



EMB145 - EMB135

AIRCRAFT  
MAINTENANCE MANUAL

**NOSE WHEEL STEERING INDICATION PLATES - REMOVAL/INSTALLATION**

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to remove and install the nosewheel steering indication marking plate and the nosewheel steering indication scale on the nose landing gear.
- B. Do these procedures when the old reference marking/scale is illegible or damaged, or the plate(s) is (are) lost.
- C. 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
32-50-10-000-801-A	STEERING INDICATION PLATES - REMOVAL	ALL
32-50-10-400-801-A	STEERING INDICATION PLATES - INSTALLATION	ALL



# AIRCRAFT MAINTENANCE MANUAL

TASK 32-50-10-000-801-A

EFFECTIVITY: ALL

## 2. STEERING INDICATION PLATES - REMOVAL

### A. General

- (1) This task gives the procedures to remove the nosewheel steering indication marking and scale plates from the nose landing gear.

### B. References

REFERENCE	DESIGNATION
AMM TASK 07-10-00-500-801-A/200	-
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 32-00-02-910-801-A/200	SAFETY PIN OF THE NLG DOORS SOLENOID VALVE - INSTALLATION AND REMOVAL
SB145-32-0036	-

### C. Zones and Accesses

Not Applicable

### D. Tools and Equipment

Not Applicable

### E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Safety Goggles	Eye Protection	1
Commercially available	Paper Respirator	Respiratory Tract Protection	1
Commercially available	Rubber Gloves	Skin Protection	1
Commercially available	Polyethylene spatula	Sealant removal	1
Commercially available	Blade	Plate removal	1
Commercially available	Sharp Knife	Plate removal	1
Commercially available	Pair of Pliers	Plate removal	1

### F. Consumable Materials

Not Applicable

### G. Expandable Parts

Not Applicable

**H. Persons Recommended**

QTY	FUNCTION	PLACE
1	Does the task	On the nose landing gear

**I. Preparation**
**SUBTASK 841-002-A**

**WARNING: MAKE SURE THAT THE AIRCRAFT IS IN A SAFE CONDITION BEFORE YOU DO THE MAINTENANCE PROCEDURES. THIS IS TO PREVENT INJURY TO PERSONS AND/OR DAMAGE TO THE EQUIPMENT.**

- (1) Use personal protection equipment while you do the tasks.
- (2) All related persons must know the safe solvent handling procedures.
- (3) Do these tasks in an area with a good flow of air, where solvent vapors cannot collect, and with no pieces of equipment which can cause flames or sparks.
- (4) A fire extinguisher with a minimum of 25 kg of carbon dioxide or equivalent must be available.
- (5) On the circuit breaker panel, open the ELEC PUMP 1, CMD, IND 1, and IND 2 circuit breakers and attach DO-NOT-CLOSE tags to them.
- (6) For aircraft PRE-MOD [SB145-32-0036](#), make sure that the pressure in hydraulic system No. 1 is fully released ([AMM TASK 29-10-00-860-802-A/200](#)).
- (7) For aircraft POST-MOD [SB145-32-0036](#), install the safety pin of the NLG doors solenoid valve ([AMM TASK 32-00-02-910-801-A/200](#)).
- (8) Make sure that the safety pins of the landing gears are installed ([AMM TASK 32-00-01-910-801-A/200](#)).
- (9) Lift the aircraft on jacks until you get the mechanical neutral position of the nose wheel steering system. Refer to AMM TASK 07-10-00-500-801-A/200.

**NOTE:** When the NLG is fully extended, two cams engage with each other to mechanically center the wheels at 0°.

**J. Removal ([Figure 401](#)) ([Figure 402](#))**
**SUBTASK 020-002-A**

**WARNING: ALWAYS USE EYE PROTECTION, RESPIRATOR, AND RUBBER GLOVES FOR PROTECTION FROM EPOXY, ADHESIVES, AND BONDING AGENTS.**

**CAUTION: BE CAREFUL TO PREVENT DAMAGE TO THE PLATE ATTACHMENT SURFACE WHEN THE PLATE IS REMOVED.**

- (1) For aircraft with scale not riveted, do as follows. Refer to [Figure 401](#).
  - (a) Remove the sealant from around the steering-indication marking plate (1) or steering indication scale (3) with the aid of a spatula.

