HIGH STAGE VALVE - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

   A. This section gives the procedures to remove and install the high-stage valve.

   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*
36-11-02-000-801-A	HIGH-STAGE VALVE - REMOVAL	ALL
36-11-02-400-801-A	HIGH-STAGE VALVE - INSTALLATION	ALL
36-11-02-000-802-A	HIGH-STAGE VALVE FILTER - REMOVAL	ALL
36-11-02-400-802-A	HIGH-STAGE VALVE FILTER - INSTALLATION	ALL

TASK 36-11-02-000-801-A
EFFECTIVITY: ALL

2. HIGH-STAGE VALVE - REMOVAL

A. General

(1) This task gives the instructions to remove the high-stage valve.

(2) This task is applicable to the high-stage valve of the LH engine and RH engine.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-43-00/100	- COMPONENT LOCATION
S.B.145-36-0048	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
412	412BT - Upper cowling access panel	LH Engine
422	422BT - Upper cowling access panel	RH Engine

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Protective plastic plugs	To protect the ducts	

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 and RH engines

I. Preparation

SUBTASK 841-002-A

(1) Remove the upper cowling access panel 412BT or 422BT (AMM MPP 06-43-00/100).

(2) On the circuit breaker panel, open the applicable circuit breaker and attach a DO-NOT-CLOSE tag to it.

- HSV 1 (Location tip: DC BUS1 / AIR COND/PNEU / HSV1)

- HSV 2 (Location tip: DC BUS2 / AIR COND/PNEU / HSV2)

J. Removal (Figure 401)

SUBTASK 020-002-A

EFFECTIVITY: PRE-MOD. S.B. 145-36-0045

WARNING: DO NOT TOUCH THE BLEED-AIR SYSTEM DUCTS OR COMPONENTS IMMEDIATELY AFTER THE ENGINE OR APU STOPS BECAUSE OF THE HIGH BLEED-AIR TEMPERATURE.

(1) Disconnect the electrical connector (10).

(2) (For A/C POST-MOD. S.B.145-36-0048) Remove the blankets of V-Clamps (7) and (9).

(3) Release the Marman V-band clamps (7) and (9) to disconnect the high-stage valve from the ducts.

(4) Remove the nut (1), washers (2), (3), (5), and bolt (6) to disconnect the anti-rotation support (4).

(5) Remove the high-stage valve (8).

(6) Install the protective plastic plugs to the ducts.

K. Removal (Figure 402)

SUBTASK 020-003-A

EFFECTIVITY: POST-MOD. S.B. 145-36-0045

WARNING: DO NOT TOUCH THE BLEED-AIR SYSTEM DUCTS OR COMPONENTS IMMEDIATELY AFTER THE ENGINE OR APU STOPS BECAUSE OF THE HIGH BLEED-AIR TEMPERATURE.

(1) Disconnect the electrical connector (1).

