts and Drive Ring.
- D. Remove the S-3532EC-1 Pulley using a .257 Dia X .13 Deep Spanner Wrench, utilizing one of the (4) four holes on the pulley body.

NOTE

Removal of the pulley is done by turning the pulley Counter Clockwise. (Facing the rear of the aircraft).

CAUTION

As the driveshaft will need to be held during the removal of the Compressor Drive Pulley, care should be taken not to damage the driveshaft, or other drive train components.

2. Removal / Installation of Compressor Belt Tensioning Collar.
 - A. Cut the safety wire and remove the AN4H-6A Bolt from the top half of the Belt Tensioning link.
 - B. Remove all eight (8) of the MS24693-S-272 Screws from the S-3010EC-5 Belt Tensioning Collar and remove the Collar from the aircraft.

NOTE

It will be necessary to match drill and counter sink four of the holes in the new S-3010EC-5 Collar, and Pro-seal per Note 12.

- C. Install new S-3010EC-5 Belt Tensioning Collar In reverse order of its removal.
 - D. Reinstall the AN4H-6A Bolt in the top half of the Belt Tensioning link, safety wire bolt using MS20995C-32 Safety Wire per MIL-P-8564 Paragraph 3.3.7.
3. Installation / Replacement of the Compressor Pulley and Drive Ring.

- A. Install the new Compressor Drive Pulley S-3532EC-4 on the Tail Rotor Driveshaft, threading the pulley tightly against the face of the Driveshaft Hanger Bearing Retainer.

NOTE

Installation of the pulley is done by turning the pulley Clockwise. (Facing the rear of the aircraft).

CAUTION

As the driveshaft will need to be held during the installation of the Compressor Drive Pulley, care should be taken not to damage the driveshaft, or other drive train components.

- B. Torque the S-3532EC-4 Compressor Drive Pulley to 200 – 300 in lbs (22.59 – 33.89 Nm), using a .257 Dia X .13 Deep Spanner Wrench, utilizing one of the (4) four available holes on the pulley body.
- C. Install new Drive Ring S-3532EC-5 on to the Driveshaft Spline, and slide into place aligning four (4) of the twelve holes provided in the Drive Ring with four (4) of the twelve (12) threaded holes located in the Compressor Drive Pulley. (See note 10).

NOTE

Alignment of four (4) of the holes in the Drive Ring that match those in the Compressor Drive Pulley is accomplished by a "trial and error" method of placing the Drive Ring on to the Driveshaft spline to check for hole alignment. Several rotations of the Drive Ring maybe necessary to find the desired hole alignment. If rotation of the pulley is required to achieve the Drive Ring hole alignment, the pulley torque must be increased. The maximum increase in torque is to the level of 350 in lbs. (39.54 Nm).

CAUTION

Never back the torque off the Compressor Drive Pulley to aid in the alignment of the Drive Ring.

- D. Once the correct hole alignment is accomplished between the Drive Ring and the Compressor Drive Pulley. Install the four (4) S-3532EC-11 Bolts and AN960-PD416 Washers and torque to 60 – 80 in lbs. (6.77 – 9.03 Nm) and safety bolts using .032 safety wire (See note 2).

NOTE

Safety wire must be routed so that it does not contact the spline or drive coupler.

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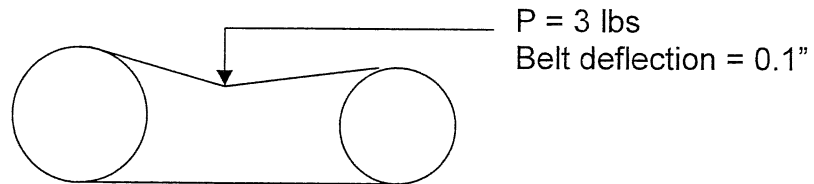
- E. Reinstall Driveshaft coupler, (Flywheel if applicable), and existing Drive Shaft mounting Bolts, torquing the MS21042L5 Nuts to 150 – 180 in lbs. (16.94 –20.33 Nm).

