



AIRCRAFT MAINTENANCE MANUAL

WINDSHIELD WIPER - REMOVAL/INSTALLATION

EFFECTIVITY: AIRCRAFT WITH WINDSHIELD WIPER SYSTEM

1. General

- A. This section gives the procedures to remove and install the arm/blade assemblies of the windshield wiper system.
- B. These procedures are applicable to the LH and RH arm/blade assemblies.
- 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
30-41-03-000-801-A	ARM/BLADE ASSEMBLY - REMOVAL	AIRCRAFT WITH WINDSHIELD WIPER SYSTEM
30-41-03-400-801-A	ARM/BLADE ASSEMBLY - INSTALLATION	AIRCRAFT WITH WINDSHIELD WIPER SYSTEM
30-41-03-000-802-A	BLADE REFILL - REMOVAL	AIRCRAFT WITH WINDSHIELD WIPER SYSTEM
30-41-03-400-802-A	BLADE REFILL - INSTALLATION	AIRCRAFT WITH WINDSHIELD WIPER SYSTEM



EMB145 - EMB135

AIRCRAFT
MAINTENANCE MANUAL

TASK 30-41-03-000-801-A

EFFECTIVITY: AIRCRAFT WITH WINDSHIELD WIPER SYSTEM

2. ARM/BLADE ASSEMBLY - REMOVAL

A. General

- (1) This procedure gives the instructions to remove the arm/blade assembly.

B. References

REFERENCE	DESIGNATION
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE

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	LH or RH Forward Fuselage Section II

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) Set switch 1 or 2, installed on the windshield wiper control panel, to TIMER.
- (3) Use the W/S WIPER 1 or W/S WIPER 2 circuit breakers as switches to put the wiper arm in the external position.
- (4) On the circuit breaker panel, open the WIPER 1 and WIPER 2 circuit breakers and attach a DO-NOT-CLOSE tag to them.
 - WIPER 1: (Location tip: DC BUS 1/ICE AND RAIN PROTECTION/WIPER 1).
 - WIPER 2: (Location tip: DC BUS 2/ICE AND RAIN PROTECTION/WIPER 2).



