

TOTAL PERFORMANCE
VAN'S AIRCRAFT

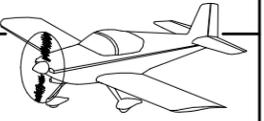
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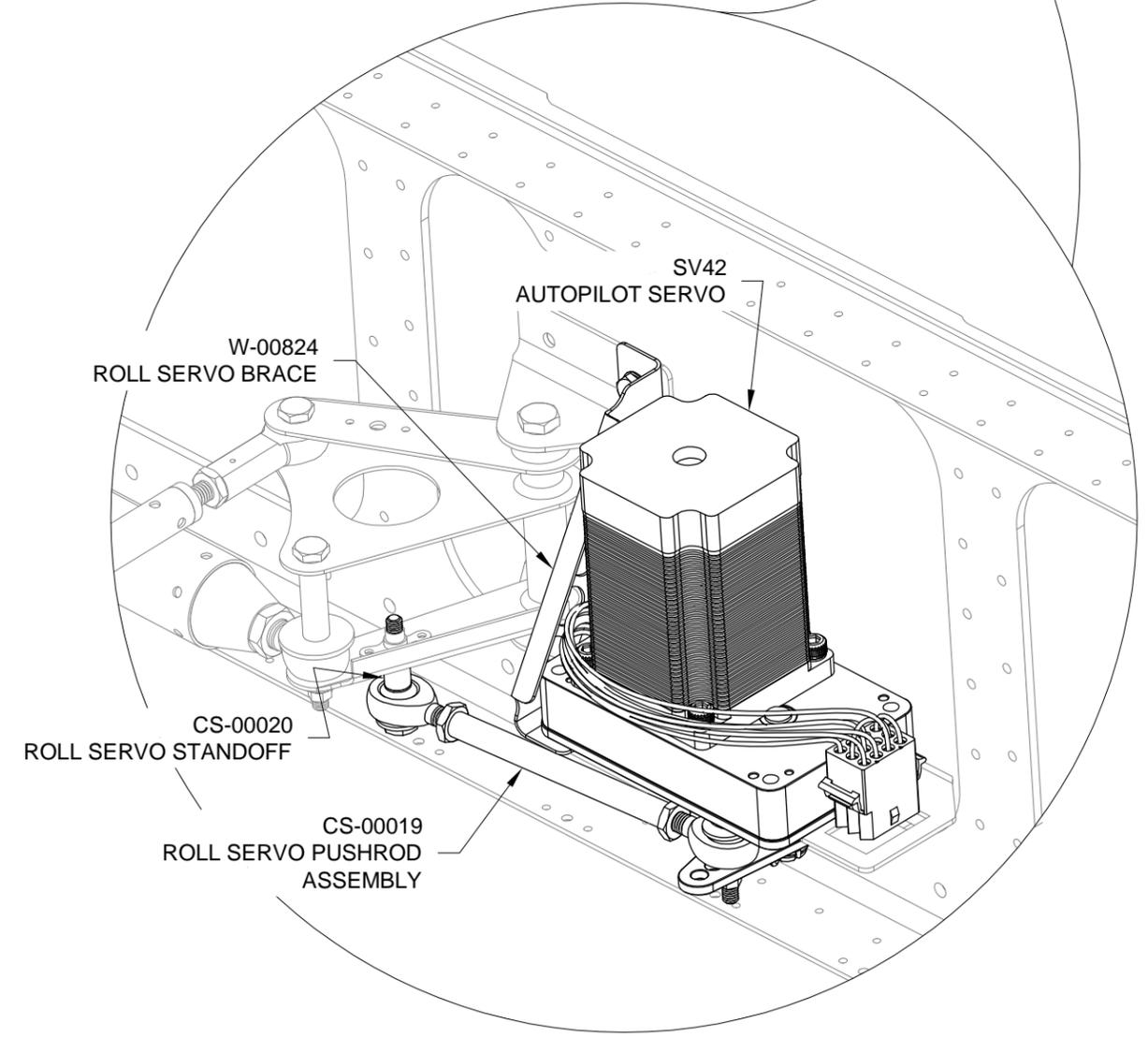
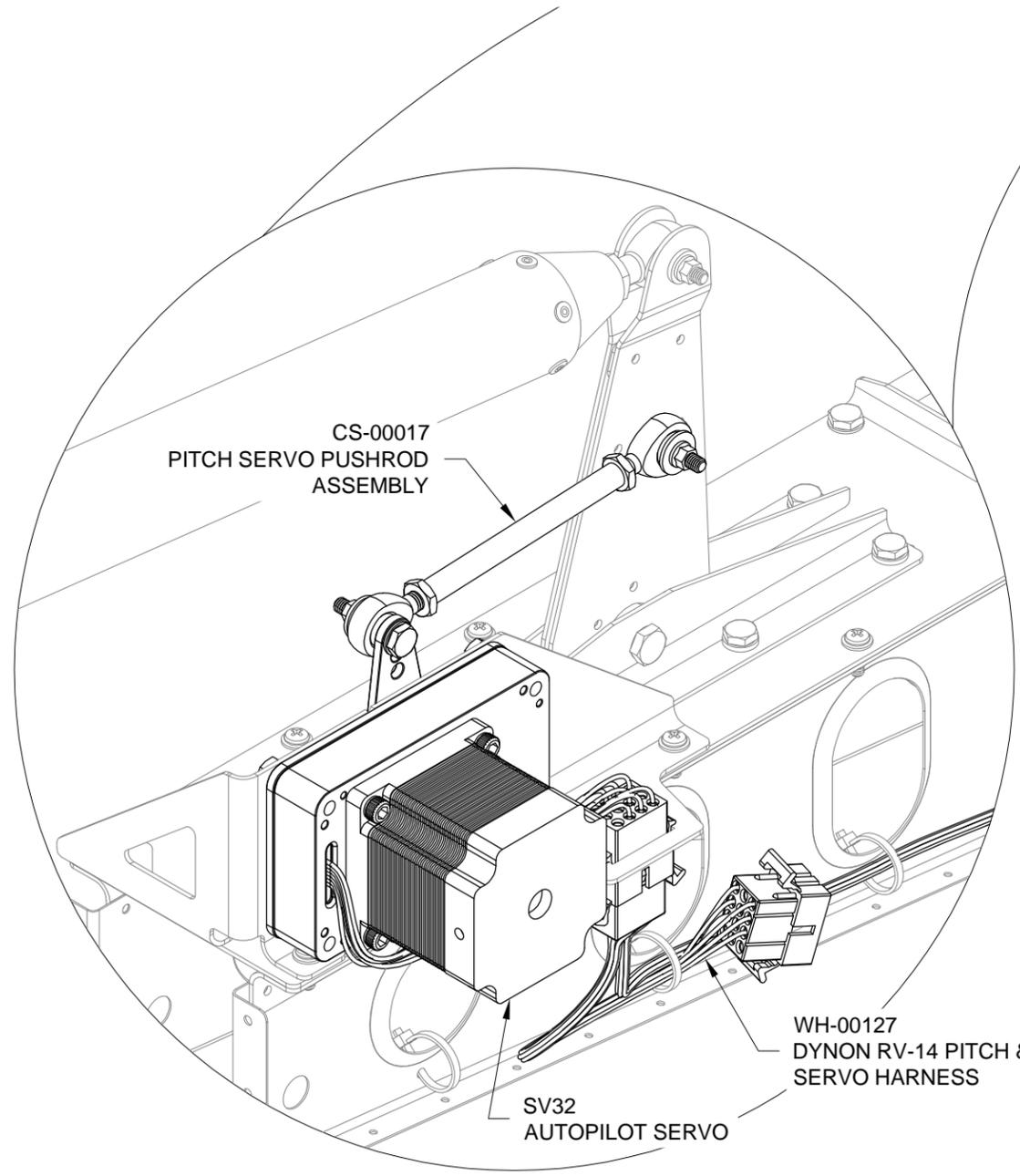
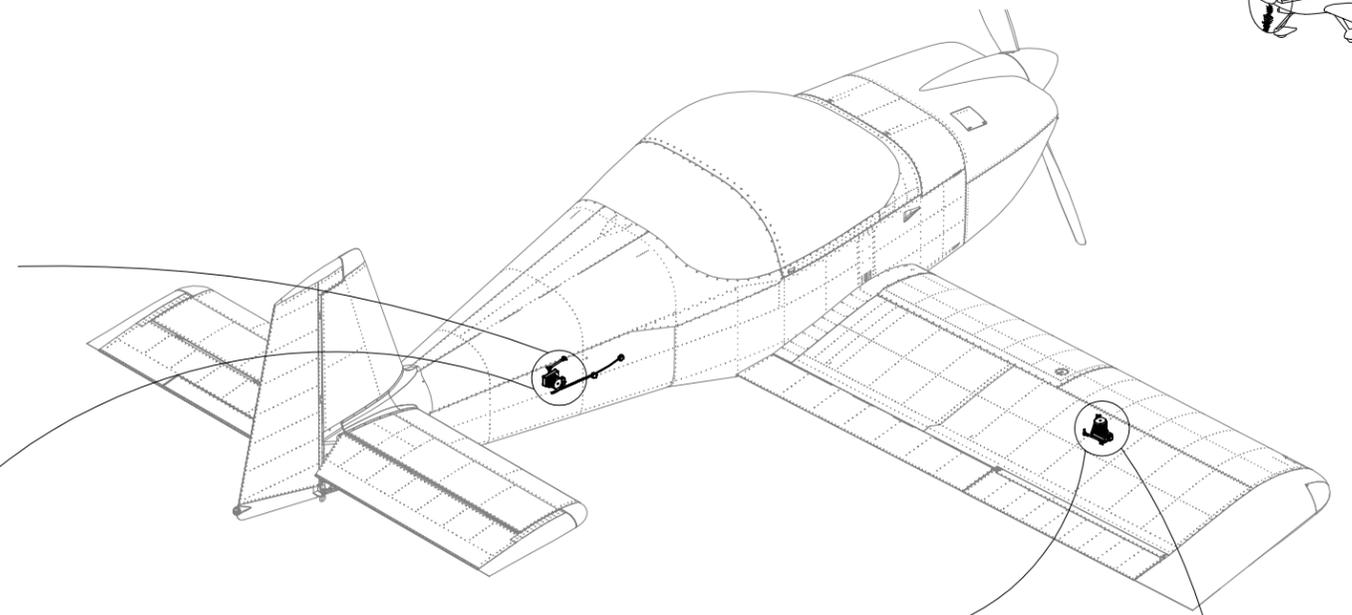
REVISION DESCRIPTION:

