



SUBJECT: Prevent Inadvertent Rudder Trim Slipping During Extreme Deflections

**MODELS/ SN
AFFECTED:** M20M: 27-0343, 27-0351, 27-0352, 27-0355 & ON
M20R: 29-0412 & ON
M20TN: 31-0002 & ON
All Mooney M20U and M20V

**TIME OF
COMPLIANCE:** AT NEXT ANNUAL OR WITHIN NEXT 100 FLIGHT HOURS

INTRODUCTION: Mooney International Corporation has determined a solution to prevent inadvertent rudder trim slipping during extreme deflections during take off. Use of a new cable and a special GSE 030035 tool during installation are advised to prevent a permanent set in springs.

Procedure for Preventing Inadvertent Rudder Trim Slipping During Extreme Deflections

- 1.1. Jack the aircraft IAW according to the applicable Mooney International Service and Maintenance Manual so that the nose tire is clear of the ground.
- 1.2. Disconnect and remove the existing cable assembly according to the applicable Mooney International Service and Maintenance Manual.
- 1.3. *(Optional)* Disconnect the aileron-rudder interconnect system. Gently tap rudder back and forth to ensure bias springs are relaxed and that no hysteresis remains before reading travel. This action is necessary due to flight loads during adjustment.
- 1.4. Electrically run the actuator assembly for left rudder deflection until the limit switch turns off the gear motor. The aft limit switch is for left rudder.
- 1.5. Wrap 740196-003 cable around 740080-001 capstan so that the forward eye of the 740196-003 cable is 10.75 inches from the forward surface of the 740080-001 capstan. Temporarily secure the cable using several wraps of a suitable tape around the cable and capstan. Install actuator assembly into the aircraft. Refer to Figure SIM20-124-1.
- 1.6. Extend 740191 springs and secure with GSE 030035 spacer. Attach one end of the springs to 740198-001 brackets. Attach one eye of the turnbuckle to the spring and start two (2) to five (5) turns of turnbuckle's barrel to the eye. Use spacer GSE 030035 over spring coils. Perform step according to the applicable Mooney International Service and Maintenance Manual.
- 1.7. Start turnbuckle's eye that is attached to the cable into the turnbuckle's barrel. Tighten turnbuckle until tension is applied to the springs.
- 1.8. Remove spring extenders, tape, and rudder lock. The rudder should be neutral at 3 to 5 degrees left rudder deflection. Adjust turnbuckles to show 4 threads at each end of the barrel.
- 1.9. Electrically run the actuator for right rudder deflection. The actuator should stop when the rudder is deflected 23 degrees right. If not, bend slightly down the rudder limit switch's actuator arm. Cycle the system and recheck right rudder deflection.



- 1.10. The trim limits are 3 to 5 degrees left, 23 degrees right.
- 1.11. Perform slip test. Ensure trim is full right, then apply full left rudder. Cable should not slip about the capstan. It is likely that spring tension will trim the system left (aft) if no slipping occurs. If the cable slips, ensure rigging is still within limits, then tighten the forward turnbuckle as required to eliminate slipping.
- 1.12. After mechanical rigging is completed, perform the following tasks according to the applicable Mooney International Service and Maintenance Manual:
 - Connect aileron-rudder interconnect system.
 - Perform electrical alignment.
 - Remove rudder lock.
- 1.13. Perform verification flight on the aircraft. The rudder trim shall center the turn coordinator ball with no pilot application of rudder during full power climb at 105 KIAS. If not, tighten the forward turnbuckle for an additional .25 to .38 inch extension to the spring.
- 1.14. Return aircraft to service.
- 1.15. Procedure complete.

WARRANTY: Mooney International Corporation will warrant labor 8 hours in accordance with procedures of this service bulletin for aircraft currently covered under the Mooney International Corporation factory warranty program.

REFERENCE DATA:

- 1. Applicable Mooney International Service and Maintenance Manual

PARTS LIST:

