RVDTs/RVITs - ADJUSTMENT/TEST

EFFECTIVITY: AIRCRAFT WITH RVDTS/RVITS

1. General

A. This section gives the procedures to calibrate the Rotary Variable Differential Transformer (RVDT) or the Rotary Variable Inductive Transformer (RVIT).

B. There are five RVDTs/RVITs installed on the aircraft: two for the ailerons, two for the elevators, and one for the rudder. They are installed near the control surfaces.

C. The RVDTs/RVITs are used to monitor the control surface positions. They generate output voltages proportional to the positions of the surfaces. These voltages are changed into digital format and got by the DAUs.

D. The procedures in this section are given in the sequence below. The tasks identified with (♦) are part of the Scheduled Maintenance Requirements Document (SMRD).

TASK NUMBER	*DESCRIPTION*	*EFFECTIVITY*
31-31-06-820-801-A	FDR AILERON RVDTS/RVITS - CALIBRATION	AIRCRAFT WITH RVDTS/RVITS
31-31-06-820-802-A	FDR ELEVATOR RVDTS/RVITS - CALIBRATION	AIRCRAFT WITH RVDTS/RVITS
31-31-06-820-803-A	FDR RUDDER RVDT/RVIT - CALIBRATION	AIRCRAFT WITH RVDTS/RVITS

TASK 31-31-06-820-801-A
EFFECTIVITY: AIRCRAFT WITH RVDTS/RVITS

2. FDR AILERON RVDTS/RVITS - CALIBRATION

A. General

(1) This task gives the procedures to calibrate the LH and RH FDR aileron RVDTs/RVITs.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-41-01/100	-
AMM MPP 06-41-03/100	- COMPONENT LOCATION
AMM MPP 06-44-00/100	- COMPONENT LOCATION
AMM SDS 23-51-00/1	
AMM SDS 27-10-00/1	
AMM SDS 31-31-00/1	
AMM SDS 31-41-00/1	
AMM SDS 31-42-00/1	
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 57-56-03-000-801-A/400	AILERON UPPER SHROUD - REMOVAL
AMM TASK 57-56-03-400-801-A/400	AILERON UPPER SHROUD - INSTALLATION

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
272	272DR	Fuselage rear section I - Right side
573		Wing, on the LH aileron surface
673		Wing, on the RH aileron surface
551	551CB	Wing sector, left side
651	651CB	Wing sector, right side

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 036	Platform - Hydraulic, Aircraft	To get access to the work area on the aileron and in the rear electronic compartment	
GSE 044	Headset - Ramp handling	For communication	
GSE 058	Kit, rig pins, flight controls	To keep the aileron control surface in the neutral position	
GSE 070	Protractor - digital	To measure the aileron deflection angle	
GSE 092	Hand-Held Download Unit (HHDLU)	To retrieve the stored data from the FDR and make it possible to monitor the aileron RVDT/RVIT data in real time	

(Continued)

ITEM	DESCRIPTION	PURPOSE	QTY
GSE 464	Portable Interface Unit (PIU)	To retrieve the stored data from the FDR and make it possible to monitor the aileron RVDT/RVIT data in real time	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Cockpit/rear electronic compartment
1	Does the task	On the LH and/or RH aileron control surface

I. Preparation

SUBTASK 841-002-A

(1) Energize the aircraft with the External DC Power Supply (AMM TASK 20-40-01-860-801-A/200).

(2) Connect the headsets (GSE 044).

(3) Make sure that the systems below are operational and on:

– Airborne Audio System (AMM SDS 23-51-00/1).

– Aileron System (AMM SDS 27-10-00/1).

– EICAS (AMM SDS 31-41-00/1).

– FDRS (AMM SDS 31-31-00/1).

– Integrated Computer System (AMM SDS 31-42-00/1).

(4) On the circuit breaker panel, open the FDR circuit breaker (Location Tip: ESSENTIAL DC BUS 1/MISCELLANEOUS/FDR) and attach a DO-NOT-CLOSE tag to it.

(5) Open maintenance panel door 223LZ (AMM MPP 06-41-03/100).

(6) Make sure that the DFDR switch, on the maintenance panel, is at the NORM position.

(7) Put up the hydraulic platform (GSE 036) at the necessary height.

(8) Open access door 272DR (AMM MPP 06-41-01/100).

(9) (Aircraft with Honeywell FDR) In the rear electronic compartment, connect to the FDR the Hand-Held Download Unit (HHDLU) (GSE 092) with the PCMCIA card inserted in it (Refer to Hand-Held Download Unit User's Manual) (Figure 501).

(10) (Aircraft with L3 FDR) In the rear electronic compartment, connect to the FDR the Portable Interface Unit (PIU) (GSE 464) with the PCMCIA card inserted in it (Refer to Portable Interface Unit User's Manual) (Figure 501).

(11) Remove the LH and/or RH aileron upper shrouds as applicable (AMM TASK 57-56-03-000-801-A/400).

(12) Open access door 551CB and/or 651CB as applicable (AMM MPP 06-44-00/100).

(13) On the circuit breaker panel, remove the DO-NOT-CLOSE tag from the FDR circuit breaker (Location Tip: ESSENTIAL DC BUS 1/MISCELLANEOUS/FDR) and close it.

J. Calibration Procedure (Figure 501) (Figure 502) (Figure 503)

SUBTASK 820-002-A

(1) On the maintenance panel, set the DFDR switch to the TEST position.

(2) (Aircraft with Honeywell FDR) On the HHDLU, select the DSDU (Data Signal Display Unit) function.

NOTE: To set the parameters (SUBFRAME, WORD and BASE) on the HHDLU, obey the instructions in the Hand-Held Download Unit User's Manual.

(3) (Aircraft with L3 FDR) On the PIU, select the WORD MONITOR function.

NOTE: To set the parameters (SUBFRAME, WORD and BASE) on the PIU, obey the instructions in the Portable Interface Unit User's Manual.

(4) On the HHDLU/PIU, select WORD and SUBFRAME as follows:

Table 501

(AIRCRAFT WITHOUT AFDAU) WORD	(AIRCRAFT WITH AFDAU) WORD	SUBFRAME
17 - LH aileron	33 - LH aileron	ALL
49 - RH aileron	97 - RH aileron	ALL

(5) Loosen the bolt which attaches the bellcrank to the RVDT/RVIT shaft.

(6) To put the aileron control surface at the neutral position, do the steps below:

(a) Install the rig pin (GSE 058) in the LH/RH wing sector (Figure 503).

(b) Make sure that the aileron and aileron/flap torsion box are aligned.

(c) Install the digital protractor (GSE 070) to the LH/RH aileron surface. Use double-face adhesive tape for it.

(d) Set the digital protractor (GSE 070) to zero (reference), and remove the rig pin (GSE 058) from the aileron wing sector.

(7) Make sure that the two red reference marks (RVDT/RVIT shaft and body) are aligned. On the HHDLU/PIU, the displayed value is between 1764 and 2012 (octal).

(8) Use a screwdriver in the slot of the RVDT/RVIT shaft to turn it and set the value on the HHDLU/PIU to 2000 (octal).

NOTE: • If the value shown is larger than 2000 (octal), turn the RVDT/RVIT shaft counterclockwise.

• If the value shown is smaller than 2000 (octal), turn the RVDT/RVIT shaft clockwise.

(9) Connect the bellcrank to the RVDT/RVIT shaft again and tighten its bolt. Apply a torque of 4.52 - 5.08 N.m (40 - 45 lbf.in) to the fasteners.

(10) On the HHDLU/PIU, make sure that the value shown stays between 1764 and 2012 (octal).

(11) Manually change the aileron deflection angle and make sure that the values shown on the HHDLU/PIU are between the limits given below:

Table 502

Deflection angle (Digital Protractor)	Value limits (OCTAL)	
	LH aileron	RH aileron
25 degrees - up	0711 - 1033	2741 - 3061
0 degrees	1764 - 2012	1764 - 2012
15 degrees - down	2437 - 2567	1220 - 1344

NOTE: If the values are out of range, adjust the RVDT/RVIT again with the aileron surface at the neutral position.

K. Follow-on

SUBTASK 842-002-A

(1) Remove the protractor (GSE 070) from the LH/RH aileron surface.

(2) Install the LH and/or RH aileron upper shrouds as applicable (AMM TASK 57-56-03-400-801-A/400).

(3) Close access door 551CB and/or 651CB as applicable (AMM MPP 06-44-00/100).

(4) (Aircraft with Honeywell FDR) In the rear electronic compartment, disconnect from the FDR the Hand-Held Download Unit (HHDLU) (GSE 092).

(5) (Aircraft with L3 FDR) In the rear electronic compartment, disconnect from the FDR the Portable Interface Unit (PIU) (GSE 464).

(6) Close access door 272DR (AMM MPP 06-41-01/100).

(7) Disconnect the headsets (GSE 044).

(8) On the maintenance panel, set the DFDR switch to the NORM position.

