



EMB145 – EMB135

AIRCRAFT  
MAINTENANCE MANUAL

**NOSE WHEEL STEERING SYSTEM - ADJUSTMENT/TEST**

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to do checks on the nose wheel steering system for its correct operation.
- B. 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
32-50-00-700-801-A ♦	NOSE WHEEL STEERING SYSTEM DIS-ENGAGEMENT - OPERATIONAL CHECK	ALL
32-50-00-700-802-A	NOSE WHEEL STEERING SYSTEM - QUICK ADJUSTMENT	ALL
32-50-00-700-803-A	NOSE WHEEL STEERING SYSTEM ACTUATION - OPERATIONAL CHECK	ALL
32-50-00-700-804-A	NOSE WHEEL STEERING SYSTEM - COMPLETE ADJUSTMENT	ALL



# AIRCRAFT MAINTENANCE MANUAL

TASK 32-50-00-700-801-A

EFFECTIVITY: ALL

## 2. NOSE WHEEL STEERING SYSTEM DISENGAGEMENT - OPERATIONAL CHECK

### A. General

- (1) This task is necessary for the SMRD, to make sure the correct disengagement of the nose wheel steering system.
- (2) The STEER INOP caution message comes on in any of the following conditions:
  - (a) NLG wheels steered to more than 7 degrees to one side with the steering handle released.
  - (b) The steering disengagement button (STEER DISC) pushed.
  - (c) Failure in the steering system.
  - (d) (For aircraft equipped with) The external disengagement switch set to the "DISENGAGED" position.
  - (e) Nose wheel steering circuit breaker open.

### B. References

REFERENCE	DESIGNATION
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
AMM TASK 29-10-00-860-802-A/200	HYDRAULIC SYSTEM - PRESSURIZATION WITH EMDP
AMM TASK 32-00-01-910-801-A/200	LG SAFETY PIN - INSTALLATION AND REMOVAL
SB 145-32-0057	-
SB 145-32-0104	-
SB145-32-0057	-

### C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
123	123AL	(POST-MOD SB145-32-0057) External steering disengagement switch

### D. Tools and Equipment

Not Applicable

### 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
1	Helps the other technician	NLG

I. Preparation

**SUBTASK 841-002-A**

- (1) Make sure that the pressure in hydraulic systems No. 1 and No. 2 is fully released ([AMM TASK 29-10-00-860-802-A/200](#)).
- (2) Make sure that the towbar is disconnected from the nose landing gear (NLG).
- (3) Make sure that the safety pins are installed on the landing gears ([AMM TASK 32-00-01-910-801-A/200](#)).
- (4) On the circuit breaker panel, open the GND SPLR INBD and GND SPLR OUTBD circuit breakers.
- (5) On the circuit breaker panel, open the THRUST REVERSER 1 and THRUST REVERSER 2 circuit breakers.
- (6) Energize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).
- (7) Pressurize the hydraulic system No. 1 ([AMM TASK 29-10-00-860-801-A/200](#)).
- (8) Make sure that the rudder system No. 1 is energized.
- (9) Make sure that the yaw trim indicator shows zero, on the EICAS display.

J. Operational Check of the Nose Wheel Steering System Disengagement ([Figure 501](#)) ([Figure 502](#))

**SUBTASK 710-002-A**

- (1) Do the check below:
  - (a) Push the steering handle and turn it to the left side until approximately half its travel (45°).
 

NOTE: Make sure that there is no STEER INOP caution message on the EICAS.
  - (b) Release the handle.  
 Result:  
 1 On the EICAS display, the STEER INOP caution message comes on. A single aural warning chime is heard and the master caution amber light comes on.
  - (c) Push the master caution push button.  
 Result:  
 1 The aural warning will stop and the master caution amber light goes off.

- (d) Push the handle in the neutral position.  
 Result:  
 1 On the EICAS display, the STEER INOP caution message goes off.
- (e) Release the handle.  
 Result:  
 1 On the EICAS display, the STEER INOP caution message stays off.
- (f) Do steps (a) thru (e) again, but now turn the handle to the right side.
- (g) Push the steering disengage button (STEER DISC) on the pilot's yoke.  
 Result:  
 1 On the EICAS display, the STEER INOP caution message comes on. A single aural warning chime is heard and the master caution amber light comes on.  
 2 Make sure that the wheels do not move when the rudder pedals are operated.
- (h) Push the master caution pushbutton.  
 Result:  
 1 The aural warning stops and the master caution amber goes off.
- (i) Push the steering handle.  
 Result:  
 1 On the EICAS display, the STEER INOP caution message goes off.
- (j) Do steps (g) thru (i) again for the steering disengage button (STEER DISC) of the copilot's yoke.
- (k) (POST-MOD [SB 145-32-0057](#)) Set the external steering disengage switch to "DISENGAGED" position.  
 Result:  
 1 On the EICAS display, the STEER INOP caution message comes on. A single aural warning chime is heard and the master caution amber comes on.  
 2 Make sure that the wheels do not move when the rudder pedals are operated.
- (l) Push the master caution pushbutton.  
 Result:  
 1 The aural warning stops and the master caution amber light goes off.
- (m) (POST-MOD [SB 145-32-0057](#)) Set the external steering disengage switch to the "ENGAGED" position, and press the steering handle.  
 Result:  
 1 On the EICAS display, the STEER INOP caution message goes off.
- (n) Open the STEER circuit breaker.  
 Result:  
 1 On the EICAS display, the STEER INOP caution message comes on. A single aural warning chime is heard and the master caution amber light comes on.

- (o) Push the master caution pushbutton.

Result:

- 1 The aural warning stops and the master caution amber light goes off.

- (p) Close the STEER circuit breaker.

Result:

- 1 On the EICAS, the STEER INOP caution message goes off.

- (2) (POST-MOD SB 145-32-0104).

Do the check below:

- (a) Push the steering handle, moving it fully to the right position and hold it on.

- (b) Open the BRAKES OUTBD circuit breaker, (Location Tip: ESSENTIAL DC BUS 1 / LDG GEAR / BRAKES OUTBD). It will simulate a wheel speed above 25 kts.

Result:

- 1 On the EICAS display, the BRK OUTBD INOP caution message comes on. A single aural warning chime is heard and the master caution amber comes on.

- (c) Push the master caution pushbutton.

Result:

- 1 The aural warning stops and the master caution amber goes off.

- (d) With the handle pushed, turn fully to the left and then fully to the right and hold it on at this position.

Result:

- 1 The nose wheels will move per the handle commands.

- (e) Release the handle.

