NOSE WHEEL ASSEMBLY - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

   A. This section gives the procedures to remove and install the wheel assembly of the nose landing gear.

   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*
32-49-05-000-801-A	WHEEL ASSEMBLY OF THE NOSE LANDING GEAR - REMOVAL	ALL
32-49-05-400-801-A	WHEEL ASSEMBLY OF THE NOSE LANDING GEAR - INSTALLATION	ALL

TASK 32-49-05-000-801-A
EFFECTIVITY: ALL

2. WHEEL ASSEMBLY OF THE NOSE LANDING GEAR - REMOVAL

A. General

(1) This procedure gives the instructions to remove the wheel assembly of the nose landing gear.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 07-10-00-500-803-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
AMM TASK 32-20-08-200-801-A/600	NLG WHEEL AXLE - INSPECTION
BF GOODRICH CMM 32-49-04	-
SB145-32-0036	-

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

QTY	*FUNCTION*	*PLACE*
1	Does the task	Nose landing gear
1	Helps the other technician	Nose landing gear

I. Preparation

SUBTASK 841-002-A

(1) For aircraft PRE-MOD. SB145-32-0036, make sure that the pressure in the hydraulic system No. 1 is fully released (AMM TASK 29-10-00-860-802-A/200).

(2) For aircraft POST-MOD. SB145-32-0036, install the safety pin of the NLG door solenoid valve (AMM TASK 32-00-02-910-801-A/200).

(3) Make sure that the landing-gear safety pins are installed (AMM TASK 32-00-01-910-801-A/200).

(4) Lift the nose landing gear on a jack (AMM TASK 07-10-00-500-803-A/200).

(5) Turn each of the nose wheels by hand. Make sure that you can turn the wheels without the use of excessive force and that there is no roughness or noise.

(6) Use your hands to apply a push/pull force to the top side of each wheel and make sure that there is no apparent axial play between the axle and the wheel bearings.

NOTE: Problems found in steps (5) and (6) are possibly a sign of failure of the bearings (2) and (8).

J. Removal (Figure 401) (Figure 402) (Figure 403)

SUBTASK 020-002-A

WARNING: WE RECOMMEND YOU TO ALWAYS DEFLATE THE TIRE BEFORE YOU REMOVE THE WHEEL/TIRE ASSEMBLY. BUT, WHEN YOU MUST REMOVE IT ONLY TO GET ACCESS TO OTHER COMPONENTS, YOU CAN REMOVE THE TIRE INFLATED IF:

- **THE TIRE IS NOT DAMAGED**
- **THE TIRE IS WITH THE CORRECT OPERATION PRESSURE. DO NOT WORK WITH HOT TIRES TO PREVENT INJURY.**

(1) Deflate the tire.

(2) Remove the cotter pin (7).

(3) Remove the nut (6), washer (5), and bolt (3).

(4) Remove the wheel nut (4).

(5) Remove the outer seal (Fig. 402, item 13; Fig. 403, item 12) or the integrated seal/ water deflector shield or water deflector shield (11), as applicable.

NOTE: Make sure that the seals, water deflectors, and bearings are sent together with the wheel assembly to the shop for inspection as written in BF GOODRICH CMM 32-49-04.

(6) Remove the outer cone bearing (Fig. 401, item 2; Fig. 402, item 2; Fig. 403, item 2) or outer cone and seal assembly bearing (Fig 404, item 2) as applicable.

(7) Remove the outer cup bearing (Fig. 404, item 12) as applicable.

CAUTION: BE VERY CAREFUL WHEN YOU REMOVE THE NOSE WHEELS FROM THE AXLE, NOT TO CAUSE DAMAGE TO THE CHROMIUM-PLATED AND CADMIUM-PLATED SURFACES OF THE AXLE. FOR THE REPAIR PROCEDURE, IF NECESSARY, REFER TO AMM TASK 32-20-08-200-801-A/600.

(8) Remove the wheel assembly (1).

(9) Remove the inner cup bearing (Fig. 404, item 12) as applicable.