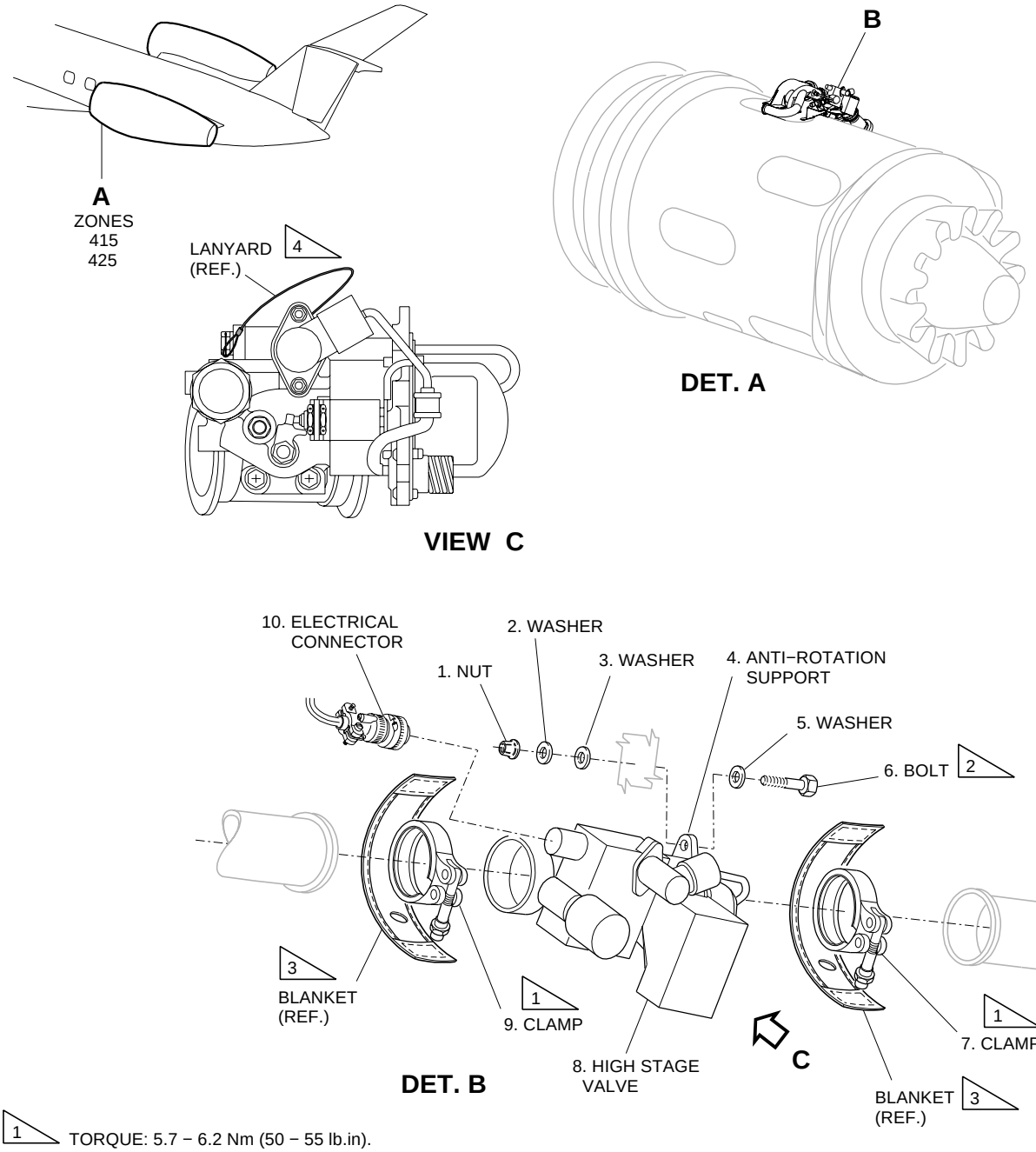
(2) Release the Marman V-band clamps (3) and (10) to disconnect the high-stage valve from the ducts.

(3) Remove the nut (9), washers (8), (7), (5), and bolt (4) to disconnect the support (6).

(4) Remove the high-stage valve (2).

(5) Install the protective plastic plugs to the ducts.

EFFECTIVITY: PRE-MOD. S.B. 145-36-0045
High-Stage Valve - Removal/Installation
Figure 401



1 TORQUE: 5.7 − 6.2 Nm (50 − 55 lb.in).
REFER TO TASK 20−10−10−910−801− A FOR CORRECT INSTALLATION OF V−CLAMP.

2 TORQUE: 3.7 − 7.9 N.m (33 − 70 lb.in).

3 FOR AIRCRAFT POST−MOD. S.B. 145−36−0048.

4 MAKE SURE THAT THE LANYARD CABLE IS POSITIONED AFT OF AND FAR AWAY FROM THE ENGINE FIRE LOOP DETECTOR. THIS WILL PREVENT CHAFING ON THE ENGINE FIRE LOOP DETECTOR.