Result:

- 1 On the EICAS display, the STEER INOP caution message comes on. A single aural warning chime is heard and the master caution amber light comes on.

- (f) Push the master caution pushbutton.

Result:

- 1 The aural warning stops and the master caution amber light goes off.

- (g) Try to engage the system again by pushing the steering handle and moving it to the left and right.

Result:

- 1 It is not possible to engage the steering system again via handle and because of that the nose wheel does not move, per the handle position.

- (h) Release the handle at the neutral position.

- (i) Close the BRAKE OUTBD circuit breaker.

Result:

- 1 On the EICAS display, the BRK OUTBD INOP caution message goes off.

- (j) Push the steering handle at the neutral position.

Result:

- 1 The steering system engages again and the STEER INOP caution message goes off from the EICAS.

NOTE: To make sure that the system engages again, you must keep the handle pushed, while you turn it to the left and to the right; at the same time, have another technician looking at the nose landing gear to see that it moves as a result of the steering wheel commands.

- (k) Release the handle and see that it is at the neutral position.
- (l) Open the BRAKES OUTBD circuit breaker.

Result:

- 1 On the EICAS display, the BRK OUTBD INOP caution message comes on. A single aural warning chime is heard and the master caution amber light comes on.

- (m) Push the master caution pushbutton.

Result:

- 1 The aural warning stops and the master caution amber light goes off.

- (n) Push the handle, turn it to the left and to the right and keep it pushed.

Result:

- 1 The nose wheel steering will be commanded, per the position of the handle.

- 2 The STEER INOP caution message will not be displayed on the EICAS and the master caution amber light does not come on.

- (o) Return the handle to the neutral position and then release the handle.

- (p) Close the BRAKES OUTBD circuit breaker.

Result:

- 1 On the EICAS display, the BRK OUTBD INOP caution message goes off.

- (q) Push the handle and keep it pushed.

- (r) With the handle pushed, turn it to the left and right and verify that the nose wheel moves, per the position of the handle.

- (s) Release the handle and see that it is at the neutral position.

- (t) Open the BRAKES OUTBD circuit breaker.

Result:

- 1 On the EICAS display, the BRK OUTBD INOP caution message comes on. A single aural warning chime is heard and the master caution amber light comes on.

- (u) Push the master caution pushbutton.

Result:

- 1 The aural warning stops and the master caution amber light goes off.

- (v) Push the steering disengage button (STEER DISC) on the pilot's yoke and release it.

Result:

- 1 On the EICAS display, the STEER INOP caution message comes on. A single aural warning chime is heard and the master caution amber light comes on.

- (w) Push the master caution pushbutton.

Result:

- 1 The aural warning stops and the master caution amber light goes off.

- (x) Push the steering handle.

Result:

- 1 The steering system will be engaged again.

- (y) Close the BRAKES OUTBD circuit breaker.

Result:

- 1 On the EICAS display, the BRK OUTBD INOP caution message goes out of view.

- (z) Do steps (t) thru (y) again for the steering disengage button (STEER DISC) of the copilot's yoke.

K. Follow-on

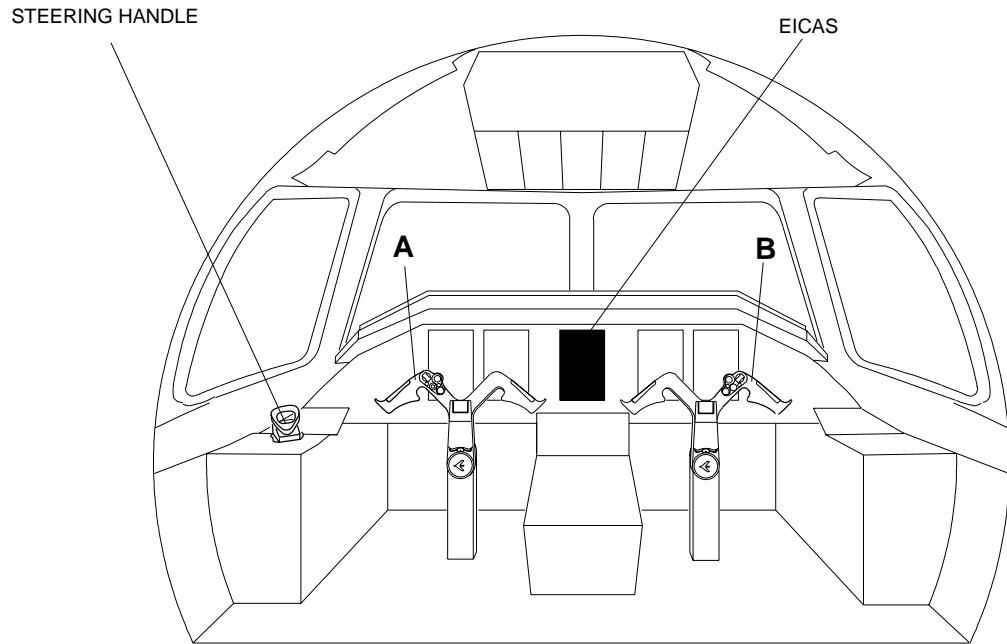
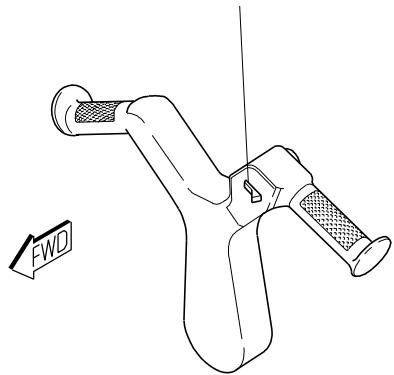
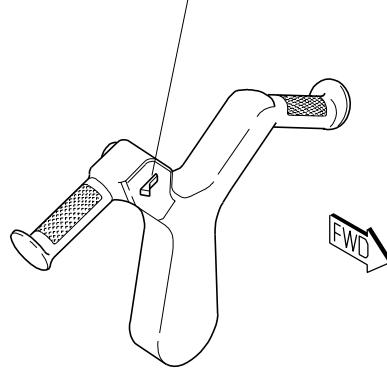
SUBTASK 842-002-A

- (1) Release all the pressure of hydraulic systems No.1 and No. 2 ([AMM TASK 29-10-00-860-801-A/200](#)).
- (2) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).
- (3) On the circuit breaker panel, close the GND SPLR INBD and GND SPLR OUTBD circuit breakers.
- (4) On the circuit breaker panel, close the THRUST REVERSER 1 and THRUST REVERSER 2 circuit breakers.
- (5) Remove the safety pins from the landing gears ([AMM TASK 32-00-01-910-801-A/200](#)) only before taxi and takeoff.

