

RAMS

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Assembly Alert: 166

Date: April 7, 2008

Subject: Flange Bushing & Washer missing from S-19 Empennage Kits

Compliance: Mandatory

Models Affected: S-19 Empennage Kits shipped before April 7, 2008.

It has come to our attention that parts were left out of the S-19 Empennage Kit.

Below is a list of the parts and corresponding parts pages which are shipping with this Assembly Alert. The corrected Parts Pages are also attached to this Assembly Alert.

<u>Parts Page</u>	<u>Description</u>	<u>Part Number</u>	<u>Quantity</u>
02A-06	Flange Bushing	KSAC0019-3	1
02A-06	3/16" Thick Washer	AN960-10	1

The following item has been deleted from the parts page.

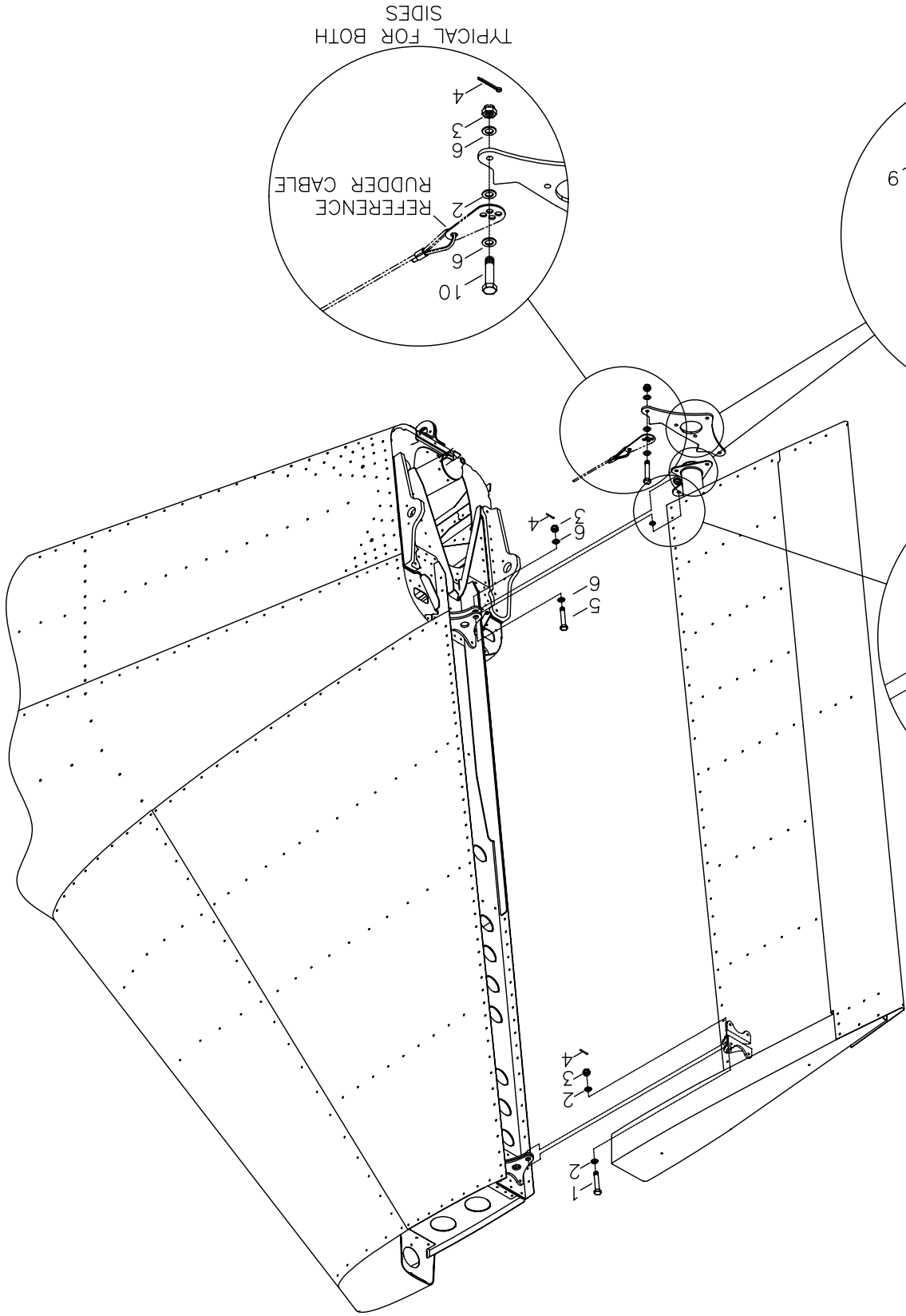
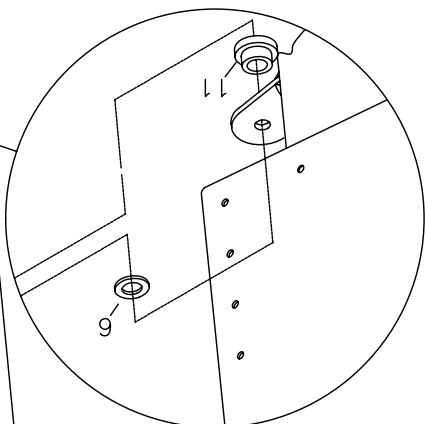
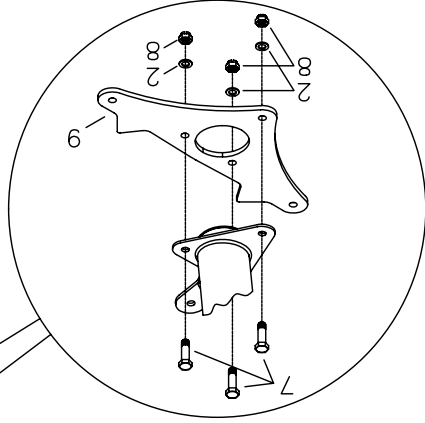
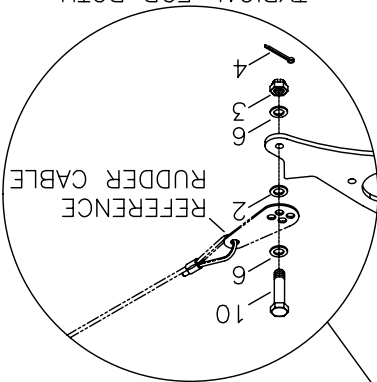
02A-06	3/16" Thin Washer	AN960-10L	-1
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Thank you for your attention to this matter. I hope that we have not inconvenienced you to any great degree. Fly safe!