NOTE

Minimum clearance between the Driveshaft / Flywheel Drive Coupler and the Drive Ring is .05 in.

- F. Re-connect the Tailrotor drive shaft retaining bolts, nuts and washers. Torque nuts to 150 – 180 in lbs. (See figure 1-1)

- G. Reinstall the Compressor drive belt and tension belt using the Belt Tensioning Link. Tension belt to 52 in lbs. A properly tensioned drive belt will have a 0.1" deflection when 3 lbs of force is applied to the mid span of the belt.



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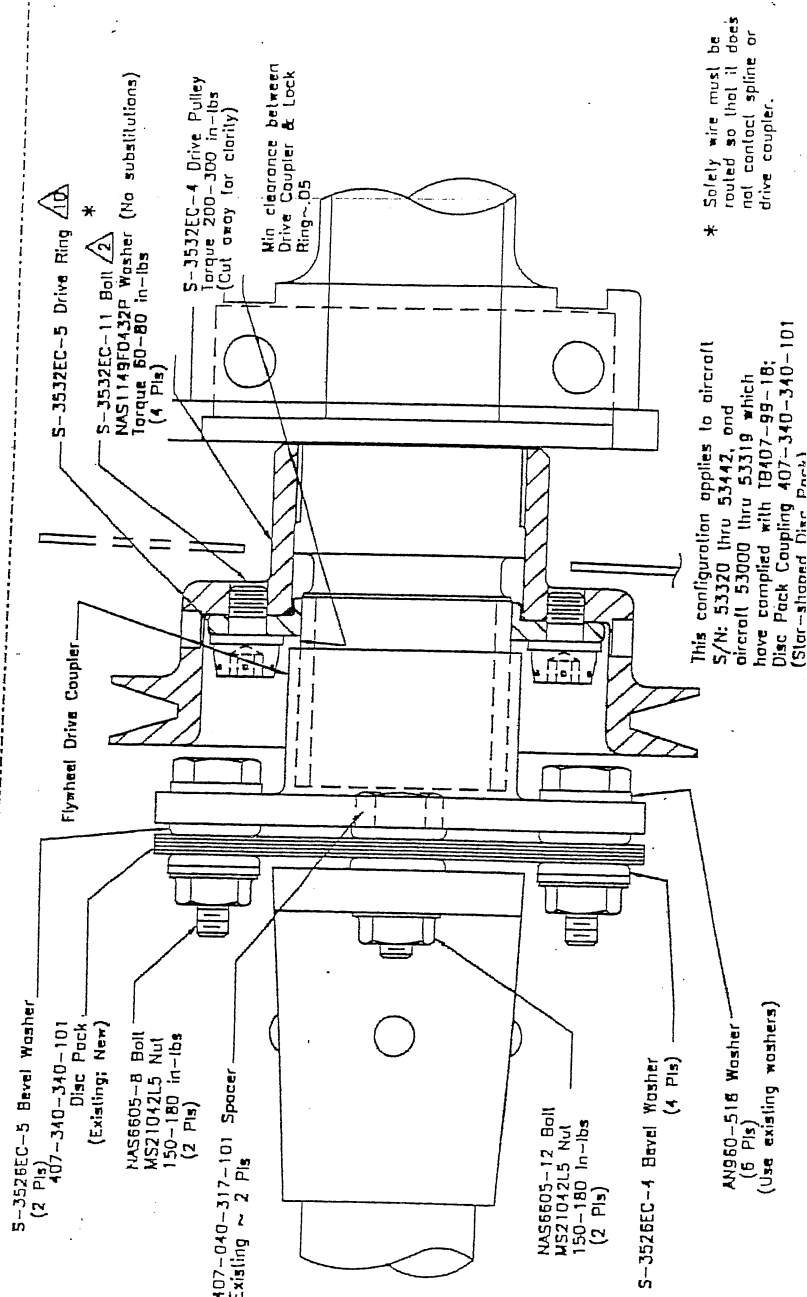
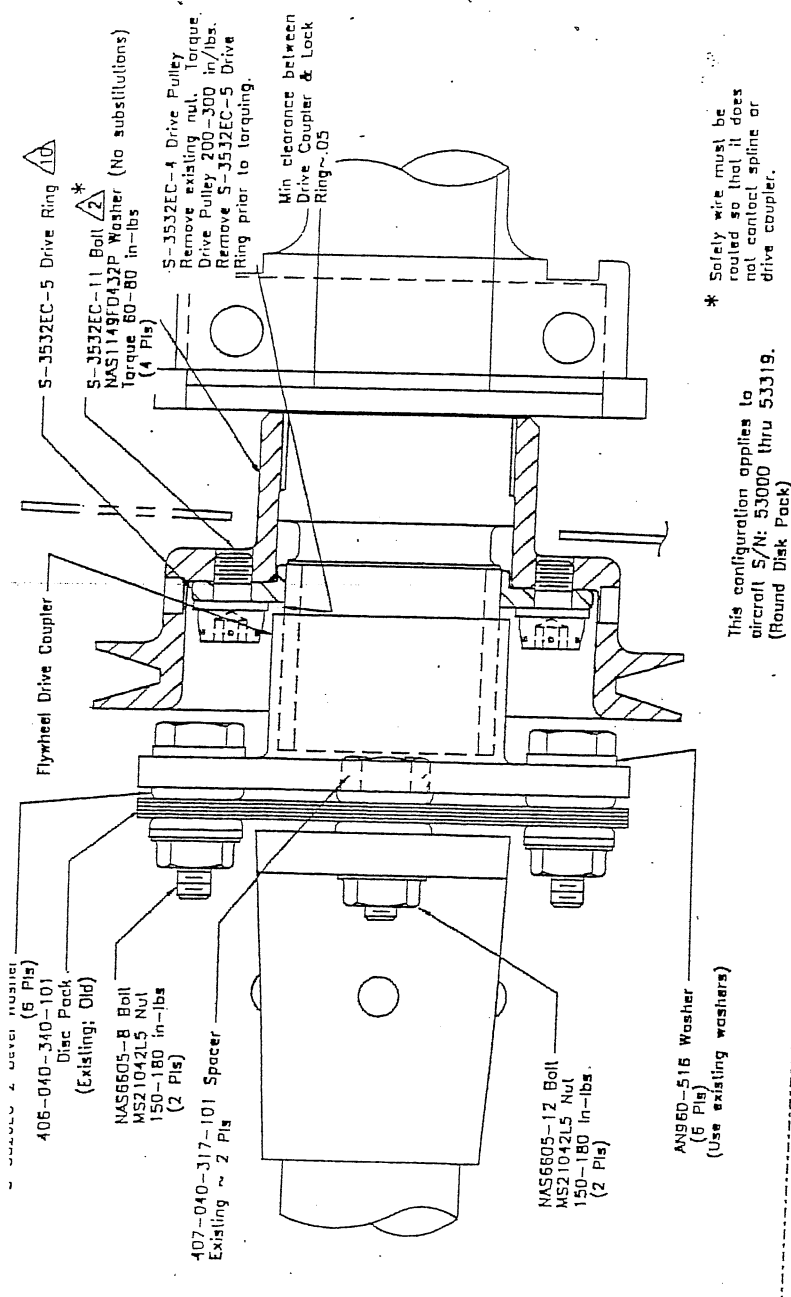