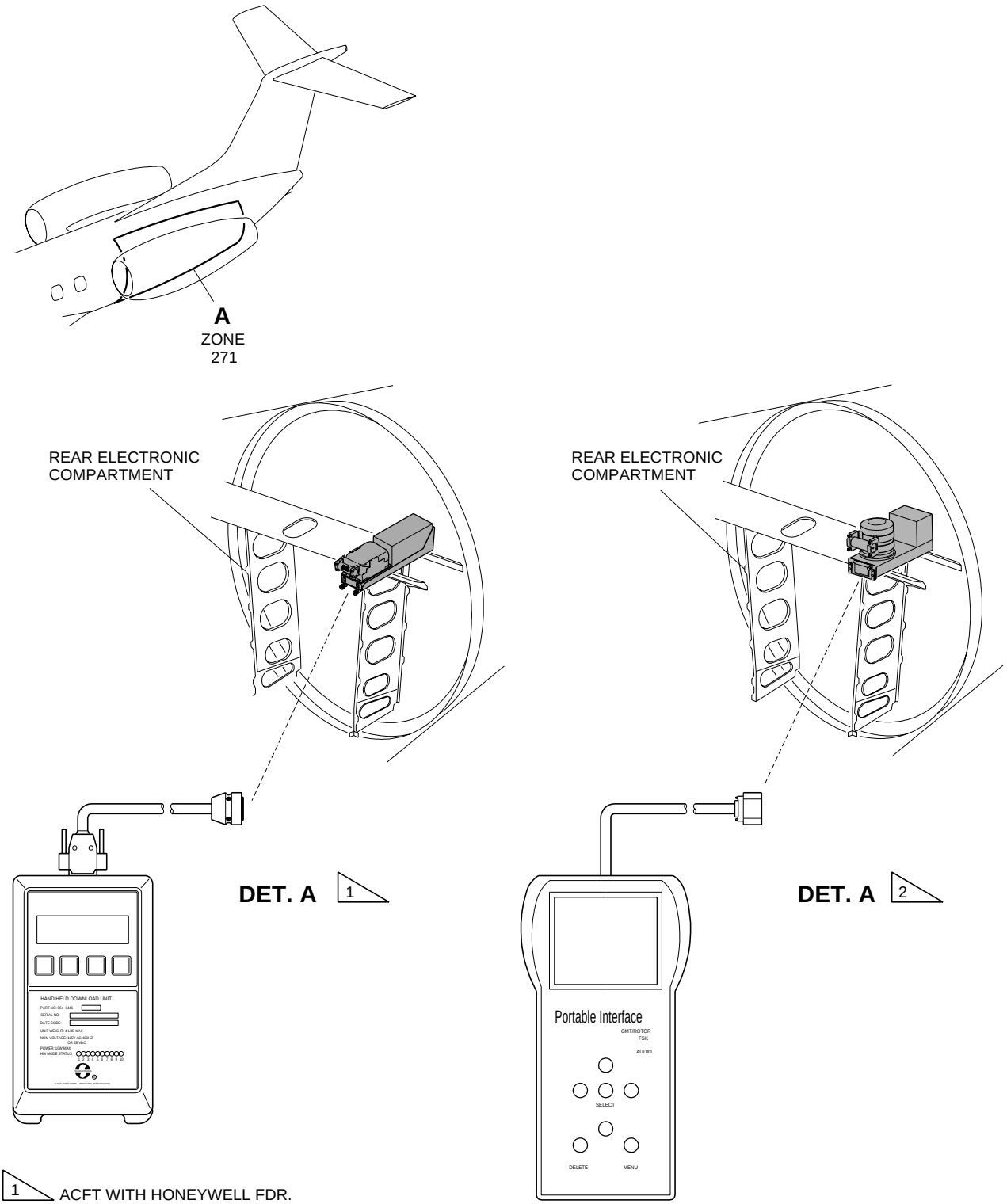
(9) Close maintenance panel door 223LZ (AMM MPP 06-41-03/100).

(10) Remove the hydraulic platform (GSE 036).

EFFECTIVITY: AIRCRAFT WITH RVDTs/RVITs

FDR RVDT/RVIT Calibration - HHDLU/PIU to FDR Interface

Figure 501



1 ACFT WITH HONEYWELL FDR.

2 ACFT WITH L3 FDR.

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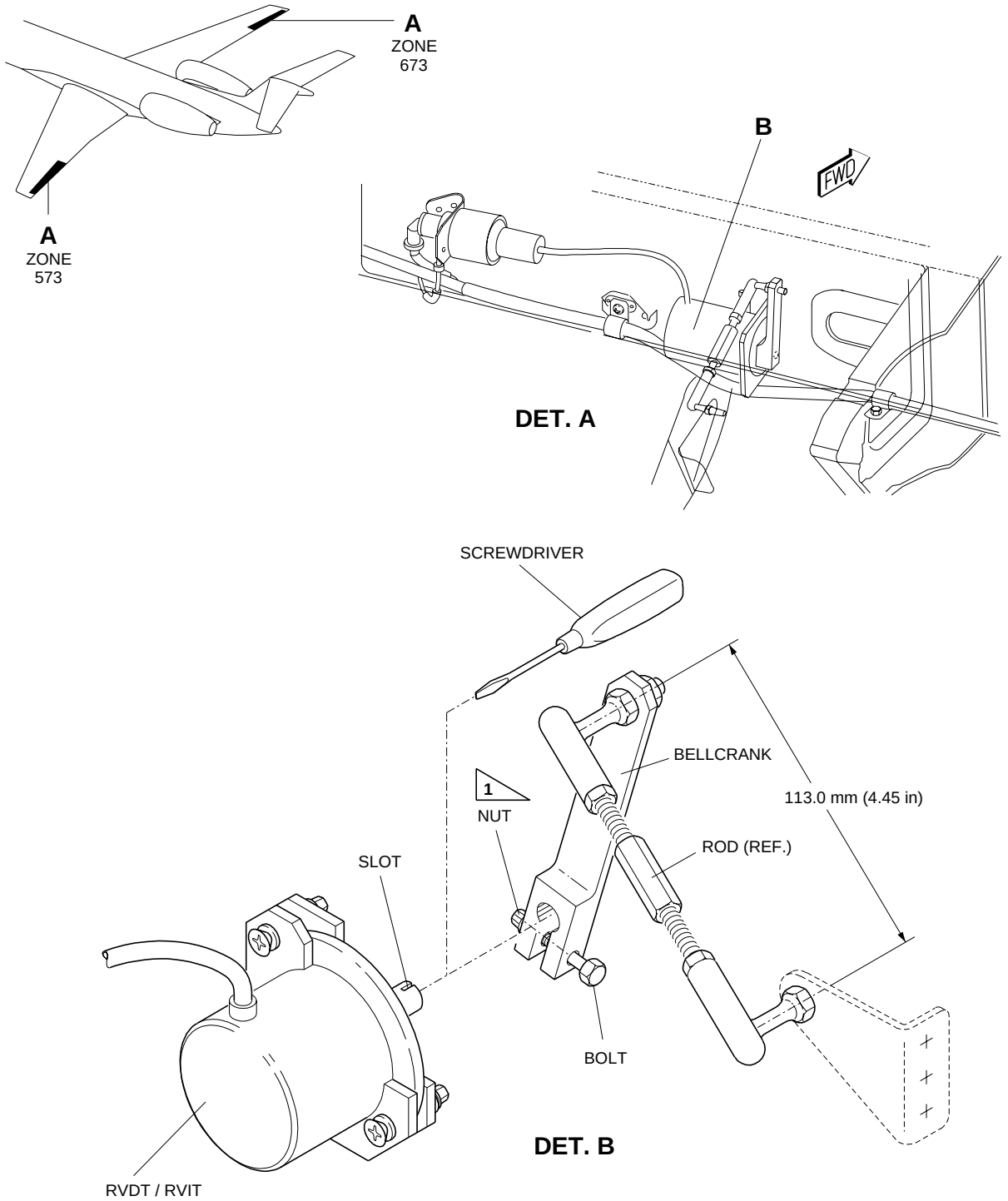
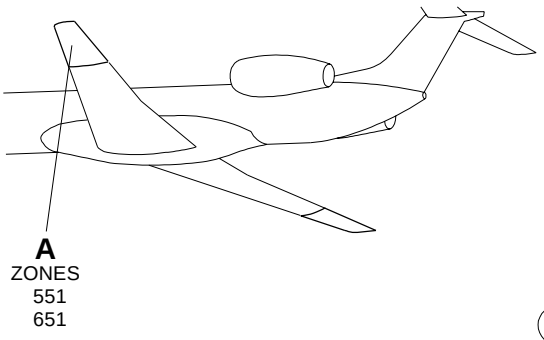
EFFECTIVITY: AIRCRAFT WITH RVDTs/RVITs
FDR Aileron RVDT/RVIT Calibration
Figure 502



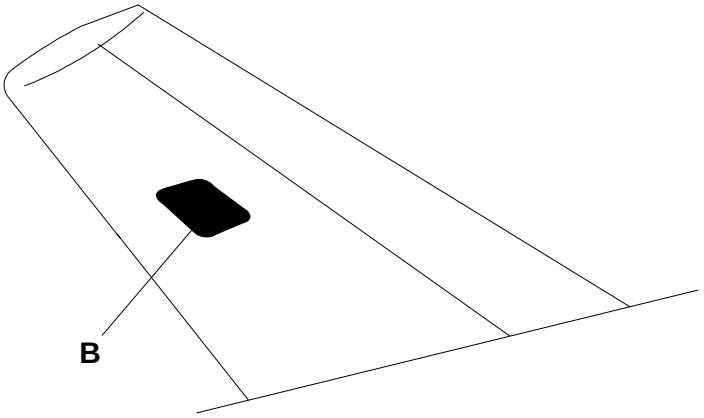
1 APPLY TORQUE OF 4.52 - 5.08 Nm (40 - 45 lbf.in)