Service Instruction Kit SIM20-124

<u>Item</u>	<u>P/N</u>	<u>Description</u>	<u>Qty</u>
1.	740196-003	CABLE ASSY	1

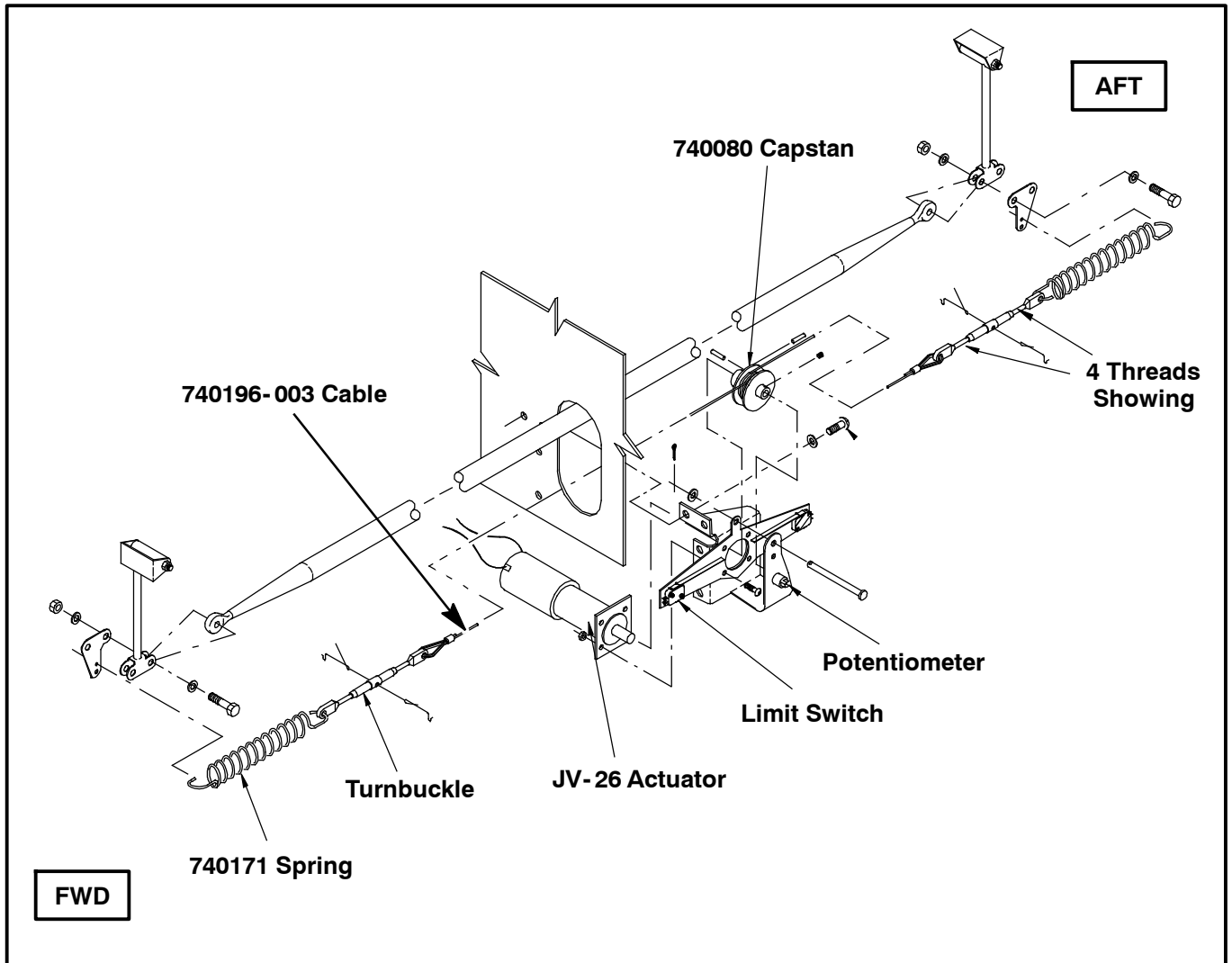


Figure SIM20-124-1 - Rudder Trim Rigging



MOONEY INTERNATIONAL CORPORATION
KERRVILLE, TEXAS 78028 - FAX 830-257-4635

SERVICE (BULLETIN) (INSTRUCTION) NO. _____ HAS BEEN COMPLIED
WITH ON AIRCRAFT MODEL _____ SERIAL NUMBER _____

Tach. Time: _____ N-Number _____ (Reg. No.)
Owner: _____ Date of Compliance: _____
_____ Complied
By: _____

Inspection Report: _____

Form 07-0001

PLACE
STAMP
HERE

MOONEY INTERNATIONAL CORPORATION
ATT'N: TECHNICAL PUBLICATIONS DEPT
165 Al Mooney Road, North
Kerrville, Texas 78028

SEND TO: Mooney International Corporation
165 Al Mooney Road North
Kerrville, TX 78028
FAX: (830) 257-4635 or EMAIL TO: techpubs@mooney.com

Figure SIM20-124-2 - FILL OUT COMPLIANCE CARD