Page 57-02 Memo: In items to be purchased from your avionics supplier, deleted:

<u>QTY</u>	<u>ITEM</u>
1	WH-00127 Dynon RV-14 Pitch & Yaw Servo Harness



SECTION 57: DYNON AUTOPILOT SERVOS





NOTE: Refer to the WH-00125 RV-14 Common Fuselage Harness drawing available on the Van's Aircraft website Downloads page for autopilot wiring diagrams (including the WH-00127 harness).

Purchase the following items from your avionics supplier:

QTY	ITEM
1	Dynon SV32 Autopilot Servo
1	Dynon SV42 Autopilot Servo

Step 1: Fabricate two servo pushrod tubes from AT6-058X5/16 aluminum tube as shown in Figure 1.

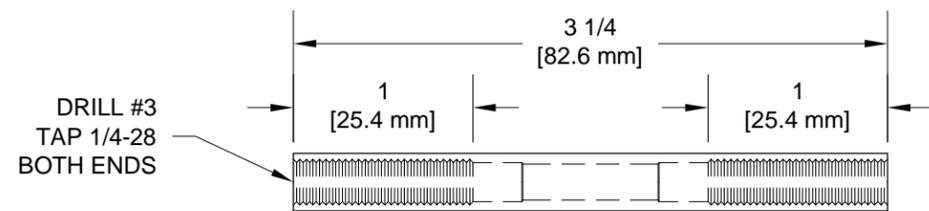


FIGURE 1: SERVO PUSHROD TUBE

Step 2: Assemble the CS-00017 Pitch Servo Pushrod Assembly as shown in Figure 2. Tighten the two nuts to 14-20 in.-lb.

Label the pushrod assembly "CS-00017".

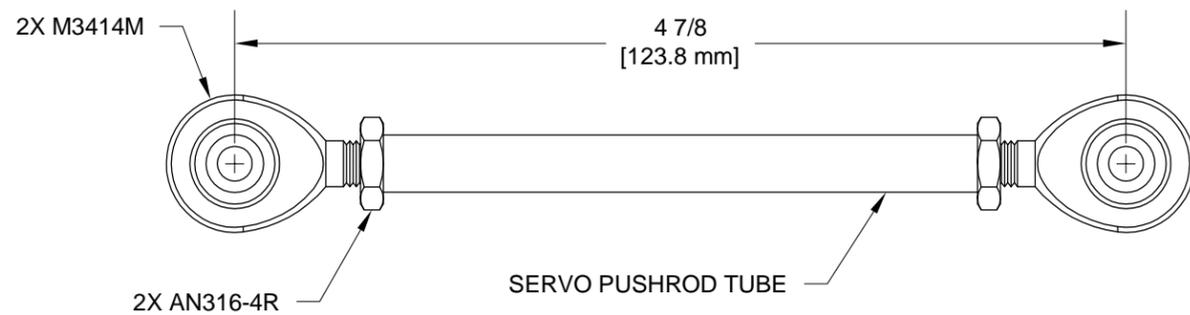


FIGURE 2: PITCH SERVO PUSHROD ASSEMBLY

Step 3: Assemble the CS-00019 Roll Servo Pushrod Assembly as shown in Figure 3. Tighten the two nuts to 14-20 in.-lb.

Label the pushrod assembly "CS-00019".

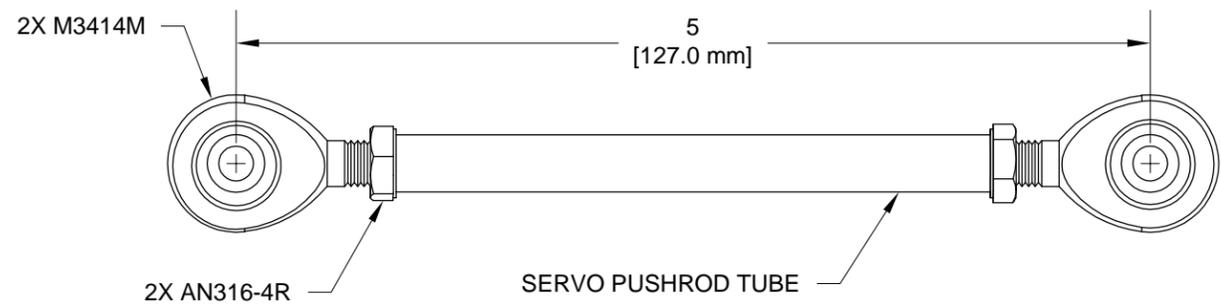


FIGURE 3: ROLL SERVO PUSHROD ASSEMBLY

Step 4: Fabricate one CS-00020 Roll Servo Standoff from AT6-058X5/16 aluminum tube as shown in Figure 4.

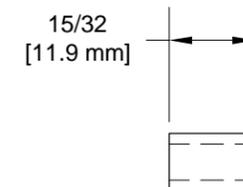


FIGURE 4: ROLL SERVO STANDOFF



NOTE: If required, review Section 5.21 regarding Molex connectors, open barrel terminals, and the terminal installation table.

Step 1: Trim the seven wires coming out of each autopilot servo to the lengths shown in Figure 1 and Figure 2.

Step 2: Strip the end of each wire and crimp on a Molex socket. See Figure 1 and Figure 2.

NOTE: Numbers identifying the wire positions are molded into the back of each receptacle.

Step 3: Insert the sockets from the SV32 servo into a 12-pin Molex receptacle as shown in Figure 1.

Label the SV32 Molex receptacle "C432J".

