

## RUDDER TRIM - MAINTENANCE PRACTICES

### 1. General

- A. Rudder system maintenance practices consist of rudder trim system removal/installation and rudder trim system rigging.

### 2. Rudder Trim System Removal/Installation

- A. Remove Rudder Trim System (Refer to Figure 201).

- (1) Remove screws (3) and washers and loosen upper cover (2).
- (2) Remove roll pins (7) and disconnect aileron trim wheel (6) from shaft (27).
- (3) Remove screws (5) and disconnect aft cover (4) from pedestal (1).

**NOTE:** Remove firewall shutoff valve control mounting brackets, and disconnect control (8) from firewall shutoff valve (31). Leave control (8) attached to aft cover (4) and move cover away from control pedestal (1).

- (4) Remove screw (12) and spacer (13) from bracket (28). Disconnect pointer (11) and remove from pedestal (1).
- (5) Remove roll pin (10) and disconnect rudder trim wheel (9) from flexible shaft (14).  
(a) If necessary, remove the washer(s) (37).
- (6) Remove clamp (15) from control pedestal (1). Remove roll pins (17) from coupling (16). Disconnect flexible shaft (14) from control pedestal bracket and coupling (16).
- (7) Disconnect coupling (16) from shaft (21).
- (8) Remove snap rings (20) and (19) from shaft (21) and nut (18).
- (9) Remove nuts (25) and (25A), washers (24) and (24A), bolts (23) and (23A). Disconnect link (22) from steering pushrod (26).
- (10) Disconnect link (22) from shaft (21).
- (11) Disconnect shaft (21) from nut (18). Remove snap rings (19) from nut (18). Disconnect nut (18) from steering arms (30).

- B. Install Rudder Trim System (Refer to Figure 201).

- (1) Replace nut (18) to steering arms (30). Replace snap rings (19). Connect shaft (21) to nut (18).
- (2) Connect link (22) to shaft (21).
- (3) Connect link (22) to steering pushrod (26). Replace bolts (23) and (23A), washers (24) and (24A), and nuts (25) and (25A).
- (4) Replace snap rings (20) on shaft (21).
- (5) Connect coupling (16) to shaft (21). Replace roll pin (17). Safety-wire roll pin.
- (6) Connect flexible shaft (14) to control pedestal bracket and coupling (16). Replace roll pin (17) and clamp (15). Safety-wire roll pin and clamp.
- (7) Connect rudder trim wheel (9) to flexible shaft (14). Replace roll pin (10).  
(a) If necessary, you can use three or less NAS1149F0663P washers (37) below the coupler (35) to remove vertical play.
- (8) Connect pointer (11) to bracket (28). Replace spacer (13) and screw (12).
- (9) Connect fuel shutoff cable (8) to fuel shutoff valve. Replace fuel shutoff mounting brackets.
- (10) Connect aft cover (4) to pedestal (1). Replace screws (5) and washers.
- (11) Connect aileron trim wheel (6) to shaft (27). Replace roll pins (7)
- (12) Replace screws (3) and washers in upper cover (2).

### 3. Rudder Trim System Rigging

- A. Rig Rudder Trim System (Refer to Figure 201).

