TO 1300i-2-27JG-30-1

TECHNICAL MANUAL

JOB GUIDE
ORGANIZATIONAL MAINTENANCE

FLIGHT CONTROLS ELEVATOR
(27-30-00 THROUGH 27-31-03)

USAF SERIES
300i
AIRCRAFT

MCDONNELL DOUGLAS CORPORATION
MILITARY TRANSPORT AIRCRAFT
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T-2

1 JULY 2024

INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES.

LIST OF EFFECTIVE PAGES

NOTE: The portion of the text affected by the changes is indicated by a vertical line in the outer margins of the page. Changes to illustrations are indicated by miniature pointing hands.

Dates of issue for original and changed pages are:

Original . . . . . 0 . . . . . 1 Jul 24

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 220 CONSISTING OF THE FOLLOWING:

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INTRODUCTION

SCOPE.

This job guide provides maintenance procedures for the built-in test, repair, and adjustment of elevator system components.

MODEL(S) COVERED.

All

ABBREVIATIONS.

The following is a list of non-standard abbreviations used throughout this manual:

EPC	Electrical Power Center
IFCM	Integrated Flight Control Module
LS	Line Select
MFD	Multifunction Display
PLCS	Places
SDS	Safety Data Sheet

CHANGE REQUEST.

Recommended changes to this manual shall be submitted in accordance with TO 00-5-1

300i TO INFORMATION.

General 300i TO/eTO, TO Manager, Supplement and finalized Recommended Change (RC) information can be found in the Enhanced Technical Information Management System (ETIMS), System of Record.

LIST OF TIME COMPLIANCE TECHNICAL ORDERS (TCTO).

This list of TCTO's contains all current TCTO's that affect the technical content of text or illustrations found in this manual.

TCTO NUMBER	TITLE	TCTO DATE	APPLICABILITY

SECTION 1

GENERAL INFORMATION (27-30-00)

1-1. GENERAL INFORMATION.

1-2. This section provides general information that is essential for ensuring complete and safe maintenance procedures contained throughout this job guide manual.

1-3. When operating an auxiliary motor pump below 15 degrees Fahrenheit a 30 seconds on/30 seconds off duty cycle for a maximum 10 cycles may be required to reach full hydraulic pressure of 3800 to 4200 psi. Allow ten minutes for cooling and repeat cycles.

1-4. Hydraulic system No. 2 may require 45 seconds before reaching full hydraulic pressure of 3800 to 4200 psi.

1-5. Flight control surfaces are to be cleared prior to turning off hydraulic auxiliary pumps from the loadmaster control panels. Flight control surface movement may occur.

1-6. When performing rig checks or when rigging elevator cables 5, 6, 7, and 8 located along horizontal rear spar, rig pins shall only be installed in the left inboard, left outboard, and right outboard control cable sector assemblies. A fourth rig pin in the right inboard control cable sector shall not be installed. It will result in erroneous cable tension readings.

1-7. To avoid erroneous cable tension readings perform all cable rig load checks at aircraft stable temperature throughout condition.

1-8. To achieve aircraft stable temperature throughout it is necessary to locate aircraft in hangar. Rig load checks to be performed after a time period of at least three hours from initial placement of the aircraft in the hangar (this will allow fuselage external and internal temperatures to equalize as heat or cold soak condition dissipates). For rig load limits, refer to para 1-10.

1-9. An alternate method is to perform rig load checks between the time period of three hours after sunset and one hour after sunrise (this will allow fuselage external and internal temperatures to equalize as heat or cold soak condition dissipates). For rig load limits, refer to para 1-10.

1-10. ELEVATOR RIG LOAD VS. TEMPERATURE CHART.

NOTE

- This chart is only valid for aircraft that have reached a uniform temperature throughout.
- Loads at **135° F** represent **limit rig load** for design.
- The cable tension requirement per **Elevator Rig Load vs Temperature Chart, 1/8″-75 lb Rig @ 70° F** shall apply for elevator cable runs 5, 6, 7, and 8.
- Minimum Allow Service load is the minimum cable loads acceptable before any tensioning of the cable is required. When tensioning is required, adjust cable tension until the final rig load is between the maximum and minimum initial rig load.

Elevator Rig Load vs Temperature Chart 1/8″-75 lb Rig @ 70°F			
TEMP (F°)	MIN INITIAL (lbf)	MAX INITIAL (lbf)	MIN ALLOW SERVICE (lbf)
135	105	116	95
130	102	113	92
125	100	110	90
120	98	107	88
115	95	105	86
110	93	102	83
105	90	99	81
100	88	97	79
95	86	94	77
90	84	92	75
85	81	90	73
80	79	87	71
75	77	85	69
70	75	82	67
65	73	80	66

Elevator Rig Load vs Temperature Chart 1/8″-75 lb Rig @ 70°F			
TEMP (F°)	MIN INITIAL (lbf)	MAX INITIAL (lbf)	MIN ALLOW SERVICE (lbf)
60	71	78	64
55	69	76	62
50	67	74	60
45	65	71	58
40	63	69	57
35	61	67	55
30	59	65	53
25	57	63	52
20	56	61	50
15	54	59	48
10	52	57	47
5	50	55	45
0	49	53	44
-5	47	52	42
-10	45	50	41
-15	44	48	39
-20	42	46	38
-25	40	44	36
-30	39	43	35
-35	37	41	33
-40	36	39	32
-45	34	38	31
-50	33	36	29
-55	31	34	28
-60	30	33	27

1-11. Rig pins are used extensively during flight control rigging procedures. To ensure accurate alignment of control system and repeatability of the rigging checks, whenever rig pins are used, differentially adjust the applicable turnbuckle so that the rig pin can be freely removed and inserted. Under no circumstances, should the rig pin holes be forced into alignment by stretching the cables. Rig pin hole shall not spring out of alignment when pin is removed. When a rig pin cannot be freely removed or inserted, the applicable turnbuckle shall be adjusted within tolerances to eliminate any required force.

1-12. To complete the rigging procedures, the system shall be cycled 10-20 times, and cable tensions rechecked and adjusted when necessary.

1-13. For all non regulated cable systems, certified tensiometers shall be used for measuring cable tensions. For initial cable rigging the rig load tolerances for all temperatures are as follows:

70° F RIG LOAD (lbs)	TOLERANCES (± lbs)
0 to 19	+4, -0
20 to 49	+5, -0
50 and over	+10 %, -0 %

1-14. The following tolerances shall be used for all cable tension inspections that are made after the above specified inspection:

70° F RIG LOAD (lbs)	TOLERANCES (± lbs)
0 to 19	+4, -3
20 to 49	+5, -4
50 and over	+10 %, -10 %

1-15. CABLE TENSION REGULATOR COMPENSATION.

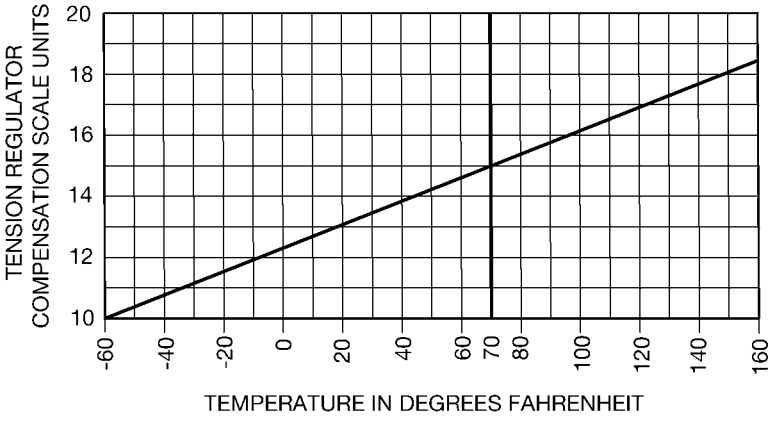
NOTE

- Aircraft shall be in a stable temperature environment for at least three hours prior to and throughout this cable tension adjustment.

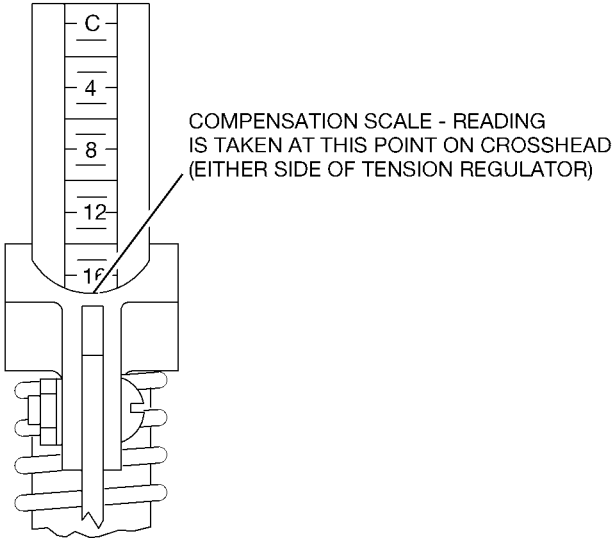
- Tension regulator compensation scale unit versus temperature chart is valid only on aircrafts that have reached a uniform temperature throughout. When the cable tensions must be measured outside in free air, they shall be measured when the airplane structure has stabilized at air temperature between the time period of three hours after sunset and one hour after sunrise (this will allow the fuselage heat and cold soak condition to dissipate).

1-16. Elevator cable runs 3 and 4 tension is maintained by tension regulator located in the elevator artificial load feel assembly. Compensation scale readings may be taken from either side of the

tension regulator at the crosshead alignment point as noted. The compensation scale reading shall be within ± 1/2 the chart indicated value for the average temperature taken.



NOTE: TOLERANCE IS ± 1/2 COMPENSATION SCALE UNIT.



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1-17. GENERAL WARNINGS, CAUTIONS, AND NOTES.

WARNING

- All flight control surfaces and thrust reversers shall be clear of personnel and equipment prior to applying or removing hydraulic power. Failure to comply may cause injury to personnel or damage to aircraft.

- The use of personal protective equipment is mandatory to perform this procedure. The applicable Safety Data Sheet (SDS) will identify special protection information. Failure to comply may cause injury to personnel.

CAUTION

Air in a hydraulic system can cause numerous malfunctions, from a total system failure to a minor indication problem. If you suspect air has been inducted into a system by removing a hydraulic component or a line, refer to the hydraulic system bleed procedure, (12-29-08). Failure to comply may cause damage to aircraft.

SECTION 2

MECHANICAL TEST-PITCH MAINTENANCE BUILT-IN TEST (27-30-01)

GENERAL MAINTENANCE INPUT CONDITIONS:

Applicability:

	Task
All	All

Additional information:

This procedure consists of the following task:

01-1. Mechanical test-pitch maintenance built-in test.

Additional data:

	Task
TO 1300i-2-22FI-00-1	All
TO 1300i-2-29JG-20-1	All
TO 1300i-2-31JG-60-1	All

Personnel recommended:

	Task
One	All

Safety conditions:

Task

WARNING

Personnel and equipment shall be clear of flight control surfaces prior to movement. Failure to comply may cause injury or death to personnel or damage to aircraft. — All

Support equipment:

Nomenclature	PN	Specification	Qty	Task
NA	--	--	--	--

Supplies:

Nomenclature	PN	Specification	Qty	Task
NA	--	--	--	--

01-1. MECHANICAL TEST-PITCH MAINTENANCE BUILT-IN TEST.

1. Review ″Section 1 (General Information)″ of this TO for system general warnings, cautions, and notes.

2. Review task ″General Maintenance Input Conditions″ page for task specific safety conditions.

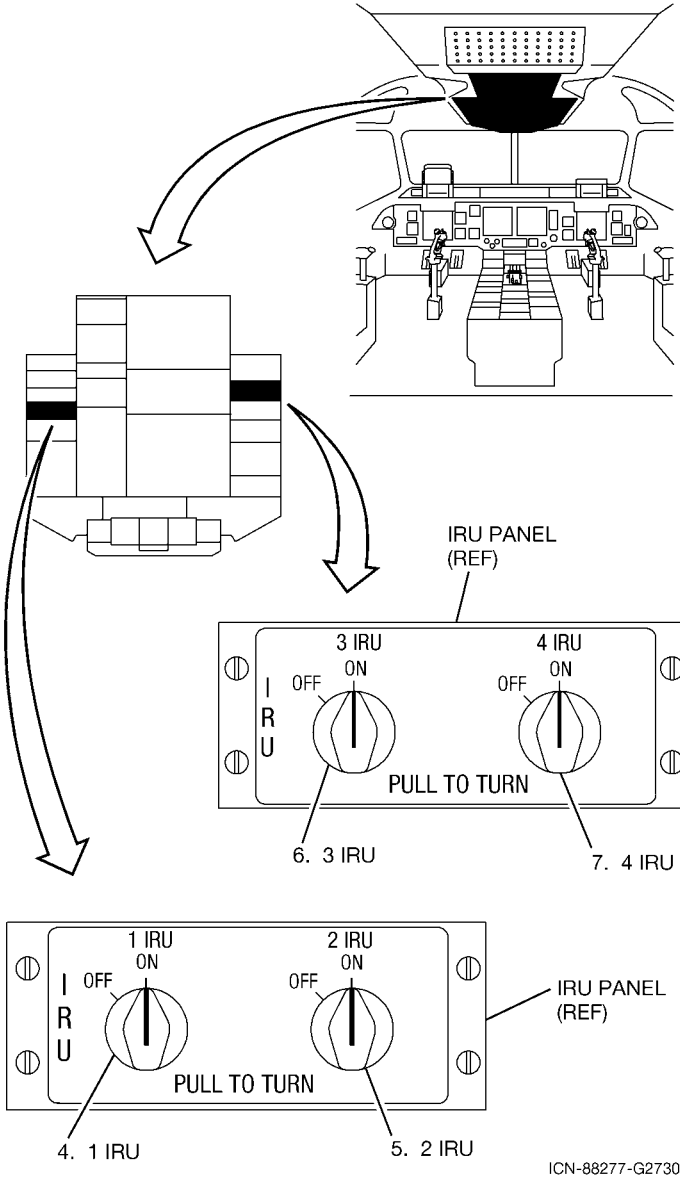
3. Operate multifunction displays system and select **CFG** format (31-61-02, task 02-1 or 02-2).

4. Set **1 IRU** switch on **IRU** panel to **ON**.

5. Set **2 IRU** switch to **ON**.

6. Set **3 IRU** switch on **IRU** panel to **ON**.

7. Set **4 IRU** switch to **ON**.



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8. Set **PITCH** switch on **FCS ACTR** panel is set to **EFCS**.