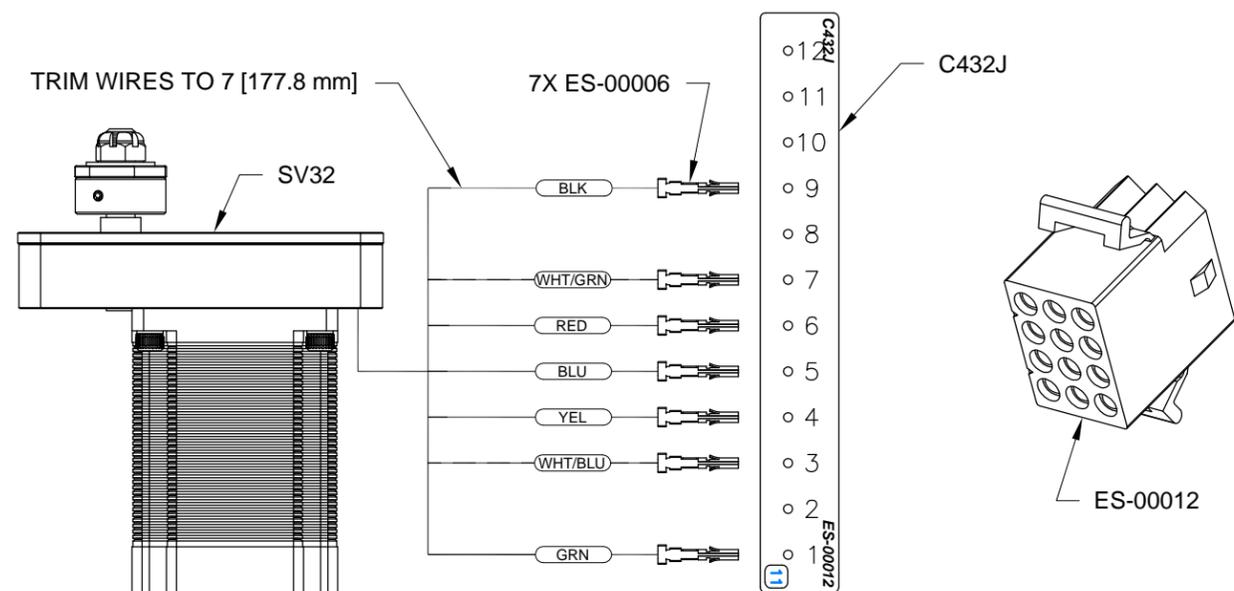


FIGURE 1: INSERT SV32 SERVO WIRES

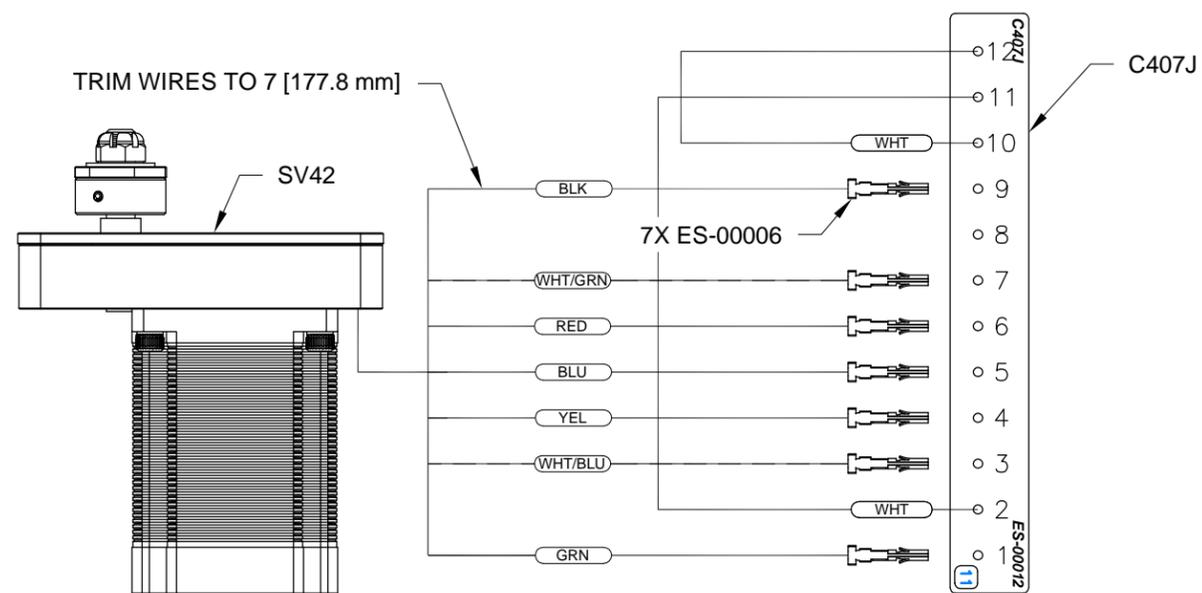


FIGURE 2: INSERT SV42 SERVO WIRES

Step 4: Insert the sockets from the SV42 servo into the 12-pin Molex receptacle on the WH-00077 Autopilot Termination Harness in the positions shown in Figure 2. See Page 19-06.

Label the SV42 Molex receptacle "C407J".

NOTE: Use the Dynon "Autopilot Servo Installation Guide - Generic (Push-Pull)" as a reference during servo installation.

Step 5: If desired, install the optional autopilot yaw servo support, plate, and spacer in accordance with Section 58.

Step 6: In the aft fuselage, attach the SV32 servo to the F-14184 Pitch Servo Bracket as shown in Figure 3. Apply Loctite 242 or an equivalent medium strength threadlocker to the bolt threads before insertion.