RPM S-19 RUDDER INSTALLATION

MD5073
REV. A

TYPICAL FOR BOTH
SIDES



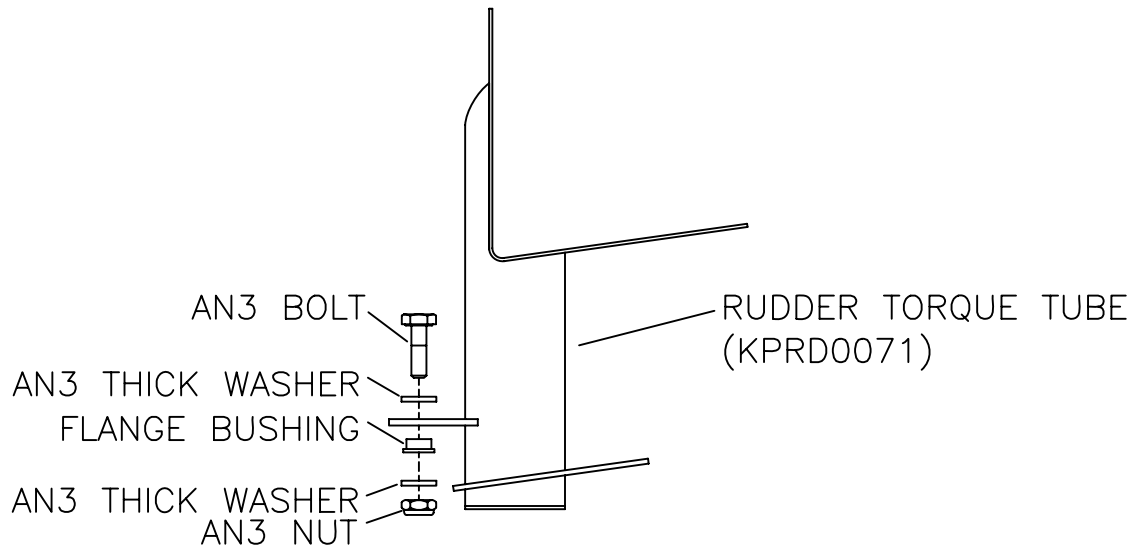
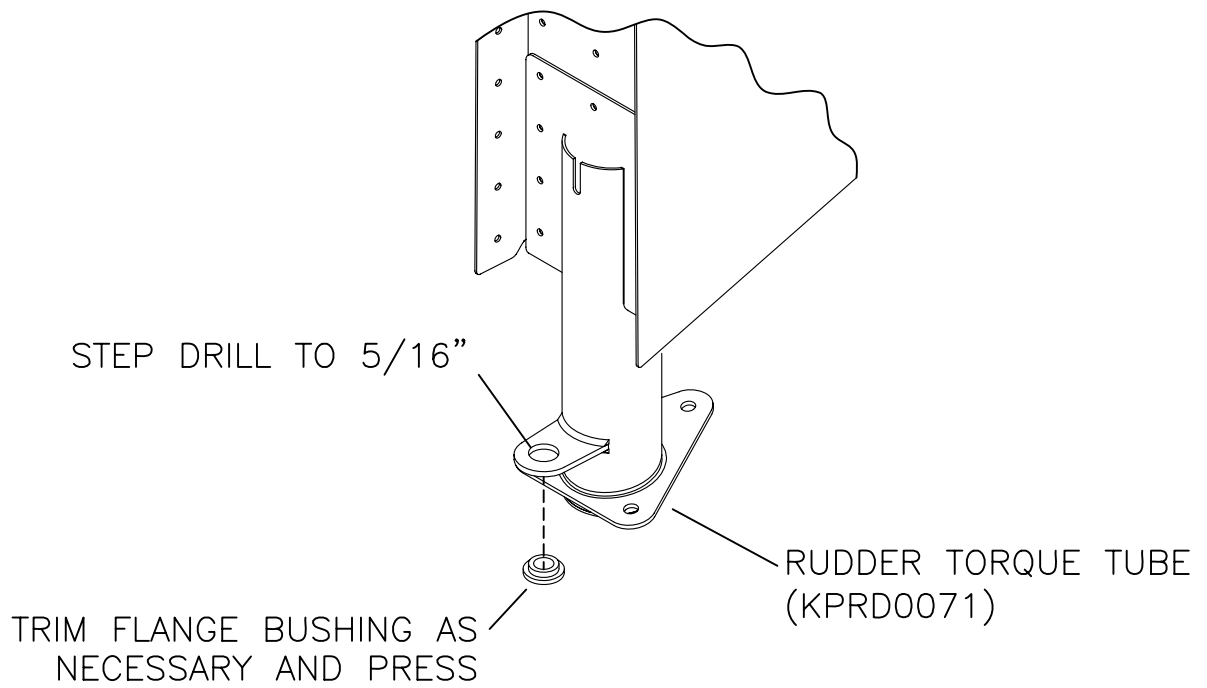
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	3/16" Bolt	AN3-11	1
2.	3/16" Thin Washer	AN960-10L	7
3.	3/16" Castle Nut	AN310-3	4
4.	Small Cotter Pin	MS24665-134	4
5.	3/16" Bolt	AN3-10	1
6.	3/16" Thick Washer	AN960-10	7
7.	3/16" Bolt	AN3-4A	3
8.	3/16" Shear Nut	AN364-1032A	3
9.	Rudder Horn	KPRD0078	1
10.	3/16" Bolt	AN3-6	2
11.	Flange Bushing	KSAC0019-3	1

RUDDER ASSEMBLY

NOTE: A 1.25" dia. x 95" long Aluminum (or PVC) Tube will be required for forming the Leading Edges of the Rudder, Flaps & Ailerons.