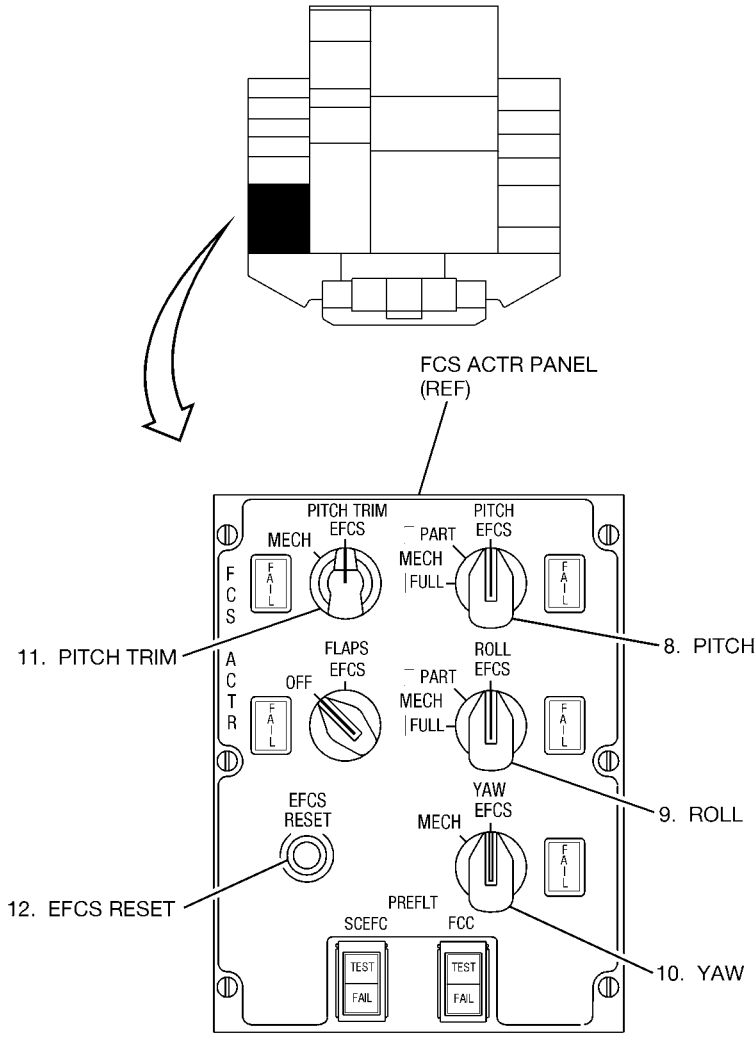
9. Set **ROLL** switch to **EFCS**.

10. Set **YAW** switch to **EFCS**.

11. Set **PITCH TRIM** switch to **EFCS**.

12. Press **EFCS RESET** button.

13. Operate auxiliary hydraulic system (29-20-01, task 01-1).



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14. Press **MSN** key on **MCD** (**DU**).

    - **MSN INDEX 1** is displayed.

15. Press up arrow key.

    - **MSN INDEX 2** is displayed.

16. Press 6L Line Select (LS) key.

    - **MAINTENANCE MENU** is displayed.

17. Press 2L LS key.

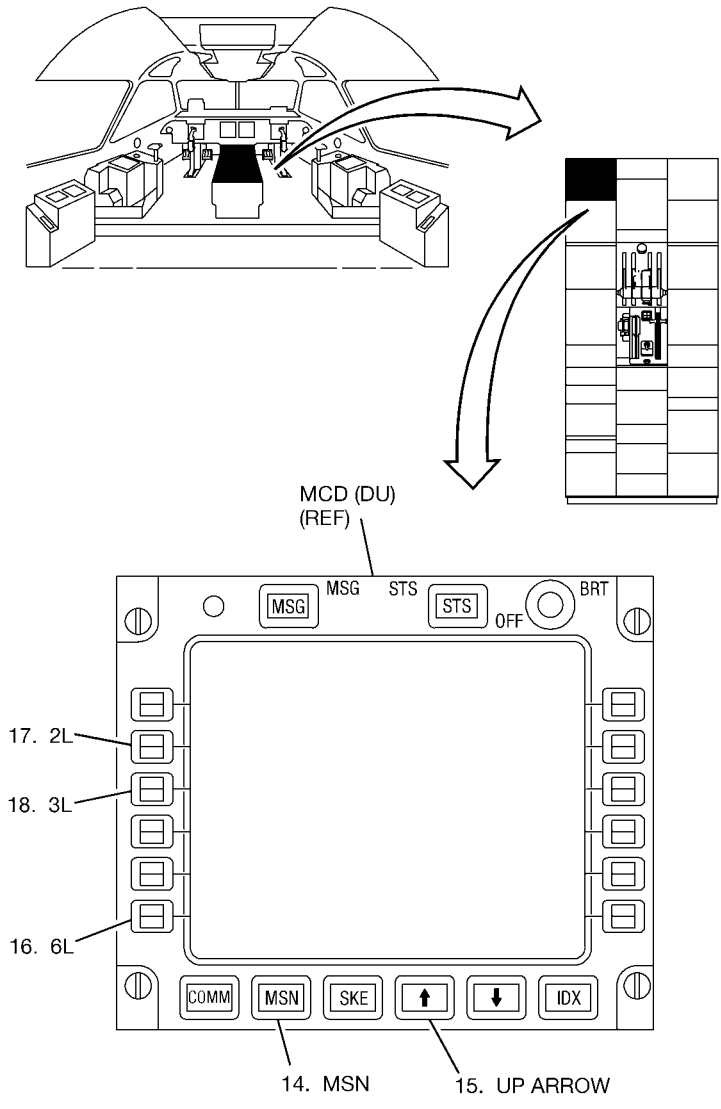
    - **EFCS MAINT MENU** is displayed.

NOTE

A fault list and history of each line replaceable unit can be accessed from **EFCS MAINT MENU** page by pressing 1L or 2L LS key.

18. Press 3L LS key.

    - **EFCS MAINTENANCE BIT** is displayed.



(TYPICAL)

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NOTE

ATS and **AP** switches on automatic pilot control indicator must be set simultaneously to access **EFCS MAINTENANCE BIT** menu.

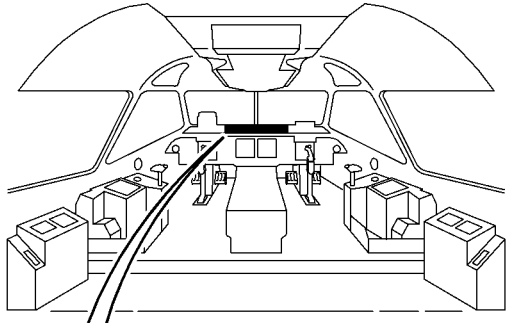
19. Set **ATS** switch on **AUTOMATIC PILOT CONTROL INDICATOR** (APCI) to **ON**.

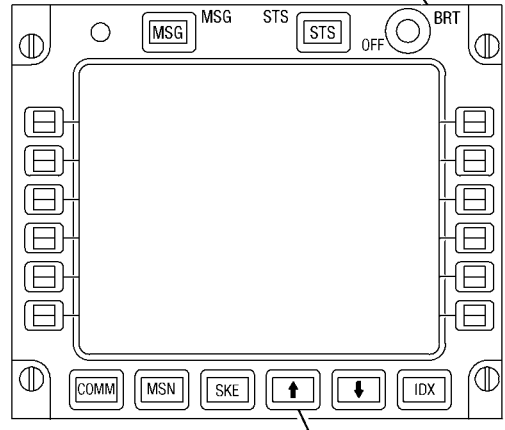
20. Set **AP** switch to **ON**.

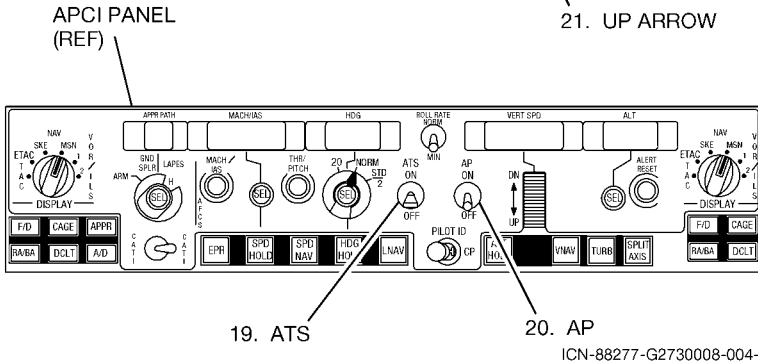
    - **EFCS MAINTENANCE BIT** page **1/5** is displayed.

21. Press up arrow key on **MCD** (**DU**) three times.

    - **EFCS MAINTENANCE BIT** page **4/5** is displayed.







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WARNING

All flight control surfaces shall be cleared prior to movement or applying hydraulic power. Failure to comply may cause injury to personnel or damage to aircraft.

22. Press 5L LS key.

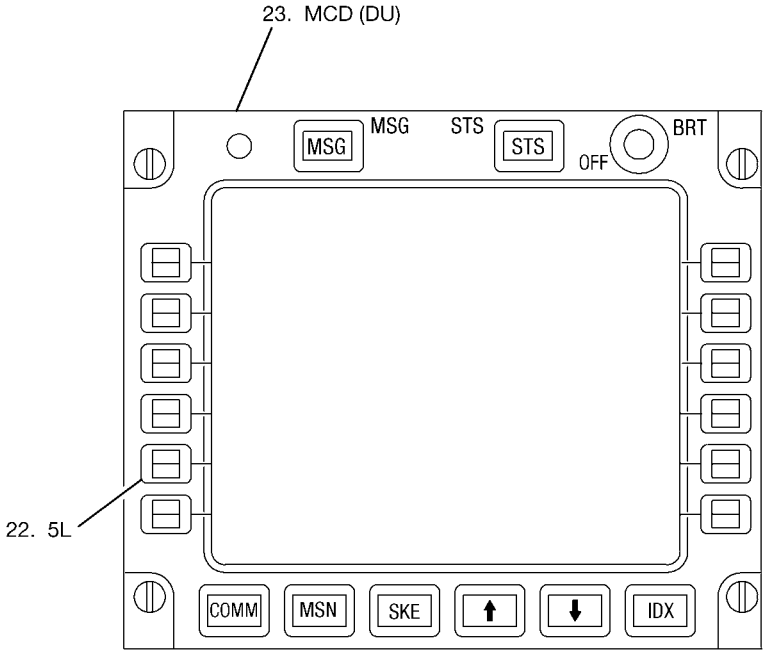
    - **EFCS MAINTENANCE BIT P_MECH IN PROGRESS** is displayed.

NOTE

- Test may be aborted at any time by pressing 6L LS key.
- Refer to TO 1300i-2-22FI-00-1 to correct any failure condition.
- Do not move control stick while **IN PROGRESS** is displayed.

23. Follow instructions on **MCD** (**DU**).

    - **TEST PASSED** is displayed.



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24. Press 6R LS key.

    - **EFCS MAINTENANCE BIT PAGE 4/5** is displayed.

25. Press 6R LS key.

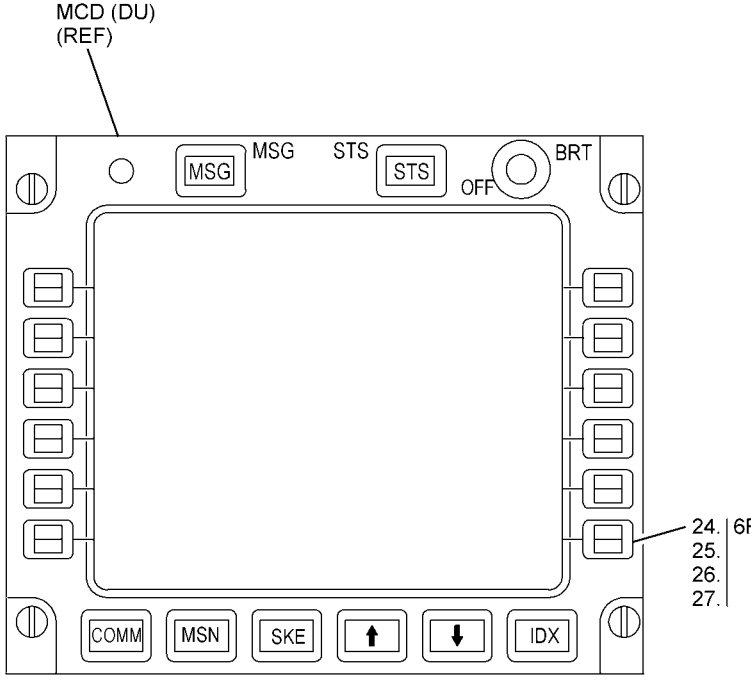
    - **EFCS MAINT MENU** is displayed.

26. Press 6R LS key.

    - **MAINT MENU** is displayed.

27. Press 6R LS key.

    - **MSN INDEX 2** is displayed.



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28. Set **1 IRU** switch on **IRU** panel to **OFF**.

29. Set **2 IRU** switch to **OFF**.

30. Set **3 IRU** switch on **IRU** panel to **OFF**.

31. Set **4 IRU** switch to **OFF**.

32. Set **PITCH** switch on **FCS ACTR** panel to **FULL MECH**.

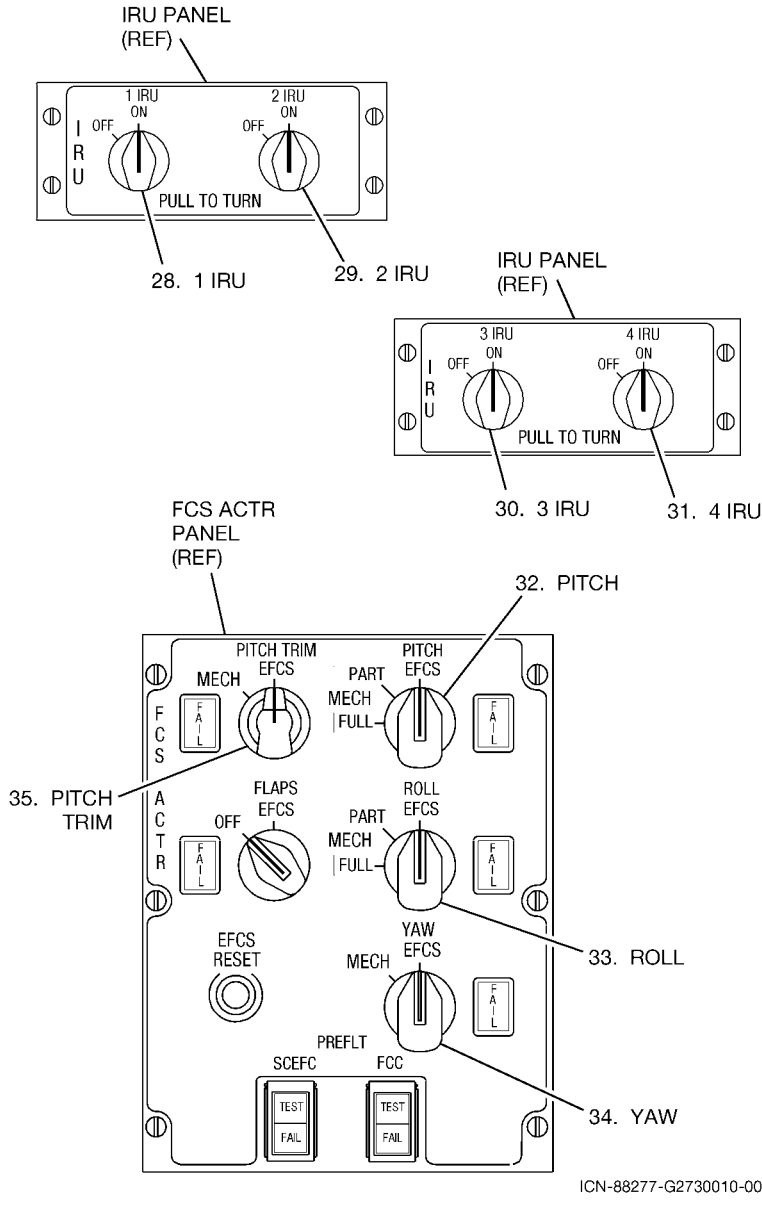
33. Set **ROLL** switch to **FULL MECH**.