**NOTE:** If it is necessary to replace the two plates to make sure of the correct indication of the NLG wheels at 0°, first remove one of the plates and

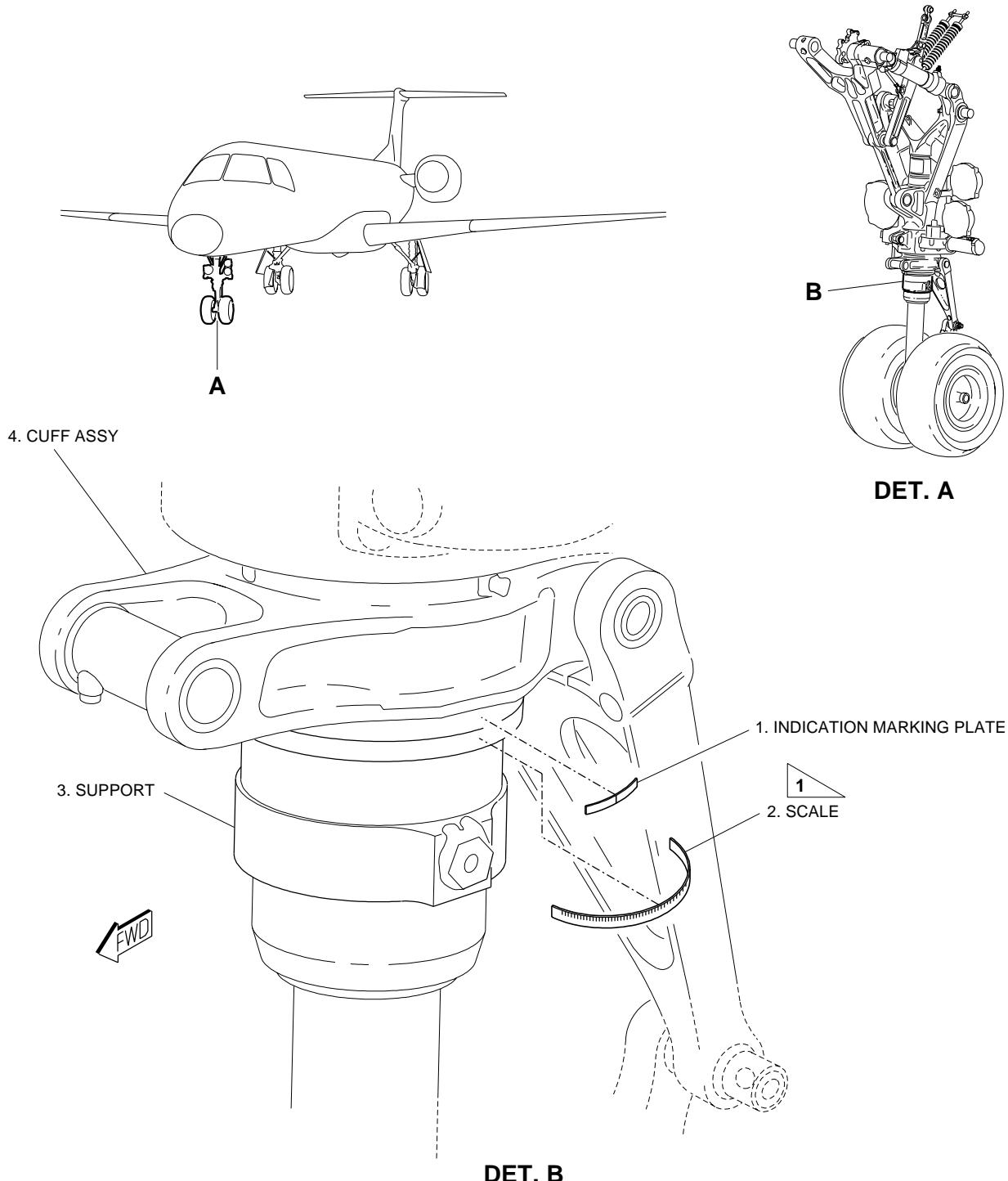
keep the other to be used as a reference for installation of the new plate.  
Replace the second plate only after the first one is replaced.

- (b) Insert a blade under the edge of the steering-indication marking plate (1) and carefully remove it from the cuff assembly (4).
  - (c) Insert a blade under the edge of the indication scale plate (2) and carefully remove it from the support (3).
- (2) For aircraft with riveted scale, do as follows. Refer to [Figure 402](#).
- (a) Remove the sealant from around the steering-indication marking plate (1) or indication scale plate (3) with the aid of a spatula.
  - (b) Insert a blade under the edge of the steering-indication marking plate (1) and carefully remove it from the cuff assembly (5).
  - (c) Use a sharp knife and then cut and remove the indication scale (2) from the support (4).  
NOTE: A piece of the plate will be kept under each rivet (3).
  - (d) Bend up the parts of the indication scale (2) that are under each rivet (3).
  - (e) Use a pair of pliers and pull and turn the remaining parts of the indication scale plate (2) counterclockwise.
  - (f) Remove the remaining parts of the indication scale (2) from the rivets (3).
  - (g) Carefully remove the rivets (3) from the support (4).