145AMM310127.MCE B

EFFECTIVITY: AIRCRAFT WITH RVDTs/RVITs
Rig Pin - Location
Figure 503

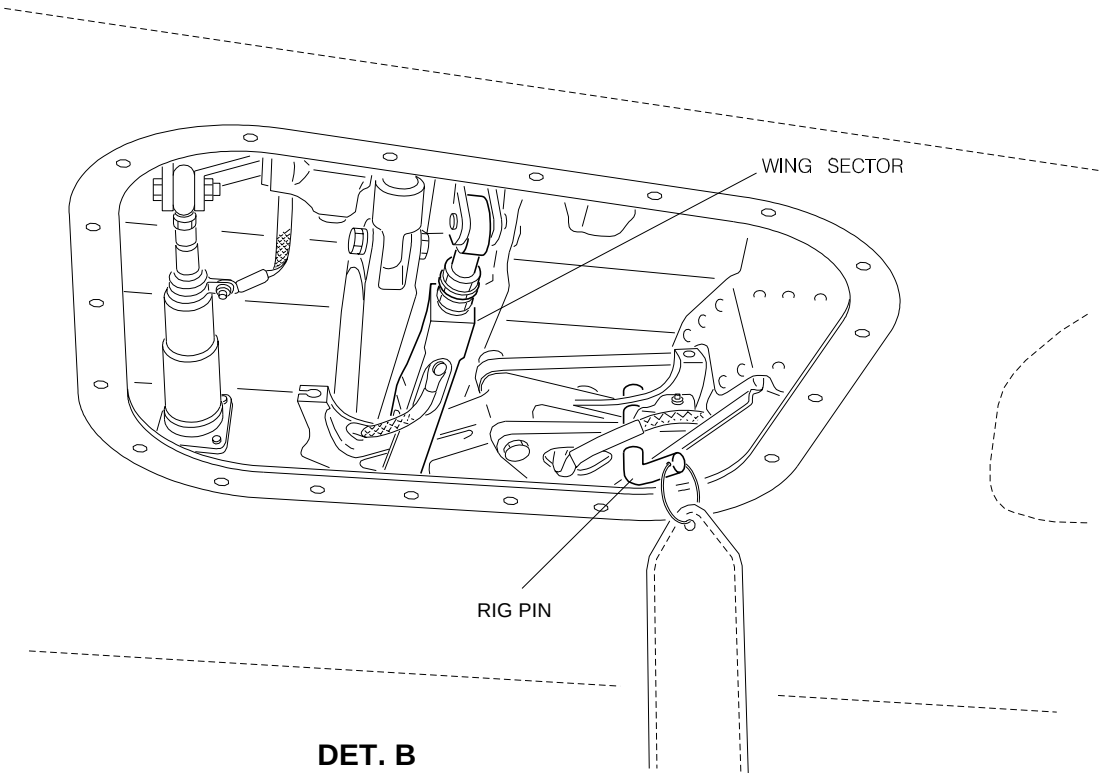


A
ZONES
551
651



B

DET. A



DET. B

EM145AMM270928A.DGN

TASK 31-31-06-820-802-A
EFFECTIVITY: AIRCRAFT WITH RVDTS/RVITS

3. FDR ELEVATOR RVDTS/RVITS - CALIBRATION

A. General

(1) This task gives the procedures to calibrate the LH and RH FDR elevator RVDTs/RVITs.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-41-01/100	-
AMM MPP 06-41-03/100	- COMPONENT LOCATION
AMM MPP 06-42-00/100	-
AMM SDS 23-51-00/1	
AMM SDS 27-30-00/1	
AMM SDS 31-31-00/1	
AMM SDS 31-41-00/1	
AMM SDS 31-42-00/1	
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 31-31-06-000-802-A/400	FDR ELEVATOR RVDTS/RVITS - REMOVAL
AMM TASK 55-36-00-000-801-A/400	TAIL BOOM - REMOVAL
AMM TASK 55-36-00-400-801-A/400	TAIL BOOM - INSTALLATION

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
272	272DR	Fuselage rear section I - Right side
335		LH elevator
336		RH elevator

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 036	Platform - Hydraulic, Aircraft	To get access to the work area on the elevator and on the rear electronic compartment	
GSE 044	Headset - Ramp handling	For communication	
GSE 070	Protractor - digital	To measure the elevator deflection angle	
GSE 092	Hand-Held Download Unit (HHDLU)	To retrieve the stored data from the FDR and make it possible to monitor the elevator RVDT/RVIT data in real time	
GSE 196	Lock clamp	To lock the elevator in the neutral position	
GSE 464	Portable Interface Unit (PIU)	To retrieve the stored data from the FDR and make it possible to monitor the elevator RVDT/RVIT data in real time	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	On the LH and/or RH elevator
1	Does the task	Cockpit/rear electronic compartment

I. Preparation

SUBTASK 841-003-A

(1) Energize the aircraft with the External DC Power Supply (AMM TASK 20-40-01-860-801-A/200).

(2) Connect the headsets (GSE 044).

(3) Make sure that the systems below are operational and on:

– Airborne Audio System (AMM SDS 23-51-00/1).

– Elevator & TAB System (AMM SDS 27-30-00/1).

– EICAS (AMM SDS 31-41-00/1).

– FDRS (AMM SDS 31-31-00/1).

– Integrated Computer System (AMM SDS 31-42-00/1).

(4) On the circuit breaker panel, open the FDR circuit breaker (Location Tip: ESSENTIAL DC BUS 1/MISCELLANEOUS/FDR) and attach a DO-NOT-CLOSE tag to it.

(5) Open maintenance panel door 223LZ (AMM MPP 06-41-03/100).

(6) Make sure that the DFDR switch, on the maintenance panel, is at the NORM position.

(7) Put up the hydraulic platform (GSE 036) at the necessary height.

(8) Open access door 272DR (AMM MPP 06-41-01/100).

(9) (Aircraft with Honeywell FDR) In the rear electronic compartment, connect to the FDR the Hand-Held Download Unit (HHDLU) (GSE 092) with the PCMCIA card inserted in it (Refer to Hand-Held Download Unit User's Manual) (Figure 504).

(10) (Aircraft with L3 FDR) In the rear electronic compartment, connect to the FDR the Portable Interface Unit (PIU) (GSE 464) with the PCMCIA card inserted in it (Refer to Portable Interface Unit User's Manual) (Figure 504).

(11) For aircraft with Mechanical Gust Lock, without provisions for Electromechanical Gust Lock, remove the LH and/or RH seal fairing from the tail boom as applicable (AMM TASK 55-36-00-000-801-A/400).

(12) For aircraft with Electromechanical Gust Lock, or with provisions for it, remove the access panels 335DB or 336DB and 335EB or 336EB (AMM MPP 06-42-00/100) for LH or RH side, as applicable.

(13) On the circuit breaker panel, remove the DO-NOT-CLOSE tag from the FDR circuit breaker (Location Tip: ESSENTIAL DC BUS 1/MISCELLANEOUS/FDR) and close it.

J. Calibration Procedure (Figure 504) (Figure 505) (Figure 506) (Figure 507) (Figure 508)

SUBTASK 820-003-A

(1) On the maintenance panel, set the DFDR switch to the TEST position.

(2) (Aircraft with Honeywell FDR) On the HHDLU, select the DSDU (Data Signal Display Unit) function.

NOTE: To set the parameters (SUBFRAME, WORD and BASE) on the HHDLU, obey the instructions in the Hand-Held Download Unit User's Manual.

(3) (Aircraft with L3 FDR) On the PIU, select the WORD MONITOR function.

NOTE: To set the parameters (SUBFRAME, WORD and BASE) on the PIU, obey the instructions in the Portable Interface Unit User's Manual.

(4) On the HHDLU/PIU, select WORD and SUBFRAME as follows:

Table 503

EICAS Version	(AIRCRAFT WITH-OUT AFDAU) WORD	(AIRCRAFT WITH AFDAU) WORD	SUBFRAME
Up to 20	33 - LH elevator	65 - LH elevator	ALL
20.5 and on	30 - LH elevator	59 - LH elevator	ALL
ALL	46 - RH elevator	91 - RH elevator	ALL

(5) Loosen the bolt which attaches the bellcrank to the RVDT/RVIT shaft.

(6) To put the elevator control surface at the neutral position, do the steps below:

(a) Install the elevator lock clamp (GSE 196) to the LH/RH elevator surface(Figure 506).

(b) Install the digital protractor (GSE 070) to the LH/RH elevator surface. Use double-face adhesive tape for it.

(c) Set the digital protractor (GSE 070) to zero (reference), and remove the lock clamp from the elevator surface.

(7) Make sure that the two red reference marks (RVDT/RVIT shaft and body) are aligned. On the HHDLU/PIU, the displayed value is between 1760 and 2016 (octal).

NOTE: It is not possible to see and/or align the two red reference marks on the front face of an on-aircraft RVDT/RVIT if the Electromechanical Gust Lock, or

provisions for it, is installed. Thus, remove the RVDT/RVIT (Figure 506) (AMM TASK 31-31-06-000-802-A/400).

(8) For aircraft with Electromechanical Gust Lock, or with provisions for it, through panel 335EB or 336EB, as applicable, get access to the RVDT/RVIT shaft.

(9) Use a screwdriver in the slot of the RVDT/RVIT shaft to turn it and set the value on the HHDLU/PIU to 2000 (octal).