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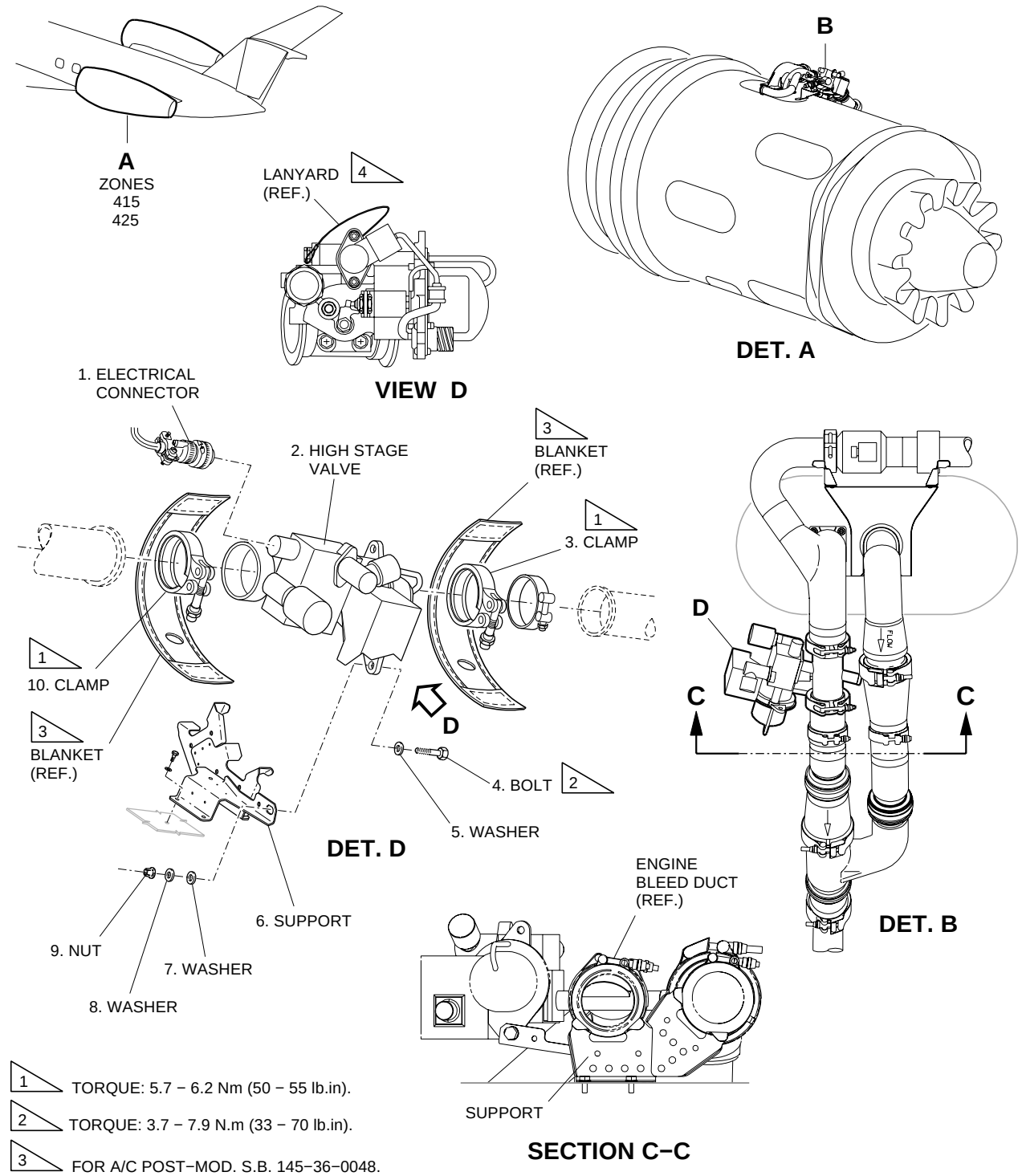
EFFECTIVITY: POST-MOD. S.B. 145-36-0045
High-Stage Valve - Removal/Installation
Figure 402



1 TORQUE: 5.7 − 6.2 Nm (50 − 55 lb.in).

2 TORQUE: 3.7 − 7.9 N.m (33 − 70 lb.in).

3 FOR A/C POST−MOD. S.B. 145−36−0048.

4 MAKE SURE THAT THE LANYARD CABLE IS POSITIONED AFT OF AND FAR AWAY FROM THE ENGINE FIRE LOOP DETECTOR. THIS WILL PREVENT CHAFING ON THE ENGINE FIRE LOOP DETECTOR.

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TASK 36-11-02-400-801-A
EFFECTIVITY: ALL

3. HIGH-STAGE VALVE - INSTALLATION

A. General

(1) This procedure gives the instructions to install the high-stage valve.

(2) This task is applicable to the high-stage valve of the LH engine and RH engine.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-43-00/100	- COMPONENT LOCATION
AMM TASK 20-10-10-910-801-A/200	V-BAND CLAMPS - INSTALLATION
AMM TASK 36-00-00-700-803-A/500	AIR BLEED SYSTEM - OPERATIONAL TEST
AMM TASK 36-11-09-820-801-A/200	ENGINE-BLEED SYSTEM DUCT LINES - ADJUSTMENT
S.B.145-36-0048	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
412	412BT - Upper cowling access panel	LH Engine
422	422BT - Upper cowling access panel	RH Engine

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 and RH engines

I. Installation (Figure 401)

SUBTASK 420-002-A
EFFECTIVITY: PRE-MOD. S.B. 145-36-0045

(1) Remove the protective plastic plugs from the ducts.