**EFFECTIVITY: ALL**

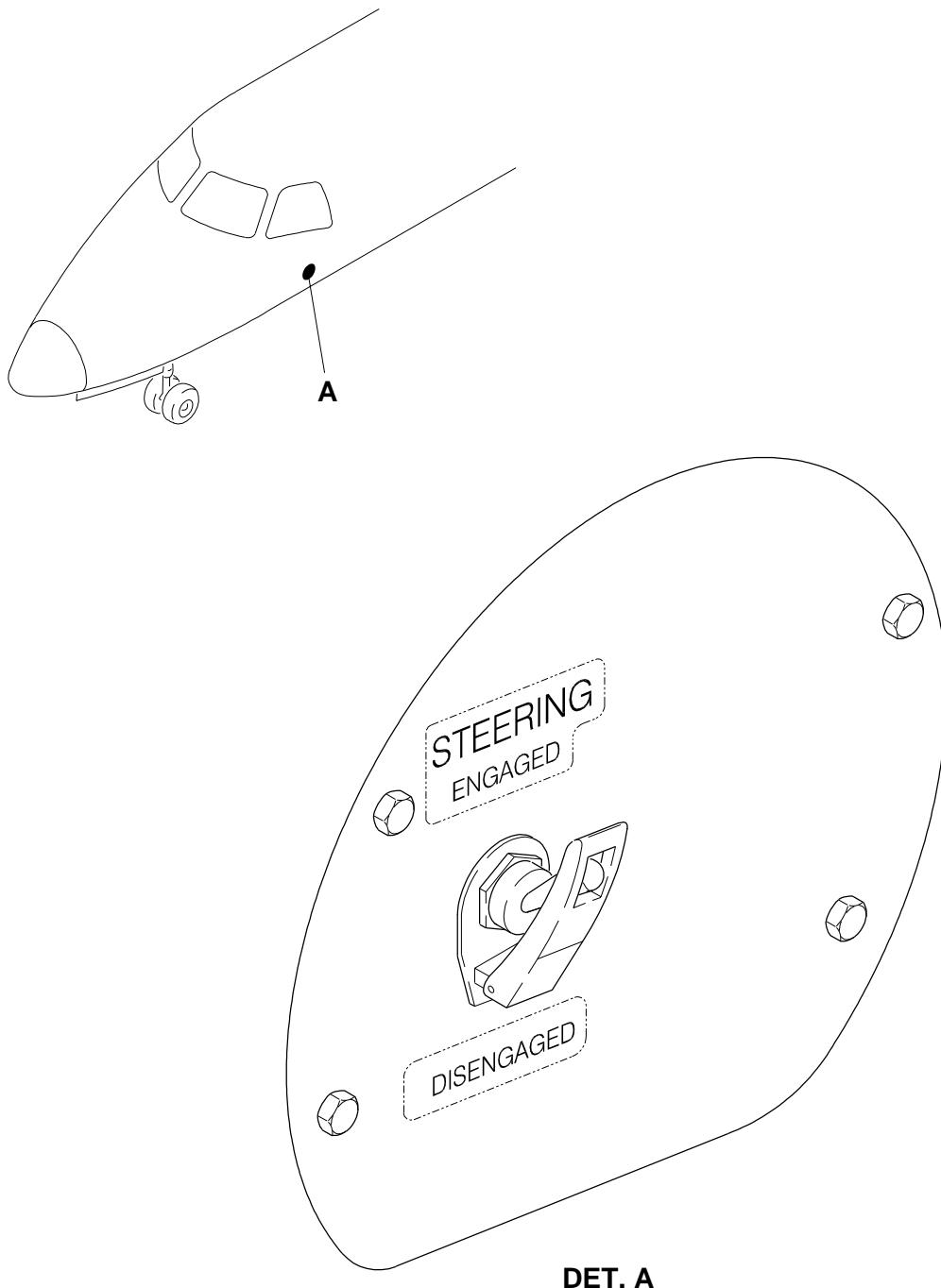
Nose Wheel Steering System Disengagement - Operational Check

Figure 501


**STEERING DISENGAGE  
BUTTON (PILOT'S CONTROL WHEEL)**

**DET. A**
**STEERING DISENGAGE  
BUTTON (COPILOT'S CONTROL WHEEL)**

**DET. B**

145AMM320118.MCE A

EFFECTIVITY: POST-MOD SB 145-32-0057  
External Steering Disengagement Switch  
Figure 502



145AMM320345.MCE



EMB145 - EMB135

AIRCRAFT  
MAINTENANCE MANUAL

TASK 32-50-00-700-802-A

EFFECTIVITY: ALL

3. NOSE WHEEL STEERING SYSTEM - QUICK ADJUSTMENT

A. General

- (1) This task is recommended when:
- (a) The aircraft has a tendency to deviate to the left or right side during taxi, takeoff or landing.
  - (b) This is a temporary solution, but the complete adjustment task ([AMM TASK 32-50-00-700-804-A/500](#)) is highly recommended to be used in case of repeater aircraft.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-42-00/100	-
<a href="#">AMM MPP 20-30-03/200</a>	- MAINTENANCE PRACTICES
<a href="#">AMM TASK 20-40-01-860-801-A/200</a>	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
<a href="#">AMM TASK 29-10-00-860-801-A/200</a>	HYDRAULIC SYSTEM - PRESSURIZATION WITH HTS
<a href="#">AMM TASK 29-10-00-860-802-A/200</a>	HYDRAULIC SYSTEM - PRESSURIZATION WITH EMDP
<a href="#">AMM TASK 32-00-01-910-801-A/200</a>	LG SAFETY PIN - INSTALLATION AND REMOVAL
<a href="#">AMM TASK 32-50-00-700-804-A/500</a>	NOSE WHEEL STEERING SYSTEM - COMPLETE ADJUSTMENT
SRM 51-20-01	-

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
223	223LZ	Cockpit, LH Side

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
MIL-S-8802, Type II, Class A1/2	Sealant	AR

G. Expandable Parts

Not Applicable

**H. Persons Recommended**

QTY	FUNCTION	PLACE
1	Does the task	Cockpit
1	Helps the other technician	NLG

**I. Preparation**
**SUBTASK 841-003-A**

- (1) Make sure that the pressure in hydraulic systems No. 1 and No. 2 is fully released ([AMM TASK 29-10-00-860-802-A/200](#)).
- (2) Make sure that the towbar is disconnected from the nose landing gear (NLG).
- (3) Make sure that the safety pins are installed on the landing gears ([AMM TASK 32-00-01-910-801-A/200](#)).
- (4) Energize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

**J. Nose Wheel Steering System - Feedback Unit Potentiometer adjustment (Figure 503)**
**SUBTASK 720-002-A**

- (1) If the nose wheel misalignment occur when the handle wheel is pressed, do the adjustment as follows:
  - (a) Identify the Feedback Unit Potentiometer ([Figure 503](#)) and remove the sealant from the cover (3).
  - (b) Remove the bolts (1) and lock washers (2).
  - (c) Lift the potentiometer cover (3).
 