EMB145 – EMB135

AIRCRAFT
MAINTENANCE MANUAL

J. Removal ([Figure 401](#))

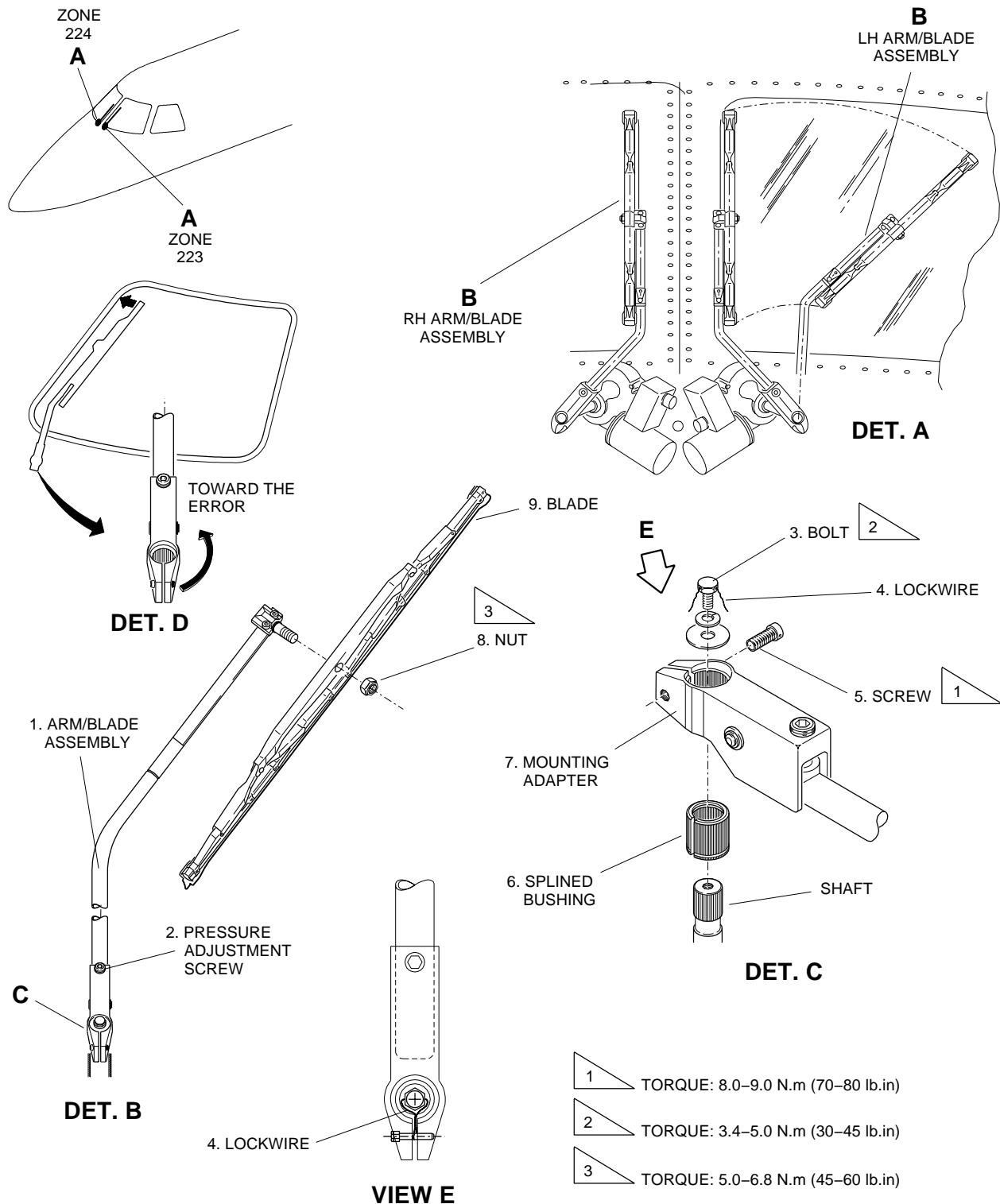
SUBTASK 020-004-A

- (1) To remove the blade, do as follows:
 - (a) Loosen the pressure adjustment screw (2).
 - (b) Remove the nut (8) then remove the blade (9).
- (2) To remove the arm, do as follows:
 - (a) Loosen the pressure adjustment screw (2).
 - (b) Cut the lockwire (4).
 - (c) Loosen the screw (5).
 - (d) Remove the bolt (3).
 - (e) Remove the arm/blade assembly (1).

EFFECTIVITY: AIRCRAFT WITH WINDSHIELD WIPER SYSTEM

Arm/Blade Assembly - Removal/Installation

Figure 401



EM145AMM300011D.DGN



EMB145 - EMB135

AIRCRAFT
MAINTENANCE MANUAL

TASK 30-41-03-400-801-A

EFFECTIVITY: AIRCRAFT WITH WINDSHIELD WIPER SYSTEM

3. ARM/BLADE ASSEMBLY - INSTALLATION

A. General

- (1) This procedure gives the instructions to install the arm/blade assembly.

B. References

REFERENCE	DESIGNATION
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 30-41-03-000-801-A/400	ARM/BLADE ASSEMBLY - REMOVAL
AMM TASK 30-41-03-700-801-A/500	WINDSHIELD WIPER-ARM ASSEMBLY PRESSURE - ADJUSTMENT

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Torque wrench	To apply the torque	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
MS20995C41	Lockwire	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	LH or RH forward fuselage section II
1	Helps the other technician	Cockpit

I. Installation (Figure 401)

SUBTASK 420-004-A

- (1) To install the blade, do as follows:

- (a) Install the blade (9) at its correct position.



EMB145 – EMB135

AIRCRAFT
MAINTENANCE MANUAL

- (b) Tighten the nut (8) with the necessary torque.
- (2) To install the arm, do as follows:
 - (a) Make sure that the shaft of the motor/converter is in the external position.
 - (b) Energize the aircraft with the External DC-Power Supply ([AMM TASK 20-40-01-860-801-A/200](#)).
 - (c) Put the splined bushing (6) in the mounting adapter (7) of the arm/blade assembly (1).
NOTE: Align the slot of the splined bushing (6) with the slot of the mounting adapter (7).
 - (d) With the arm/blade assembly (1) in the external position, put its mounting adapter (7) on the shaft, with the slot of the mounting adapter aligned with the output shaft line. If there is no line on the output shaft, put the drive arm as close to the external position as possible.
 - (e) Tighten the screw (5).
 - (f) Install the bolt (3).

J. Follow-on

SUBTASK 842-004-A

CAUTION: MAKE SURE THAT THE WINDSHIELD SURFACE IS WET WITH WATER AND KEEP IT WET DURING ALL THE PROCEDURE.

- (1) If you only removed and installed the blade, do as follows:
 - (a) On the circuit breaker panel, close the WIPER 1 and WIPER 2 circuit breakers and remove the DO-NOT-CLOSE tag from them.
 - WIPER 1: (Location tip: DC BUS 1/ICE AND RAIN PROTECTION/WIPER 1).
 - WIPER 2: (Location tip: DC BUS 2/ICE AND RAIN PROTECTION/WIPER 2).
 - (b) Adjust the pressure of the arm/blade assembly against the windshield ([AMM TASK 30-41-03-700-801-A/500](#)) until item J step 6 of adjustment.
- (2) If you only removed and installed the arm, do as follows:
 - (a) On the circuit breaker panel, close the WIPER 1 and WIPER 2 circuit breakers.
 - WIPER 1: (Location tip: DC BUS 1/ICE AND RAIN PROTECTION/WIPER 1).
 - WIPER 2: (Location tip: DC BUS 2/ICE AND RAIN PROTECTION/WIPER 2).
 - (b) On the windshield wiper control panel, set switch 1 or 2 to LOW.