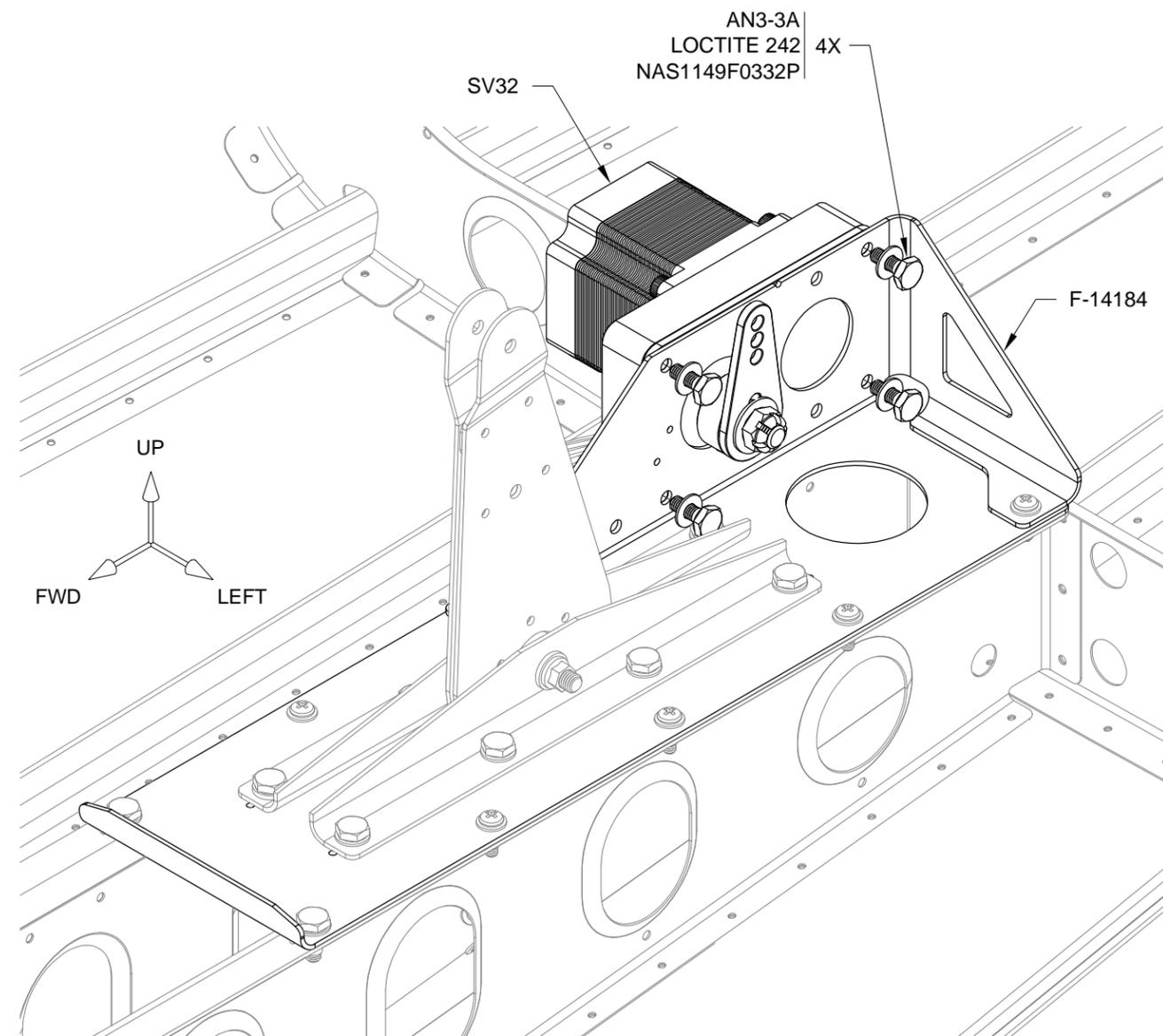


FIGURE 3: INSTALL PITCH SERVO



Step 1: Detach the ends of the C1036 (WHT) and C1037 (WHT) wires that were adhered previously to the forward side of the F-01406B Bulkhead. See Page 10-25.

Step 2: Insert the C1036 (WHT) and C1037 (WHT) wires from the WH-00057 Aft Fuselage Harness into C411P as shown in Figure 2.