(10) Remove the inner cone bearing (Fig. 401, item 8; Fig. 402, item 8; Fig. 403, item 8) or inner cone and seal assembly bearing (Fig 404, item 2) as applicable.

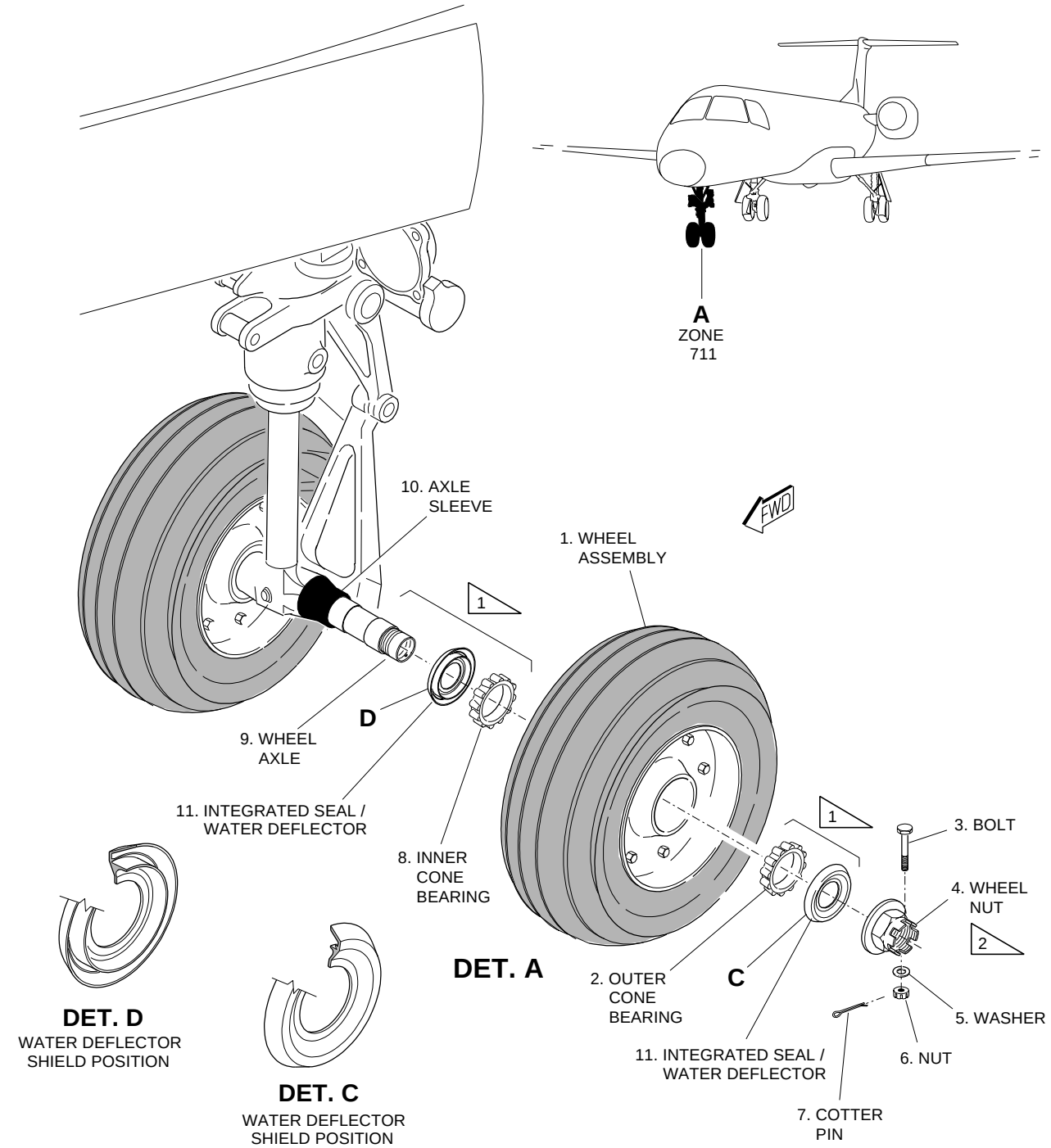
(11) Remove the inner seal (Fig. 402, item 12; Fig. 403, item 11) or the integrated seal/ water deflector shield or water deflector shield (11), as applicable.