- (c) On the circuit breaker panel, open the WIPER 1 or WIPER 2 circuit breaker to stop the arm/blade assembly (1) in the windshield inboard position.
- (d) If the arm/blade assembly (1) does not stop with the blade turned to the windshield inboard position (ideal position), do the steps below:
 - 1 Remove the arm/blade assembly (1) ([AMM TASK 30-41-03-000-801-A/400](#)).
 - 2 Put the arm/blade assembly (1) on the shaft and make sure that the notches of the splined bushing (6) are away from the notches of the shaft.

NOTE: Each notch of the splined bushing (6) shows a blade movement of 3 inches (75 mm), approximately, on the windshield surface.
- (e) Complete the installation of the arm/blade assembly (1) and do steps (2) and (3) again.
- (f) If the arm/blade assembly (1) does not stop with the blade turned to the windshield inboard position (ideal position) again, do the steps below:
 - 1 Remove the arm/blade assembly (1) ([AMM TASK 30-41-03-000-801-A/400](#)) again.
 - 2 Remove the splined bushing (6) from the mounting adapter (7).
 - 3 Put the splined bushing (6) in the mounting adapter (7) with its slot at 90 or 180 degrees from the original position, toward the error (refer to detail D).

NOTE:

 - The rotation of 90 degrees of the splined bushing (6) from the initial position shows a blade movement of 0.7 inches (20 mm), approximately, on the windshield surface.
 - The rotation of 180 degrees of the splined bushing (6) from the initial position shows a blade movement of 1.4 inches (40 mm), approximately, on the windshield surface.
- (g) Torque the screw (5) as necessary.
- (h) Torque the bolt (3) as necessary.
- (i) Safety the bolt (3) with new lockwire (4).
- (j) Adjust the pressure of the arm/blade assembly against the windshield ([AMM TASK 30-41-03-700-801-A/500](#)).
- (k) On the windshield wiper control panel, set switches 1 and 2 to OFF.
- (l) On the circuit breaker panel, close the WIPER 1 and WIPER 2 circuit breakers and remove the DO-NOT-CLOSE tag from them.
- (m) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).



EMB145 - EMB135

AIRCRAFT
MAINTENANCE MANUAL

TASK 30-41-03-000-802-A

EFFECTIVITY: AIRCRAFT WITH WINDSHIELD WIPER SYSTEM

4. BLADE REFILL - REMOVAL

A. General

- (1) This procedure gives the instructions to remove the blade refill.

B. References

REFERENCE	DESIGNATION
AMM TASK 30-41-03-000-801-A/400	ARM/BLADE ASSEMBLY - REMOVAL

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Needle nose pliers	To remove the retainer clip	1

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	LH or RH Forward Fuselage Section II

I. Preparation

SUBTASK 841-005-A

- (1) Remove the blade from the aircraft (AMM TASK 30-41-03-000-801-A/400).

J. Removal (Figure 401)

SUBTASK 020-005-A

- (1) Do these steps for the two sides of the blade:

- (a) Lightly bend the tabs (3) of the retainer clip (2) down.
- (b) Compress the tabs (3) of the retainer clip (2) to release them from the blade mechanism (4).



AIRCRAFT
MAINTENANCE MANUAL

- (c) Move the end of the retainer clip (2) up to loose its locks (1) from the metal strip holes (5).
- (d) Pull the retainer clip (2) to release the blade refill (6) and the metal strips (5).

NOTE: • If it is necessary to use a tool, be careful not to cause damage to the retainer clip (2).
• Keep the removed retainer clip to hold the new blade refill.