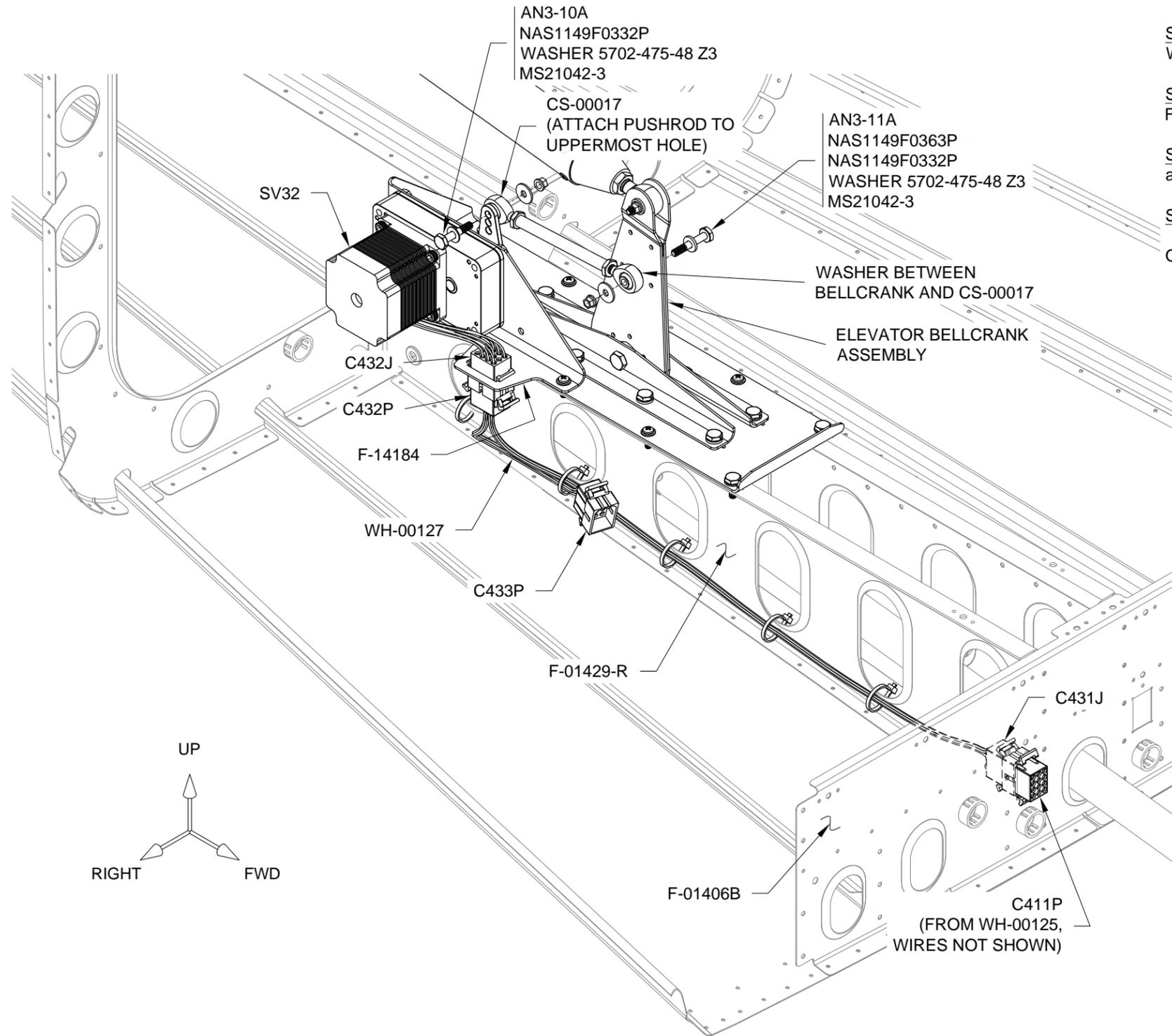


FIGURE 1: CONNECT PITCH SERVO

Step 3: Attach the CS-00017 Pitch Servo Pushrod Assembly to the SV32 Autopilot Servo and to the Elevator Bellcrank Assembly as shown in Figure 1. Before installation, verify that the correct pushrod is being used by comparing the pushrod length with Figure 2 on Page 57-02.

Step 4: Label the 12-pin Molex receptacle (the one with sockets) on the WH-00127 Dynon RV-14 Pitch & Yaw Servo Harness "C431J".

Step 5: Label the 12-pin Molex plug (the one with pins) that is directly wired to C431J on the WH-00127 harness "C432P".

Step 6: Label the remaining 12-pin Molex plug (the one with pins) that is directly wired to C432P on the WH-00127 harness "C433P".

Step 7: Connect C432J to C432P through the opening in the F-14184 Pitch Servo Bracket as shown in Figure 1.

Step 8: Route C431J forward along the right side of the F-01429-R Bellcrank Rib and connect it to C411P as shown in Figure 1 and Figure 2.

Step 9: If desired, install the optional autopilot yaw servo in accordance with Section 58.

Otherwise, tie-wrap C433P to the wire bundle along the right side of the bellcrank rib as shown in Figure 1.

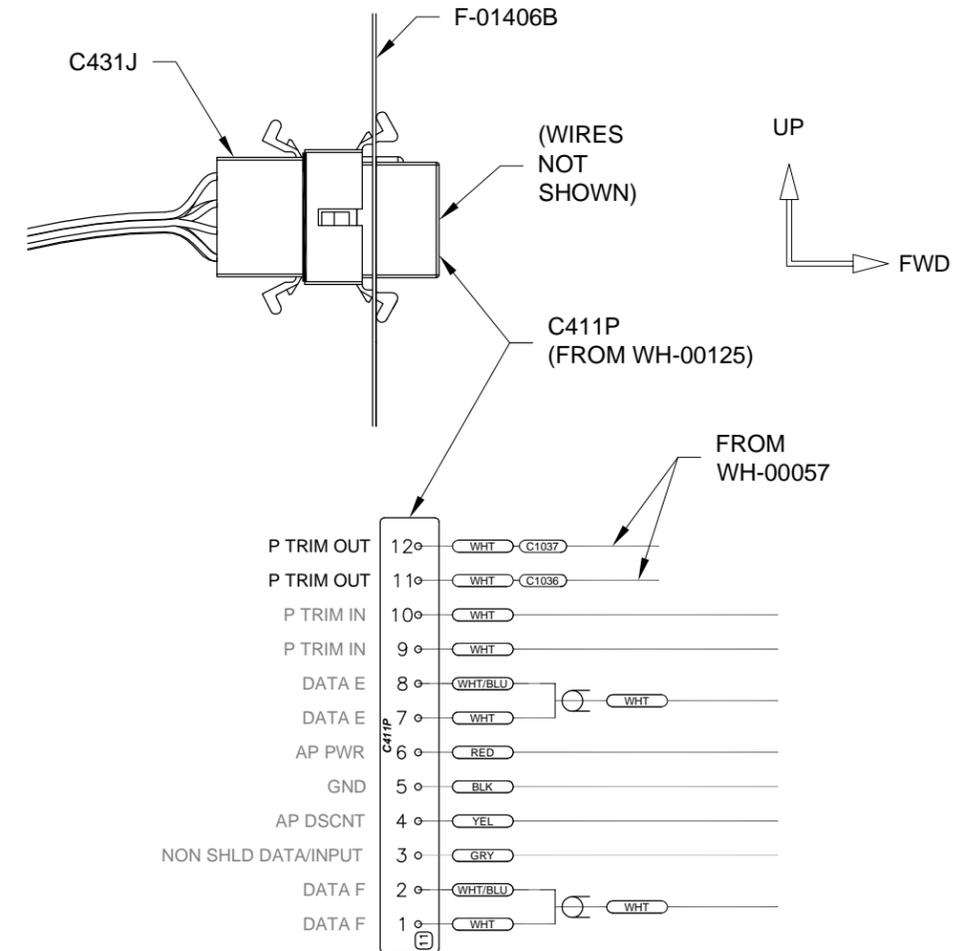


FIGURE 2: INSERT WIRES INTO RV-14 COMMON FUSELAGE HARNESS



Step 1: In the right wing, remove the bolt and washer called out in Figure 1.