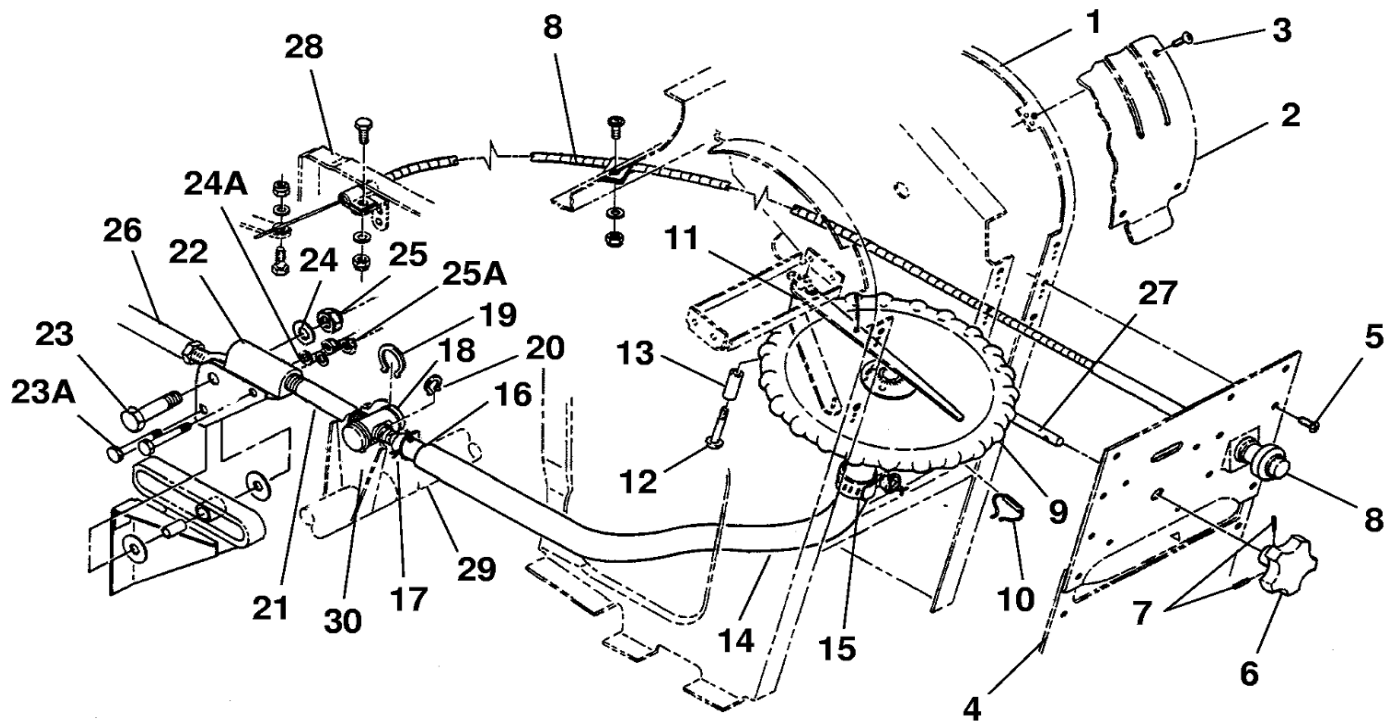
- (1) Remove nut (25), washer (24), and bolt (23). Disconnect link (22) from steering pushrod (26).
- (2) Secure rudder in streamlined position.
- (3) Loosen screw (12) and locate pointer (11) in neutral position. Tighten screw (12).
- (4) Remove roll pin (17). Disconnect coupling (16) from shaft (21).

- (5) Rotate shaft (21) until threads extend equidistant on each side of nut (18).
- (6) Connect shaft (21) to coupling (16). Replace roll pin (17). Safety-wire roll pin.
- (7) Rotate forward end of shaft (21) up and thread on link (22) until 0.50 inch of thread is showing on shaft (21).
- (8) Connect link (22) to steering pushrod (26). Replace bolt (23), washer (24), and nut (25).
- (9) Release rudder from streamlined position.

**NOTE:**     **After rigging rudder trim system, check nose gear steering rigging instructions. Refer to Chapter 32, Nose Gear Steering- Maintenance Practices.**