NOTE: Do not remove the axle sleeve (10) from the wheel axle (9).

(12) If the removal of the wheel is because of a bearing failure, do the inspection on the NLG wheel axle (9). Refer to AMM TASK 32-20-08-200-801-A/600.

EFFECTIVITY: ALL

Wheel Assembly of the Nose Landing Gear - Removal/Installation
Figure 401



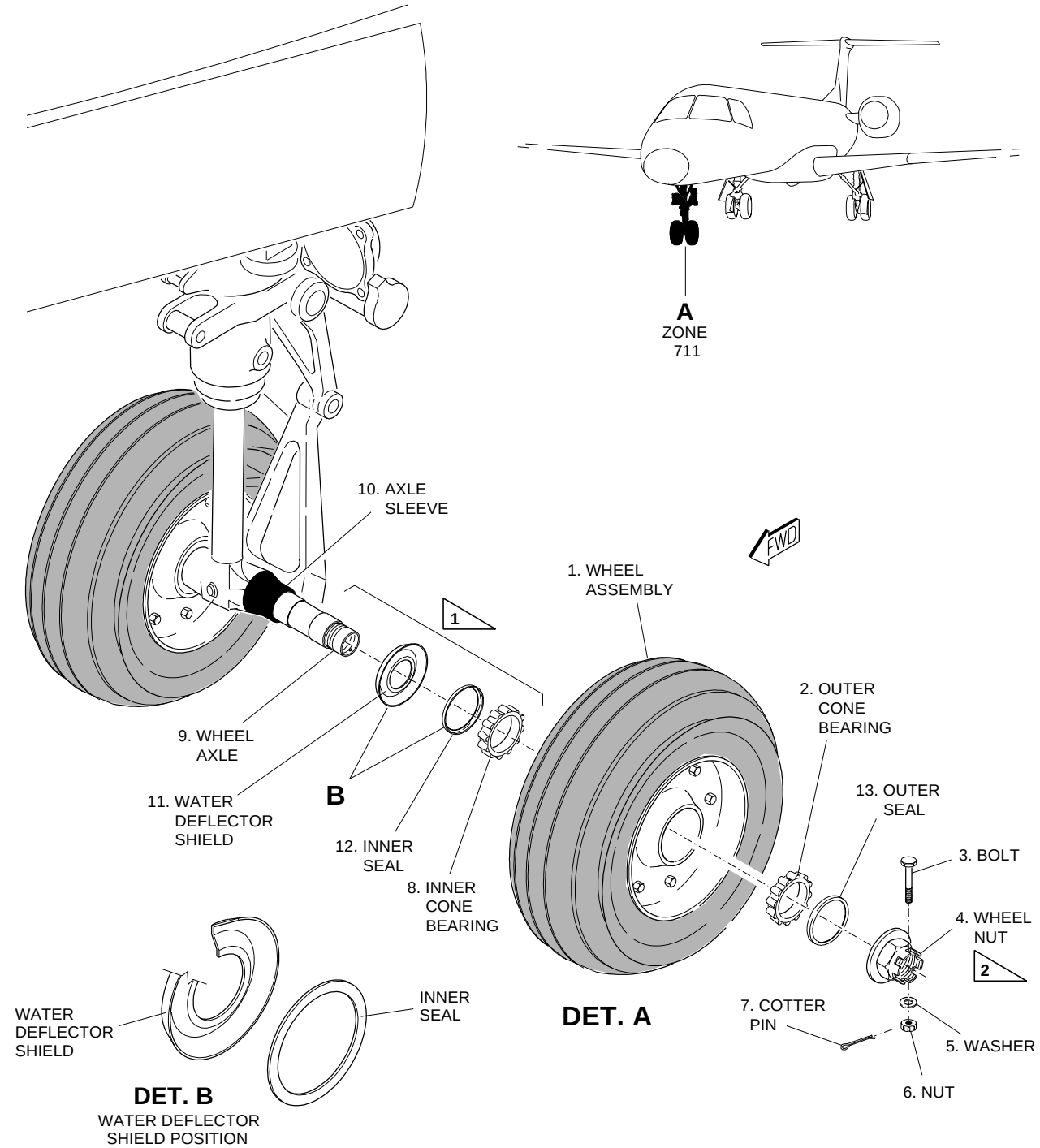
1 AIRCRAFT EQUIPPED WITH INTEGRATED SEAL/WATER DEFLECTOR INBOARD AND OUTBOARD OF THE WHEELS.