**EFFECTIVITY: ALL**

Steering Indication Plates - Removal/Installation

Figure 401

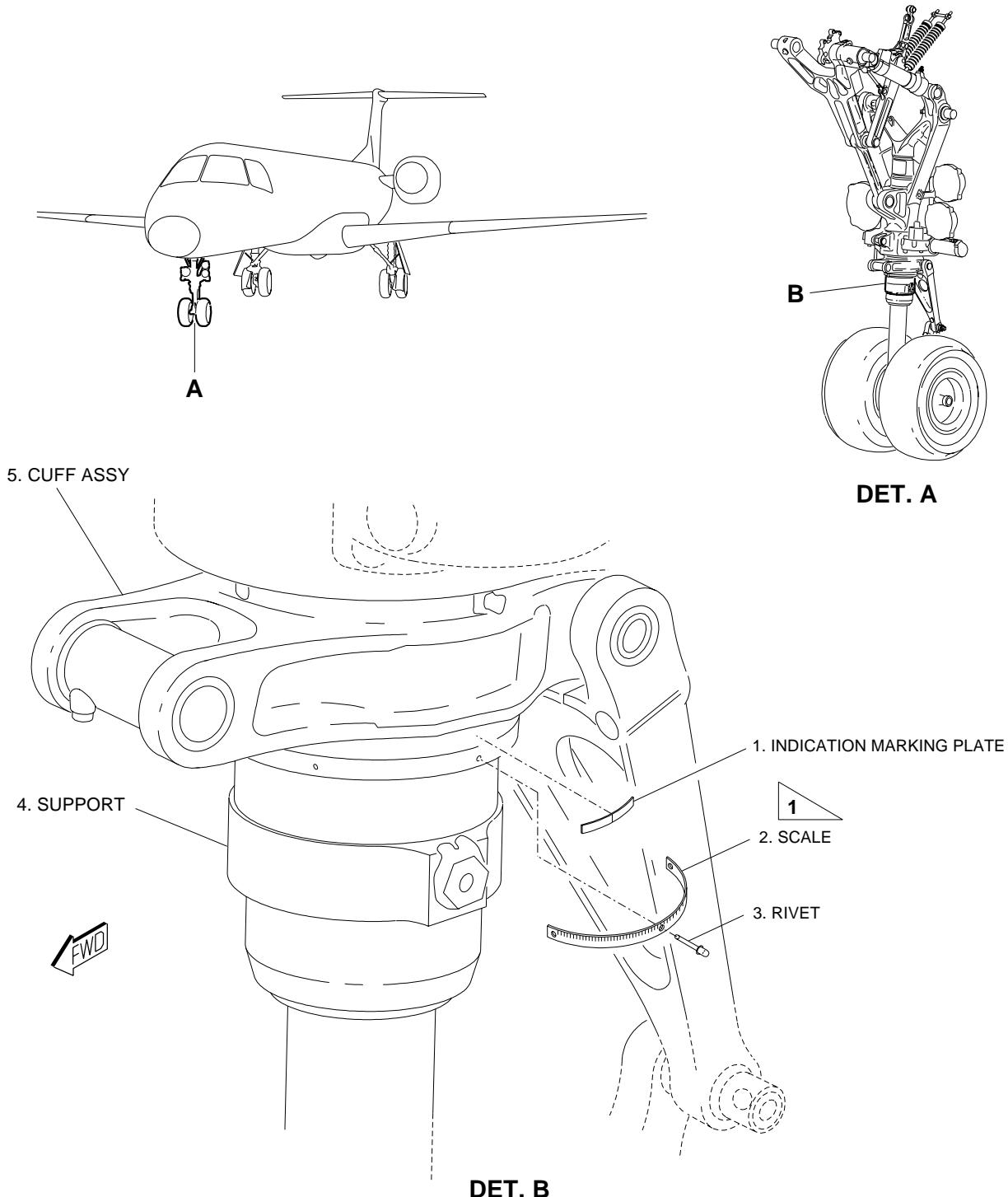

**1** PRE-MOD SB 145-32-0025

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**EFFECTIVITY: ALL**

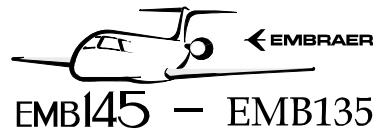
Steering Indication Plates - Removal/Installation

Figure 402



POST-MOD SB 145-32-0025

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TASK 32-50-10-400-801-A

EFFECTIVITY: ALL

3. STEERING INDICATION PLATES - INSTALLATION

A. General

- (1) This task gives the procedures to install the nosewheel steering indication marking and scale plates on the nose landing gear.