Figure 1-1 Installation of Compressor Drive Pulley and Drive Ring Assembly

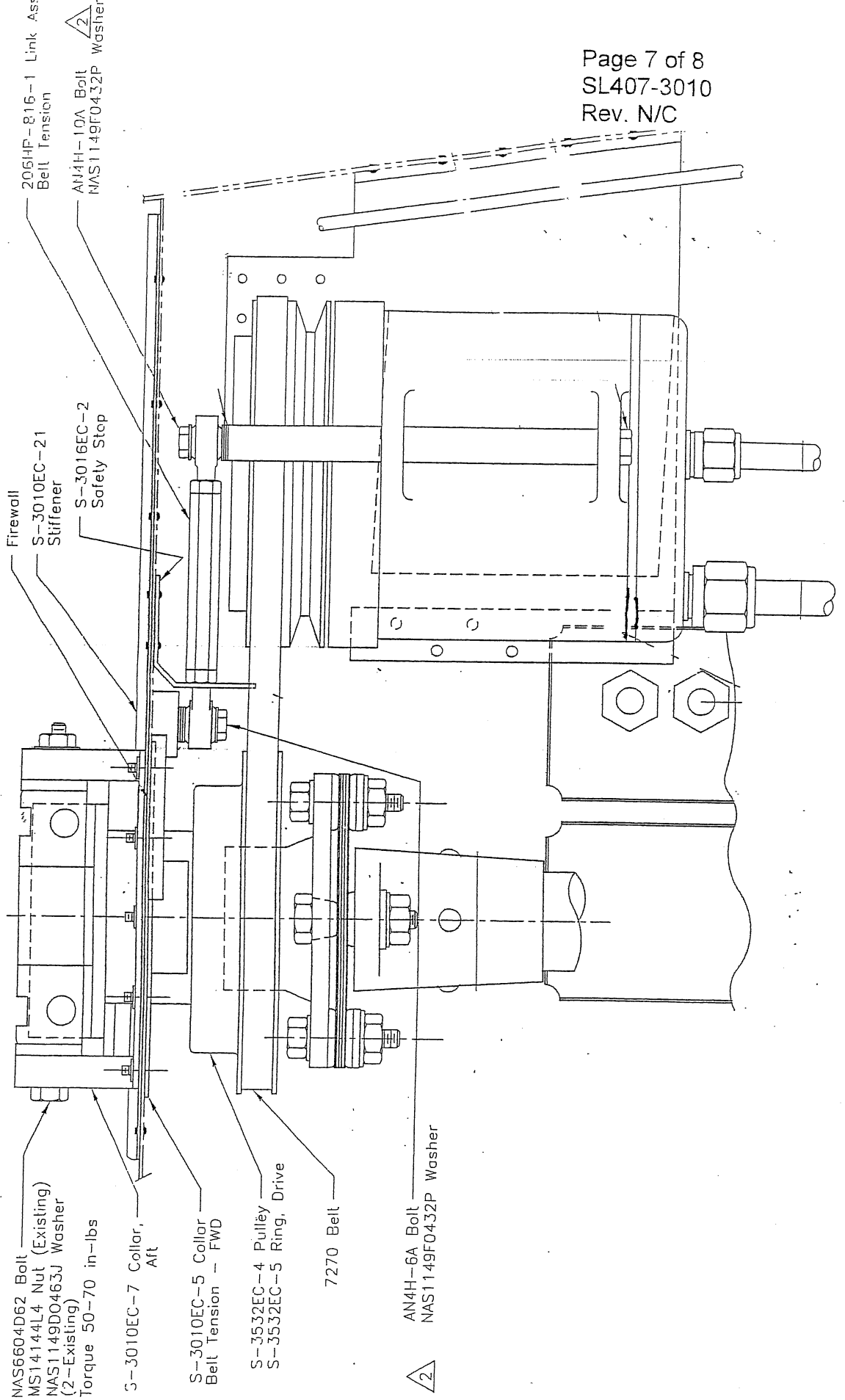


Figure 1-2 Installation of Compressor Collar Installation view looking Down.