2 INITIAL TORQUE: 33.9 Nm (300 lb.in)
FINAL TORQUE: 16.3 − 39.5 N.m (150 − 350 lb.in)

EM145AMM320480C.DGN

EFFECTIVITY: ALL

Wheel Assembly of the Nose Landing Gear - Removal/Installation
Figure 402



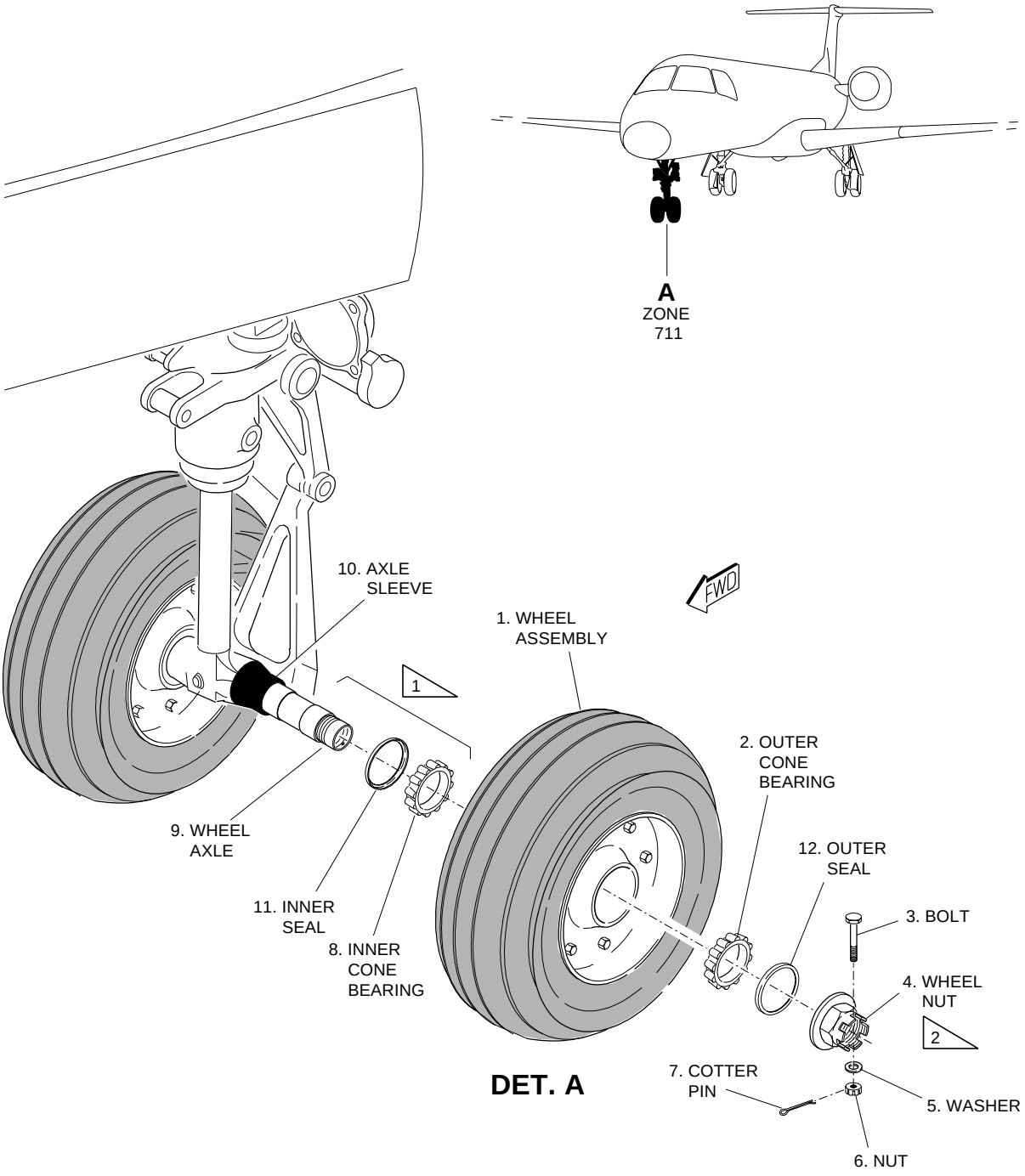
1 AIRCRAFT EQUIPPED WITH WATER DEFLECTOR SHIELD INBOARD OF THE WHEELS.