34. Set **YAW** switch to **MECH**.

35. Set **PITCH TRIM** switch to **MECH**.

36. Shutdown auxiliary hydraulic system (29-20-01, task 01-2).

37. Shutdown multifunction displays system (31-61-02, task 02-3 or 02-4).



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MECHANICAL CONTROLS AND SURFACES SYSTEM OPERATIONAL CHECKOUT (27-31-01)

GENERAL MAINTENANCE INPUT CONDITIONS:

Applicability:

	Task
All	All

Additional information:

This procedure consists of the following tasks:

01-1. Mechanical controls and surfaces system operational checkout.

01-2. Mechanical controls and surfaces system breakout force operational checkout.

Additional data:

	Task
TO 1300i-2-22FI-00-1	01-1
TO 1300i-2-23JG-40-1	All
TO 1300i-2-27FI-00-1	All
TO 1300i-2-27JG-40-6	01-1
TO 1300i-2-29JG-20-1	All
TO 1300i-2-31FI-00-1	01-1
TO 1300i-2-31JG-60-1	01-1

Personnel recommended:

	Task
Two	01-2
Three	01-1

Person (A) performs task.

Person (B) assists person (A).

	Task
Person (C) ground observer.	

Safety conditions:

	Task
NA	--

Support equipment:

Nomenclature	PN	Specification	Qty	Task
Platform, Maintenance	60001	--	1	01-1
Tensiometer, Dial	L10M	--	1	01-2

Supplies:

Nomenclature	PN	Specification	Qty	Task
NA	--	--	--	--

01-1. MECHANICAL CONTROLS AND SURFACES SYSTEM OPERATIONAL CHECKOUT.

1. Review ″Section 1 (General Information)″ of this TO for system general warnings, cautions, and notes.

2. Review task ″General Maintenance Input Conditions″ page for task specific safety conditions.

3. Operate multifunction displays system and select **CFG** format (31-61-02, task 02-1 or 02-2).

4. Operate auxiliary hydraulic system (29-20-01, task 01-1).

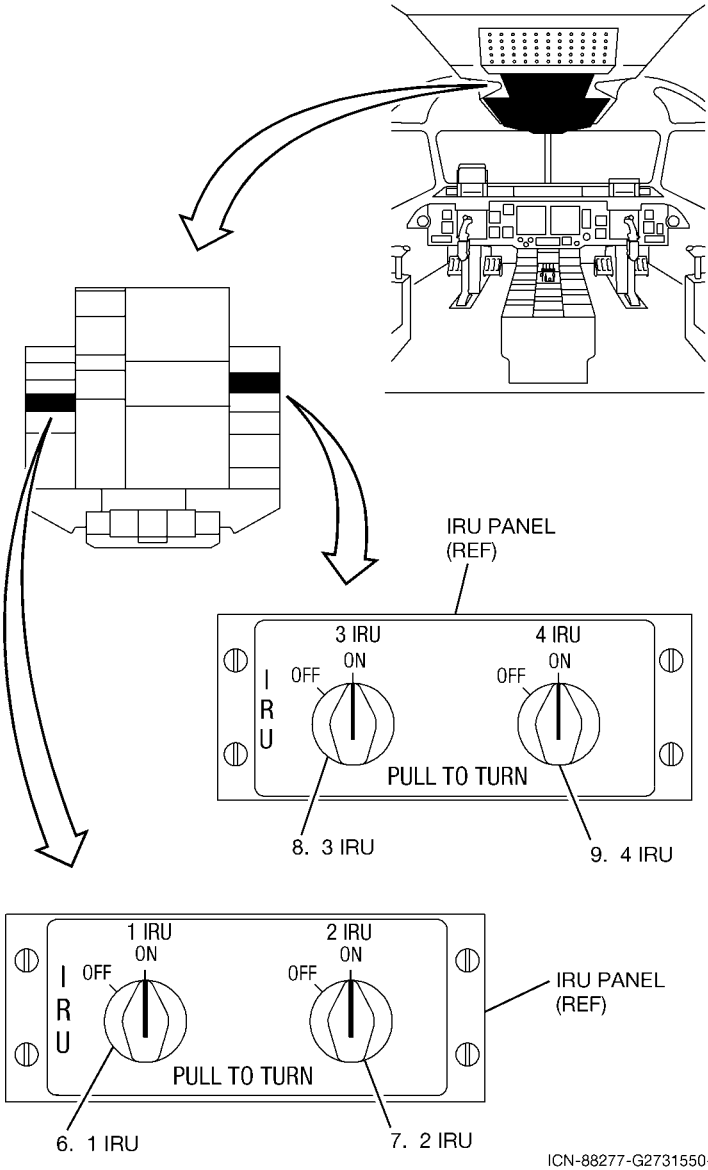
5. Perform maintenance interphone operation (23-41-02, task 02-3).

6. (A) Set **1 IRU** switch on **IRU** panel to **ON**.

7. (A) Set **2 IRU** switch to **ON**.

8. (A) Set **3 IRU** switch on **IRU** panel to **ON**.

9. (A) Set **4 IRU** switch to **ON**.



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10. (A) Rotate **PITCH TRIM** switch on **FCS ACTR** panel to **EFCS**.

11. (A) Press **EFCS RESET** button.

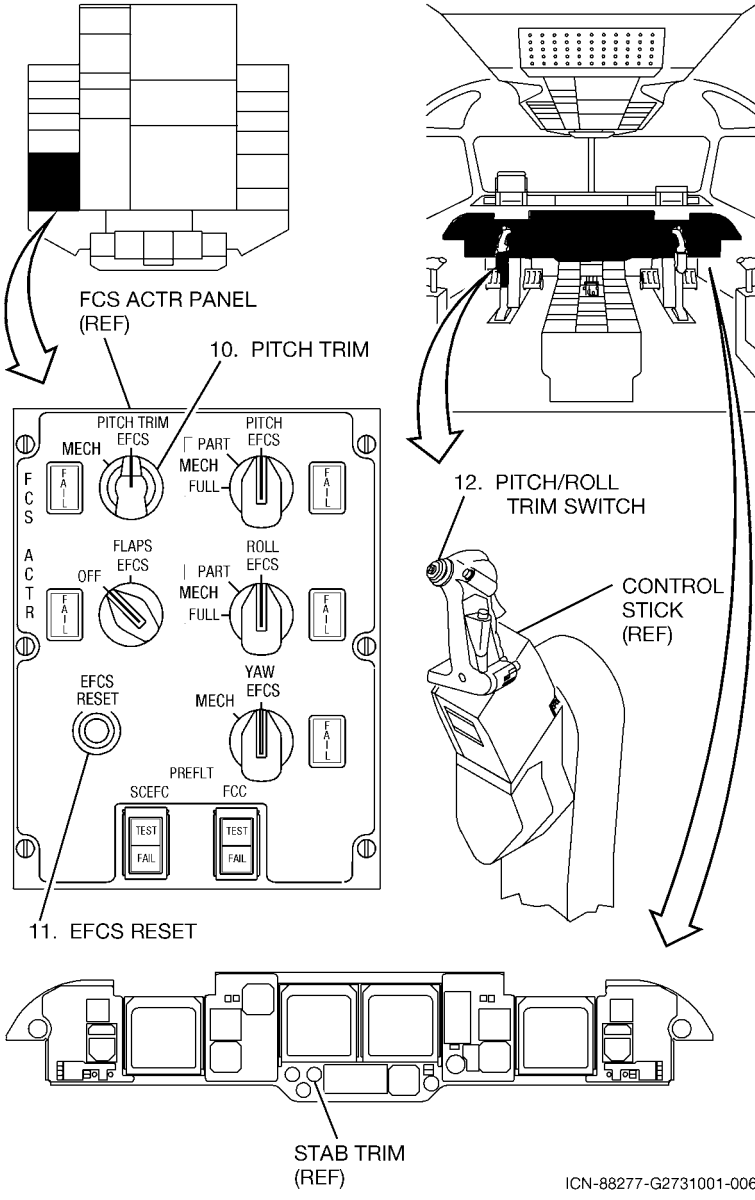
WARNING

All flight control surfaces shall be cleared prior to movement or applying hydraulic power. Failure to comply may cause injury to personnel or damage to aircraft.

12. (A) Press and hold pitch/roll trim switch on control stick.

- **STAB TRIM** indicator reads 0° ± 1° (27-45-AC-00).

- The two protruding head rivets or markings on the horizontal stabilizer align with the protruding head rivet or the markings on the vertical stabilizer (TO 1300i-23, Chapter 1, Section IV and 27-45-11, task 5-1).



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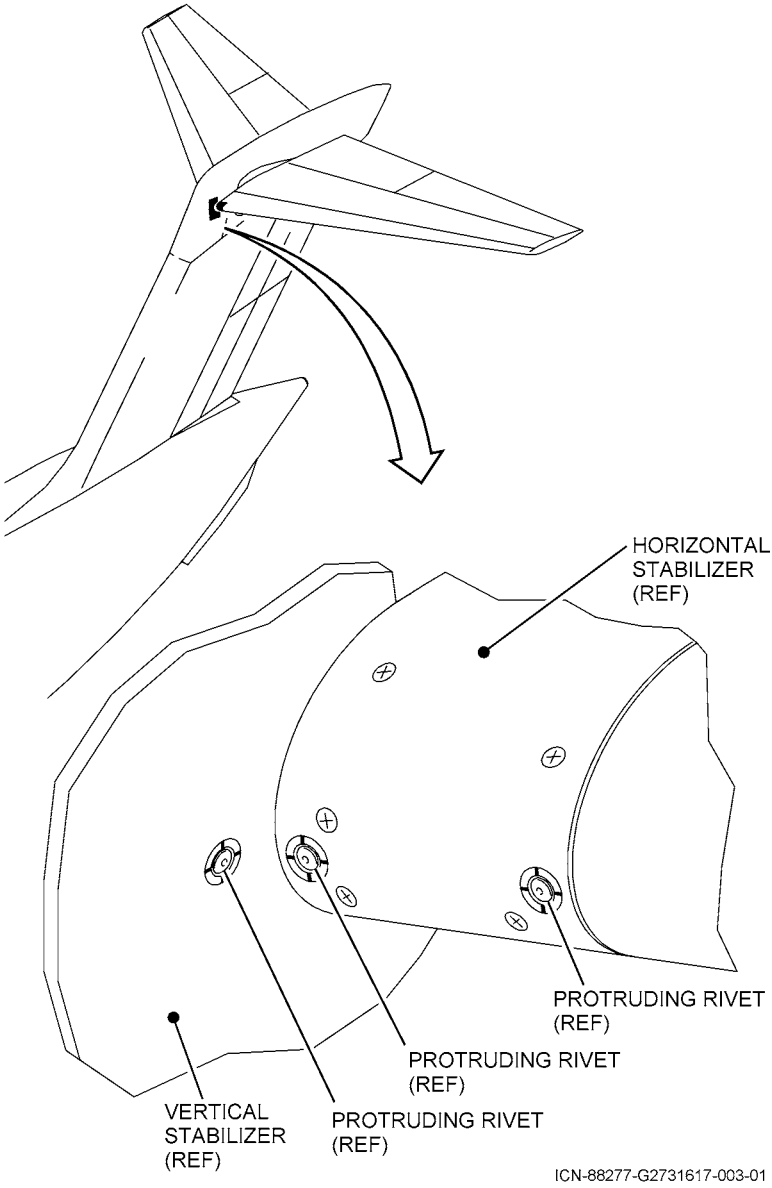
HORIZONTAL
STABILIZER
(REF)
PROTRUDING RIVET
(REF)
PROTRUDING RIVET
(REF)
VERTICAL
STABILIZER
(REF)
PROTRUDING RIVET
(REF)
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13. (A) Rotate **PITCH** switch on **FCS ACTR** panel to **EFCS**.