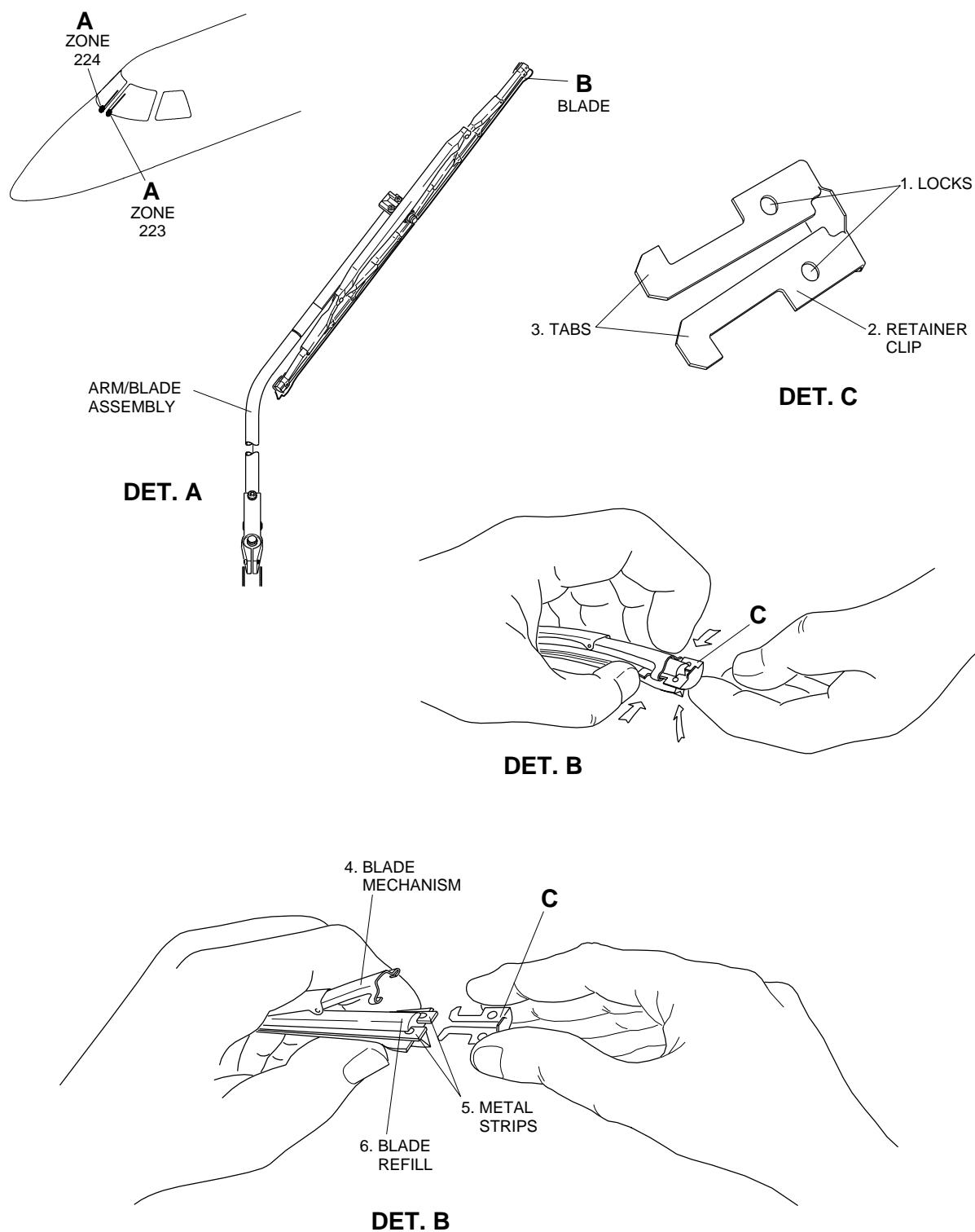
- (2) Move the blade refill (6) away from the blade mechanism (4).

NOTE: There are two thin metal strips (5) between the blade refill (6) and the blade mechanism (4). If the new metal strips are not supplied with your blade refill, keep the old metal strips and use them again.

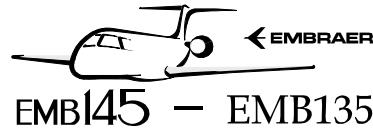
EFFECTIVITY: AIRCRAFT WITH WINDSHIELD WIPER SYSTEM

Blade Refill - Removal/Installation

Figure 402



145AMM300241.MCE



EMB145 - EMB135

AIRCRAFT
MAINTENANCE MANUAL

TASK 30-41-03-400-802-A

EFFECTIVITY: AIRCRAFT WITH WINDSHIELD WIPER SYSTEM

5. BLADE REFILL - INSTALLATION

A. General

- (1) This procedure gives the instructions to install the blade refill.

B. References

REFERENCE	DESIGNATION
AMM TASK 30-41-03-400-801-A/400	ARM/BLADE ASSEMBLY - INSTALLATION

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	LH or RH forward fuselage section II

I. Installation (Figure 401)

SUBTASK 420-005-A

- (1) Put the metal strips (5) on top of the blade refill (6).
- (2) Move the blade refill (6) back into the blade mechanism (4).
- (3) Do these steps for the two sides of the blade:
 - (a) Put the retainer clip (2) back into the end of the blade mechanism (4) to hold it.
 - (b) Lightly bend the tabs (3) of the retainer clip (2) up to lock them in position.

J. Follow-on

SUBTASK 842-005-A

- (1) Install the blade to the aircraft ([AMM TASK 30-41-03-400-801-A/400](#)).