2 INITIAL TORQUE: 33.9 Nm (300 lb.in)
FINAL TORQUE: 16.3 − 39.5 N.m (150 − 350 lb.in)

EM145AMM320478B.DGN

EFFECTIVITY: ALL

Wheel Assembly of the Nose Landing Gear - Removal/Installation
Figure 403



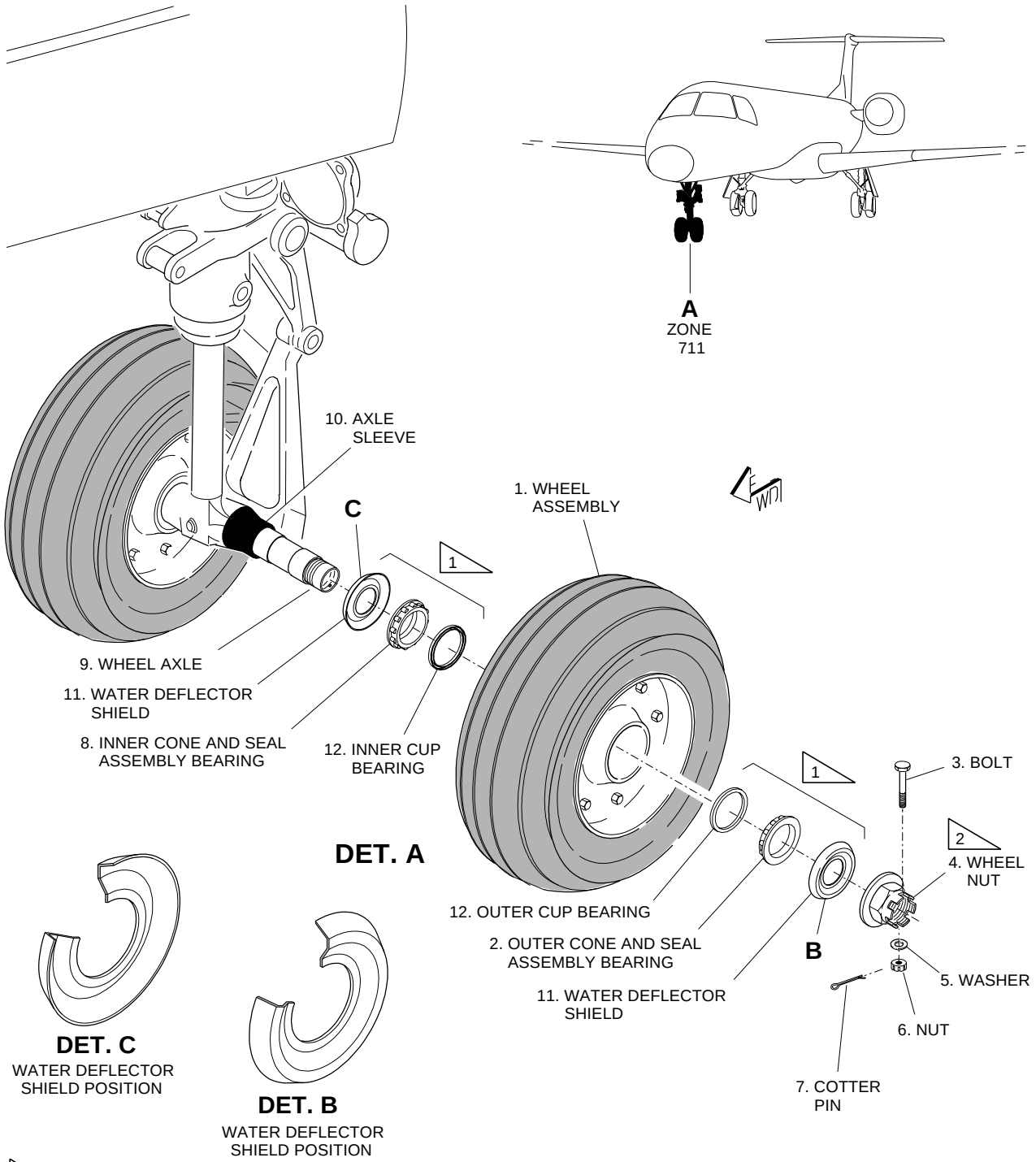
1 AIRCRAFT NOT EQUIPPED WITH WATER DEFLECTOR SHIELD.