Step 2: Remove the servo arm from the SV42 Autopilot Servo. **DO NOT** remove or adjust the shear screw. See Figure 1.

Step 3: Attach the CS-00019 Roll Servo Pushrod Assembly to the servo arm as shown in Figure 3. Verify that the correct pushrod is being used by comparing the pushrod length with Figure 3 on Page 57-02.

Step 4: Reattach the servo arm to the servo. Tighten the castle nut finger-tight then tighten using a torque wrench until the nearest castellation aligns with the hole in the shaft. **DO NOT** exceed 4.5 in.-lb. Use a new cotter pin. Refer to Dynon document 101156-001 "Dynon Servo Arm/Capstan Removal and Replacement Instructions".

Step 5: Attach the servo to the W-823-AP Aileron Bellcrank Bracket as shown in Figure 1. Apply Loctite 242 or an equivalent medium strength threadlocker to the bolt threads before insertion.

Step 6: Final-Drill #12 the two attach holes in the W-00824 Roll Servo Brace.

Step 7: Attach the roll servo brace to the servo and W-823-1 Aileron Bellcrank Bracket as shown in Figure 2. Apply Loctite 242 or an equivalent medium strength threadlocker to the bolt threads before insertion.

Step 8: Connect C407J to C407P as shown in Figure 2.

Step 9: Attach the roll servo pushrod assembly to the W-421-L Aileron Bellcrank as shown in Figure 2 and Figure 3.