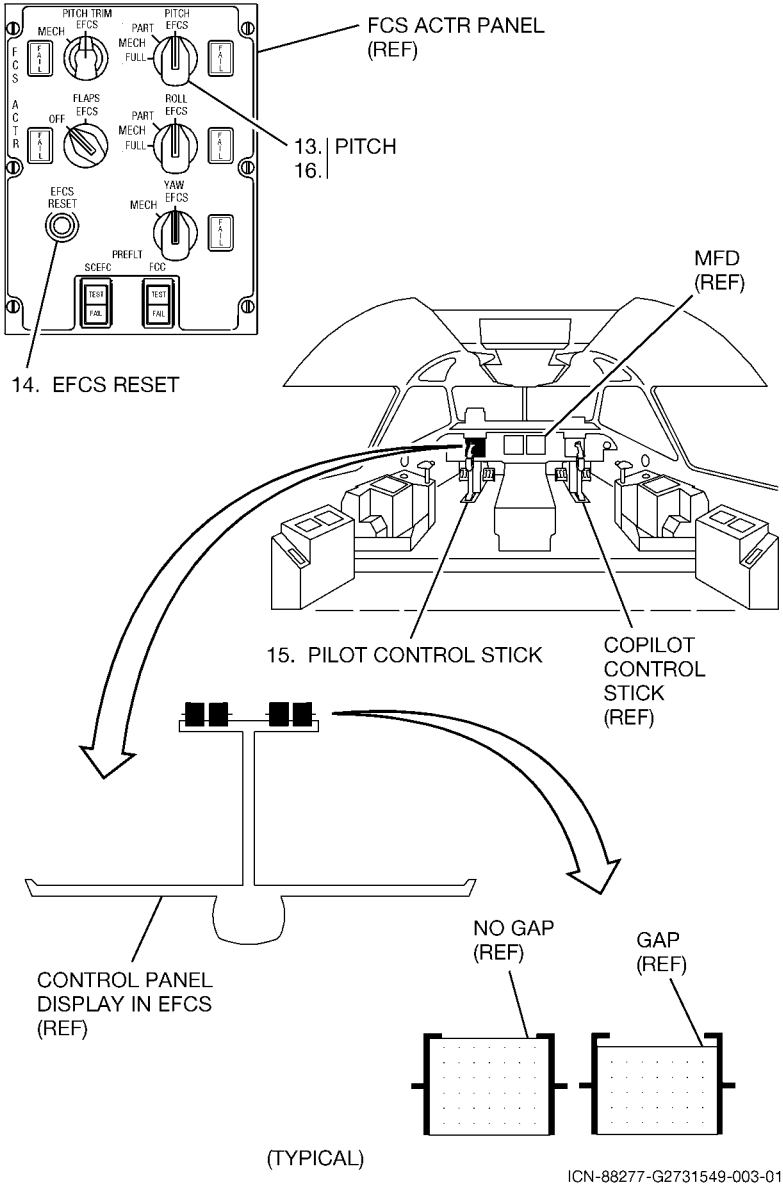
14. (A) Press **EFCS RESET** button.

NOTE

- One full elevator cycle is defined as elevator up, elevator down, and neutral.
- Minimum acceptable full surface deflection for elevators in **EFCS** is displayed as full scale on **MFD CFG** page. Full scale is defined as no gap displayed between surface deflection and full scale brackets.

15. (A) Operate pilot control stick through one full cycle in **EFCS**; observe Multifunction Display (MFD).
    - MFD indicates proper elevator position (27-33-AB-_).
    - Elevator position displays no gap on MFD with elevator at full deflection (27-33-AB-_).
    - Copilot control stick follows pilot control stick movement (27-31-AD-00).

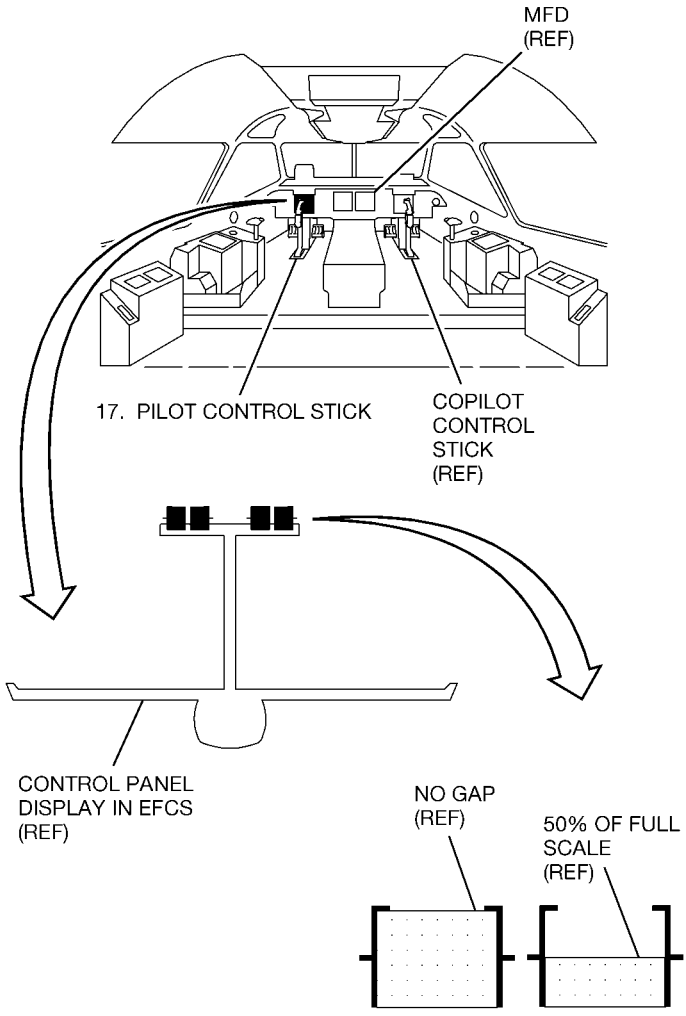
16. (A) Rotate **PITCH** switch on **FCS ACTR** panel to **PART MECH**.


FCS ACTR PANEL
(REF)
13.
16.
PITCH
14. EFCS RESET
MFD
(REF)
15. PILOT CONTROL STICK
COPILOT
CONTROL
STICK
(REF)
CONTROL PANEL
DISPLAY IN EFCS
(REF)
NO GAP
(REF)
GAP
(REF)
(TYPICAL)
ICN-88277-G2731549-003-01

NOTE

- One full elevator cycle is defined as elevator up, elevator down, and neutral.
- Full scale is defined as no gap displayed between surface deflection and full scale bracket.

17. (A) Operate pilot control stick through one full cycle in **PART MECH**; observe MFD.
    - MFD indicates proper elevator position (31-61-AA-01, 31-61-AA-02).
    - Elevator position displays approximately 50% of full scale on MFD when stick is at full travel (22-00-BQ-00).
    - Copilot control stick follows pilot control stick movement (27-31-AJ-00).



(TYPICAL)

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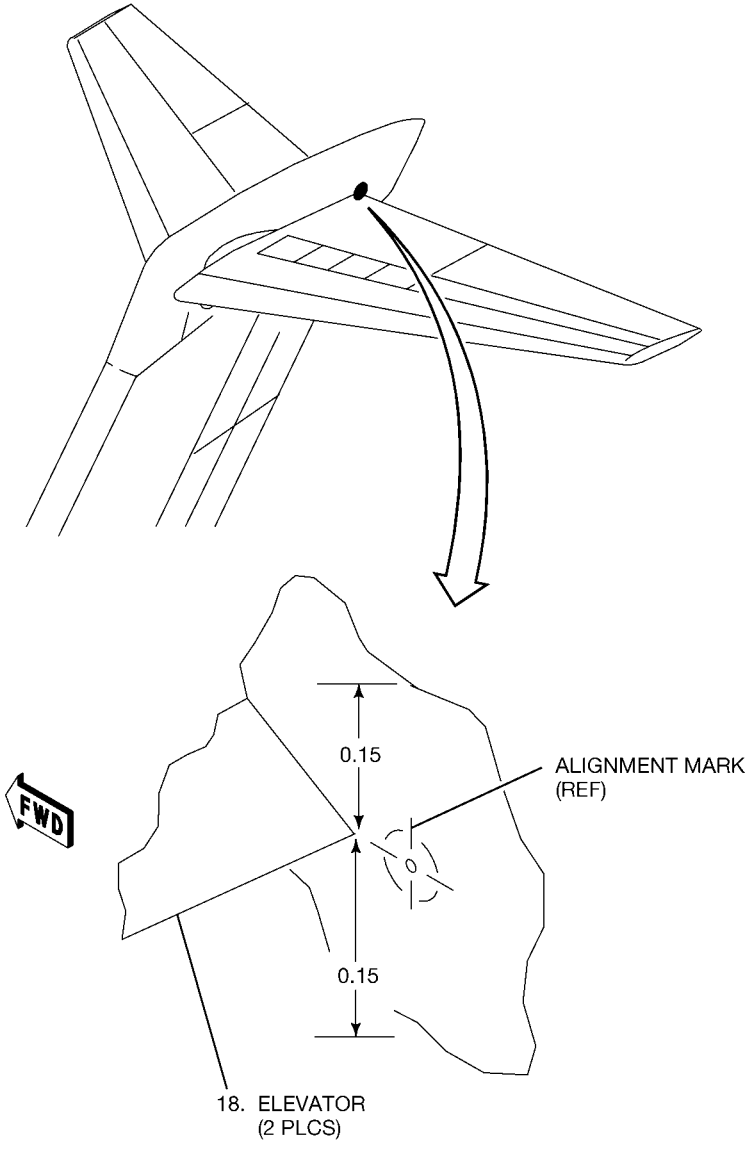
18. (B,C) Measure inboard trailing edge of inboard elevators and alignment marks on vertical stabilizer.

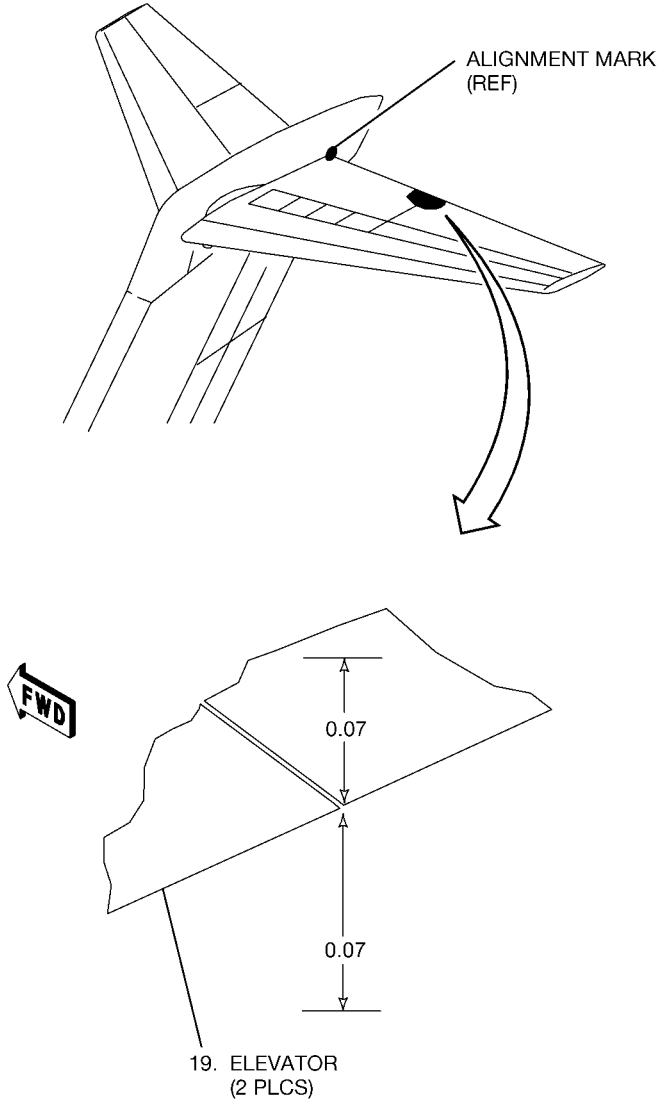
    - Elevators are within 0.15 inch above or below center of alignment marks (27-31-02, task 02-7).



ICN-88277-G2731004-004-01

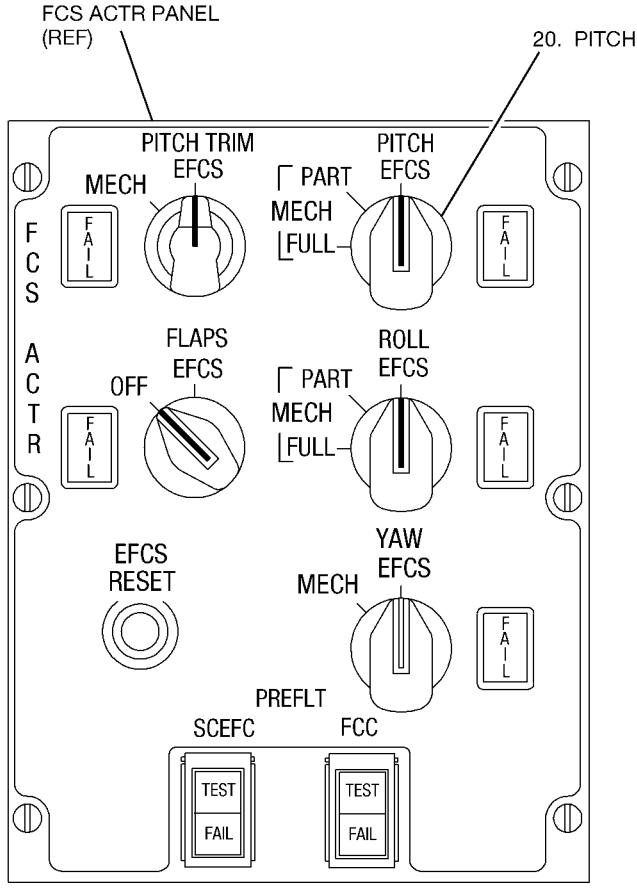
19. (B,C) Measure distance from outboard trailing edge of inboard elevators to inboard trailing edge of outboard elevators.

    - Outboard elevators are within 0.07 inch above or below outboard trailing edge of inboard elevators and not to exceed 0.15 inch above or below alignment marks (27-31-02, task 02-7).



ICN-88277-G2731005-004-01

20. (A) Rotate **PITCH** switch on **FCS ACTR** panel to **FULL MECH**.



ICN-88277-G2731006-003-01

NOTE

- One full elevator cycle is defined as elevator up, elevator down, and neutral.