B. References

REFERENCE	DESIGNATION
32-21-10-4-145A (LIEBHERR/ELEB)	-
32-21-10-4-30A (LIEBHERR/ELEB)	-
32-21-10-4A-145A (LIEBHERR/ELEB)	-
32-21-10-4A-27A (LIEBHERR/ELEB)	-
32-21-10-4A-28A (LIEBHERR/ELEB)	-
AMM TASK 07-10-00-500-804-A/200	-
<b>AMM TASK 32-00-02-910-801-A/200</b>	SAFETY PIN OF THE NLG DOORS SOLENOID VALVE - INSTALLATION AND REMOVAL
<b>SB145-32-0036</b>	-

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Safety Goggles	Eye Protection	1
Commercially available	Paper Respirator	Respiratory Tract Protection	1
Commercially available	Rubber Gloves	Skin Protection	1
Commercially available	Wiper Cloth, Lint-Free	Cleaning	1
Commercially available	Hammer	To install the rivets	1
Commercially available	Scriber	To mark plate aligned position	1

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
MEP 13-073	RHODIASOLVE E-23	AR



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SPECIFICATION (BRAND)	DESCRIPTION	QTY
3298	Loctite Adhesive	AR
7407	Loctite Activator	AR
PR1826B2ALO	Sealant	AR

## G. Expendable Parts

ITEM	IPC REFERENCE (VENDOR REFERENCE)	QTY
Indication Scale Plate -or-	32-21-10-4-30A (LIEBHERR/ELEB)	1
Indication Scale Plate	32-21-10-4A-27A (LIEBHERR/ELEB)	1
Steering-Indication Marking Plate -or-	32-21-10-4-145A (LIEBHERR/ELEB)	1
Steering-Indication Marking Plate	32-21-10-4A-145A (LIEBHERR/ELEB)	1
Rivet	32-21-10-4A-28A (LIEBHERR/ELEB)	3

## H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	On the nose landing gear

## I. Preparation

## SUBTASK 841-003-A

**WARNING: MAKE SURE THAT THE AIRCRAFT IS IN A SAFE CONDITION BEFORE YOU DO THE MAINTENANCE PROCEDURES. THIS IS TO PREVENT INJURY TO PERSONS AND/OR DAMAGE TO THE EQUIPMENT.**

- (1) Use personal protection equipment while you do the tasks.
- (2) All related persons must know the solvent handling procedures.
- (3) Do these tasks in an area with a good flow of air, where solvent vapors cannot collect and with no pieces of equipment which can cause flames or sparks.
- (4) A fire extinguisher with a minimum of 25 kg of carbon dioxide or equivalent must be available.
- (5) Make sure that the aircraft is in the same configuration as it was at the end of removal task.



## J. Installation (Figure 401) (Figure 402)

## SUBTASK 420-002-A

**WARNING:** ALWAYS OBEY THE MANUFACTURER'S HEALTH AND SAFETY PRECAUTIONS WHEN YOU USE SEALANTS OR SOLVENTS. USE SEALANTS OR SOLVENTS ONLY IN AREAS WHERE THERE IS A GOOD AIRFLOW. DO NOT BREATHE THE FUMES OF THESE MATERIALS AND DO NOT GET THEM ON YOUR SKIN, IN YOUR EYES OR MOUTH. PUT ON APPROVED PROTECTIVE CLOTHING AND GOGGLES. SEALANTS AND SOLVENTS ARE DANGEROUS AND, IF YOU DO NOT OBEY THESE PRECAUTIONS, INJURY CAN OCCUR.

- (1) For aircraft with a not-riveted scale, do as follows to install the new steering indication marking plate (1) or new indication scale (2). Refer to (Figure 401).

- (a) Rub the backside of the plate and the receiving area with a lint-free wiper cloth moist with RHODIASOLVE E-23 solvent, to remove dirt such as dust, grease, oil, or other contaminants.
- (b) Apply a layer of Loctite 3298 with Activator 7407 to the back of the plate.
- (c) Install the plate in the correct position.

NOTE: Use the other plate as a reference to put the plate in the correct position.