NOTE:

    - Do not remove the connector and the harness.
    - Be careful not to cause damage to the potentiometer wires when lifting the potentiometer cover.
- (d) Untighten (1/4 turn) the locking bolts (5) that fix the Feedback Potentiometer (4).
  - 1 Pressurize the hydraulic system No. 1 ([AMM TASK 29-10-00-860-801-A/200](#)).
  - 2 Make sure that the rudder system No. 1 is energized (see the shutoff switch).
  - 3 Make sure that the rudder trim indicator shows zero, on the EICAS display.
  - 4 Push the steering handle wheel and keep it pushed in its neutral position and adjust the feedback potentiometer, turning it to left or to right slowly (see the deflection of the nose wheels position in the indication scale placard).
  - 5 Make sure the nose wheels position indicator aligned with the zero mark on the graduated scale of the landing gear.

- (e) Fully tighten (until it is locked) each of the locking bolts (5).

NOTE: Make sure that the nose wheels alignment remains unchanged when you tighten the locking bolts.

- (f) Release the steering handle wheel.

- (g) Check if the nose wheels position indicator is aligned with the zero mark on the graduated scale of the landing gear.

**K. Nose Wheel Steering System - Load Potentiometer adjustment ([Figure 504](#))**

**SUBTASK 720-003-A**

- (1) If the nose wheel misalignment occur when the handle wheel is not pressed, do the adjustment as follows:

- (a) Pressurize the hydraulic system No. 1 ([AMM TASK 29-10-00-860-801-A/200](#)).

- (b) Make sure that the rudder system No. 1 is energized (see the shutoff switch).

- (c) Make sure that the rudder trim indicator shows zero, on the EICAS display.

- (d) Push the steering handle wheel and release it to make sure that the Nose Wheel Steering System is activated.

- (e) Identify the load potentiometer (2) ([Figure 504](#)) through the access door 223LZ (AMM MPP 06-42-00/100).

- (f) Release the lock nut (1).

- (g) Adjust the adjusting bolt (3) until the nose landing gear is centered/aligned with the zero mark on the graduated scale of the landing gear.

- (h) Tighten the lock nut (1) of the adjusting bolt (3).

NOTE: Make sure that the nose wheels alignment remains unchanged when you tighten the locking bolts.

**L. Follow-on**

**SUBTASK 842-003-A**

- (1) Release all the pressure of hydraulic system No.1 ([AMM TASK 29-10-00-860-801-A/200](#)).

- (2) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

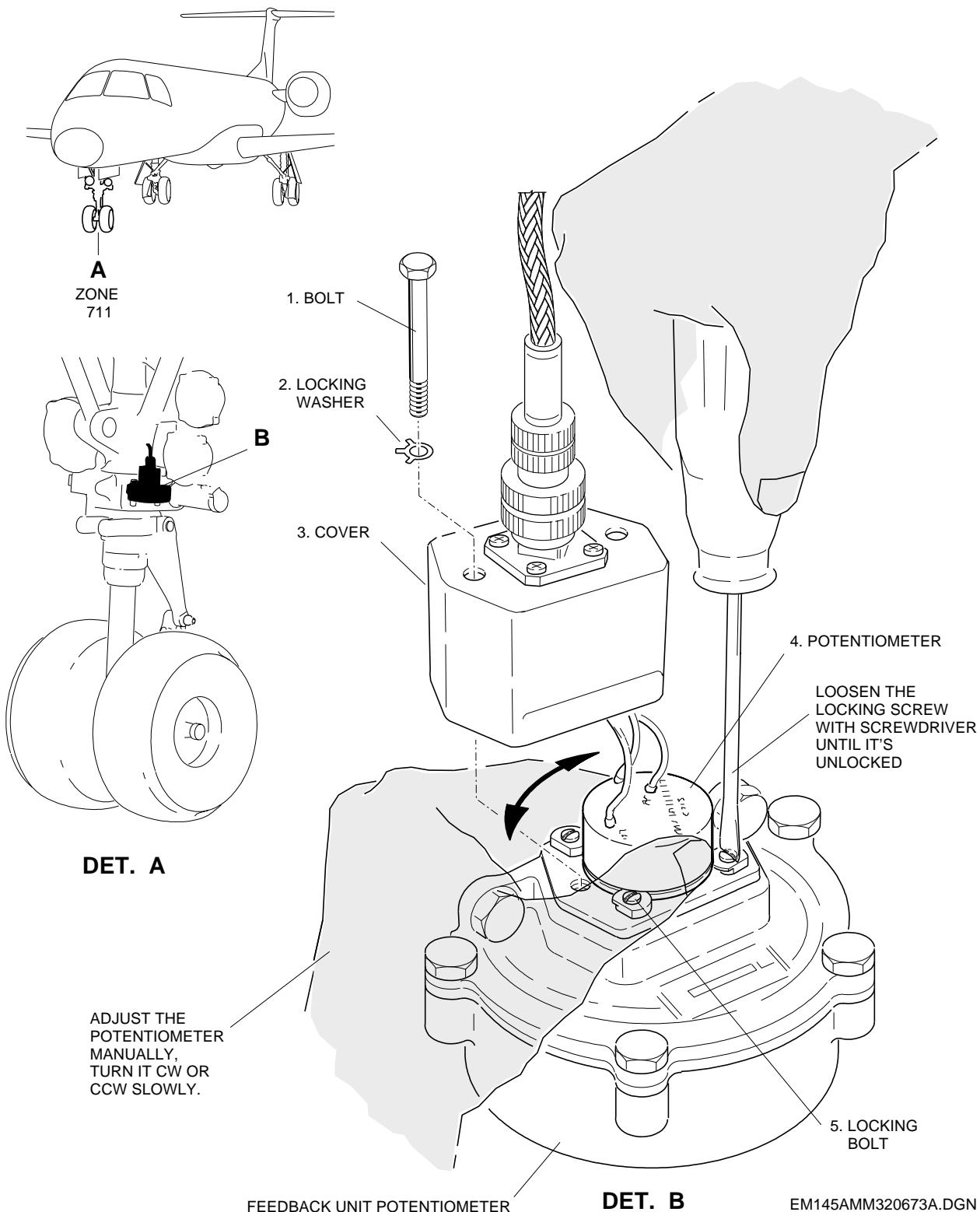
- (3) Install the potentiometer cover and put the lock washers and bolts.