(2) Put the high-stage valve (8) with the arrow in the bleed-air flow direction in the installation position.

(3) Install the bolt (6), washers (5), (3), (2), and the nut (1) to connect the anti-rotation support (4).

CAUTION:
- BEFORE YOU INSTALL THE ENGINE BLEED VALVE, MAKE SURE THAT IT IS NOT BLOCKED IN THE STOWED POSITION.
- REFER TO AMM TASK 20-10-10-910-801-A/200 FOR CORRECT INSTALLATION OF MARMAN V-CLAMP.

(4) Connect the high-stage valve ducts and tighten the Marman V-band clamps (7) and (9) to the torque shown in (Figure 401).

(5) Tighten the bolt (6) and nut (1) that attach the high-stage valve (8) to the support (4).

(6) (For A/C POST-MOD. S.B.145-36-0048) Install the blankets of Marman V-band Clamps (7) and (9).

(7) NOTE: If there is tension at the connection and/or the ducts are misaligned, refer to AMM TASK 36-11-09-820-801-A/200.

Connect the electrical connector (10).

CAUTION: MAKE SURE THAT THE LANYARD CABLE OF THE VALVE IS POSITIONED AFT OF AND FAR AWAY FROM THE ENGINE FIRE LOOP DETECTOR. THIS WILL PREVENT CHAFING ON THE ENGINE FIRE LOOP DETECTOR.

(8) If necessary, reroute the valve lanyard cable backwards to prevent chafing on the fire loop detector.

J. Installation (Figure 402)

SUBTASK 420-003-A

EFFECTIVITY: POST-MOD. S.B. 145-36-0045

(1) Remove the protective plastic plugs from the ducts.

(2) Put the high-stage valve (2) with the arrow in the bleed-air flow direction in the installation position.

(3) Install the bolt (4), washers (5), (7), (8), and the nut (9) to connect the support (6).

CAUTION:
- BEFORE YOU INSTALL THE ENGINE BLEED VALVE, MAKE SURE THAT IT IS NOT BLOCKED IN THE STOWED POSITION.
- REFER TO AMM TASK 20-10-10-910-801-A/200 FOR CORRECT INSTALLATION OF MARMAN V-CLAMP.

(4) Connect the high-stage valve ducts and tighten the Marman V-band clamps (3) and (10) to the torque shown in (Figure 402).

(5) Tighten the bolt (4) and nut (9) that attach the high-stage valve (2) to the support (6).

(6) NOTE: If there is tension at the connection and/or the ducts are misaligned, refer to AMM TASK 36-11-09-820-801-A/200.

Connect the electrical connector (1).

CAUTION: MAKE SURE THAT THE LANYARD CABLE OF THE VALVE IS POSITIONED AFT OF AND FAR AWAY FROM THE ENGINE FIRE LOOP DETECTOR. THIS WILL PREVENT CHAFING ON THE ENGINE FIRE LOOP DETECTOR.

(7) If necessary, reroute the valve lanyard cable backwards to prevent chafing on the fire loop detector.

K. Follow-on

SUBTASK 842-002-A

(1) Install the upper cowling access panel 412BT or 422BT (AMM MPP 06-43-00/100).

(2) On the circuit breaker panel, close the applicable circuit breaker below and remove the DO-NOT-CLOSE tag from it.

- HSV 1 (Location tip: DC BUS1 / AIR COND/PNEU / HSV1)
- HSV 2 (Location tip: DC BUS2 / AIR COND/PNEU / HSV2)

(3) Do the Operational Test of the Air Bleed System (AMM TASK 36-00-00-700-803-A/500).

TASK 36-11-02-000-802-A
EFFECTIVITY: ALL

4. HIGH-STAGE VALVE FILTER - REMOVAL

A. General

(1) This task gives the instructions to remove the filter from the high-stage valve.

(2) This task is applicable to the high-stage valve of the LH engine and RH engine.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-43-00/100	- COMPONENT LOCATION

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
412	412BT - Upper cowling access panel	LH Engine
422	422BT - Upper cowling access panel	RH Engine

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 and RH engines

I. Preparation

SUBTASK 841-003-A

(1) Remove the upper cowling access panel 412BT or 422BT (AMM MPP 06-43-00/100).

(2) On the circuit breaker panel, open one of these circuit breakers, as applicable and attach a DO-NOT-CLOSE tag to it.

- HSV 1 (Location tip: DC BUS1 / AIR COND/PNEU / HSV1).
- HSV 2 (Location tip: DC BUS2 / AIR COND/PNEU / HSV2).