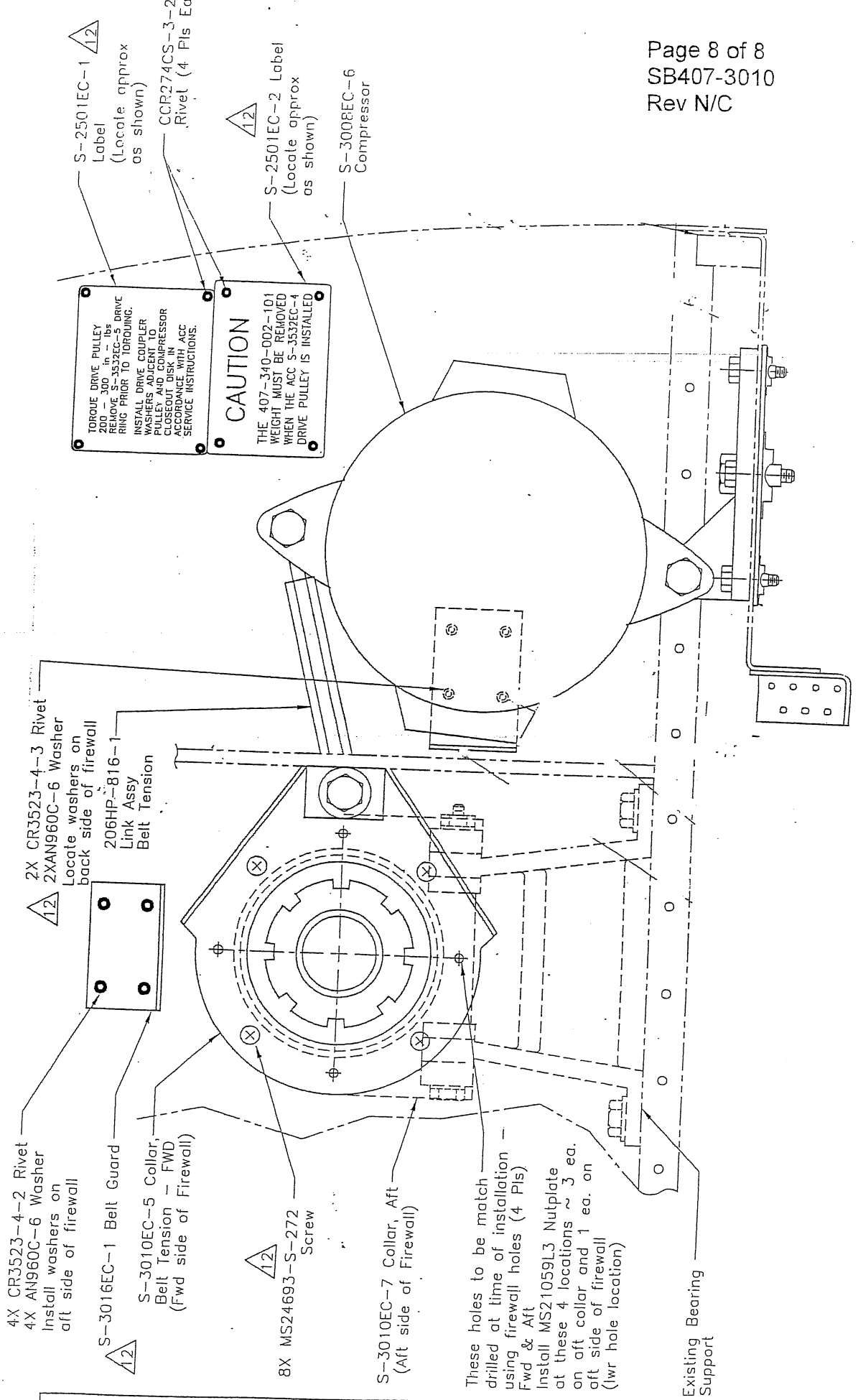


Figure 1-2 Installation of Compressor Collar Installation view looking Aft.