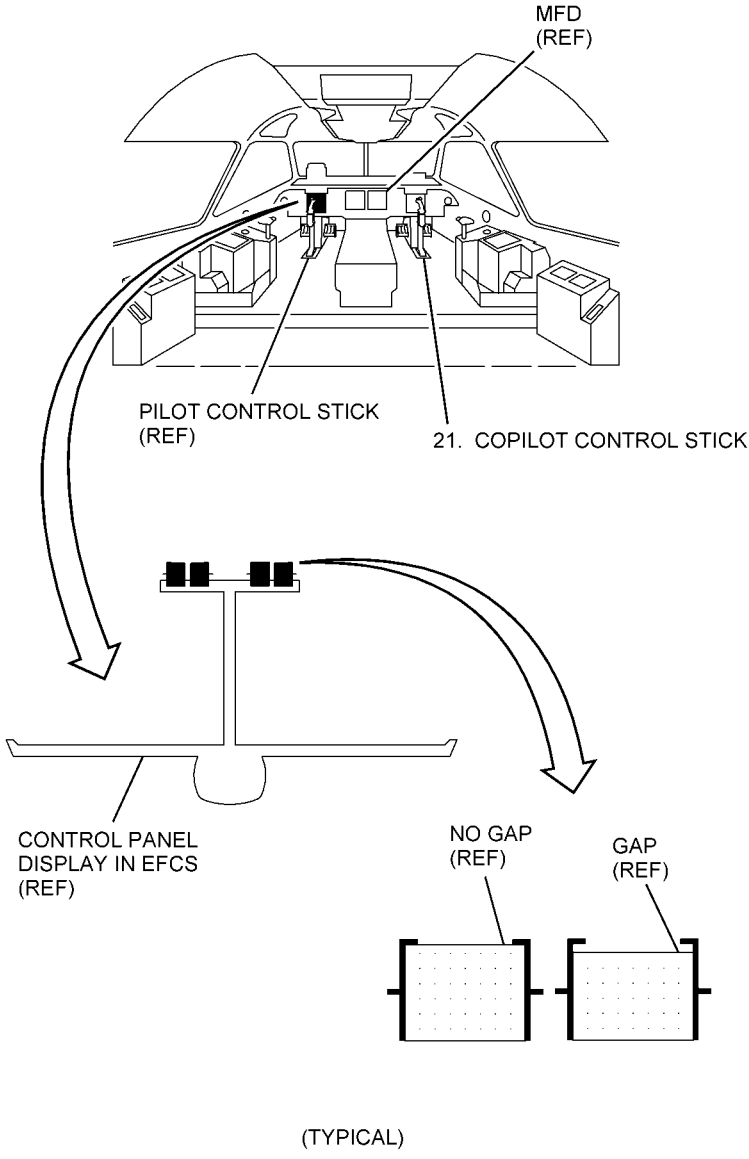
- Minimum acceptable full surface deflection for elevators in **FULL MECH** is displayed as close to full scale on **MFD CFG** page. Close to full is defined as when gap displayed between surface deflection and full scale bracket is no wider than width of full scale bracket display line.

21. (A) Operate copilot control stick through one full cycle in **FULL MECH**; observe elevator position on MFD.

    - MFD indicates proper elevator position (31-61-AA-01, 31-61-AA-02).

    - Elevator position displays at least minimum full surface deflection on MFD when elevator is at full deflection (22-00-BQ-00).

    - Pilot control stick follows copilot control stick movement (27-31-AH-00).



(TYPICAL)

ICN-88277-G2731007-007-01

22. (A) Set **1 IRU** switch on **IRU** panel to **OFF**.

23. (A) Set **2 IRU** switch to **OFF**.

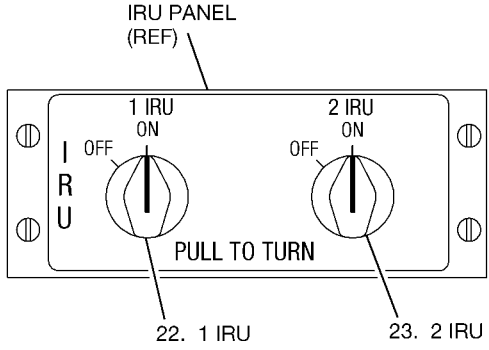
24. (A) Set **3 IRU** switch on **IRU** panel to **OFF**.

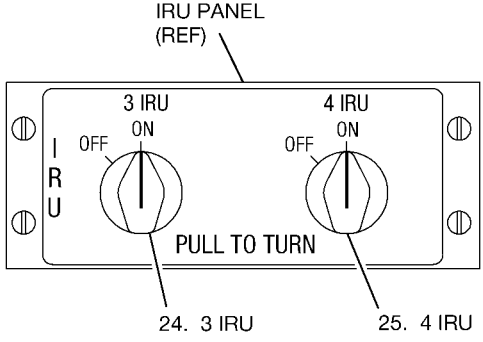
25. (A) Set **4 IRU** switch to **OFF**.

26. Perform maintenance interphone shutdown (23-41-02, task 02-4).

27. Shutdown auxiliary hydraulic system (29-20-01, task 01-2).

28. Shutdown multifunction displays system (31-61-02, task 02-3 or 02-4).





ICN-88277-G2731551-002-01

01-2. MECHANICAL CONTROLS AND SURFACES SYSTEM BREAKOUT FORCE OPERATIONAL CHECKOUT.

1. Review ″Section 1 (General Information)″ of this TO for system general warnings, cautions, and notes.

2. Review task ″General Maintenance Input Conditions″ page for task specific safety conditions.

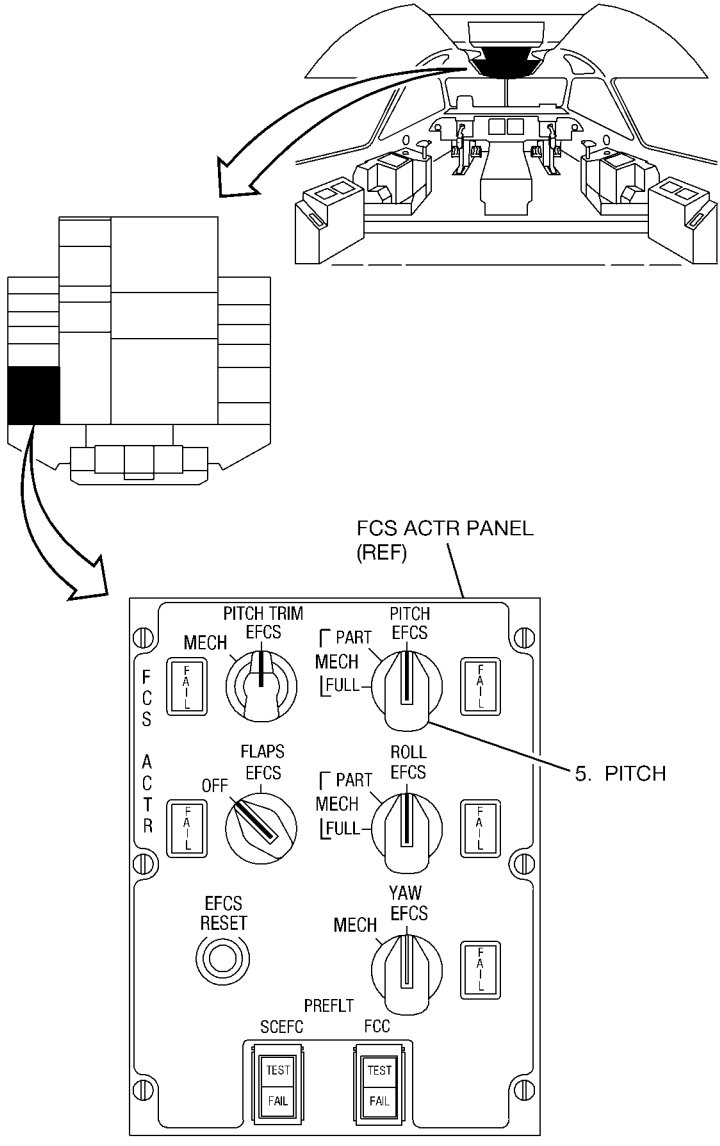
NOTE

This is a typical mechanical controls and surfaces system breakout force operational checkout for all control stick assemblies.

3. Perform maintenance interphone operation (23-41-02, task 02-3).

4. Operate auxiliary hydraulic system (29-20-01, task 01-1).

5. (A) Rotate **PITCH** switch on **FCS ACTR** panel to **PART MECH**.



ICN-88277-G2731010-002-01

6. (A) Set dial tensiometer to read 0 lb and position probe forward side of control stick grip reference point.

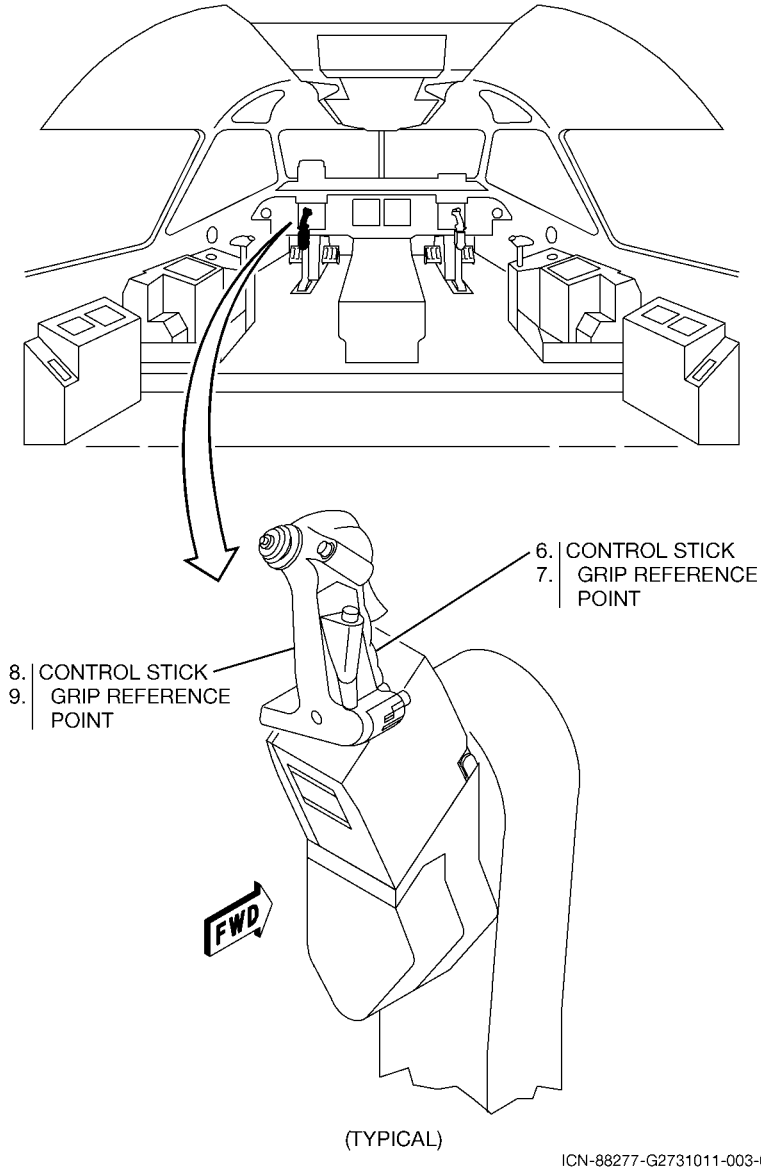
7. (A,B) Maintain a slow and steady push on tensiometer at control stick grip reference point until elevator initially moves.

   - Breakout force is 0.5 to 5 lbs (27-31-AR-00).

8. (A) Set dial tensiometer to read 0 lb and position probe aft side of control stick grip reference point.

9. (A,B) Maintain a slow and steady pull on tensiometer at control stick grip reference point until elevator initially moves.

   - Breakout force is 0.5 to 5 lbs (27-31-AR-00).



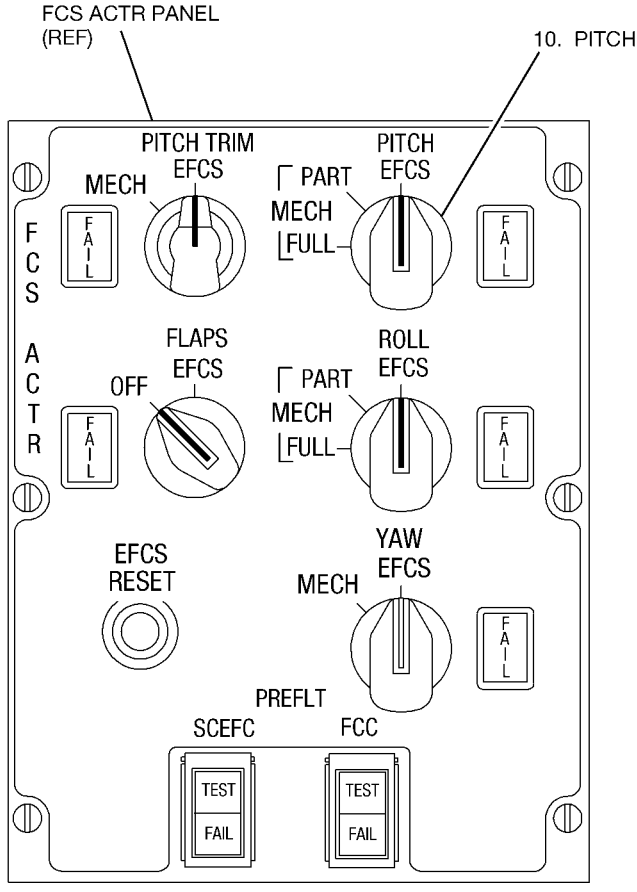
(TYPICAL)

ICN-88277-G2731011-003-01

10. (A) Rotate **PITCH** switch on **FCS ACTR** panel to **FULL MECH**.

11. Perform maintenance interphone shutdown (23-41-02, task 02-4).

12. Shutdown auxiliary hydraulic system (29-20-01, task 01-2).



ICN-88277-G2731012-002-01

MECHANICAL CONTROLS AND SURFACES SYSTEM ADJUSTMENT (27-31-02)

GENERAL MAINTENANCE INPUT CONDITIONS:

Applicability:

	Task
All	All

Additional information:

This procedure consists of the following tasks:

02-1. Preparation.
02-2. Copilot elevator artificial feel control assembly to pilot elevator artificial feel control assembly adjustment.
02-3. Copilot elevator artificial feel control assembly to control stick assembly connecting link adjustment.
02-4. Pilot elevator artificial feel control assembly to elevator cable crank control assembly cable adjustment.
02-5. Elevator cable crank control assembly to elevator cable crank control assembly cable runs 5 & 6, adjustment.
02-6. Elevator cable crank control assembly to elevator cable crank control assembly cable runs 7 & 8, adjustment.
02-7. Elevator cable crank assembly to elevator integrated flight control module input connecting link adjustment.
02-8. Follow-on maintenance.
02-9. Cable tension regulator check and verification for cable runs 3 and 4.
02-10. Cable tension check and verification for cable runs 5 and 6.
02-11. Cable tension check and verification for cable runs 7 and 8.

Additional data:

	Task
TO 1300i-2-00JG-00-1	02-1, 02-4, 02-6, 02-7, 02-9, 02-10, 02-11
TO 1300i-2-22FI-00-1	02-1
TO 1300i-2-23JG-40-1	02-4, 02-5, 02-6, 02-7
TO 1300i-2-27JG-10-3	02-3
TO 1300i-2-27JG-30-1	02-8
TO 1300i-2-27JG-40-1	02-1
TO 1300i-2-29JG-20-1	02-7

Personnel recommended:

	Task
One	02-1, 02-2, 02-5, 02-6, 02-7, 02-8
Two	02-3, 02-4, 02-9, 02-10, 02-11

Person (A) performs task.

Person (B) assists person (A).