NOTE:
- If the value shown is larger than 2000 (octal), turn the RVDT/RVIT shaft counterclockwise.
- If the value shown is smaller than 2000 (octal), turn the RVDT/RVIT shaft clockwise.

(10) Connect the bellcrank to the RVDT/RVIT shaft again and tighten its bolt. Apply a torque of 4.52 - 5.08 N.m (40 - 45 lbf.in) to the fasteners.

(11) NOTE: For aircraft with Electromechanical Gust Lock, or with provision for it refer to Figure 508. When you tighten the nut (5) that connects the bellcrank (6) to the RVDT/RVIT (2), try to install the bellcrank (6) as far from the clamp (7) as possible, but not more than 2.8 mm. This is not to let the bellcrank (6) touch the clamp.

(12) On the HHDLU/PIU, make sure that the value shown stays between 1760 and 2016 (octal).

(13) Manually change the elevator deflection angle and make sure that the values shown on the HHDLU/PIU are between the limits given below:

Table 504

EFFECTIVITY	DEFLECTION ANGLE (Digital Protractor)	VALUE LIMITS (OCTAL)	
		LH elevator	RH elevator
Aircraft with Mechanical Gust Lock, without provisions for Electromechanical Gust Lock	25 degrees - up	3045 - 3205	0602 - 0706
	0 degrees	1760 - 2016	1760 - 2016
	10 degrees - down	1177 - 1367	2402 -2572
Aircraft with Electromechanical Gust Lock, or with provisions for it	25 degrees - up	3147 - 3322	0454 - 0627
	0 degrees	1762 - 2014	1762 - 2014
	10 degrees - down	1276 - 1451	2325 - 2500

NOTE: If the values are out of range, adjust the RVDT/RVIT again with the elevator surface at the neutral position.

K. Follow-on

SUBTASK 842-003-A

(1) Remove the protractor (GSE 070) from the LH/RH elevator surface.

(2) For aircraft with Mechanical Gust Lock, without provisions for Electromechanical Gust Lock, install the LH and/or RH seal fairing to the tail boom as applicable (AMM TASK 55-36-00-400-801-A/400).

(3) For aircraft with Electromechanical Gust Lock, or with provisions for it, install access panel 335DB or 336DB and 335EB or 336EB (AMM MPP 06-42-00/100) for the LH or RH side, as applicable.

(4) (Aircraft with Honeywell FDR) In the rear electronic compartment, disconnect from the FDR the Hand-Held Download Unit (HHDLU) (GSE 092).

(5) (Aircraft with L3 FDR) In the rear electronic compartment, disconnect from the FDR the Portable Interface Unit (PIU) (GSE 464).

(6) Close access door 272DR (AMM MPP 06-41-01/100).

(7) Disconnect the headsets (GSE 044).

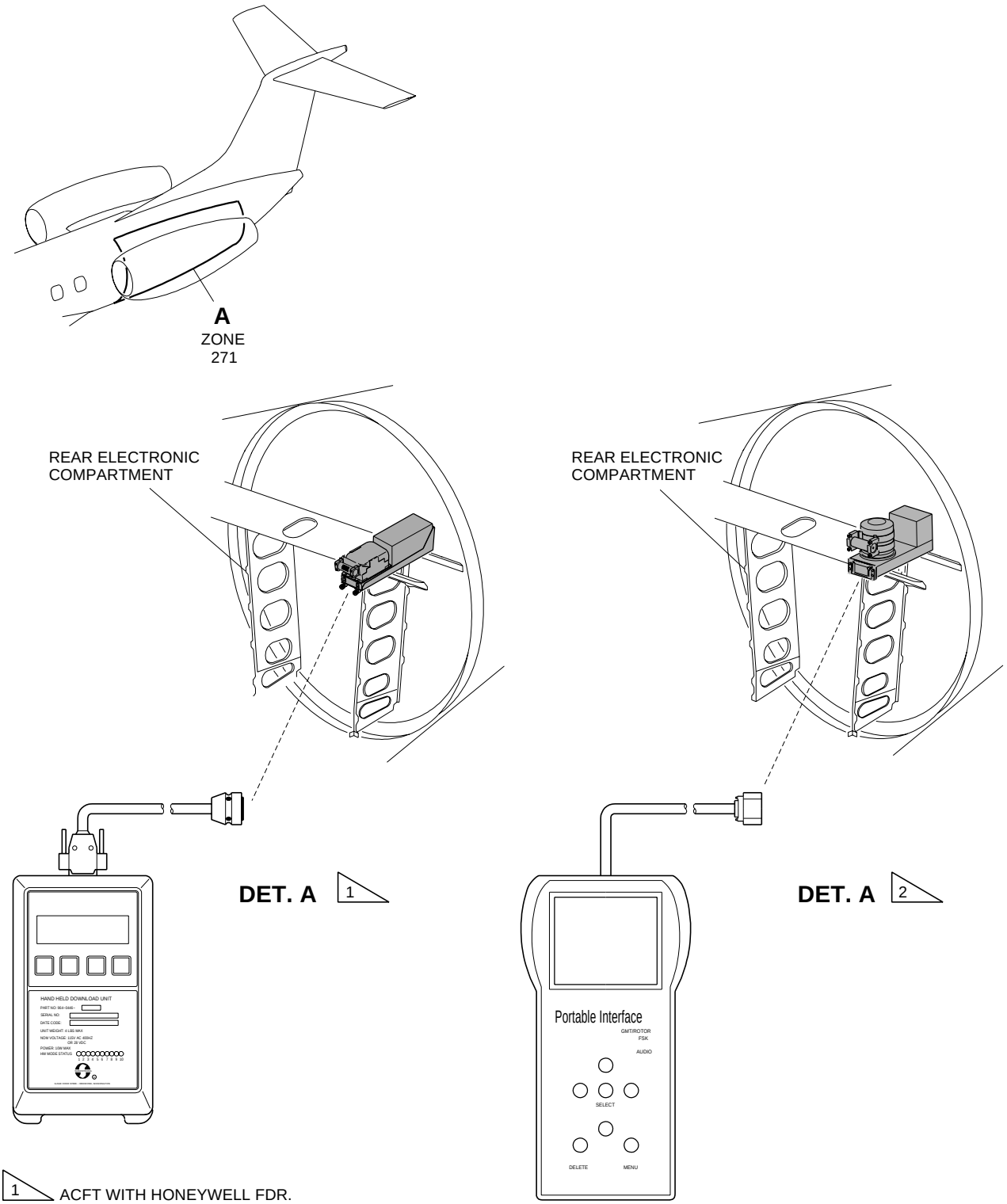
(8) On the maintenance panel, set the DFDR switch to the NORM position.

(9) Close maintenance panel door 223LZ (AMM MPP 06-41-03/100).

(10) Remove the hydraulic platform (GSE 036).

EFFECTIVITY: AIRCRAFT WITH RVDTs/RVITs

RVDT/RVIT Calibration - HHDLU/PIU to FDR Interface
Figure 504



1 ACFT WITH HONEYWELL FDR.

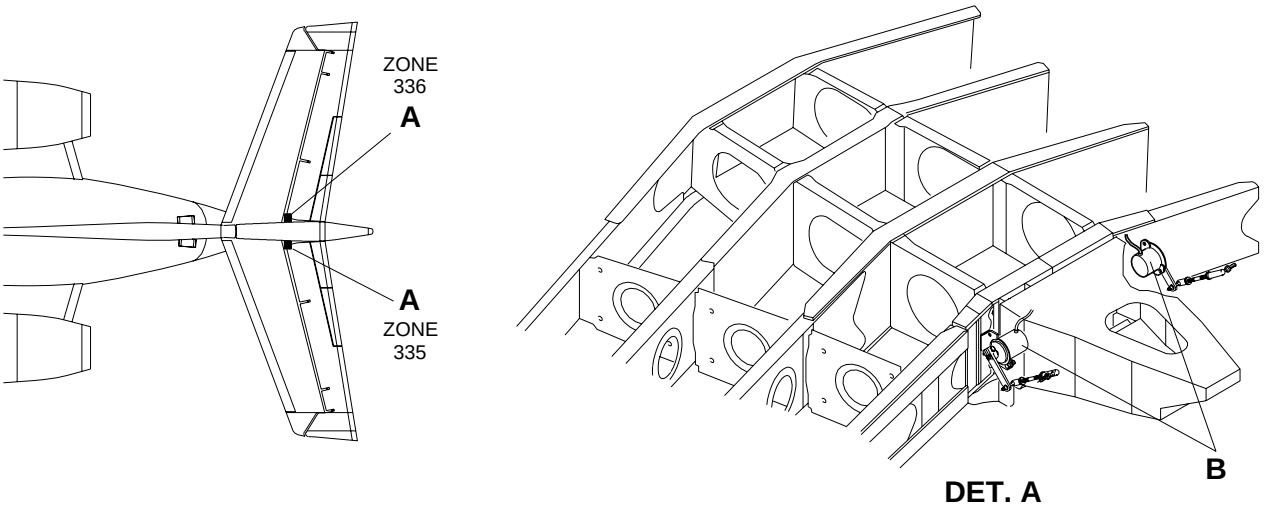
2 ACFT WITH L3 FDR.