2 INITIAL TORQUE: 33.9 Nm (300 lb.in)
FINAL TORQUE: 16.3 − 39.5 N.m (150 − 350 lb.in)

EM145AMM320479B.DGN

EFFECTIVITY: ALL

Wheel Assembly of the Nose Landing Gear - Removal/Installation
Figure 404



1 AIRCRAFT EQUIPPED WITH WATER DEFLECTOR SHIELD INBOARD AND OUTBOARD OF THE WHEELS.

2 INITIAL TORQUE: 33.9 Nm (300 lb.in)
FINAL TORQUE: 16.3 − 39.5 N.m (150 − 350 lb.in)

EM145AMM320716A.DGN

TASK 32-49-05-400-801-A
EFFECTIVITY: ALL

3. WHEEL ASSEMBLY OF THE NOSE LANDING GEAR - INSTALLATION

A. General

(1) This procedure gives the instructions to install the wheel assembly of the nose landing gear.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 07-10-00-500-804-A/200	-
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
AMM TASK 32-49-04-600-801-A/300	NLG WHEEL TIRE - CHECK AND CHARGING
CMM 32-49-04	-
SB145-32-0036	-

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Torque Wrench (0-500 lb.in range)	To tighten the wheel nut	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
MS24665-153	Cotter pin	1
MIL-PRF 680	Cleaning solvent	AR
Grease SHC 100	Mobil Aviation Grease SHC 100	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Nose landing gear
1	Helps the other technician	Nose landing gear

I. Preparation (Figure 401) (Figure 402) (Figure 403)

SUBTASK 841-003-A

CAUTION: USE ONLY MOBIL AVIATION GREASE SHC100. DO NOT MIX DIFFERENT BRANDS OF GREASE.

(1) Make sure that the bearings of the wheel assembly (1) are completely lubricated (filled with grease). Refer to CMM 32-49-04.

NOTE: EMBRAER recommends that you install tires of the same brand to prevent possible vibration.

(2) Clean the wheel axle (9) with cleaning solvent.

(3) Lubricate the threads and the chromium-plated area of the wheel axle (9) with Mobil Aviation Grease SHC100.

J. Installation (Figure 401) (Figure 402) (Figure 403) (Figure 404)

SUBTASK 420-002-A

CAUTION:
- THERE ARE FOUR DIFFERENT WHEEL ASSY SEAL CONFIGURATIONS, WHICH ARE SHOWN IN FIGURES 401, 402, 403 AND 404. MAKE SURE THAT ONLY ONE CONFIGURATION ASSEMBLY IS INSTALLED ON EACH WHEEL. IF NECESSARY, REFER TO FIGURE 401, 402, 403 OR 404. IF YOU ADD MORE WATER DEFLECTORS AND/OR SEALS THAN SPECIFIED, THEY CAN CAUSE DAMAGE TO THE NOSE WHEEL ASSEMBLY.
- MAKE SURE THAT THE WHEEL BEARINGS AND THE SEALS ARE SERVICEABLE BEFORE THE WHEEL INSTALLATION.
- BE CAREFUL TO PREVENT DAMAGE TO THE BEARINGS DURING THE WHEEL INSTALLATION.
- BE VERY CAREFUL WHEN YOU INSTALL THE NOSE WHEELS ON THE AXLE, NOT TO CAUSE DAMAGE TO THE CHROMIUM-PLATED AND CADMIUM-PLATED SURFACES OF THE AXLE.