J. Removal (Figure 403)

SUBTASK 020-004-A

WARNING: DO NOT TOUCH THE BLEED-AIR SYSTEM DUCTS OR COMPONENTS IMMEDIATELY AFTER THE ENGINE OR APU STOPS BECAUSE OF THE HIGH BLEED-AIR TEMPERATURE.

(1) Remove the lockwire (1) from the plug.

(2) Remove the plug (2) from the high-stage valve.

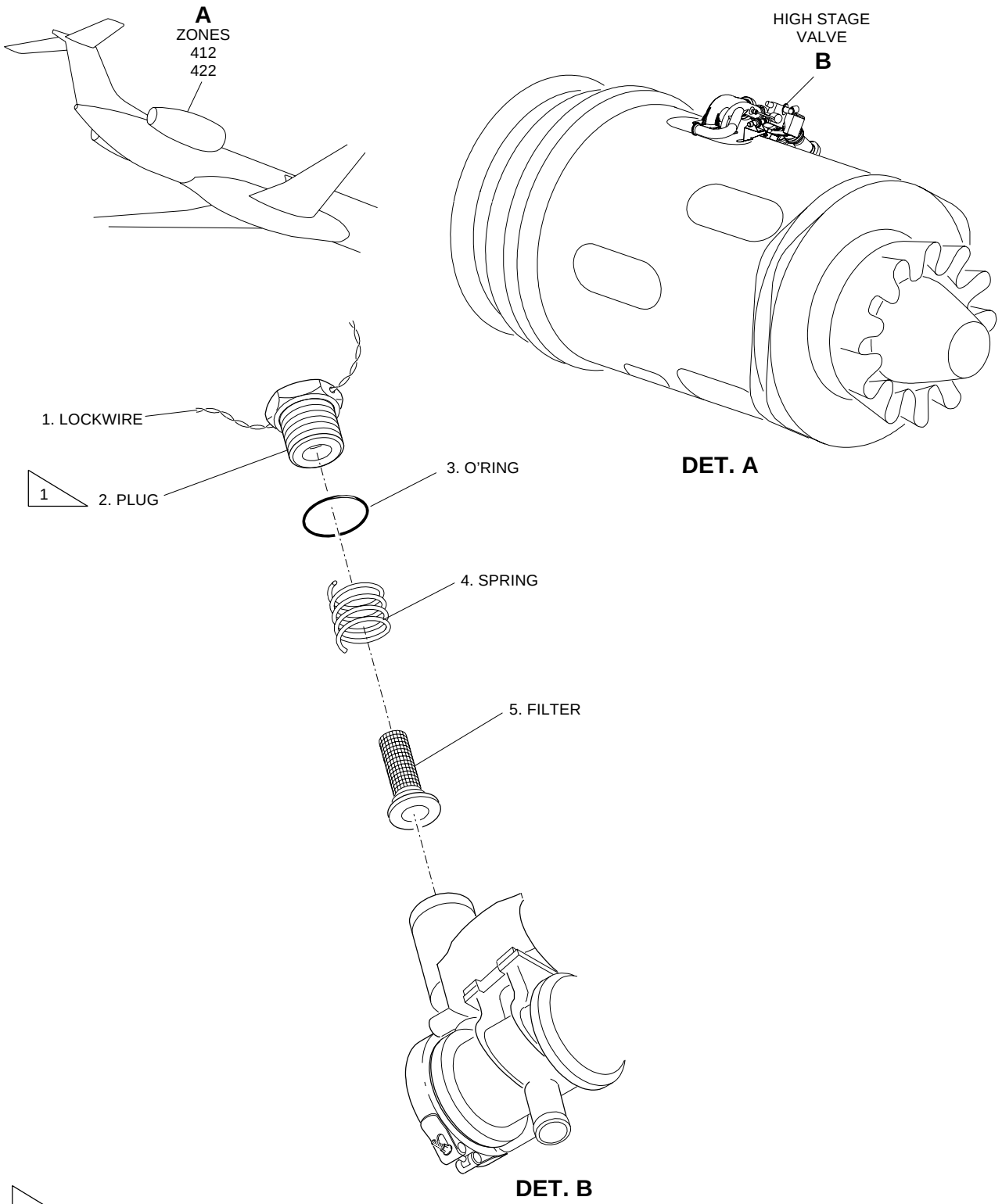
(3) Remove the O-ring (3) and spring (4) from the filter (5).

(4) Remove the filter (5) from the high-stage valve.