EM145AMM310526A.DGN

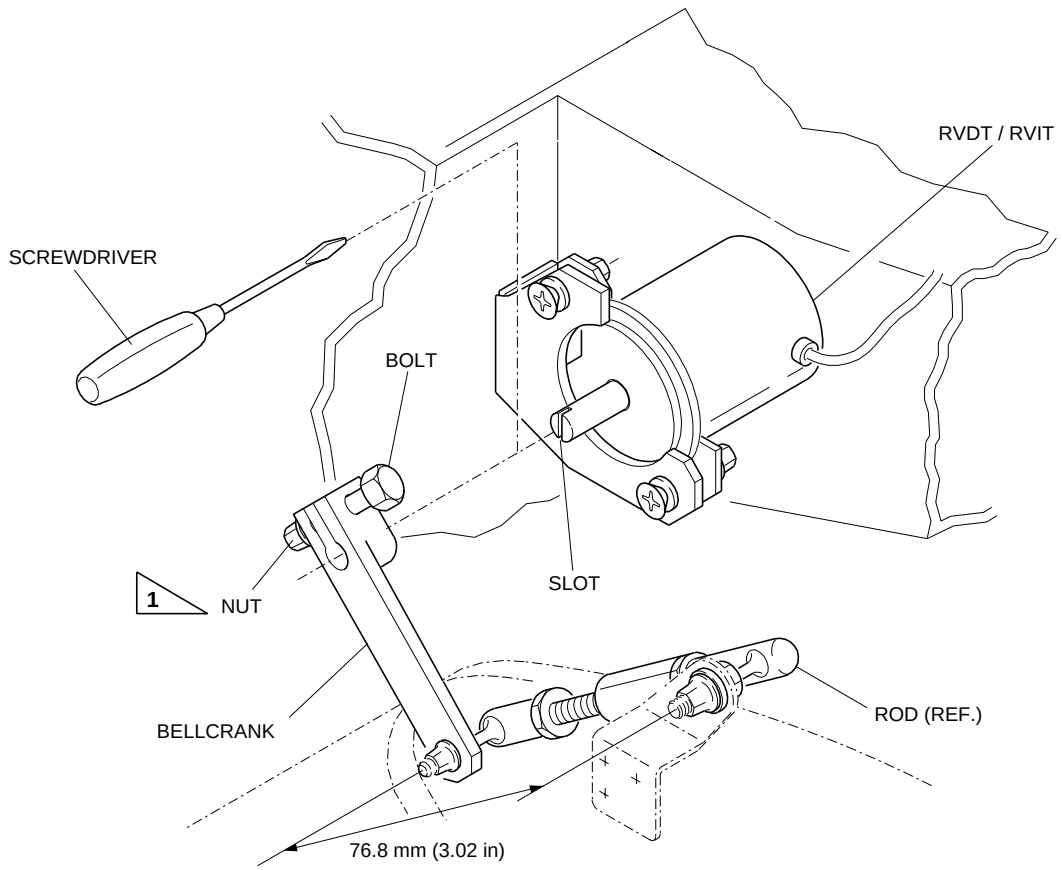
EFFECTIVITY: AIRCRAFT WITH RVDTs/RVITs AND MECHANICAL GUST LOCK, WITHOUT PROVISIONS FOR ELECTROMEC. GUST LOCK

FDR Elevator RVDT/RVIT Calibration

Figure 505



DET. A



DET. B

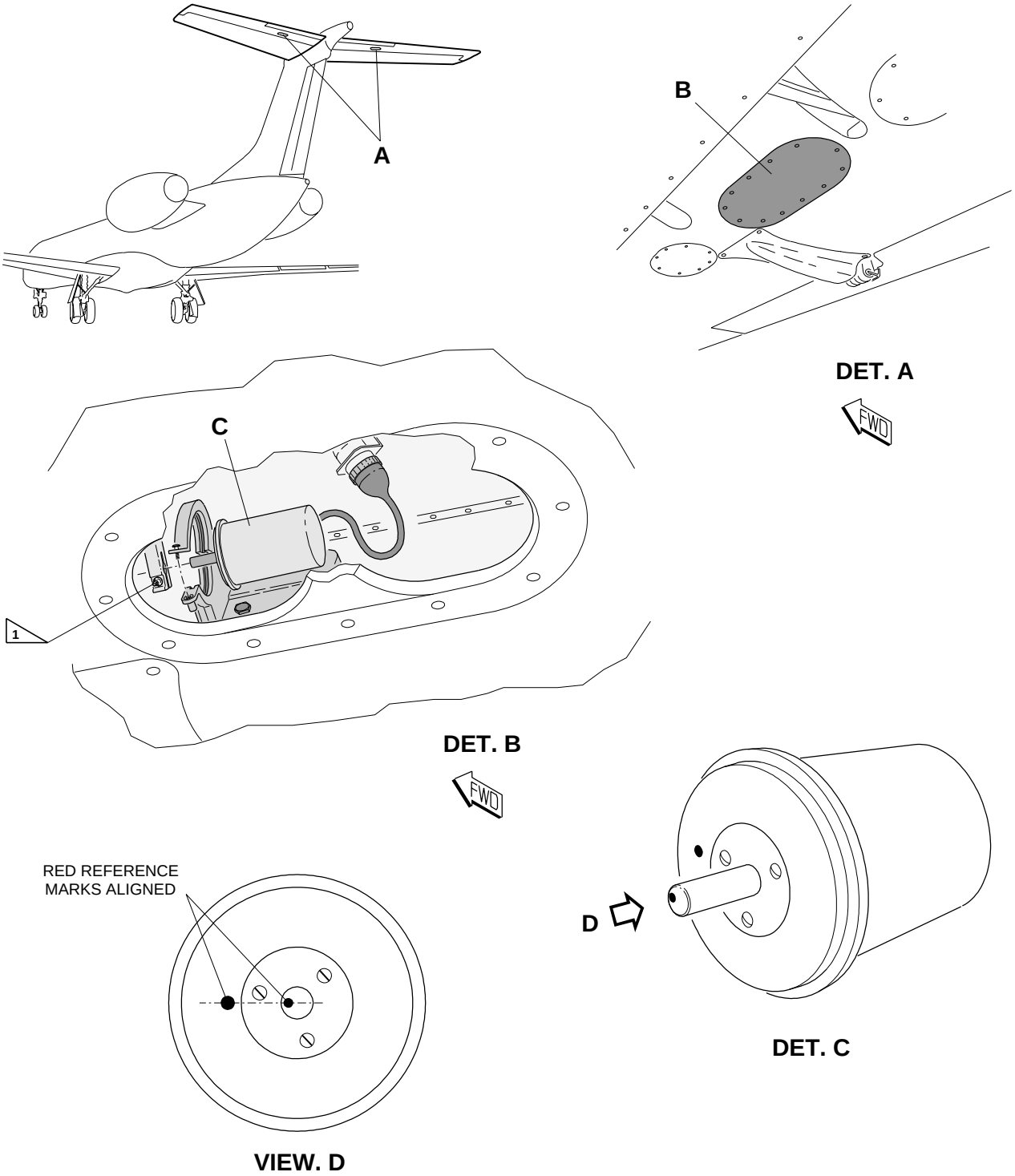
1 APPLY TORQUE OF 4.52 - 5.08 Nm (40 - 45 lbf.in)