- (4) Seal the potentiometer cover (3) and bolts (1).

NOTE: Apply sealant PR-1440 A1/2. Refer to SRM 51-20-01. For alternative sealants, refer to [AMM MPP 20-30-03/200](#).

- (5) Remove the safety pins from the landing gears ([AMM TASK 32-00-01-910-801-A/200](#)) only before taxi and takeoff.

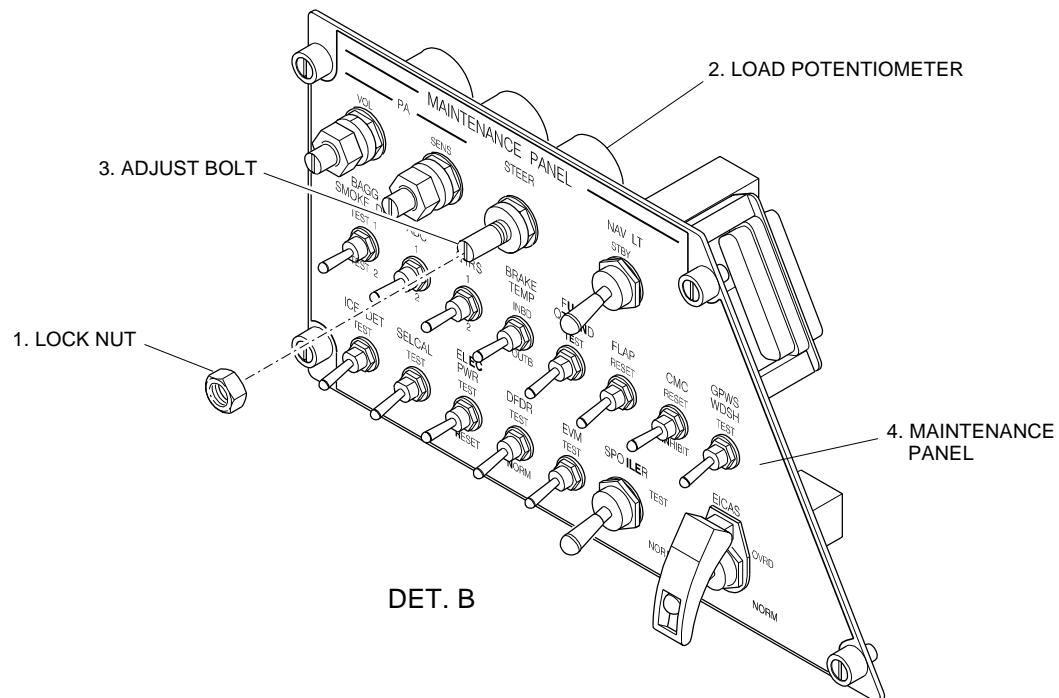
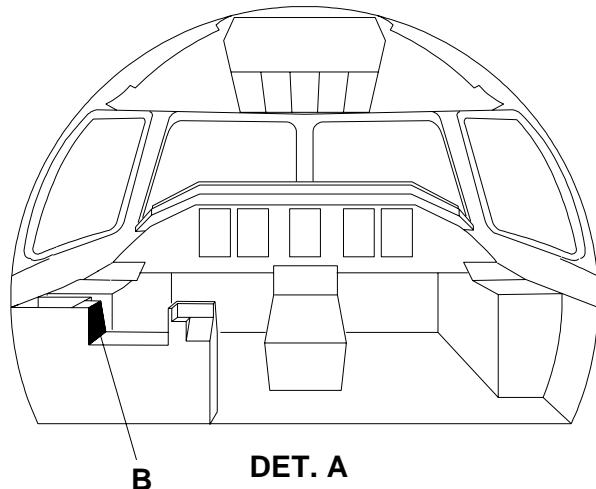
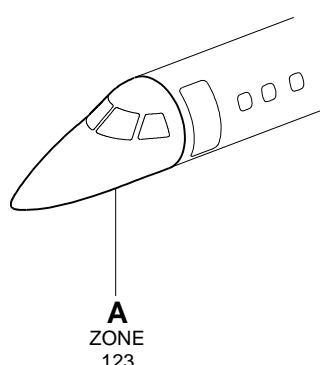
**EFFECTIVITY: ALL**

 Feedback Unit Potentiometer - Adjustment  
 Figure 503


**EFFECTIVITY: ALL**

Load Potentiometer - Adjustment

Figure 504



EM145AMM320710A.DGN

**TASK 32-50-00-700-803-A**

**EFFECTIVITY: ALL**

**4. NOSE WHEEL STEERING SYSTEM ACTUATION - OPERATIONAL CHECK**

**A. General**

- (1) This task gives the procedures to do the operational check to assure correct actuation of the Nose Wheel Steering System.

**B. References**

<i>REFERENCE</i>	<i>DESIGNATION</i>
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
AMM TASK 29-10-00-860-802-A/200	HYDRAULIC SYSTEM - PRESSURIZATION WITH EMDP
AMM TASK 32-00-01-910-801-A/200	LG SAFETY PIN - INSTALLATION AND REMOVAL
S.B.145-32-0002	-

**C. Zones and Accesses**

Not Applicable

**D. Tools and Equipment**

Not Applicable

**E. Auxiliary Items**

Not Applicable

**F. Consumable Materials**

Not Applicable

**G. Expandable Parts**

Not Applicable

**H. Persons Recommended**

<i>QTY</i>	<i>FUNCTION</i>	<i>PLACE</i>
1	Does the task	Cockpit
1	Helps the other technician	Nose landing gear

**I. Preparation**

**SUBTASK 841-004-A**

- (1) Make sure that the pressure in hydraulic systems No. 1 and No. 2 is fully released ([AMM TASK 29-10-00-860-802-A/200](#)).
- (2) Make sure that the tow bar is disconnected from the nose landing gear (NLG).



EMB145 – EMB135

AIRCRAFT  
MAINTENANCE MANUAL

- (3) Make sure that the safety pins are installed on the landing gears ( [AMM TASK 32-00-01-910-801-A/200](#)).
- (4) Energize the aircraft ( [AMM TASK 20-40-01-860-801-A/200](#)).
- (5) (For aircraft in CTA/FAA/IAC-AR configuration only) Pressurize hydraulic system No. 1 ( [AMM TASK 29-10-00-860-801-A/200](#)).
- (6) (For aircraft in JAA configuration only) Pressurize hydraulic systems No. 1 and No. 2 ( [AMM TASK 29-10-00-860-801-A/200](#)).

