

## RUDDER CONTROL LOCK - MAINTENANCE PRACTICES

### 1. General

- A. This section covers description and operation, removal/installation and rigging procedures for the rudder control lock installed on Airplane 20800030 Thru 20800236 and 208B0001 Thru 208B0381.

### 2. Description and Operation

- A. A rudder control lock may be installed on the airplane to lock the rudder in neutral position, thus preventing damage to the system by buffeting winds when the airplane is parked. The control lock is operated by a red rudder lock handle. A placard designating "UP" position of the handle is located on the end of the handle. The rudder lock handle is located below the instrument panel, adjacent to the upper right corner of the pedestal.
- B. The rudder control lock may be engaged by placing the rudder lock handle in the UP position and pulling it aft until tension on the rudder cables prevents engagement of the handle with the "next tighter" locking tooth. The rudder control lock may be released by the following methods: (1) gasp the rudder lock handle and rotate it in either direction from its vertical "locked" position until the lock spring disengages from the locking teeth on the handle and allows rudder cable tension and the return spring to pull the rudder lock handle forward to the released position; (2) move the fuel condition lever from CUTOFF to LOW IDLE position.

**NOTE:** The rudder lock handle will not stay in locked position unless fuel condition lever is placed in CUTOFF position.

### 3. Rudder Control Lock Removal/Installation

- A. Remove Rudder Control Lock (Refer to Figure 201).

**NOTE:** Mounting bracket (7), support (10), reinforcement (40), doubler and grommet (37), bracket (47), and clamps (41) may be left in airplane unless they are excessively worn or damaged.

- (1) Remove pins (23) and (29), washers (24) and (31), and cotter pins (25) and (30). Disconnect terminals (35) from housing (22) and lock (43).
- (2) Remove bolts (12) and (38), nuts (33), and firewall and rudder clamps from control (34). Disconnect control (34) and clamps (32) and (39) from system.
- (3) Remove pin (23), washer (24), and cotter pin (25) from lock (43) and terminal (35). Disconnect terminal (35) and spring (45) from system.
- (4) Remove bolts (42), nuts (48), and washers (49) from lock (43) and retainer (44). Disconnect lock (43) and retainer (44) from system.
- (5) Remove screws (11), pin (23), bolt (18), nut (26), washer (24), and cotter pin (25) from guide (28), slide (27) and housing (22), disconnect rudder lock handle (17), housing (22), spacers (19), spring (20), bushing (21), slide (27), and guide (28) from system.
- (6) Remove pins (3), (23), and (51), washers (4), (24), and (52), and cotter pins (5), (25), and (53) from fuel condition lever (1), pushrod (2), and mounting bracket (7). Disconnect pushrod (2) and bell crank (6) from system.

- B. Install Rudder Control Lock (Refer to Figure 201).

- (1) Connect support (10) to pedestal and bulkhead at FS 100.00. Install rivets, screws (13), washers (14), and nuts (15). Tighten screws.
  - (2) Rivet mounting brackets (7) to support (10).
  - (3) Connect rudder lock handle (17) to support (10) and housing (22). Attach slide (27), guide (28), spacers (19), spring (20), and bushing (21) to housing (22).
  - (4) Connect housing (22) and guide (28) to support (10). Install screws (11), bolt (18), and nuts (26). Tighten bolt and screws.
  - (5) Connect bell crank (6) to mounting bracket (7) and slide (27). Install pins (23), washers (24), and cotter pins (25).
- NOTE:** Before proceeding to the next step, clamp a block across the face of the rudder pedals to secure rudder in neutral position.

- (6) Connect clamps (41) to rudder cables (46). Install and tighten bolts in clamps.
- NOTE:** Before tightening bolts in clamps (41), locate aft sides of clamps 5.50 inches from aft face of bulkhead (36).
- (7) Remove block from rudder pedals.

- (8) Locate and rivet doubler and grommet (37) to bulkhead (36).
- (9) Install lock (43) in doubler and grommet (37).
- (10) Connect lock (43) and retainer (44) to rudder cables (46) and install bolts (42), washers (49), and nuts (48). Tighten bolts.
- (11) Locate and rivet bracket (47) to bulkhead.
- (12) Connect spring (45) to bracket (47) and terminal (35).
- (13) Locate and rivet reinforcement (40) to aft face of bulkhead (36).
- (14) Locate control (34) and attach clamps (32) and (39) to support (10) and reinforcement (40).
- (15) Install and tighten bolts (12) and (38) and nuts (33). Tighten bolts.  
**NOTE: Before tightening bolts (38), locate aft end of control (34) 3.20 inches from aft face of bulkhead (36). Clamps are furnished to secure control (34) to firewall and rudder bracket assembly.**
- (16) Connect terminals (35) to housing (22) and lock (48). Install pins (23) and (29), washers (31) and (24), and cotter pins (30) and (25).
- (17) Connect terminal (35) to lock (43) and install pin (23), washer (24), and cotter pin (25).  
**NOTE: Ensure rudder lock handle (17) is in the unlocked position. Dimensions from center of lock (43) to aft face of bulkhead (36) should check 8.00 inches.**
- (18) Connect pushrod (2) to fuel condition lever (1) and bell crank (6). Install pins (3) and (51), washers (4) and (52). and cotter pins (5) and (53).