145AMM310128.MCE A

EFFECTIVITY: AIRCRAFT WITH RVDTs/RVITs AND ELECTROMECHANICAL GUST LOCK, OR WITH PROVISIONS FOR IT

FDR Elevator RVDT/RVIT Calibration

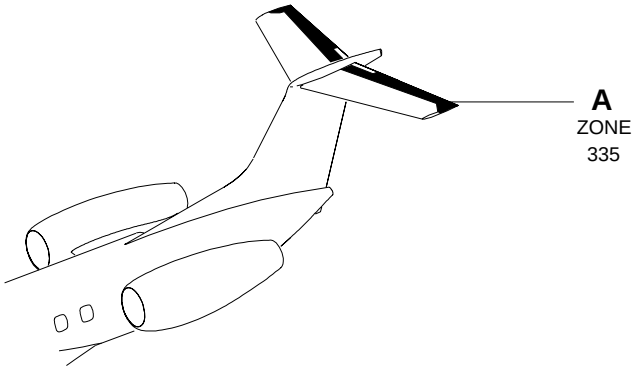
Figure 506

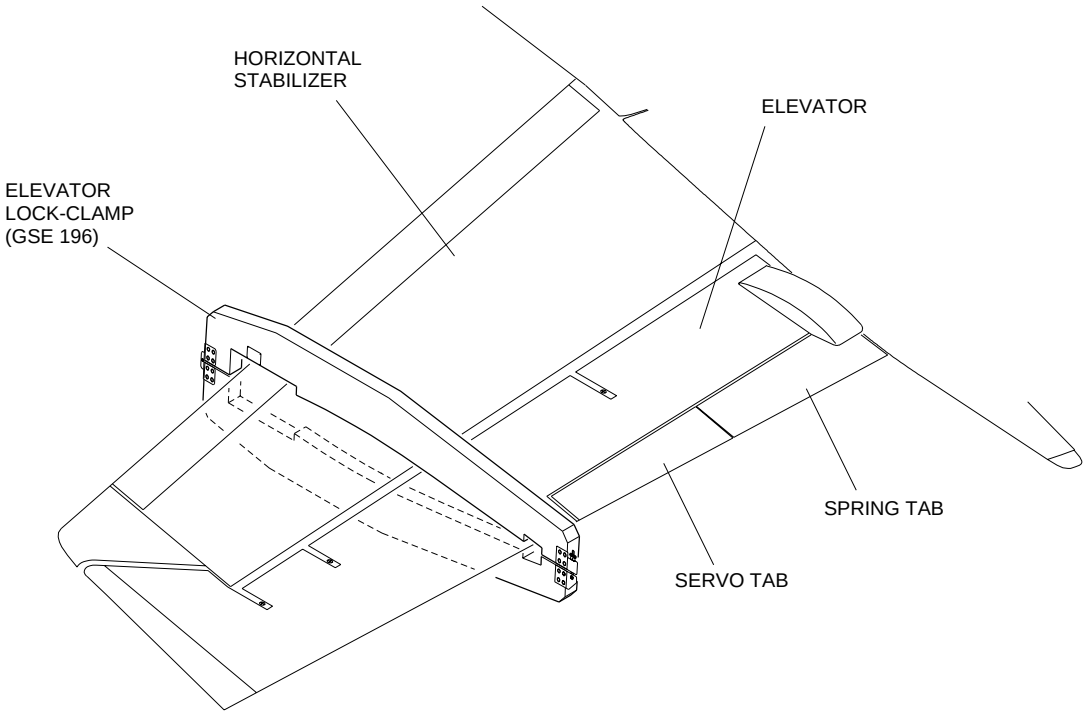


1 APPLY TORQUE OF 4.52 - 5.08 Nm (40 - 45 lbf.in)

145AMM310161.MCE A

EFFECTIVITY: AIRCRAFT WITH RVDTs/RVITs
Elevator Lock Clamp
Figure 507





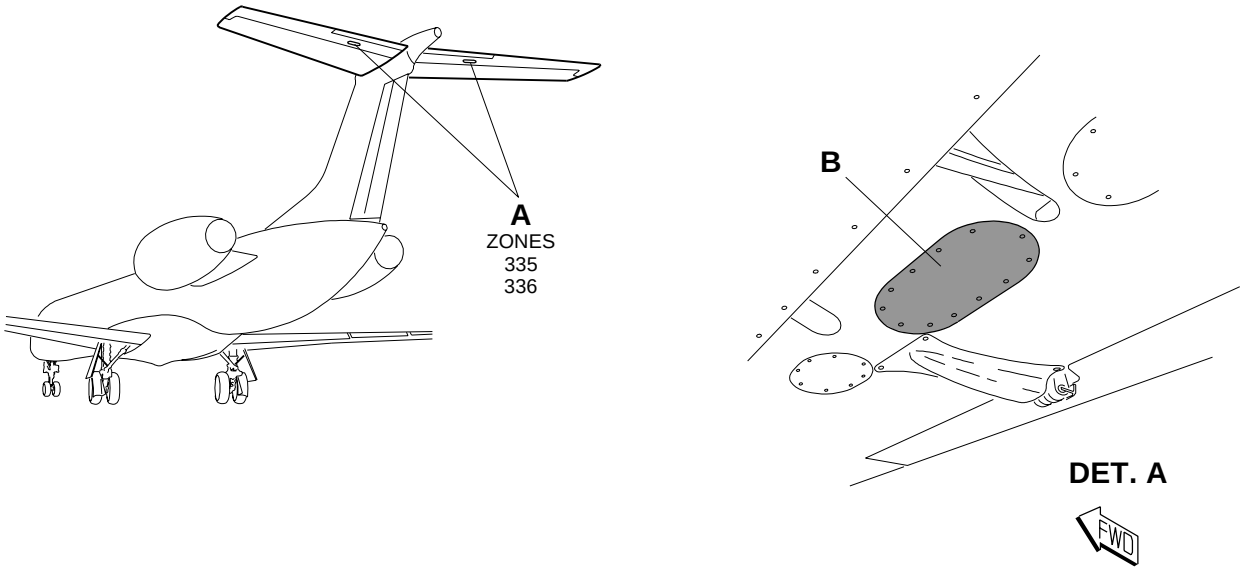
DET. A

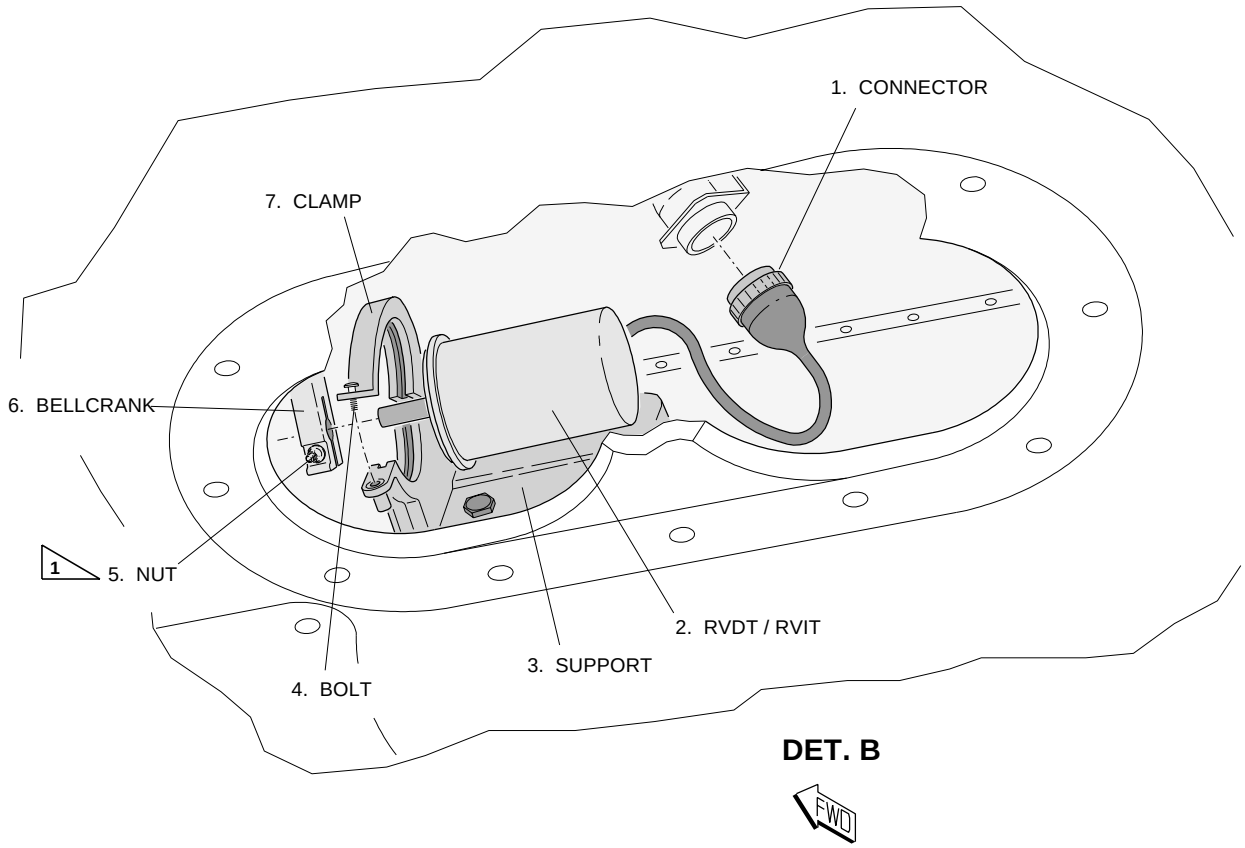
145AMM270468.MCE

EFFECTIVITY: AIRCRAFT WITH RVDTS/RVITS AND ELECTROMECHANICAL GUST LOCK OR WITH PROVISIONS FOR IT

FDR Elevator RVDTs/RVITs

Figure 508





1 APPLY TORQUE OF 4.52 − 5.08 Nm (40 − 45 lbf.in).

EM145AMM310622A.DGN

TASK 31-31-06-820-803-A
EFFECTIVITY: AIRCRAFT WITH RVDTS/RVITS

4. FDR RUDDER RVDT/RVIT - CALIBRATION

A. General

(1) This task gives the procedures to calibrate the FDR rudder RVDT/RVIT.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-41-01/100	-
AMM MPP 06-41-03/100	- COMPONENT LOCATION
AMM MPP 06-42-00/100	-
AMM SDS 23-51-00/1	
AMM SDS 27-20-00/1	
AMM SDS 31-31-00/1	
AMM SDS 31-41-00/1	
AMM SDS 31-42-00/1	
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 29-10-00-860-801-A/200	HYDRAULIC SYSTEM - PRESSURIZATION WITH HTS

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
272	272DR	Fuselage rear section I - Right side
325	325CL	Rudder
325	325JR	Rudder

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 036	Platform - Hydraulic, Aircraft	To get access to the work area on the rudder and on the rear electronic compartment	
GSE 044	Headset - Ramp handling	For communication	
GSE 059	Protractor	To measure the rudder deflection angle	
GSE 092	Hand-Held Download Unit (HHDLU)	To retrieve the stored data from the FDR and make it possible to monitor the rudder RVDT/RVIT data in real time	
GSE 464	Portable Interface Unit (PIU)	To retrieve the stored data from the FDR and make it possible to monitor the rudder RVDT/RVIT data in real time	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Screw, NASM(MS)24694-6 (or similar with #8-32UNC thread, 19/32 in. length)	To attach the base of GSE-059 to the aircraft	1

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
Commercially available	Double-face adhesive-tape	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	On the rudder
1	Does the task	Cockpit/rear electronic compartment

I. Preparation

SUBTASK 841-004-A

(1) Energize the aircraft with the External DC Power Supply (AMM TASK 20-40-01-860-801-A/200).

