

Collective Main Rotor Controls - Removal / Installation

4-1 Removal / Installation - Collective Levers

A. Applicable Documents

- (1) Main information
 - 67-12-00, 5-1 Adjustment - Collective Stick Balance
 - 67-12-00, 5-2 Adjustment - Fine Pitch Engagement
 - 67-12-00, 8-1 Replacement - Collective Stick Control Unit
 - 76-12-03, 5-1 Functional Tests - Twist Grip Indications
 - 76-12-03, 5-2 Adjustment - Twist Grip Loads
 - 76-12-04, 5-1 Functional Tests - Twist-grip Indications
 - 76-12-04, 5-2 Adjustment - Twist Grip Loads
- (2) Conditional information
 - 53-51-00, 4-2 Removal / Installation - Lower Fairings
 - 76-12-03, 4-1 Removal / Installation - Twist Grip Contactors
 - 76-12-04, 4-1 Removal / Installation - Twist Grip Switches
- (3) General information
 - 24-00-00, 3-1 General Safety Instructions - Electrical Power Supply System
 - 60-00-00, 3-1 General Safety Instructions - Mechanical Assemblies
 - 67-00-00, 3-1 General Safety Instructions - Flight Controls

B. Special Tools

Commercial measuring rod diameter 0,8 mm (.031 in.)

C. Materials

CM 150 grease
 CM 651 locking compound
 CM 777 lockwire

D. Routine Replacement Parts

None

E. Job Set-up

- (1) Comply with the general safety instructions for the mechanical assemblies (60-00-00, 3-1).
- (2) Comply with the general safety instructions for the electrical power supply system (24-00-00, 3-1).
- (3) Comply with the general safety instructions for the flight controls (67-00-00, 3-1).
- (4) Open the left pilot access door.
- (5) If necessary, remove the optional equipment controls fitted on the collective levers, in accordance with the associated documentation.

- (6) Remove the plastic cover which provides access to the orifice in the collective pitch torque tube, located behind the pilot's door frame and secured with "VELCRO" strip.
- (7) Release the pilot's collective lever from fine pitch engagement.
- (8) Remove the lower front fairings (53-51-00, 4-2).

F. Procedure

Figure 401

- (1) Removal of the collective levers:

NOTE

- *Removal of the collective levers may be performed independently one from the other and in any sequence.*
- *Select the twist grips on the collective levers to the "IDLE" position.*

- (a) Removal of the pilot's collective lever (16) (DETAIL B):

- Remove control unit (21) (67-12-00, 8-1).
- Remove the boot (15) secured with "VELCRO" to the cover (17), and pull it up the pilot's collective lever (16).
- Disconnect the electric plugs (9) and (10) and remove the clamp securing them to the aircraft structure.
- Cut and remove the lockwire from bolts (12).
- Unscrew and remove the bolts (12) and washers (11).
- Push the bonding braid (13) to one side.
- Remove the pilot's collective lever (16) from the aircraft from underneath the floor.
- Retrieve the shim plate (14).
- If necessary, remove the contactors support assembly (8) (76-12-03, 4-1) or (76-12-04, 4-1).

- (b) Removal of the copilot's collective lever (1) (DETAIL A):

- Remove the boot (7) secured with "VELCRO" to the cover (2), and pull it up the copilot's collective lever (1).
- Disconnect the electric plug (3), connect the shunt plug on structure outlet (plug on socket rest).
- Cut and remove the lockwire from bolts (6).
- Unscrew and remove the bolts (6) and washers (5).
- Push the bonding braid (4) to one side.
- Remove the copilot's collective lever (1) from the aircraft.

NOTE

Balance adjustment required to change from dual to single control (67-12-00, 5-1).

- (2) Installation of the collective levers.



- BEFORE INSTALLATION COLLECTIVE LEVERS, MAKE SURE THAT THE INTERLINK RACK FOR THE TWIST GRIPS (18) IS FLUSH WITH THE ORIFICE IN THE COLLECTIVE PITCH TORQUE TUBE (19).
- THIS POSITION OF THE RACK CORRESPONDS TO THE "IDLE" POSITION ON THE TWIST GRIPS.

NOTE

Installation of the collective levers may be performed independently of each other and in any sequence.

- (a) Installation of the pilot's collective lever (16) (DETAIL B):



BEFORE INSTALLING THE PILOT'S COLLECTIVE LEVER (16), CHECK THAT THE TWIST GRIP IS IN THE "IDLE" POSITION.

PROTECT THE PILOT'S COLLECTIVE LEVER (16) WHEN PASSING IT THROUGH THE FLOOR.

- If necessary, remove control unit (21) (67-12-00, 8-1).
- Lubricate the coordination rack of the pilot's collective lever (16) with the grease CM 150.
- If necessary, install the contactors support assembly (8) (76-12-03, 4-1) or (76-12-04, 4-1).
- Locate and secure in position the pilot's collective lever (16) and the shim plate (14) from underneath the floor.
- Adjust peel shim (14) to obtain a clearance "j" of 0,8 -0 / +0,2 mm (.031 -0 / +.008 in.) between the root of torque tube rack teeth (18) and the apex of pinion teeth (20), use a measuring rod diameter 0,8 mm (.031 in.) (DETAIL D).
- Bond the peel shim (14), using locking compound CM 651.
- Perform electrical bonding of the bonding braid attachment point (13).
- Install the bonding braid (13) on the upper right bolt (12).
- Install the washers (11) and the bolts (12), torque the value and safety the bolts (12), using lockwire CM 777.
- Connect the electric plugs (9) and (10) and install the clamp securing them to the aircraft structure.
- Install and secure the boot (15) on the cover (17) using "VELCRO" strips.
- Install control unit (21) (67-02-00, 8-1).