**CAUTION:** BEFORE YOU DO THE TEST, MAKE SURE THAT THERE ARE NO OBSTACLES (LADDERS, ETC.) IN THE RUDDER AND HORIZONTAL STABILIZER TRAVEL AREA.

- (7) (For aircraft in CTA/FAA/IAC-AR configuration only) Make sure that the rudder system No. 1 is energized.
- (8) (For aircraft in JAA configuration only) Make sure that the rudder system No. 1 and No. 2 are energized.

**NOTE:** If rudder system 2 is not pressurized, the steering command through the pedals is going to have its travel decreased and it is going to cause command responses out of the tolerances.

- (9) Make sure that the rudder trim indicator shows zero on the EICAS display.

J. Operational Check of the Nose Wheel Steering System Actuation

SUBTASK 720-004-A

- (1) Make sure the nose wheels are centered.
- (2) Press the steering handle wheel. Make sure the nose wheel misalignment is less than 0.5 degree.
- (3) With the rudder pedals in the neutral position, push and slowly turn the steering handle wheel to the left stop and then to the right stop. The scale (in degrees) on the nose landing gear leg must indicate nose wheel position deflections as defined according to the maximum steering handle wheel deflection column in ([Table 501](#)).

Table 501 - STEERING DEFLECTION

Aircraft Configuration	Maximum Rudder Pedal Deflection <sup>[1]</sup>	Maximum Steering Handle Wheel Deflection (SEE NOTE)
CTA/FAA/IAC-AR-Certified Aircraft (PRE-MOD. S.B. 145-32-0002)	5 degrees (+ 1 degree - 1 degree)	50 degrees (+ 2 degrees - 2 degrees)

[1] For steering handle wheel commands (rudder pedal at neutral position) with deviations from the steering deflections specified in column "Maximum Steering Handle Wheel Deflection", it is necessary to make sure that the Part Number of the Nose Wheel Steering Electronic Control Module is correctly installed as related the nose landing gear strut configuration.

Table 501 - STEERING DEFLECTION (Continued)

Aircraft Configuration	Maximum Rudder Pedal Deflection <sup>[1]</sup>	Maximum Steering Handle Wheel Deflection (SEE NOTE)
CTA/FAA/IAC-AR-Certified Aircraft (POST-MOD. S.B. 145-32-0002 or S/N 145-027 and on)	5 degrees (+ 1 degree - 1.5 degrees)	71 degrees (+ 5 degrees - 2 degrees)
JAA-Certified Aircraft (Aircraft without rudder movable primary stop and PRE-MOD. S.B. 145-32-0002)		50 degrees (+ 2 degrees - 2 degrees)
JAA-Certified Aircraft (Aircraft without rudder movable primary stop and POST-MOD. S.B. 145-32-0002 or S/N 145-027 and on)	3.5 degrees (+ 1 degree - 1 degree)	
JAA-Certified Aircraft (Aircraft with rudder movable primary stop or factory-incorporated modification and POST-MOD. S.B. 145-32-0002 or S/N 145-027 and on)	5 degrees (+ 1 degree - 1.5 degrees)	71 degrees (+ 5 degrees - 2 degrees)

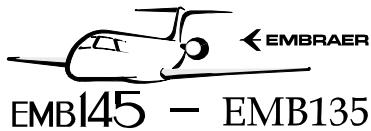
[1] For steering handle wheel commands (rudder pedal at neutral position) with deviations from the steering deflections specified in column "Maximum Steering Handle Wheel Deflection", it is necessary to make sure that the Part Number of the Nose Wheel Steering Electronic Control Module is correctly installed as related the nose landing gear strut configuration.

- (4) Push the steering handle wheel in the neutral position.
- (5) Release the steering handle wheel.
- (6) With the rudder pedal, command the rudder to the left stop and than to the right stop. The scale (in degrees) on the nose landing gear leg must indicate nose wheels position deflections as defined according to the maximum rudder pedal deflection column in (Table 501).

#### K. Follow-on

##### SUBTASK 842-004-A

- (1) Release all the pressure of hydraulic systems No. 1 and No. 2 ( AMM TASK 29-10-00-860-801-A/200).
- (2) Deenergize the aircraft ( AMM TASK 20-40-01-860-801-A/200).
- (3) Remove the safety pins of the landing gears ( AMM TASK 32-00-01-910-801-A/200) only before taxi and takeoff.



EMB145 - EMB135

AIRCRAFT  
MAINTENANCE MANUAL

TASK 32-50-00-700-804-A

EFFECTIVITY: ALL

5. NOSE WHEEL STEERING SYSTEM - COMPLETE ADJUSTMENT

A. General

- (1) This task is recommended when:
- (a) The aircraft has a tendency to deviate to the left or right side during taxi, takeoff or landing.
  - (b) There is a temporary solution ([AMM TASK 32-50-00-700-802-A/500](#)) to help dispatch the aircraft, but this task is highly recommended to be used in case of repeater aircraft.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-42-00/100	-
AMM MPP 20-30-03/200	- MAINTENANCE PRACTICES
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
AMM TASK 29-10-00-860-802-A/200	HYDRAULIC SYSTEM - PRESSURIZATION WITH EMDP
AMM TASK 32-00-01-910-801-A/200	LG SAFETY PIN - INSTALLATION AND REMOVAL
AMM TASK 32-50-00-700-802-A/500	NOSE WHEEL STEERING SYSTEM - QUICK ADJUSTMENT
AMM TASK 32-50-01-700-801-A/500	STEERING HANDLE WHEEL POTENTIOMETER - ADJUSTMENT
AMM TASK 32-50-02-700-801-A/500	RUDDER PEDAL POTENTIOMETER - ADJUSTMENT/TEST
AMM TASK 32-50-05-700-801-A/500	LOAD POTENTIOMETER - ADJUSTMENT
AMM TASK 32-50-07-700-801-A/500	FEEDBACK UNIT (POTENTIOMETER) - FUNCTIONAL CHECK/ADJUSTMENT
SRM 51-20-01	-

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
223	223LZ	Cockpit, LH Side

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

Not Applicable

**F. Consumable Materials**

<i>SPECIFICATION (BRAND)</i>	<i>DESCRIPTION</i>	<i>QTY</i>
MIL-S-8802, Type II, Class A1/2	Sealant	AR

**G. Expandable Parts**

Not Applicable

**H. Persons Recommended**

<i>QTY</i>	<i>FUNCTION</i>	<i>PLACE</i>
1	Does the task	Cockpit
1	Helps the other technician	NLG

**I. Preparation**

**SUBTASK 841-014-A**

- (1) Make sure that the pressure in hydraulic systems No. 1 and No. 2 is fully released ([AMM TASK 29-10-00-860-802-A/200](#)).
- (2) Make sure that the towbar is disconnected from the nose landing gear (NLG).
- (3) Make sure that the safety pins are installed on the landing gears ([AMM TASK 32-00-01-910-801-A/200](#)).
- (4) Energize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

**J. Nose Wheel Steering System - System Potentiometers check and adjustment**

NOTE: Do the check of the potentiometer and adjust only if necessary.