(2) Connect the headsets (GSE 044).

(3) Make sure that the systems below are operational and on:

– Airborne Audio System (AMM SDS 23-51-00/1).

– Rudder Control System (AMM SDS 27-20-00/1).

– EICAS (AMM SDS 31-41-00/1).

– FDRS (AMM SDS 31-31-00/1).

– Integrated Computer System (AMM SDS 31-42-00/1).

(4) On the circuit breaker panel, open the FDR circuit breaker (Location Tip: ESSENTIAL DC BUS 1/MISCELLANEOUS/FDR) and attach a DO-NOT-CLOSE tag to it.

(5) Open maintenance panel door 223LZ (AMM MPP 06-41-03/100).

(6) Make sure that the DFDR switch, on the maintenance panel, is at the NORM position.

(7) Put up the hydraulic platform (GSE 036) at the necessary height.

(8) Open access door 272DR (AMM MPP 06-41-01/100).

(9) (Aircraft with Honeywell FDR) In the rear electronic compartment, connect to the FDR the Hand-Held Download Unit (HHDLU) (GSE 092) with the PCMCIA card inserted in it (Refer to Hand-Held Download Unit User's Manual) (Figure 508).

(10) (Aircraft with L3 FDR) In the rear electronic compartment, connect to the FDR the Portable Interface Unit (PIU) (GSE 464) with the PCMCIA card inserted in it (Refer to Portable Interface Unit User's Manual) (Figure 508).

(11) Remove access panels 325CL and 325JR (AMM MPP 06-42-00/100) to get access to the rudder RVDT/RVIT.

(12) On the circuit breaker panel, remove the DO-NOT-CLOSE tag from the FDR circuit breaker (Location Tip: ESSENTIAL DC BUS 1/MISCELLANEOUS/FDR) and close it.

J. Calibration Procedure (Figure 509) (Figure 510) (Figure 511)

SUBTASK 820-004-A

(1) On the maintenance panel, set the DFDR switch to the TEST position.

(2) (Aircraft with Honeywell FDR) On the HHDLU, select the DSDU (Data Signal Display Unit) function.

NOTE: To set the parameters (SUBFRAME, WORD and BASE) on the HHDLU, obey the instructions in the Hand-Held Download Unit User's Manual.

(3) (Aircraft with L3 FDR) On the PIU, select the WORD MONITOR function.

NOTE: To set the parameters (SUBFRAME, WORD and BASE) on the PIU, obey the instructions in the Portable Interface Unit User's Manual.

(4) (Aircraft without AFDAU) On the HHDLU/PIU, select WORD 28 and SUBFRAME ALL.

(5) (Aircraft with AFDAU) On the HHDLU/PIU, select WORD 55 and SUBFRAME ALL.

(6) Loosen the bolt which attaches the bellcrank to the RVDT/RVIT shaft.

(7) To put the rudder control surface at the neutral position, do the steps below:

(a) Pressurize the hydraulic system (AMM TASK 29-10-00-860-801-A/200).

(b) On the overhead panel, turn on rudder systems 1 and 2. Make sure that the RUDDER SHUTOFF SYS 1 and 2 pushbutton lights are off.

(c) Make sure that the yaw trim indicator, on the EICAS, shows zero position.

(d) Install the protractor (GSE 059) to the fin/rudder I, with screw NASM(MS)24694-6 or with a double face adhesive tape, and set it to the zero position (reference) (Figure 510).

(e) On the overhead panel, turn off rudder systems 1 and 2. Make sure that the RUDDER SHUTOFF SYS 1 and 2 pushbutton lights are on.

(f) Release the pressure from the hydraulic system (AMM TASK 29-10-00-860-801-A/200).

(8) Make sure that the two red reference marks (RVDT/RVIT shaft and body) are aligned. On the HHDLU/PIU, the displayed value is between 1756 and 2020 (octal).

(9) Use a screwdriver in the slot of the RVDT/RVIT shaft to turn it and set the value on the HHDLU/PIU to 2000 (octal).

NOTE:
- If the value shown is larger than 2000 (octal), turn the RVDT/RVIT shaft counterclockwise.
- If the value shown is smaller than 2000 (octal), turn the RVDT/RVIT shaft clockwise.

(10) Connect the bellcrank to the RVDT/RVIT shaft again and tighten its bolt. Apply a torque of 4.52 - 5.08 N.m (40 - 45 lbf.in) to the fasteners.

(11) On the HHDLU/PIU, make sure that the value shown stays between 1756 and 2020 (octal).

(12) Manually change the rudder deflection angle and make sure that the values shown on the HHDLU/PIU are between the limits given below:

Table 505

Deflection angle (Protractor)	Value limits (OCTAL)
10 degrees - left	1205 - 1400
0 degrees	1756 - 2020
10 degrees - right	2332 - 2562

NOTE: If the values are out of range, adjust the RVDT/RVIT again with the rudder surface at the neutral position.

K. Follow-on

SUBTASK 842-004-A

(1) Remove the protractor (GSE 059) from the fin/rudder I.

(2) Install access panels 325CL and 325JR (AMM MPP 06-42-00/100).

(3) (Aircraft with Honeywell FDR) In the rear electronic compartment, disconnect from the FDR the Hand-Held Download Unit (HHDLU) (GSE 092).

(4) (Aircraft with L3 FDR) In the rear electronic compartment, disconnect from the FDR the Portable Interface Unit (PIU) (GSE 464).

(5) Close access door 272DR (AMM MPP 06-41-01/100).

(6) Disconnect the headsets (GSE 044).

(7) On the maintenance panel, set the DFDR switch to the NORM position.

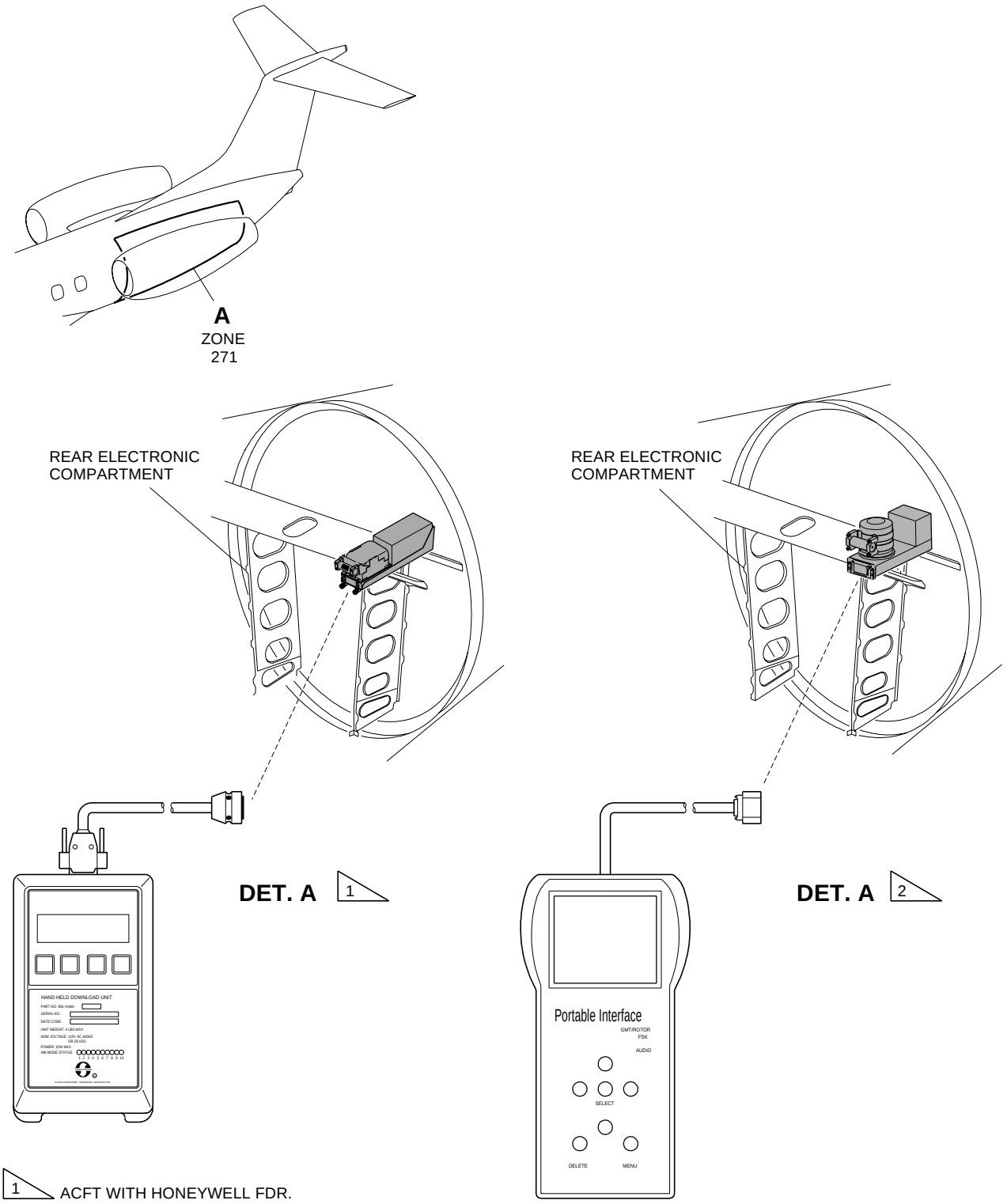
(8) Close maintenance panel door 223LZ (AMM MPP 06-41-03/100).