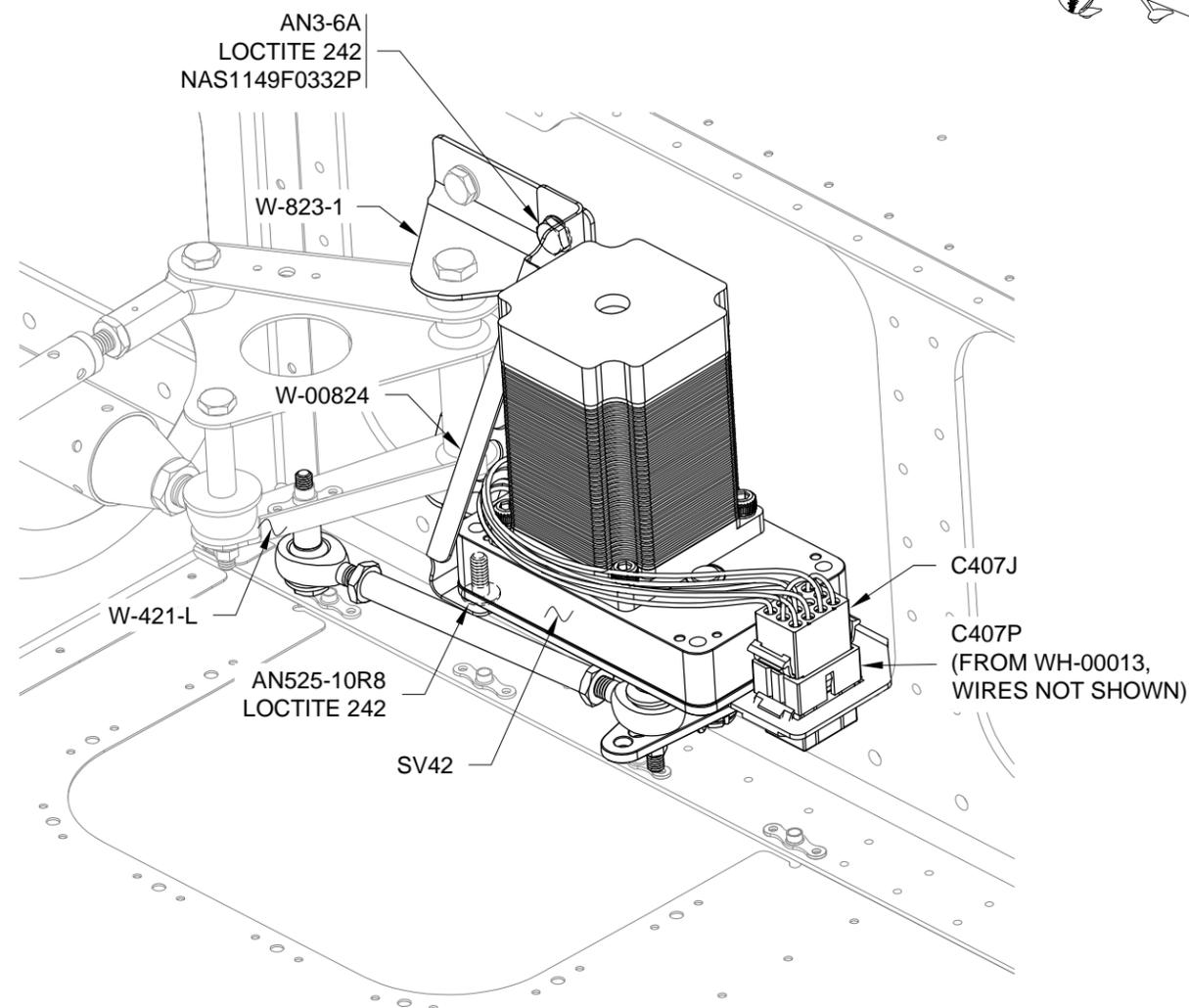


FIGURE 2: CONNECT ROLL SERVO

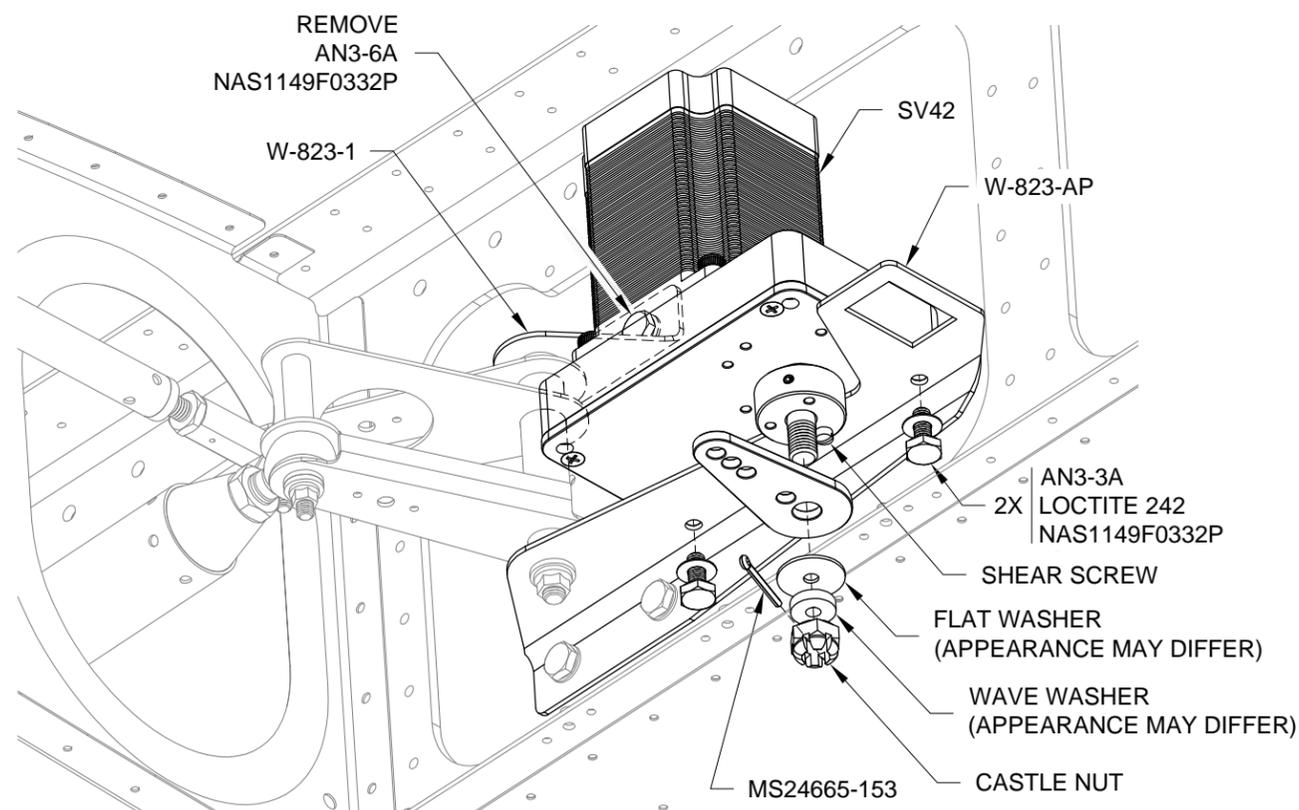


FIGURE 1: INSTALL ROLL SERVO

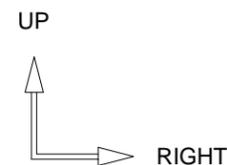
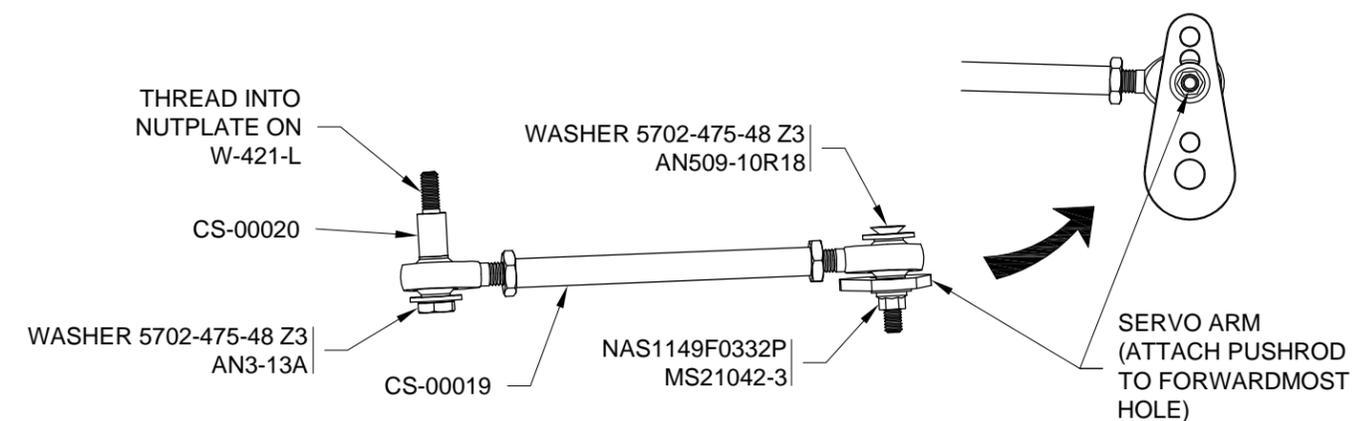


FIGURE 3: ROLL SERVO PUSHROD HARDWARE



WARNING: IF A SERVO ARM BECOMES PARALLEL WITH ITS PUSHROD, AN OVER-CENTER CONDITION CAN DEVELOP IN WHICH THE FLIGHT CONTROLS JAM.

Step 1: Move the control stick throughout its entire range of travel many times to verify that there is no binding, interference, or over-center condition with either servo. Correct any deficiencies.

Step 2: Configure your avionics to control the servos in accordance with your avionics manufacturer's documentation.

Step 3: If installation of the pitch and roll servos was done as a retrofit, update the aircraft weight and balance and make a logbook entry.