**SUBTASK 720-010-A**

- (1) Do the check and adjustment of the Rudder Pedal Potentiometer ([AMM TASK 32-50-02-700-801-A/500](#)).
- (2) Do the check and adjustment of the Steering Handle Wheel Potentiometer ([AMM TASK 32-50-01-700-801-A/500](#)).
- (3) Do the check and adjustment of the Load Potentiometer ([AMM TASK 32-50-05-700-801-A/500](#)).
- (4) Do the check and adjustment of the Feedback Unit Potentiometer ([AMM TASK 32-50-07-700-801-A/500](#)).

**K. Nose Wheel Steering System - Feedback Unit Potentiometer adjustment ([Figure 505](#))**

**SUBTASK 720-011-A**

- (1) If the nose wheel misalignment occur when the handle wheel is pressed, do the adjustment as follows:
  - (a) Identify the Feedback Unit Potentiometer ([Figure 505](#)) and remove the sealant from the cover (3).

- (b) Remove the bolts (1) and lock washers (2).
- (c) Lift the potentiometer cover (3).
 

NOTE:

  - Do not remove the connector and the harness.
  - Be careful not to cause damage to the potentiometer wires when lifting the potentiometer cover.
- (d) Untighten (1/4 turn) the locking bolts (5) that fix the Feedback Potentiometer (4).
  - 1 Pressurize the hydraulic system No. 1 ([AMM TASK 29-10-00-860-801-A/200](#)).
  - 2 Make sure that the rudder system No. 1 is energized (see the shutoff switch).
  - 3 Make sure that the rudder trim indicator shows zero, on the EICAS display.
  - 4 Push the steering handle wheel and keep it pushed in its neutral position and adjust the feedback potentiometer, turning it to left or to right slowly (see the deflection of the nose wheels position in the indication scale placard).
  - 5 Make sure the nose wheels position indicator aligned with the zero mark on the graduated scale of the landing gear.
- (e) Fully tighten (until it is locked) each of the locking bolts (5).
 

NOTE: Make sure that the nose wheels alignment remains unchanged when you tighten the locking bolts.
- (f) Release the steering handle wheel.
- (g) Check if the nose wheels position indicator is aligned with the zero mark on the graduated scale of the landing gear.

#### L. Nose Wheel Steering System - Load Potentiometer adjustment ([Figure 506](#))

##### SUBTASK 720-012-A

- (1) If the nose wheel misalignment occur when the handle wheel is not pressed, do the adjustment as follows:
  - (a) Pressurize the hydraulic system No. 1 ([AMM TASK 29-10-00-860-801-A/200](#)).
  - (b) Make sure that the rudder system No. 1 is energized (see the shutoff switch).
  - (c) Make sure that the rudder trim indicator shows zero, on the EICAS display.
  - (d) Push the steering handle wheel and release it to make sure that the Nose Wheel Steering System is activated.
  - (e) Identify the load potentiometer (2) ([Figure 506](#)) through the access door 223LZ (AMM MPP 06-42-00/100).
  - (f) Release the lock nut (1).

- (g) Adjust the adjusting bolt (3) until the nose landing gear is centered/aligned with the zero mark on the graduated scale of the landing gear.

- (h) Tighten the lock nut (1) of the adjusting bolt (3).

NOTE: Make sure that the nose wheels alignment remains unchanged when you tighten the locking bolts.

**M. Follow-on**

**SUBTASK 842-014-A**

- (1) Release all the pressure of hydraulic system No.1 ( [AMM TASK 29-10-00-860-801-A/200](#)).

- (2) Deenergize the aircraft ( [AMM TASK 20-40-01-860-801-A/200](#)).

- (3) Install the potentiometer cover and put the lock washers and bolts.

- (4) Seal the potentiometer cover (3) and bolts (1).

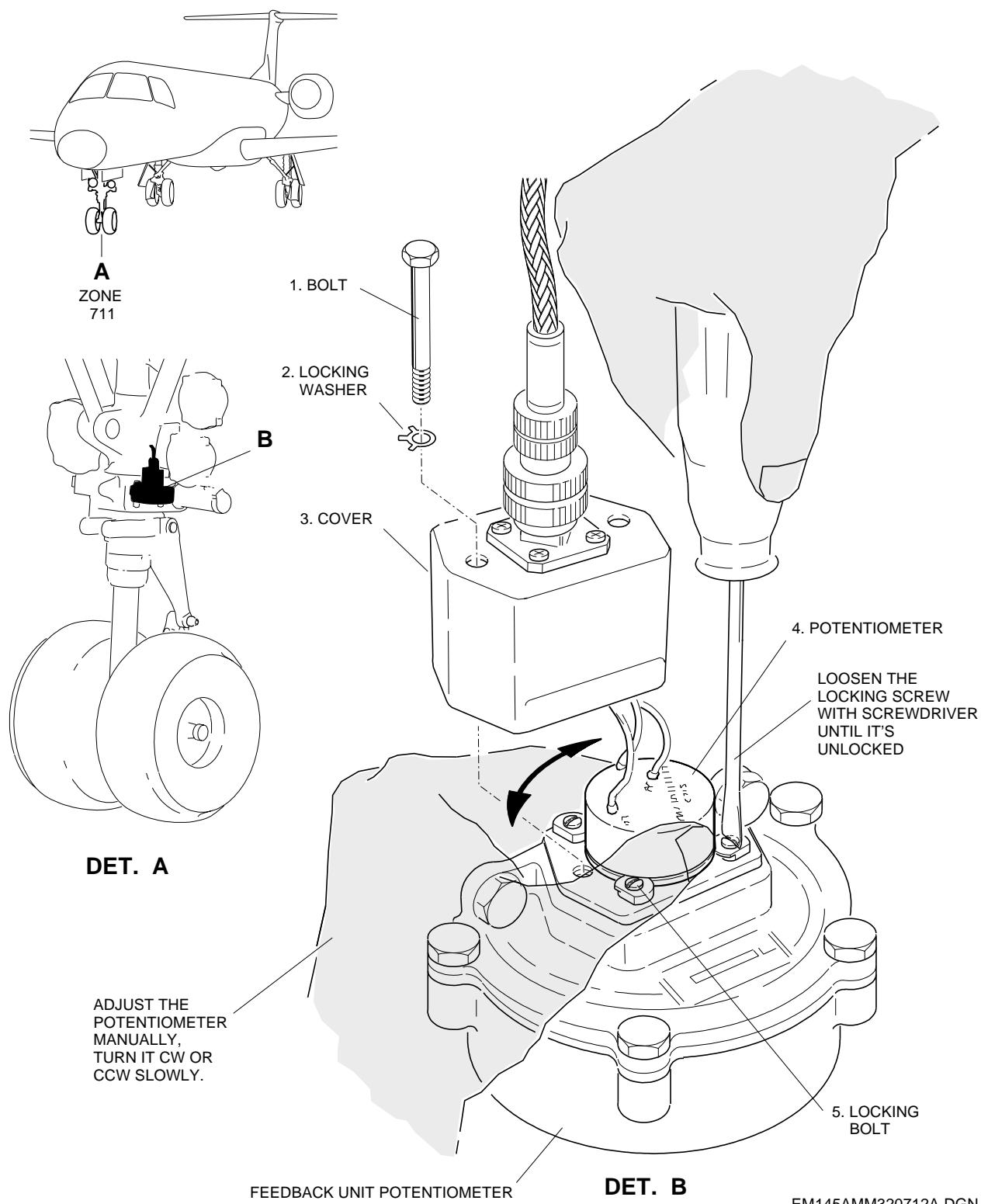
NOTE: Apply sealant PR-1440 A1/2. Refer to SRM 51-20-01. For alternative sealants, refer to [AMM MPP 20-30-03/200](#).