- Rudder assembly must be performed on a flat work surface. Assembly on a warped surface will result in a warped rudder
 - Clamps will be required in parts of the assembly to hold the rudder flat to the work surface
 - Wipe all parts down with acetone to remove markings before assembly
 - All parts must have their edges polished smooth before installation to avoid cracking in service.
 - All ribs must be straightened. Use fluting pliers at fluted locations. Check on a flat table. It is also important that the rib flanges are straight. Use padded pliers to flatten flanges if necessary.
1. Position all parts on the table in the order they appear in the **Parts Drawings**. Become familiar with the parts and the way they go together.
 2. Press Flange Bushings into Rudder Hinges and Rudder Torque Tube as shown in **FIGURES 02A-02** and **02A-02A**. **NOTE:** You may wish to final-fit and paint the Rudder Torque Tube before final installing the flange bushing.
 3. Assemble all parts on the RUDDER FRAME ASSEMBLY, except Trailing Edge, using clecos. Refer to **FIGURE 02A-03** for Rudder Spar orientation.
 4. Transfer drill all rivet holes #30 and cleco. Transfer drill hinge holes #11 and cleco.
 5. Disassemble, deburr, and re-assemble.
 6. Assemble frame, except Trailing Edge, using rivets and hardware shown in **Parts Drawing**. Be sure an AN3 bolt will insert through the Flange Bushings after bolting the hinges on.
 7. Mark a centerline on all rib flanges with a fine-tip felt marker.
 8. Setup assembly jig as shown in **FIGURE 02A-08**. Use wood screws to attach Tip Angle Jig to the Rudder Frame.
 10. Assemble frame, including Trailing Edge, in jig as shown in **FIGURE 02A-10**.
 11. Apply tape to the overlapping parts of the trailing edge to hold them straight with each other.
 12. Transfer drill the leading edge of the Trailing Edge #40 and cleco. Then drill #30 and cleco. **NOTE:** If you prefer you may use a 12" long #40 drill bit after the Rudder Skins and Ribs have been clecoed in place.

13. Cut apart and profile the strips of Skin Stiffeners (KPRD0069) per **FIGURE 02A-13**. Cleco to the inside of each Rudder Skin (KPRD0073). Be sure to make a Left and Right skin.
14. Slide the Rudder Skins into the rudder jig on the outer sides of the Rudder Frame. Cleco into place along the Rudder Spar, and 1 side of the Trailing Edge **NOTE: Only 1 side is pilot drilled to allow for proper alignment in jig.**
15. Verify that the marked centerlines on the ribs are visible through the holes in the skins and Trailing Edge. Verify that the jig is aligned properly. Transfer drill #40 the Rudder Skins to the ribs, and un-drilled side of the Trailing Edge.
16. Tape Rudder Strap (KPRD0074) in place. Align the top edge of the strap with the top edge of the rudder skin. Position the aft end of the Rudder Strap under the Rudder Skins. The edge with the holes spaced closest together lays over the Tip Rib.
17. Align the Rudder Strap holes with the centerline on the Tip Rib. Drill #40 and cleco.
18. Mark a centerline on the flanges of the Rudder Closeout Rib (KPRD0076)
19. Tape the Rudder Closeout Rib in place. Align the tip holes of the Rudder Strap with the centerline on the rib. Transfer drill #40 and cleco
20. Transfer drill all holes #30 and cleco.
21. Remove rudder from jig and remove Rudder Skins. Un-cleco Skin Stiffeners from Rudder Skins. **NOTE: Be sure to label each skin Left or Right.**
22. Determine which skin will be the top overlapping skin, on the leading edge and bend the edge slightly using a flanging tool. See **FIGURE 02A-22**.
23. The leading edges of the Rudder Skins must be formed to meet at the leading edge of the Rudder along the pilot holes. Form skins using **FIGURE 02A-23**. Templates on **FIGURE 02A-23A** should be used to check for proper shape. **HINT: Glue page to poster board and cut out the templates.** Cleco skins together on Rudder Frame and check fit. Transfer drill #30 and Cleco.
24. Un-cleco and deburr frame and skins.
25. Re-assemble Rudder in jig and rivet.
26. Remove from jig and set aside in a safe place for painting and installation in a later step.



TIGHTEN NUT UNTIL FLANGE BUSHING IS PRESSED INTO PLACE.

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RANS S-19
RUDDER TANG FLANGE BUSHING INSTALLATION
FIGURE 02A-02A

04/01/2008