NOTE: Make sure that the axle sleeve (10) is installed on the wheel axle (9).

(1) For nose wheel assembly equipped with integrated seal/water deflector shield on the inboard and outboard sides (Figure 401):

(a) Install the integrated seal/water deflector shield (11) in the correct position. Refer to DET. C and DET. D.

(b) Install the inner cone bearing (8) on the wheel axle (9).

(c) Put the wheel assembly (1) on the wheel axle (9).

NOTE: Make sure that the tire valve is on the outer side.

(d) Install the outer cone bearing (2) and the integrated seal/water deflector shield (11) on the wheel axle (9). Refer to DET. C and DET. D.

(2) For nose wheel assembly equipped with water deflector shield only on the inboard side and separate from the seal (Figure 402):

(a) Install the water deflector shield (11) in the correct position. Refer to DET. B.

(b) Install the inner seal (12) and inner cone bearing (8) on the wheel axle (9).

(c) Put the wheel assembly (1) on the wheel axle (9).

NOTE: Make sure that the tire valve is on the outer side.

(d) Install the outer cone bearing (2) and the outer seal (13) on the wheel axle (9).

(3) For nose wheel assembly not equipped with water deflector shield (Figure 403):

(a) Install the inner seal (11) and inner cone bearing (8) on the wheel axle (9).

(b) Put the wheel assembly (1) on the wheel axle (9).

NOTE: Make sure that the tire valve is on the outer side.

(c) Install the outer cone bearing (2) and the outer seal (12) on the wheel axle (9).

(4) For nose wheel assembly equipped with /water deflector shield on the inboard and outboard sides (Figure 404):

(a) Install the water deflector shield (11) in the correct position. Refer to DET. C and DET. D.

(b) Install the inner cone and seal assembly bearing (8) on the wheel axle (9).

(c) Install the inner cone bearing (12) on the wheel axle (9).

(d) Put the wheel assembly (1) on the wheel axle (9).

NOTE: Make sure that the tire valve is on the outer side.

(e) Install the outer cone bearing (12) outer cone and seal assembly bearing (2) and the water deflector shield (11) on the wheel axle (9). Refer to DET. C and DET. D.

(5) Install the wheel nut (4) and turn it manually until it touches the outer cone bearing (2).

(6) Tighten the wheel nut (4) and apply a torque of 33.9 N.m (300 lb.in), while you turn the wheel. Turn the wheel assembly (1) in the same direction as that in which the wheel nut (4) is tightened.

NOTE: This procedure is to prevent possible gaps.

(7) Release the torque on the wheel nut (4) to zero.

(8) Apply a torque of 16.3 N.m (150 lb.in) to the wheel nut (4), in only one continuous turn, while you turn the wheel. Turn the wheel assembly (1) in the same direction as that in which the wheel nut (4) is tightened.

NOTE: This procedure will prevent incorrect indication of the break-away torque that will occur when the turning of the nut stops and starts again.

(9) Install the bolt (3), washer (5), nut (6), and cotter pin (7). If necessary, continue to tighten the wheel nut (4) up to a torque of 39.5 N.m (350 lb.in) maximum to make the holes align to permit the bolt (3) installation.

(10) Make sure that you can turn the wheel manually on the wheel axle (9).

K. Follow-on

SUBTASK 842-002-A

(1) Lower the aircraft and remove the jack (AMM TASK 07-10-00-500-804-A/200).

(2) For aircraft POST-MOD. SB145-32-0036, remove the safety pin of the NLG door solenoid valve (AMM TASK 32-00-02-910-801-A/200).

(3) Do a check on the tire for operational pressure (AMM TASK 32-49-04-600-801-A/300).

(4) Remove the safety pins of the landing gear (AMM TASK 32-00-01-910-801-A/200) before the taxi and take-off.