(5) Install the plug (2) to the high-stage valve to prevent contamination.

EFFECTIVITY: ALL

High-Stage Valve Filter - Removal/Installation
Figure 403



TASK 36-11-02-400-802-A
EFFECTIVITY: ALL

5. HIGH-STAGE VALVE FILTER - INSTALLATION

A. General

(1) This task gives the instructions to install the filter in the high-stage valve.

(2) This task is applicable to the high-stage valve of the LH engine and RH engine.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-43-00/100	- COMPONENT LOCATION
AMM TASK 36-00-00-700-803-A/500	AIR BLEED SYSTEM - OPERATIONAL TEST
IPC 36-11-00	ENGINE BLEED AIR SYSTEM

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
412	412BT - Upper cowling access panel	LH Engine
422	422BT - Upper cowling access panel	RH Engine

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Torque wrench (Range: 0 - 75 lb.in)	To tighten the plug	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Safety Goggles	For protection of technician's eyes	1
Commercially available	Neoprene or Rubber Gloves	For protection of technician's hands	1

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
MS20995C20	Lockwire	AR
SAE-AS8660	Silicone Grease Compound DC-4 or DC-44 (Dow Corning 4 or Dow Corning 44)	AR
-	Mo-Lith No. 2 Thread Lubricant	AR

G. Expendable Parts

ITEM	*IPC REFERENCE (VENDOR REFERENCE)*	*QTY*
O-ring	IPC 36-11-00	AR

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	LH and RH engines

I. Installation (Figure 403)

SUBTASK 420-004-A

(1) Remove the plug (2) from the high-stage valve.

CAUTION: REFER TO FIGURE 403 FOR THE CORRECT INSTALLATION POSITION OF THE FILTER IN THE HIGH-STAGE VALVE.

(2) Install the filter (5) and spring (4) in the high-stage valve.

WARNING:
- **USE SILICONE GREASE COMPOUND DC44 (DOW CORNING 44) CORRECTLY. IT IS A FLAMMABLE MATERIAL AND CAN CAUSE A BAD EFFECT ON YOUR HEALTH AND SAFETY.**
- **BEFORE YOU USE THE GREASE, GET THE MATERIAL SAFETY DATA SHEET FROM THE MANUFACTURER OR SUPPLIER AND READ IT CAREFULLY.**
- **PUT ON PROTECTIVE SPLASH GOGGLES AND NEOPRENE OR RUBBER GLOVES TO PREVENT PERSONNEL INJURIES.**
- **MAKE SURE THAT YOU HAVE SUFFICIENT AIRFLOW TO KEEP THE GREASE FUMES BELOW THE MATERIAL SAFETY DATA SHEET LIMIT.**

(3) Lubricate the O-ring (3) with grease DC-4 or DC-44. Put the O-ring (3) on the plug (2).

WARNING:
- **USE MO-LITH No. 2 THREAD LUBRICANT CORRECTLY. IT IS A FLAMMABLE MATERIAL AND CAN CAUSE A BAD EFFECT ON YOUR HEALTH AND SAFETY.**
- **BEFORE YOU USE THE GREASE, GET THE MATERIAL SAFETY DATA SHEET FROM THE MANUFACTURER OR SUPPLIER AND READ IT CAREFULLY.**
- **PUT ON PROTECTIVE SPLASH GOGGLES AND NEOPRENE OR RUBBER GLOVES TO PREVENT PERSONNEL INJURIES.**
- **MAKE SURE THAT YOU HAVE SUFFICIENT AIRFLOW TO KEEP THE LUBRICANT FUMES BELOW THE MATERIAL SAFETY DATA SHEET LIMIT.**

(4) Lubricate the threads of the plug (2) with lubricant Mo-Lith No. 2.

(5) Install the plug (2) in the high-stage valve.

(6) Tighten the plug (2) to the torque specified in (Figure 403).

(7) Safety the plug (2) with lockwire (1).

J. Follow-on

SUBTASK 842-003-A

(1) Install the upper cowling access panel 412BT or 422BT (AMM MPP 06-43-00/100).

(2) On the circuit breaker panel, close of one of these circuit breakers, as applicable, and remove the DO-NOT-CLOSE tag from it.

- HSV 1 (Location tip: DC BUS1 / AIR COND/PNEU / HSV1).
- HSV 2 (Location tip: DC BUS2 / AIR COND/PNEU / HSV2).

(3) Do the Operational Test of the Air Bleed System (AMM TASK 36-00-00-700-803-A/500).