Figure 201 : Sheet 1 : Rudder Trim System Installation

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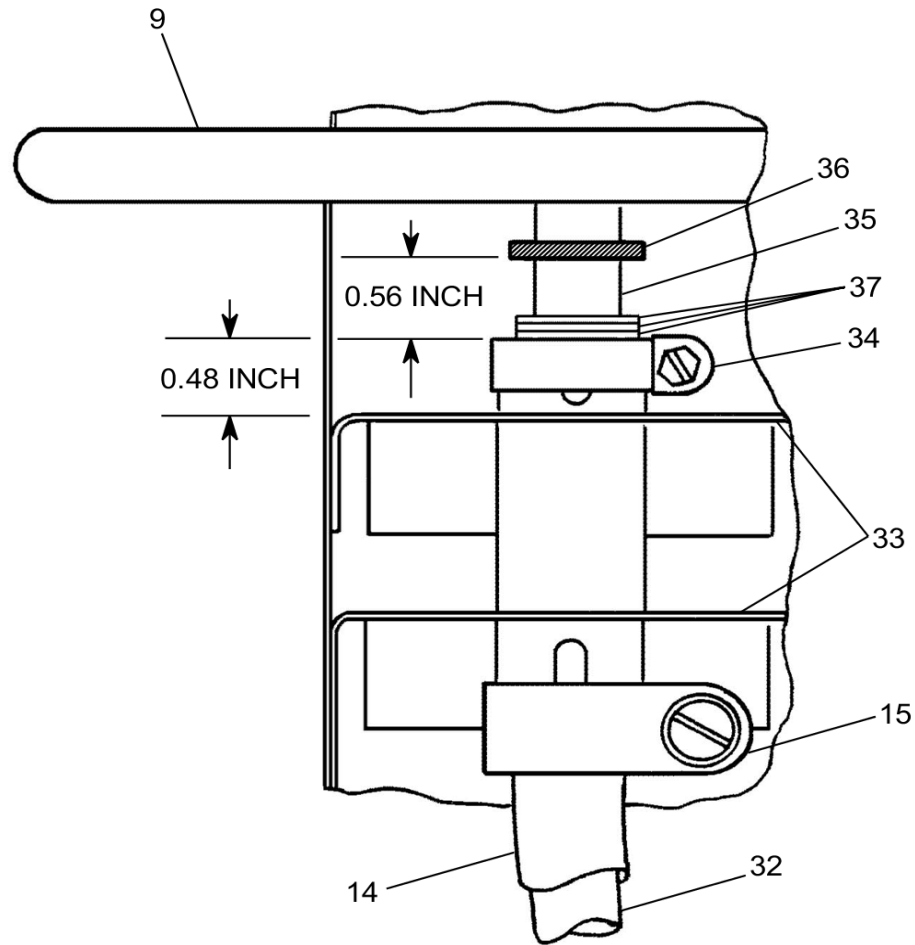


- |                                   |                    |                                |
|-----------------------------------|--------------------|--------------------------------|
| 1. CONTROL PEDESTAL               | 12. SCREW          | 23A. BOLT                      |
| 2. UPPER COVER                    | 13. SPACER         | 24. WASHER                     |
| 3. SCREW                          | 14. FLEXIBLE SHAFT | 24A. WASHER                    |
| 4. AFT COVER                      | 15. CLAMP          | 25. NUT                        |
| 5. SCREW                          | 16. COUPLING       | 25A. NUT                       |
| 6. AILERON TRIM WHEEL             | 17. ROLL PIN       | 26. STEERING PUSHROD           |
| 7. ROLL PIN                       | 18. NUT            | 27. SHAFT                      |
| 8. FIREWALL SHUTOFF VALVE CONTROL | 19. SNAP RING      | 28. BRACKET                    |
| 9. RUDDER TRIM WHEEL              | 20. SNAP RING      | 29. FORWARD RUDDER TORQUE TUBE |
| 10. ROLL PIN                      | 21. SHAFT          | 30. STEERING ARM               |
| 11. POINTER                       | 22. LINK           |                                |
|                                   | 23. BOLT           |                                |

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Figure 201 : Sheet 2 : Rudder Trim System Installation

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- 9. RUDDER TRIM WHEEL
- 14. FLEXIBLE SHAFT ASSEMBLY
- 15. CLAMP
- 32. INNER FLEXIBLE SHAFT
- 33. SUPPORT
- 34. UPPER CLAMP
- 35. COUPLER
- 36. PIN
- 37. WASHER

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