Safety conditions:

	Task
WARNING	
The horizontal pressure panel access cover(s) are removed in these tasks to gain access to the cavity above. When rudder, aileron, and elevator aircraft ground safety locks are not installed, care shall be taken working around rudder, aileron, and elevator cables, pulleys, and linkage due to possible moving parts. Failure to comply may cause injury to personnel.	02-2, 02-3, 02-4, 02-9

Support equipment:

Nomenclature	PN	Specification	Qty	Task
Kit, Rig Pin	17G140015-1	--	--	--
Pin 5-5, Rig	17G140015-13	--	1	02-4, 02-9, 02-10
Pin 5-5, Rig	17G140015-13	--	2	02-5, 02-6, 02-11
Pin 5-10, Rig	17G140015-17	--	1	02-9
Pin 5-10, Rig	17G140015-17	--	2	02-2, 02-4
Platform, Maintenance	60001	--	1	02-5

Nomenclature	PN	Specification	Qty	Task
Tensiometer (Primary)	T5-2004-113-00	(0-100 lb)	1	02-5, 02-6, 02-9, 02-10, 02-11
Tensiometer (Alternate)	ACX-100	(5-100 lb)	1	02-5, 02-6, 02-9, 02-10, 02-11
Tensiometer (Alternate)	ACX-250	(20-250 lb)	1	02-5, 02-6, 02-9, 02-10, 02-11
Tensiometer (Alternate)	CT12A	--	1	02-5, 02-6, 02-9, 02-10, 02-11

Nomenclature	PN	Specification	Qty	Task
Tool, Adjusting, Turnbuckle	17G140019-1	--	1	02-4, 02-5, 02-6

Supplies:

Nomenclature	PN	Specification	Qty	Task
Clip, Safety	MS21256-2	--	AR	02-4, 02-5, 02-6
Pin, Cotter	MS24665-151	--	3	02-2, 02-3
Tag, Warning	--	--	4	02-1
Tag, Warning	--	--	5	02-9, 02-10, 02-11

Nomenclature	PN	Specification	Qty	Task
Wire, Safety	900010-32C	--	AR	02-2, 02-3, 02-7

02-1. PREPARATION.

1. Review ″Section 1 (General Information)″ of this TO for system general warnings, cautions, and notes.

2. Review task ″General Maintenance Input Conditions″ page for task specific safety conditions.

NOTE

- The aural warning STABILIZER MOTION will be heard for every 1 degree of horizontal stabilizer movement.

- The standby **STAB TRIM** indicator on the instrument panel is the primary indicator for this test because the horizontal stabilizer position indication on the Multifunction Display (MFD) lacks sufficient graduation to accurately position the horizontal stabilizer for this test. A tolerance of ±1 degree between the **STAB TRIM** indicator and the horizontal stabilizer position displayed on the MFD **CFG** format is acceptable.

3. Operate horizontal stabilizer and position stabilizer to **0** degrees on the standby **STAB TRIM** indicator (27-45-AC-00).

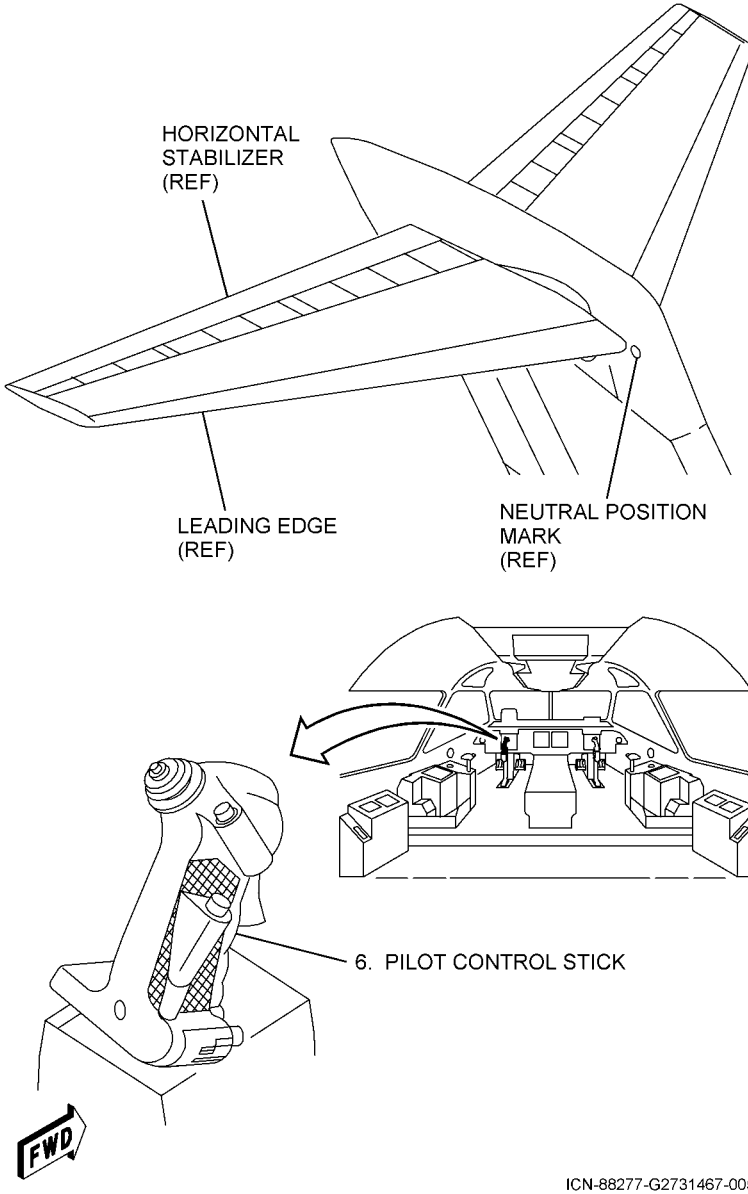
4. Enter horizontal stabilizer (00-00-02).

5. Deleted.

NOTE

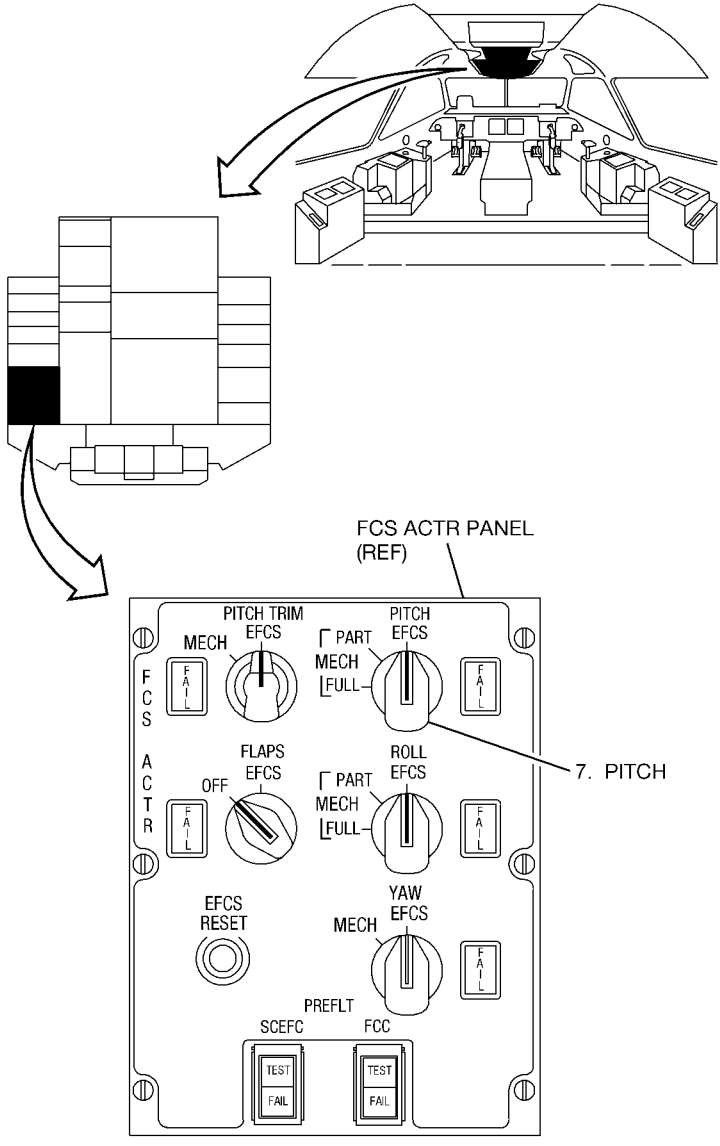
One full elevator cycle is defined as elevator up, elevator down, and neutral.

6. Operate pilot control stick through three full cycles.



ICN-88277-G2731467-005-01

7. Rotate **PITCH** switch on **FCS ACTR** panel to **PART MECH**.



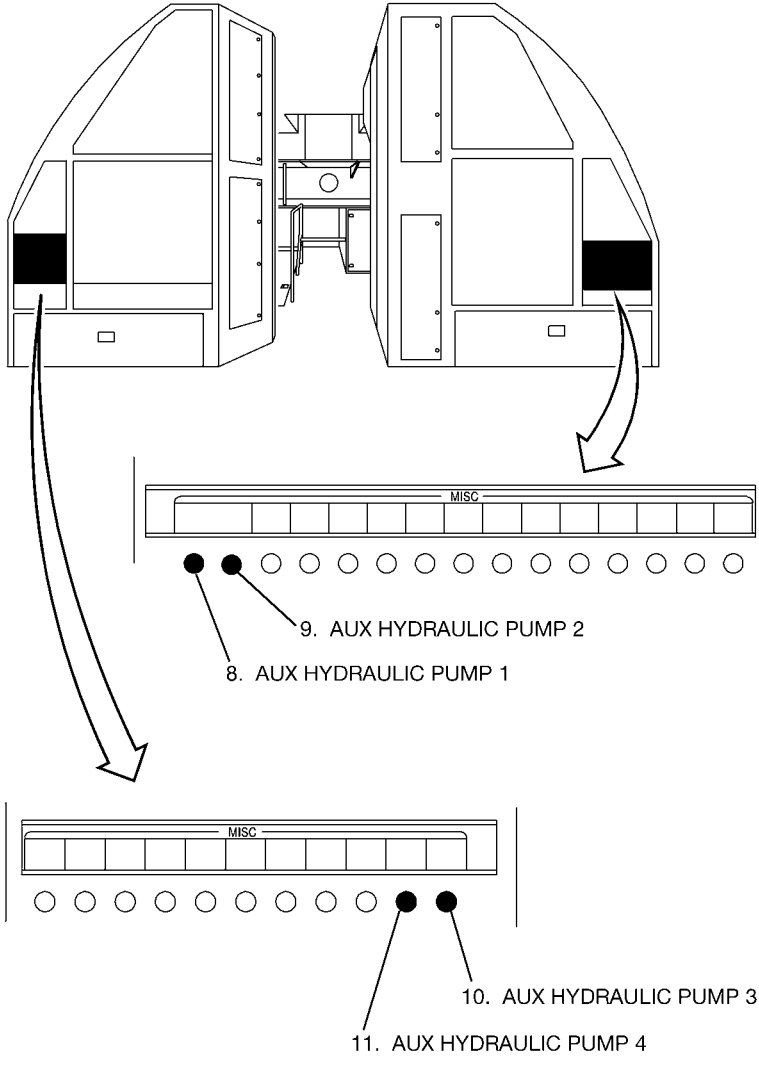
ICN-88277-G2731537-003-01

8. Open **AUX HYDRAULIC PUMP 1** circuit breaker on Electrical Power Center (EPC), row **LL**, column **68**, and attach warning tag.

9. Open **AUX HYDRAULIC PUMP 2** circuit breaker on EPC, row **LL**, column **69**, and attach warning tag.

10. Open **AUX HYDRAULIC PUMP 3** circuit breaker on EPC, row **LL**, column **11**, and attach warning tag.

11. Open **AUX HYDRAULIC PUMP 4** circuit breaker on EPC, row **LL**, column **10**, and attach warning tag.



ICN-88277-G2731402-004-01

02-2. COPILOT ELEVATOR ARTIFICIAL FEEL CONTROL ASSEMBLY TO PILOT ELEVATOR ARTIFICIAL FEEL CONTROL ASSEMBLY ADJUSTMENT.

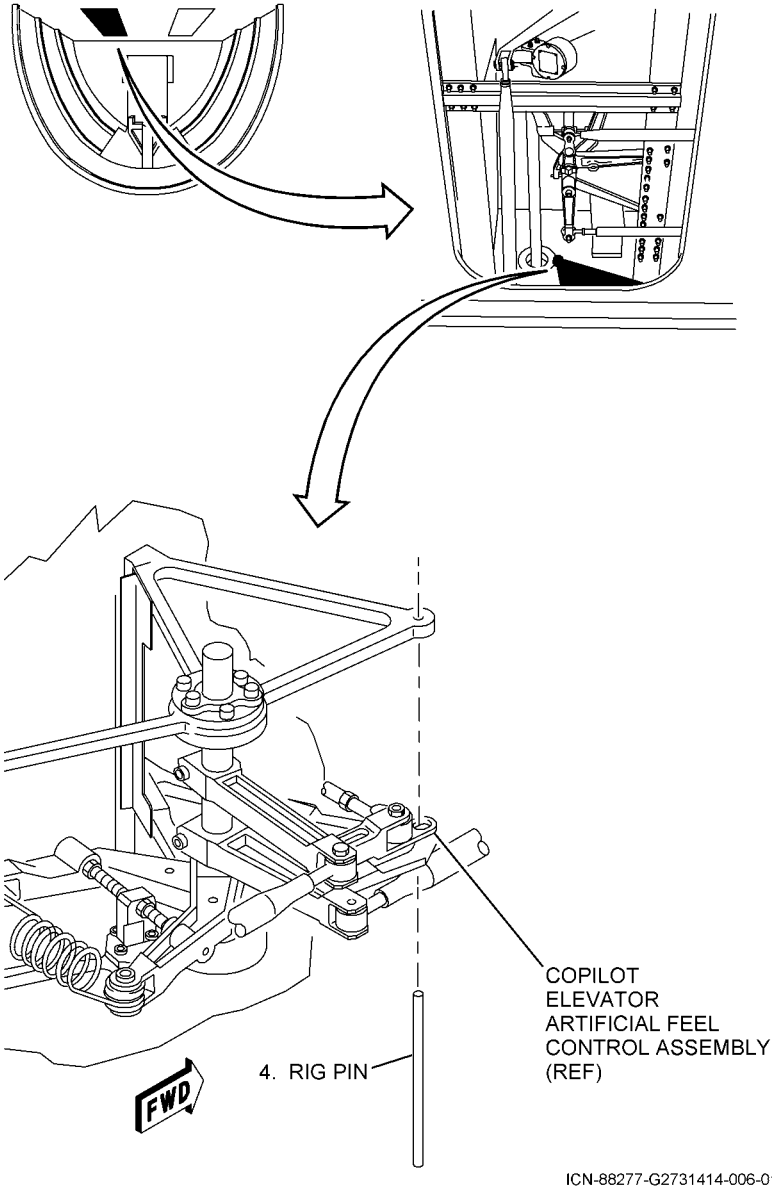
1. Remove horizontal pressure panel access cover assemblies (53-12-10).