- (d) Apply a bead of Sealing Compound PR1826B2ALO around the plate edges.

**WARNING:** ALWAYS OBEY THE MANUFACTURER'S HEALTH AND SAFETY PRECAUTIONS WHEN YOU USE SEALANTS OR SOLVENTS. USE SEALANTS OR SOLVENTS ONLY IN AREAS WHERE THERE IS A GOOD AIRFLOW. DO NOT BREATHE THE FUMES OF THESE MATERIALS AND DO NOT GET THEM ON YOUR SKIN OR IN YOUR EYES OR MOUTH. PUT ON APPROVED PROTECTIVE CLOTHING AND GOGGLES. SEALANTS AND SOLVENTS ARE DANGEROUS AND, IF YOU DO NOT OBEY THESE PRECAUTIONS, INJURY CAN OCCUR.

- (2) For aircraft with riveted scale, do as follows:

- (a) Install the new indication scale plate (2) as follows. Refer to (Figure 402).

- 1 Rub the backside of the indication scale (2) and the receiving area of the support (4) with a lint-free wiper cloth moist with solvent RHODIASOLVE E-23, to remove dirt such as dust, grease, oil, or other contaminants.

- 2 Carefully bend the indication scale plate (2) to the shape of the receiving area of the support (4).

- 3 Make sure that the indication scale (2) is aligned with the receiving area of the support (4).

- 4 Install a new rivet (3) in the middle position of the indication scale (2).

NOTE: Do not install the rivet fully. Hit the rivet lightly with a hammer.

- 5 Carefully bend the indication scale plate (2).

**NOTE:** Make sure that the holes of the plate are aligned. If necessary, use a scribe and mark the plate alignment position with the receiving area of the support.

- 6 Carefully turn the indication scale (2) on the rivet (3) to get the best access to the rear surface.
- 7 Apply a layer of Loctite Activator 7407 to the indication scale (2) back surface.
- 8 Apply a layer of adhesive Loctite 3298 to the faying surface of the support (4).
- 9 Turn the indication scale (2) to the correct position.
- 10 Use your fingers and press the indication scale (2) from the middle to the end of the faying surface of the support (4).

**NOTE:** Make sure that the plate outer holes align with the holes of the support. If necessary, use an alignment tool and align the plate with the faying surface of the nose landing gear.

- 11 Install the new rivets (3) in the outer holes.
- 12 Use a hammer to fully install the three rivets (3).
- 13 Use a lint-free wiper cloth and remove unwanted adhesive.

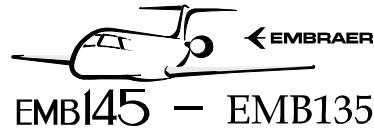
**NOTE:** Make sure that there is no clearance between the plate and the nose landing gear.

- 14 Apply a thin bead of Sealing Compound PR1826B2ALO around the edges of the indication scale (2).

**NOTE:**

- Make sure that the plate outer holes align with the holes of the support. If necessary, use an alignment tool and align the plate with the faying surface of the nose landing gear.
- Sealant P/S 870B-2 or sealant AC-665 B-2 can be used as an alternative to sealant PR1826B2ALO. After twenty-four hours after the application of these alternative sealants, apply a layer of varnish 683-3-2/X-310A to them.

- (b) Install the new indication mark plate (1) as follows. Refer to (Figure 402).
- 1 Rub the backside of the indication mark plate (1) and the receiving area of the cuff assembly (5) with a lint-free wiper cloth moist with solvent RHODIASOLVE E-23, to remove dirt such as dust, grease, oil, or other contaminants.
  - 2 Apply a layer of Loctite 3298 with Activator 7407 to the back of the steering-indication marking plate (1).
  - 3 Install the steering-indication marking plate (1) in the correct position.



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NOTE: Use the indication scale (2) as a reference to put the marking plate in the correct position.

- 4 Apply a bead of Sealing Compound PR1826B2ALO around the steering-indication marking plate (1) edges and at the joint to the receiving surface of the cuff assembly (5).

K. Follow-on

SUBTASK 842-002-A

- (1) On the circuit breaker panel, close the ELEC PUMP, CMD, IND 1, and IND 2 circuit breakers and remove the DO-NOT-CLOSE tags from them.
- (2) Remove the safety pins from the landing gears.
- (3) For aircraft POST-MOD SB145-32-0036, remove the safety pin of the NLG doors solenoid valve ([AMM TASK 32-00-02-910-801-A/200](#)).
- (4) Lower the aircraft and remove the jacks (AMM TASK 07-10-00-500-804-A/200).