- (5) Remove the safety pins from the landing gears ( [AMM TASK 32-00-01-910-801-A/200](#)) only before taxi and takeoff.

**EFFECTIVITY: ALL**

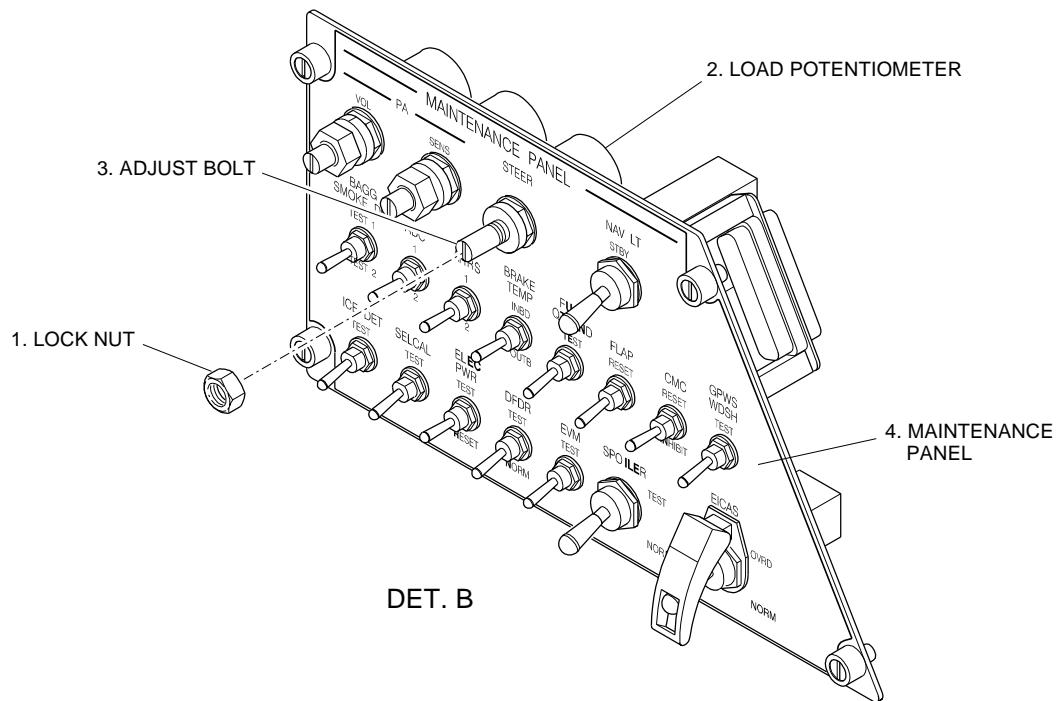
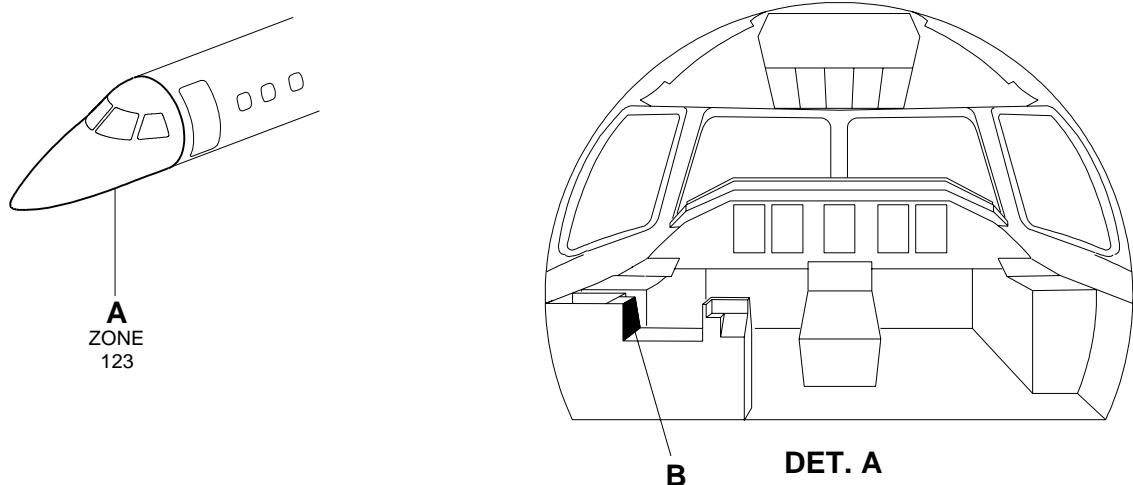
Feedback Unit Potentiometer - Adjustment

Figure 505



EM145AMM320712A.DGN

**EFFECTIVITY: ALL**  
 Load Potentiometer - Adjustment  
 Figure 506



EM145AMM320713A.DGN