PANEL NO.	PANEL REF DES
112AZP	5312CA001
112BZP	5312CA002

2. DELETED.

3. DELETED.

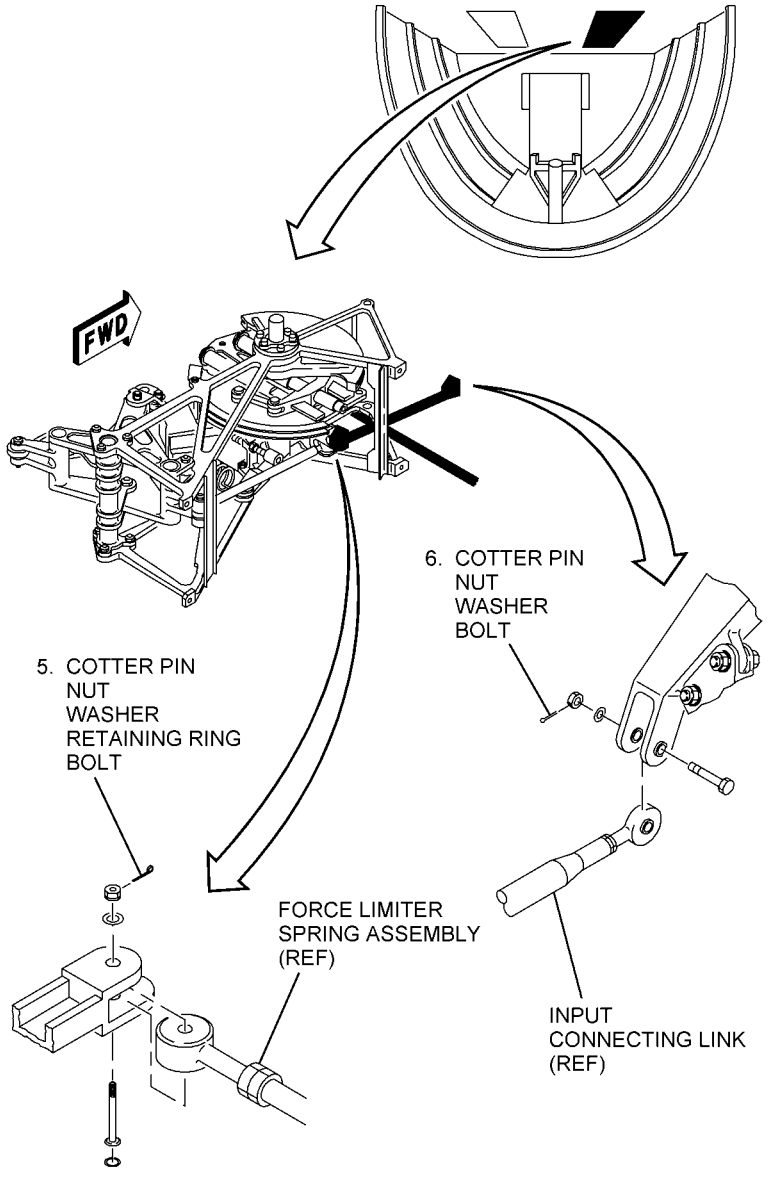
4. Install rig pin 5-10 in copilot elevator artificial feel control assembly.



ICN-88277-G2731414-006-01

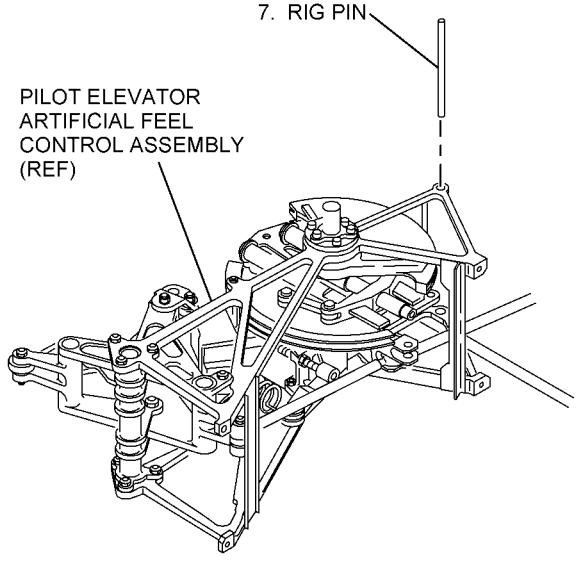
5. Remove cotter pin, nut, washer, retaining ring, and bolt from force limiter spring assembly.

6. Remove cotter pin, nut, washer, and bolt from input connecting link.



ICN-88277-G2731413-008-01

7. Install rig pin 5-10 in pilot elevator artificial feel control assembly.



ICN-88277-G2731496-001-01

8. Remove safety wire; loosen nut and disconnect locking device.

9. Loosen nut on rod end.

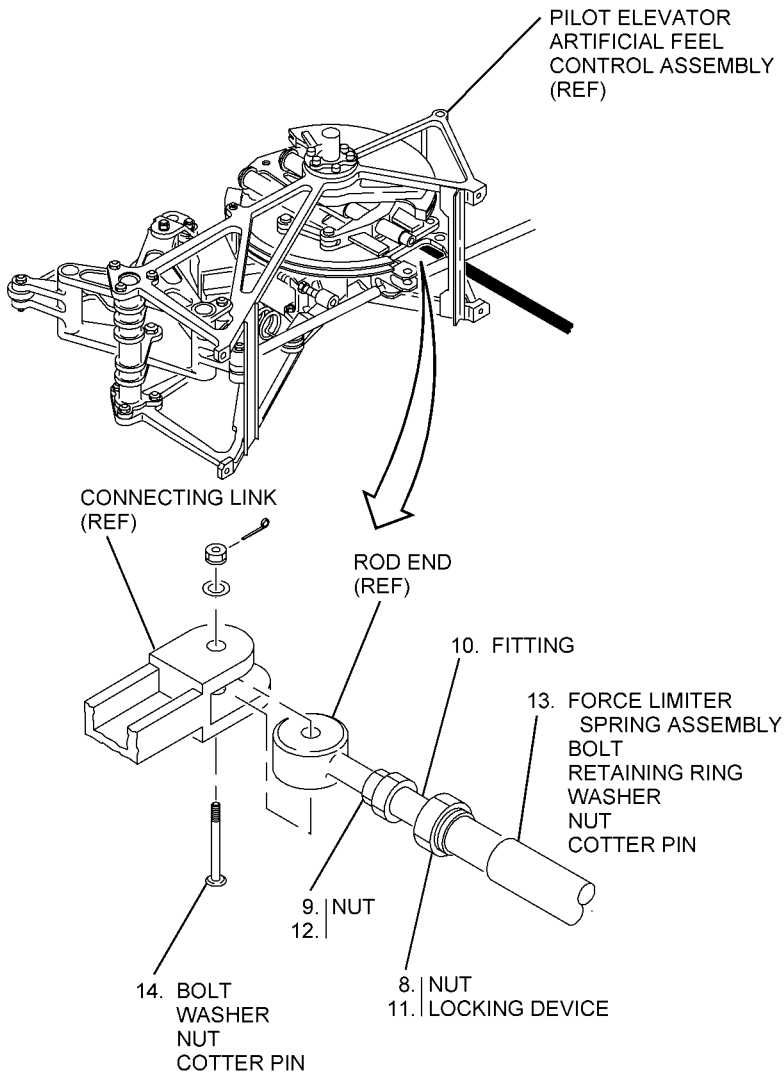
10. Adjust fitting.

11. Position nut and tighten locking device; secure with safety wire.

12. Tighten nut on rod end.

13. Position force limiter spring assembly; install bolt, retaining ring, washer, nut, and cotter pin.

14. Install bolt, washer, nut, and cotter pin on input connecting link.



ICN-88277-G2731415-008-01

NOTE

Rig pin can be removed freely.

15. Remove rig pin 5-10 from copilot elevator artificial feel control assembly.

NOTE

Rig pin can be removed freely.

16. Remove rig pin 5-10 from pilot elevator artificial feel control assembly.

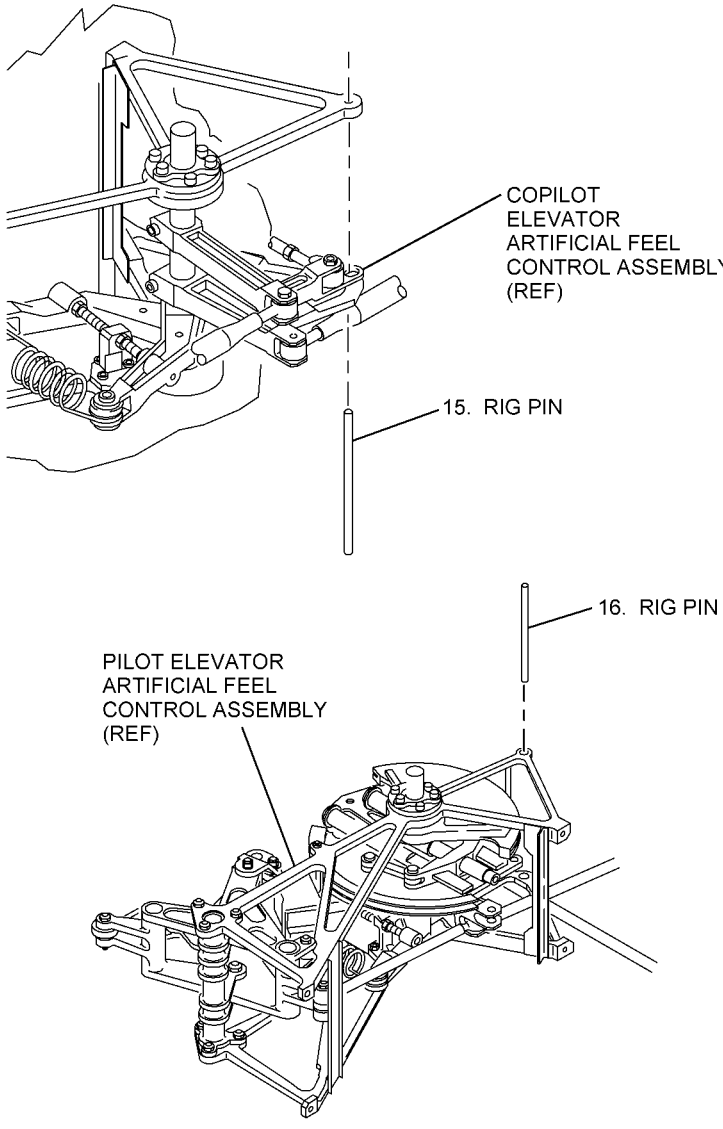
17. DELETED.

18. Install horizontal pressure panel access cover assemblies (53-12-10).

PANEL NO.	PANEL REF DES
112AZP	5312CA001
112BZP	5312CA002

19. DELETED.

20. DELETED.



ICN-88277-G2731497-001-01

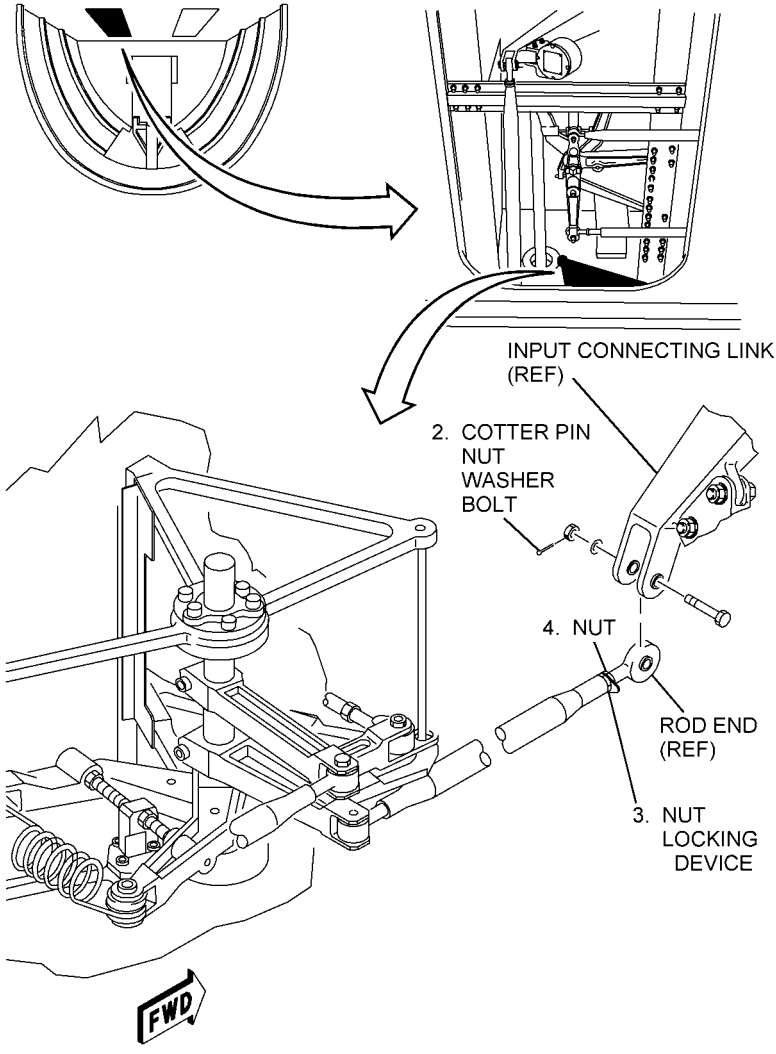
02-3. COPILOT ELEVATOR ARTIFICIAL FEEL CONTROL ASSEMBLY TO CONTROL STICK ASSEMBLY CONNECTING LINK ADJUSTMENT.

1. Perform control stick assembly adjustment (27-11-10, tasks 5-1, 5-2, 5-3, and 5-4).

2. (A) Remove cotter pin, nut, washer, and bolt from input connecting link.

3. (A) Remove safety wire; loosen nut and disconnect locking device.