BEFORE INSTALLING THE COPILOT'S COLLECTIVE LEVER (1), CHECK THAT THE TWIST GRIP IS IN THE "IDLE" POSITION.

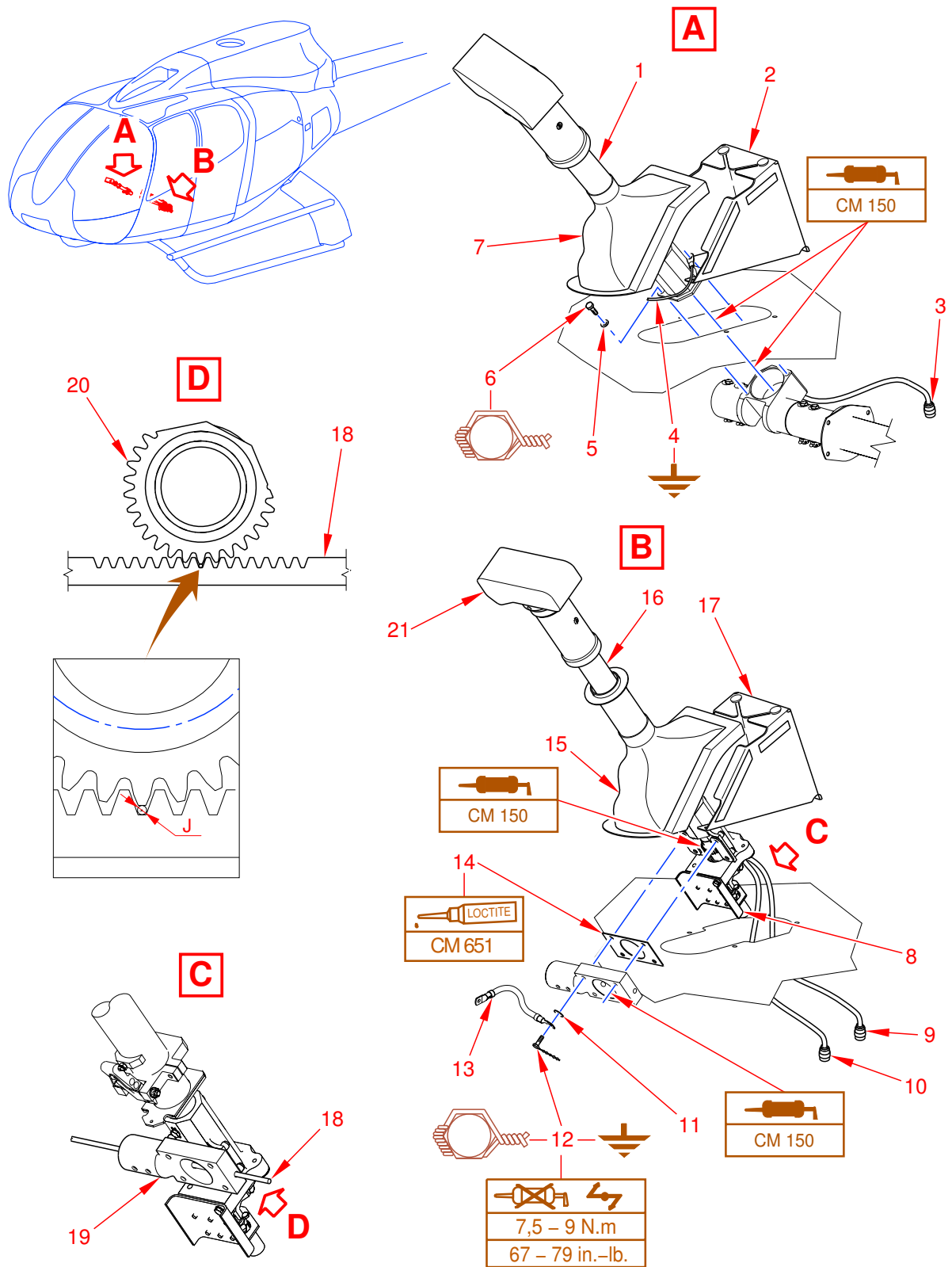
- (c) Installation of the copilot's collective lever (1) (DETAIL A):
- Lubricate the coordination rack of the copilot's collective lever (1) with the grease CM 150.
 - Carefully engage the copilot's collective lever tube (1) into its housing.
 - Perform electrical bonding of the bonding braid attachment point (4).
 - Secure the copilot's collective lever (1) and the bonding braid (4) via bolts (6) and washers (5).
 - Torque and safety the bolts (6) with lockwire CM 777.
 - Remove the shunt plug, connect it on socket rest, connect the electric plug (3).
 - Install and secure the boot (7) on the cover (2) using "VELCRO" strips.

NOTE

Balance adjustment required to change from single to dual control (67-12-00, 5-1).

G. Close-up

- (1) If necessary, install the optional equipment controls on the collective levers in accordance with the associated documentation.
- (2) Check the rotational synchronization and the rotational forces on the pilot's and copilot's twist grips (76-12-03, 5-2) or (76-12-04, 5-2).
- (3) Check when the pilot and copilot twist grips are in the "IDLE" position, that the rack is flush with and does not protrude from the orifice in the collective pitch torque tube.
- (4) Perform a functional test of the twist grip indication (76-12-03, 5-1) or (76-12-04, 5-1).
- (5) Perform the functional tests of the optional installations controlled by the stick, in accordance with the associated documentation.
- (6) Check the engagement of the pilot's collective stick in the fine pitch position (67-12-00, 5-2). If necessary, adjust it.
- (7) Install the plastic cover located behind the pilot's door frame.
- (8) Install the lower front fairings (53-51-00, 4-2).
- (9) Close the left pilot access door.



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Figure 401