(9) Remove the hydraulic platform (GSE 036).

EFFECTIVITY: AIRCRAFT WITH RVDTs/RVITs

RVDT/RVIT Calibration - HHDLU/PIU to FDR Interface

Figure 509



1 ACFT WITH HONEYWELL FDR.

2 ACFT WITH L3 FDR.

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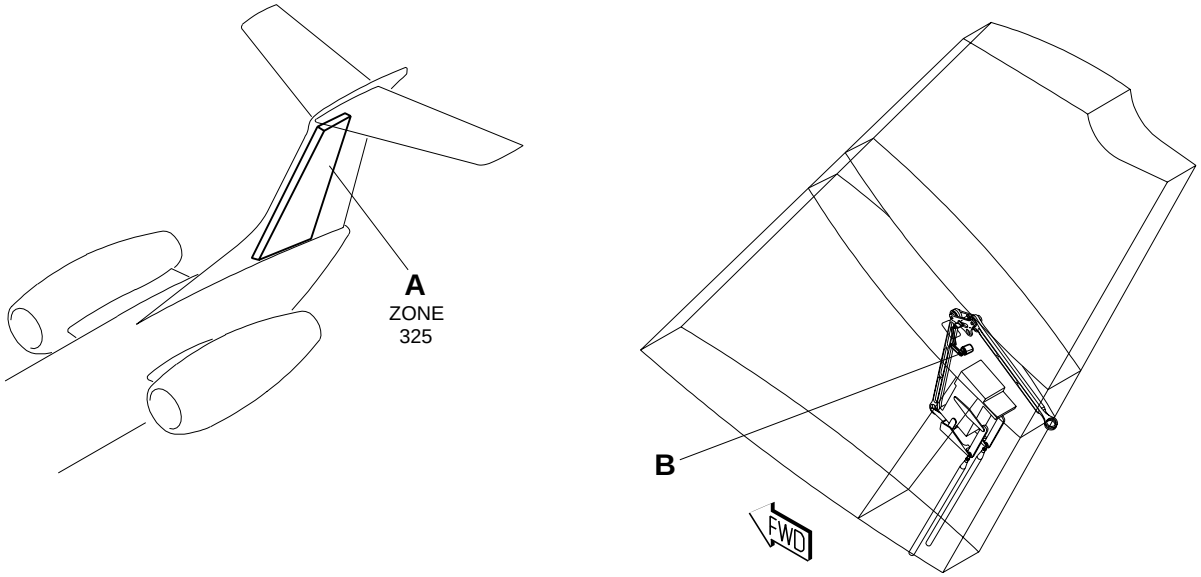
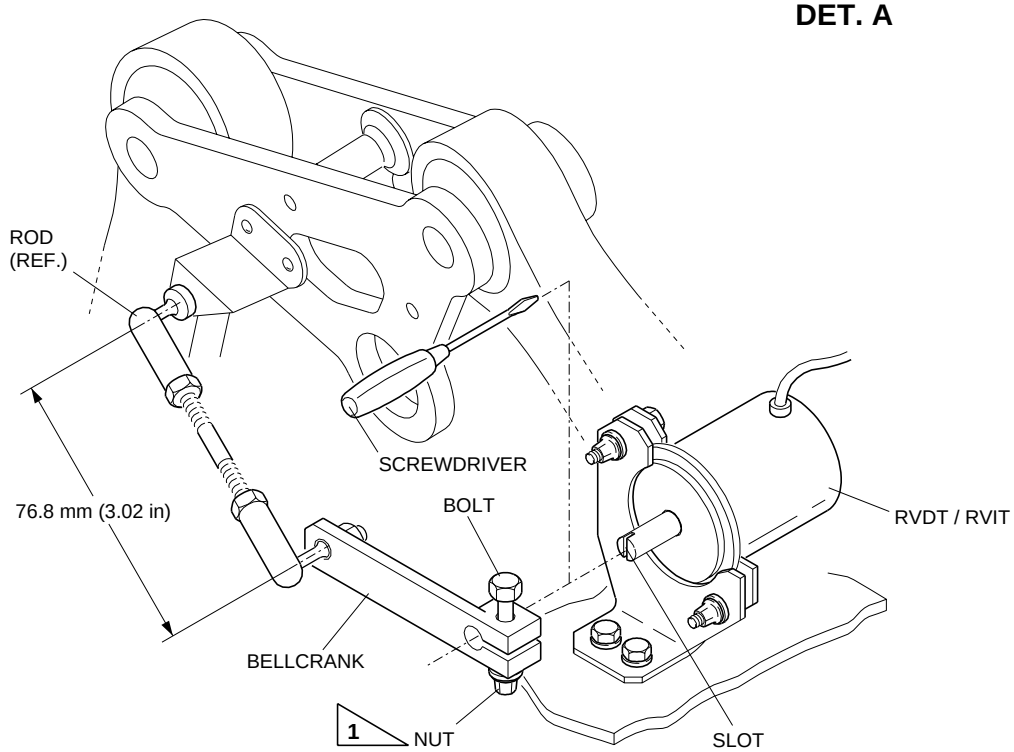
EFFECTIVITY: AIRCRAFT WITH RVDTs/RVITs
FDR Rudder RVDT/RVIT Calibration
Figure 510



DET. A

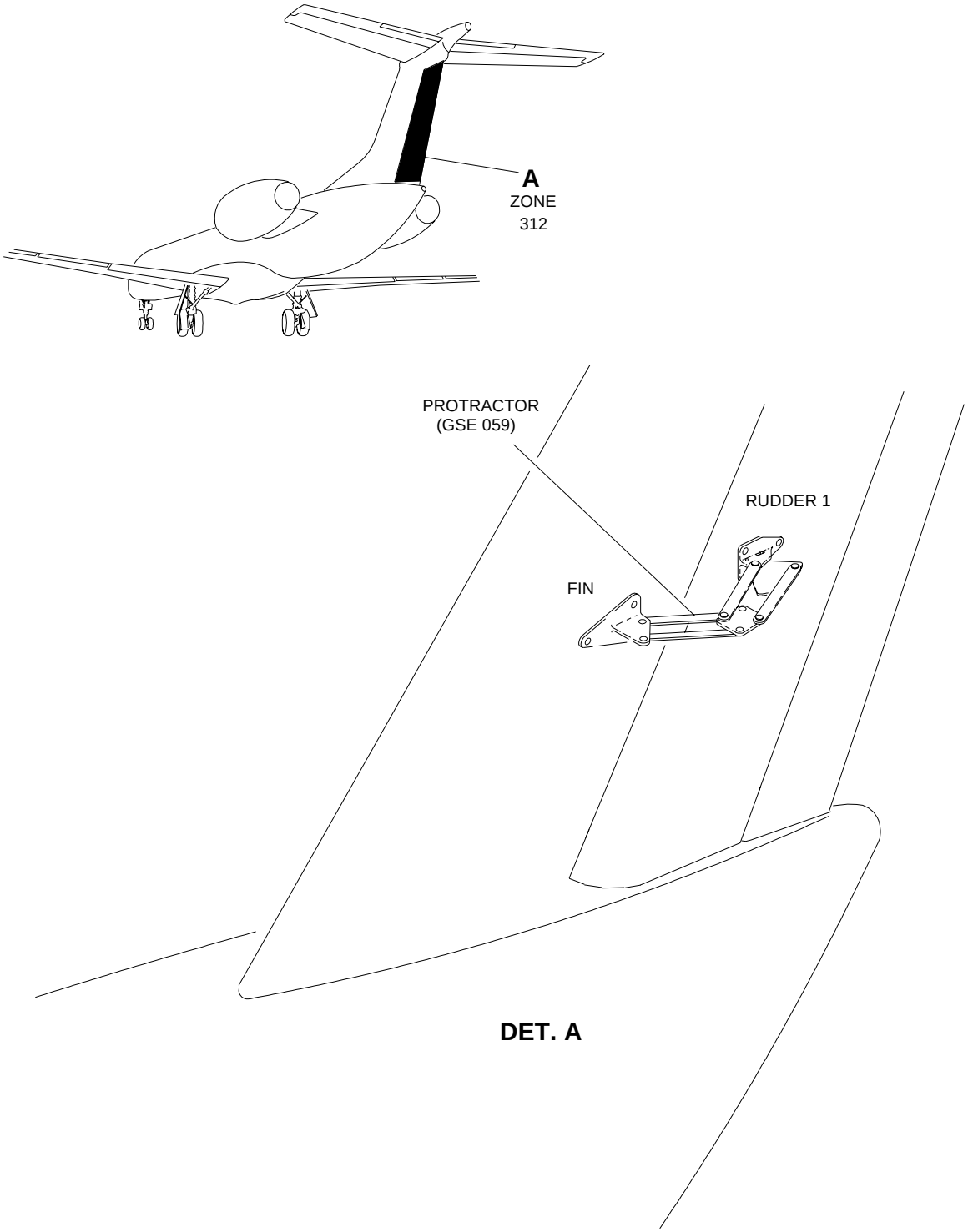


DET. B

1 APPLY TORQUE OF 4.52 - 5.08 Nm (40 - 45 lbf.in)

145AMM310129.MCE B

EFFECTIVITY: AIRCRAFT WITH RVDTs/RVITs
Protractor - Installation
Figure 511



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