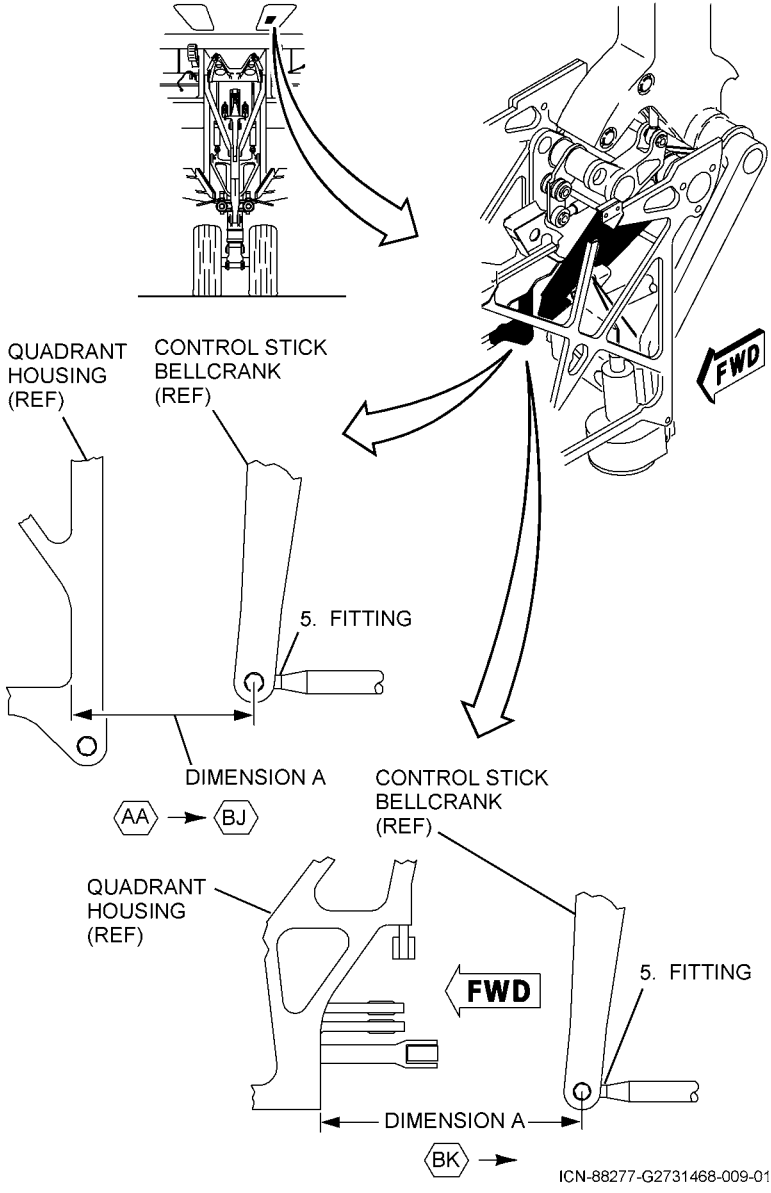
4. (A,B) Loosen nut on rod end.



ICN-88277-G2731416-008-01

5. ⟨AA⟩ → ⟨BJ⟩ (A,B) Adjust fitting until dimension A between control stick bellcrank to quadrant housing is 5.54 to 5.60 inches.

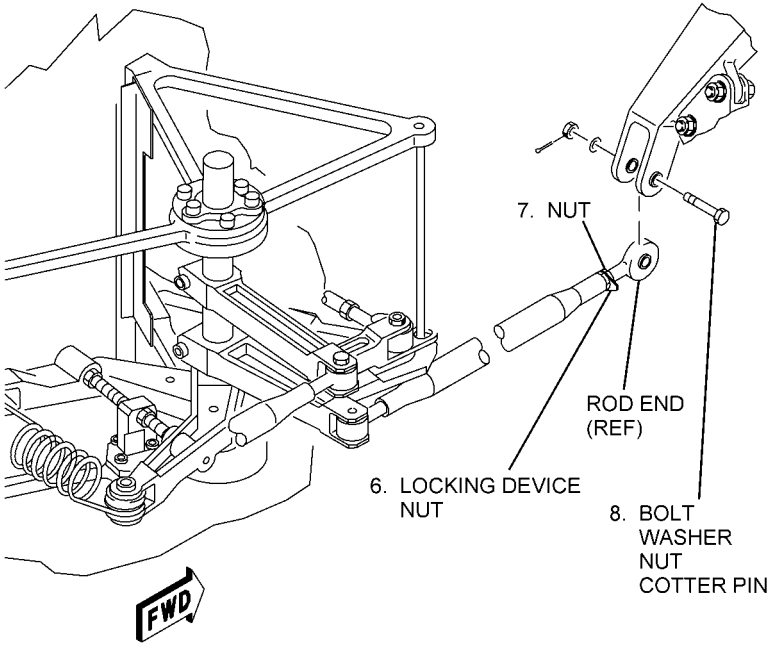
5. ⟨BK⟩ → (A,B) Adjust fitting until dimension A between control stick bellcrank to quadrant housing is 9.01 to 9.07 inches.


QUADRANT HOUSING (REF)
CONTROL STICK BELLCRANK (REF)
FWD
5. FITTING
DIMENSION A
AA
BJ
CONTROL STICK BELLCRANK (REF)
QUADRANT HOUSING (REF)
FWD
5. FITTING
DIMENSION A
BK
ICN-88277-G2731468-009-01

6. (A) Position locking device and tighten nut; secure with safety wire.

7. (A) Tighten nut on rod end.

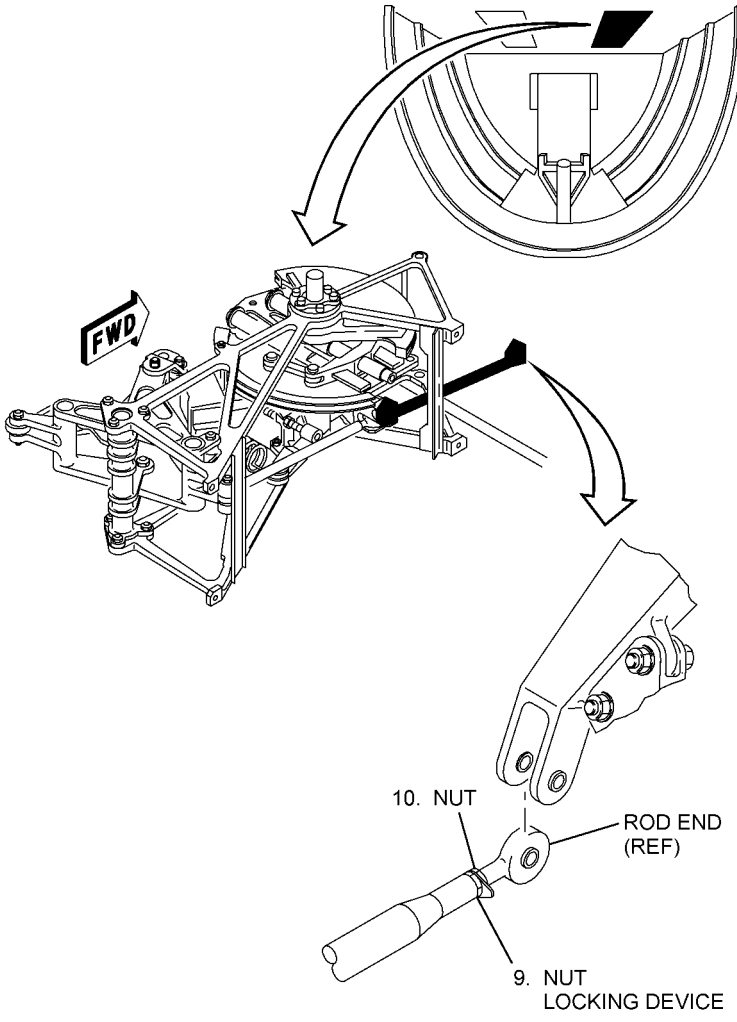
8. (A) Install bolt, washer, nut, and cotter pin.



ICN-88277-G2731423-006-01

9. (A) Remove safety wire; loosen nut and disconnect locking device.

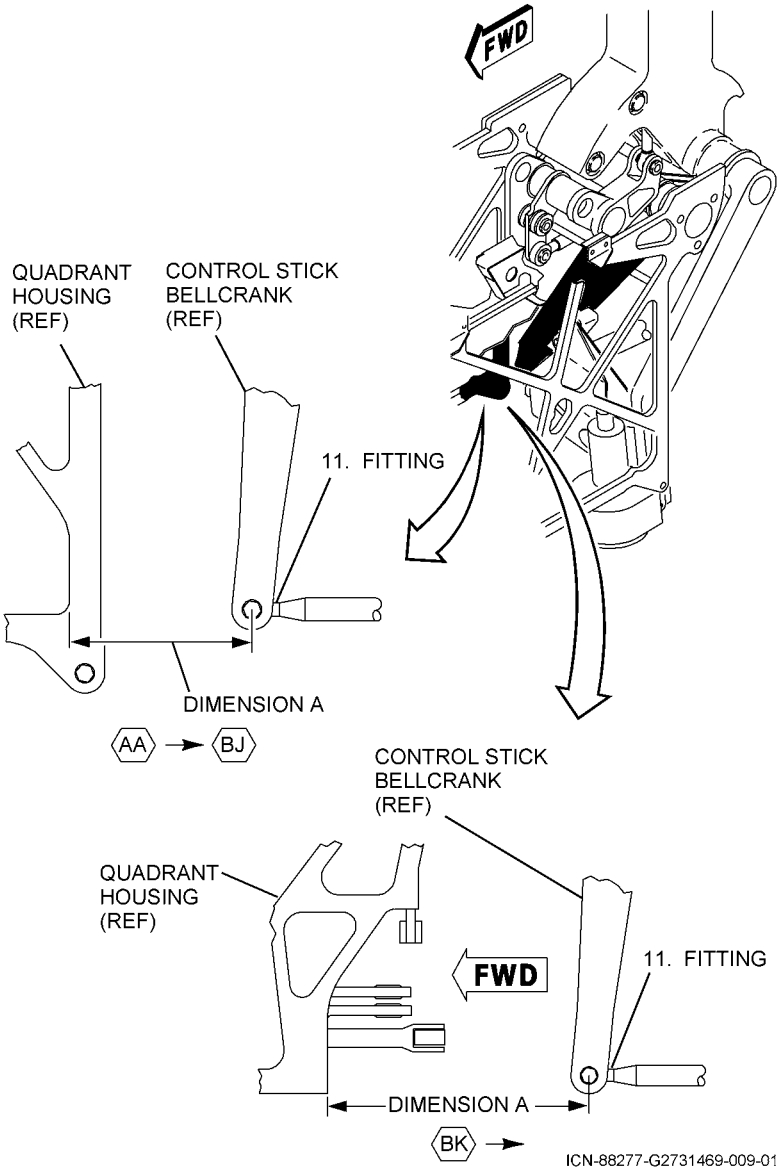
10. (A,B) Loosen nut on rod end.



ICN-88277-G2731424-008-01

11. ⟨AA⟩ → ⟨BJ⟩ (A,B) Adjust fitting until normal distance between control stick bellcrank to quadrant housing is 5.54 to 5.60 inches.

11. ⟨BK⟩ → (A,B) Adjust fitting until dimension A between control stick bellcrank to quadrant housing is 9.01 to 9.07 inches.

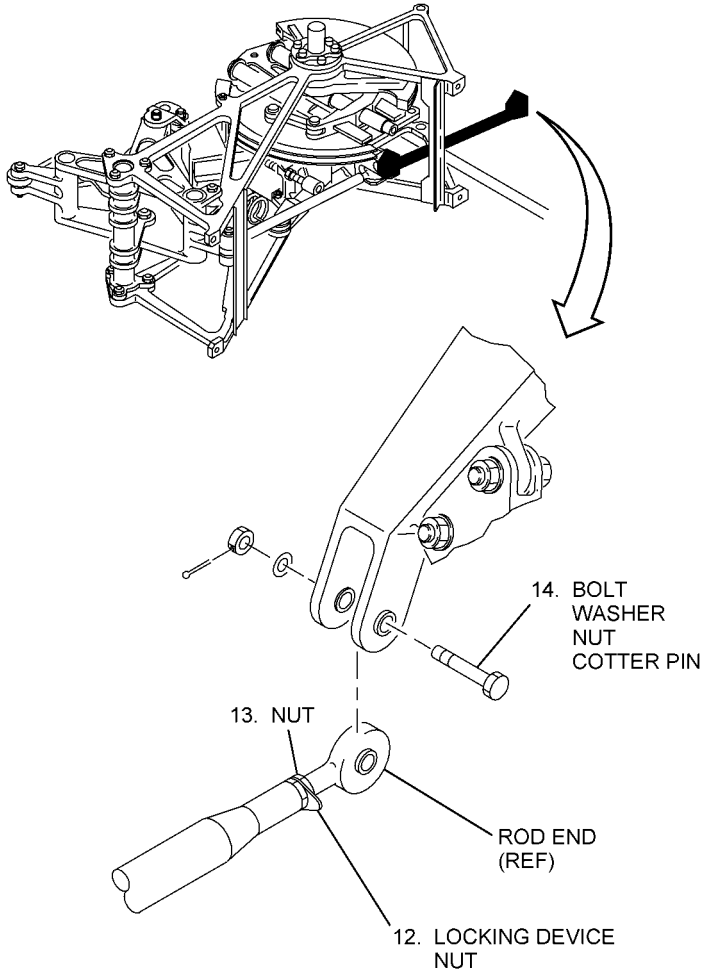

FWD
QUADRANT HOUSING (REF)
CONTROL STICK BELLCRANK (REF)
11. FITTING
DIMENSION A
AA
BJ
CONTROL STICK BELLCRANK (REF)
QUADRANT HOUSING (REF)
FWD
11. FITTING
DIMENSION A
BK
ICN-88277-G2731469-009-01

12. (A) Position locking device and tighten nut; secure with safety wire.

13. (A) Tighten nut and rod end.

14. (A) Install bolt, washer, nut, and cotter pin.

15. Perform follow-on maintenance (27-11-10, tasks 5-5 and 5-6).



ICN-88277-G2731426-008-01

02-4. PILOT ELEVATOR ARTIFICIAL FEEL CONTROL ASSEMBLY TO ELEVATOR CABLE CRANK CONTROL ASSEMBLY CABLE ADJUSTMENT.

1. Remove horizontal pressure panel access cover assemblies (53-12-10).

PANEL NO.	PANEL REF DES
112AZP	5312CA001
112BZP	5312CA002

2. Perform maintenance interphone operation (23-41-02, task 02-3).

2A. (A) Remove and discard safety clips; loosen turnbuckle on cable run 3.

2B. (A) Remove and discard safety clips; loosen turnbuckle on cable run 4.