#### 4. Rudder Control Lock Rigging

##### A. Rigging Procedures.

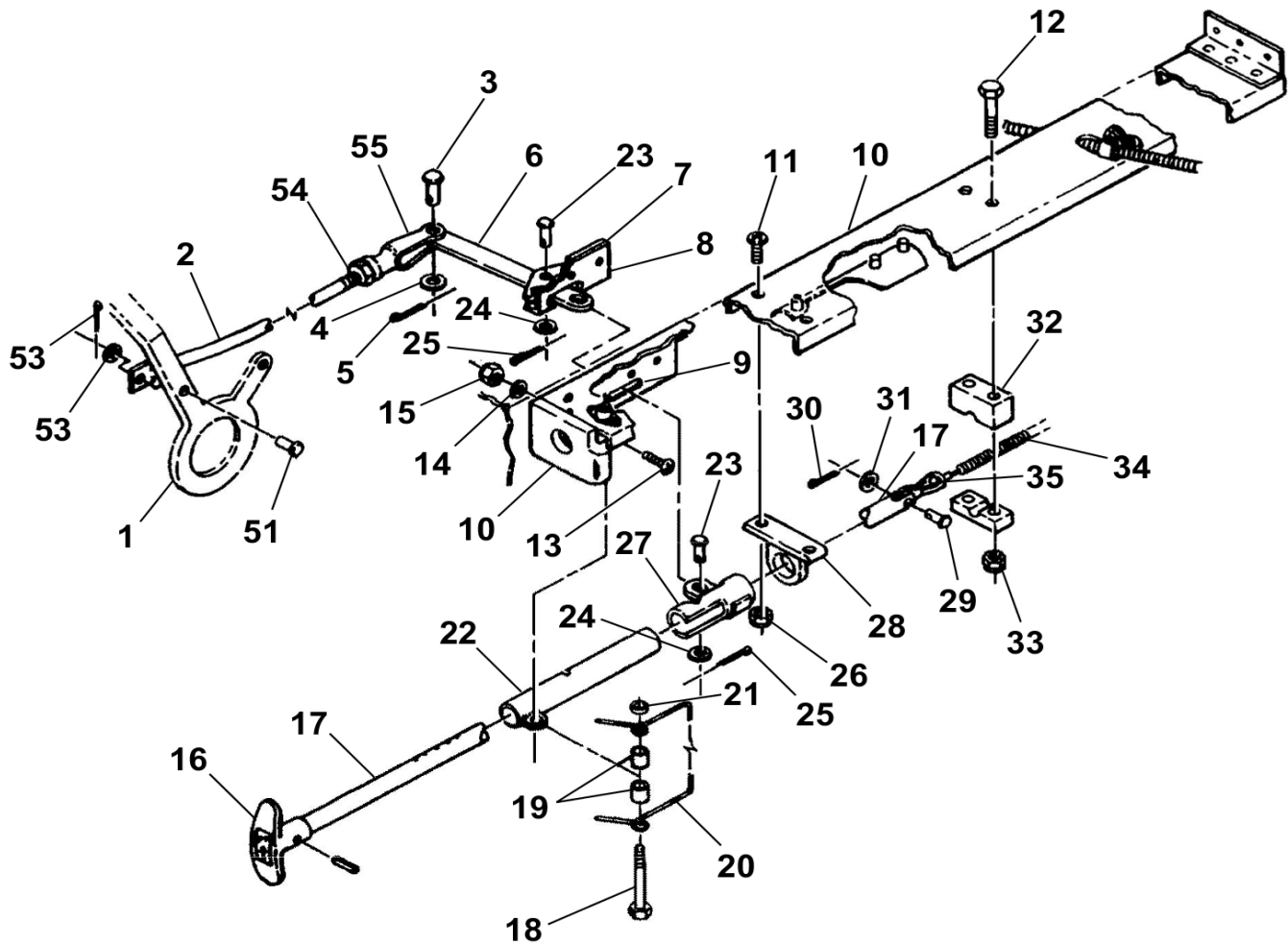
- (1) Remove pin (3), washer (4), and cotter pin (5). Detach pushrod (2) from bell crank (6).
- (2) Engage rudder control lock by pulling rudder lock handle (17) aft to the "tightest" locking tooth with decal (16) pointing up.
- (3) Place fuel condition lever (1) in CUTOFF position.
- (4) Loosen locknut (54) and turn clevis (55) in required direction to align holes in clevis with hole in bell crank.
- (5) Install pin (3) in clevis (55) and bell crank (6).
- (6) Move fuel condition lever (1) from CUTOFF to LOW IDLE position.  
**NOTE: Rudder Control Lock must release at or before fuel condition lever reaches LOW IDLE position. If control lock does not release, adjust clevis (55) in required direction until control lock releases. Cycle fuel condition control lever through its full travel and check that bell crank (6) does not bottom out on either end of slots (8) and (9). If bell crank bottoms out on either end, remove bell crank and lengthen slots.**

#### 5. Rudder Control Lock Inspection

- A. Ensure that clamps (41) are securely attached to rudder cables (46). Clamps must not slip on rudder cables.

Figure 201 : Sheet 1 : Rudder Control Lock Installation

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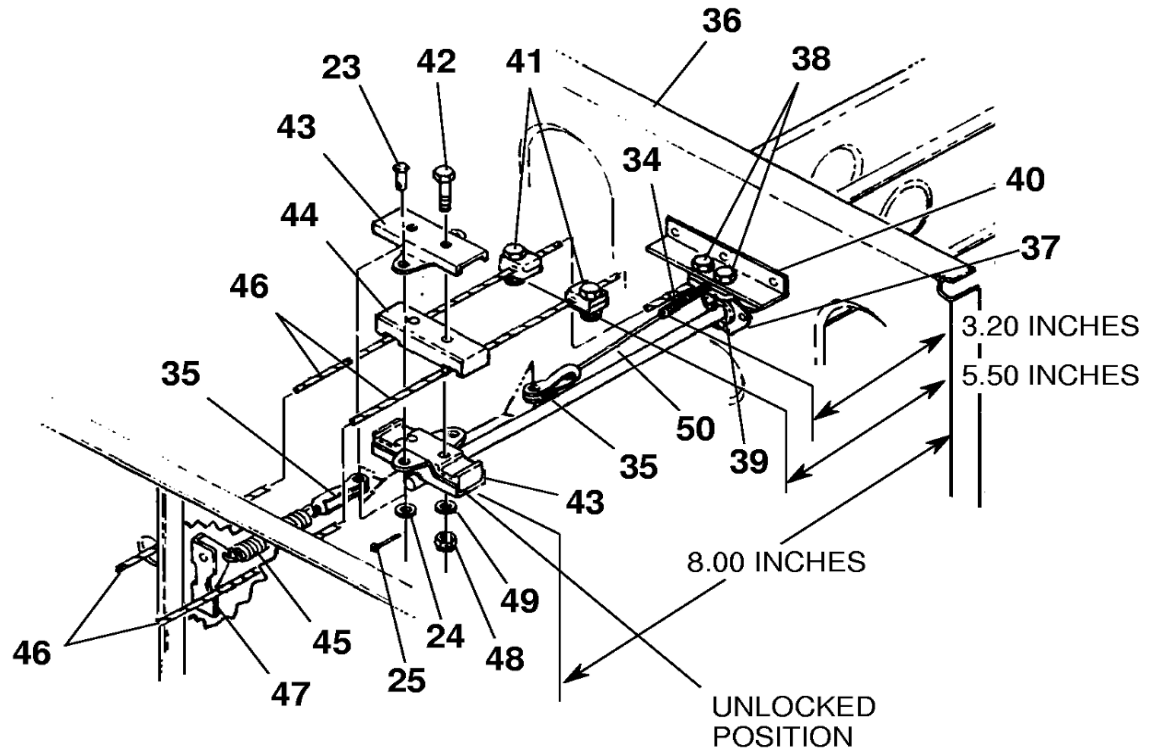
- |                          |                        |                |
|--------------------------|------------------------|----------------|
| 1. FUEL CONDITION LEVER  | 14. WASHER             | 24. WASHER     |
| 2. PUSHROD               | 15. NUT                | 25. COTTER PIN |
| 3. PIN                   | 16. PLACARD            | 26. NUT        |
| 6. BELL CRANK            | 17. RUDDER LOCK HANDLE | 27. SLIDE      |
| 7. MOUNTING BRACKET/SLOT | 18. BOLT               | 28. GUIDE      |
| 8. SLOT                  | 19. SPACER             | 29. PIN        |
| 9. SLOT                  | 20. LOCK SPRING        | 30. COTTER PIN |
| 10. SUPPORT              | 21. BUSHING            | 31. WASHER     |
| 11. SCREW                | 22. HOUSING            | 32. CLAMP      |
| 12. BOLT                 | 23. PIN                | 33. NUT        |
| 13. SCREW                |                        |                |

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Figure 201 : Sheet 2 : Rudder Control Lock Installation

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- 35. TERMINAL
- 36. BULKHEAD
- 37. DOUBLER AND GROMMET
- 38. BOLT
- 39. CLAMP
- 40. REINFORCEMENT
- 41. CLAMP
- 42. BOLT
- 43. LOCK
- 44. RETAINER
- 45. SPRING
- 46. RUDDER CABLE
- 47. BRACKET
- 48. NUT
- 50. CORE
- 51. PIN
- 52. WASHER
- 53. COTTER PIN
- 54. LOCKNUT
- 55. CLEVIS

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