DUAL TEMPERATURE CONTROL VALVE - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

A. This section gives the procedures to remove and install the dual temperature control valves of the cooling pack system.

B. These procedures are applicable to the LH and RH dual temperature control valves.

C. The LH dual temperature control valve is installed on the LH side of the forward lower fairing.

D. The RH dual temperature control valve is installed on the RH side of the forward lower fairing.

E. 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*
21-60-01-000-801-A	DUAL TEMPERATURE CONTROL VALVE - REMOVAL	ALL
21-60-01-400-801-A	DUAL TEMPERATURE CONTROL VALVE - INSTALLATION	ALL

TASK 21-60-01-000-801-A
EFFECTIVITY: ALL

2. DUAL TEMPERATURE CONTROL VALVE - REMOVAL

A. General

(1) This task gives the procedure to remove the dual temperature control valves.

(2) The dual temperature control valves are installed in the forward lower fairing, zone 191.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-41-01/100	-
AMM MPP 20-10-02/200	- MAINTENANCE PRACTICES
AMM TASK 20-10-03-000-801-A/400	TUBING - REMOVAL

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
191	191KL	LH side of the forward lower fairing
191	191EL	LH side of the forward lower fairing
191	191LR	RH side of the forward lower fairing
191	191FR	RH side of the forward lower fairing

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Plastic spatula - P/N GTP 530A	To help remove the rubber connection	1

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
Temporary Rubber Lubricant	P- 80 RUBBER LUBRICANT	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	LH or RH side of the forward lower fairing

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.

WARNING: DO NOT TOUCH THE COOLING PACK SYSTEM DUCTS OR COMPONENTS IMMEDIATELY AFTER THE SYSTEM IS TURNED OFF. THE HIGH AIR TEMPERATURE CAN CAUSE INJURY TO YOU.

CAUTION: BE CAREFUL WHEN YOU HANDLE THE PACKS, VALVES, SENSING ELEMENTS, AND AIR CONDITIONING DUCTS. DO NOT LET OIL, GREASE OR RESIN GET ON THESE COMPONENTS.

(1) On the Circuit Breaker Panel, open the PACK 1 and PACK 2 circuit breakers and attach a DO-NOT-CLOSE tag to them.

(2) Remove access panels as applicable:

- 191KL and 191EL (AMM MPP 06-41-01/100), for the LH dual temperature control valve.
- 191LR and 191 FR (AMM MPP 06-41-01/100), for the RH dual temperature control valve.

J. Removal (Figure 401)

SUBTASK 020-002-A

WARNING: DO NOT TOUCH THE BLEED-AIR SYSTEM DUCTS OR COMPONENTS IMMEDIATELY AFTER THE ENGINE OR APU STOPS. THE HIGH TEMPERATURE OF THE BLEED-AIR CAN CAUSE INJURIES TO PERSONS.

(1) To remove the RH dual temperature control valve, do as follows:

(a) NOTE: The removal procedure is almost the same for the two LH and RH dual temperature control valves.

Disconnect the electrical connector (13).

CAUTION: USE ONLY PROTECTIVE CAPS FOR THE PROTECTION OF CONNECTOR PINS OR SOCKETS IN ELECTRICAL CONNECTORS. OTHER MATERIALS CAN CAUSE DAMAGE TO THE CONNECTOR PINS OR SOCKETS, OR LET UNWANTED MATERIALS STAY IN THE CONNECTOR

(b) Put a protective cap on the electrical connector.

(c) Loosen the clamps (3) and (14), (16) and (18).

(d) Disconnect the rubber connections (20) and tubes (1), (2).

NOTE: You can find the rubber connections stuck on the ducts. You can use a polyethylene spatula or a tie-down strap in association with a thin layer of

P-80 lubricant to unbind the rubber connections from the tubes. Be careful not to damage the connection and the tubes.

(e) Loosen the clamp (15), disconnect the rubber connection from ACM (REF.), and if necessary, remove the tube (2).

CAUTION: PUT CAPS ON ALL LINES AND FITTINGS AND MAKE SURE THAT THE AREA IS CLEAN AND FREE OF ALL UNWANTED FLUID. DIRT CAN CAUSE SYSTEM CONTAMINATION, LEAKAGE, AND DAMAGE TO COMPONENTS.

(f) Disconnect the servo tubes (4) and (9). Refer to AMM TASK 20-10-03-000-801-A/400.

(g) If necessary, remove the servo tube (4). Refer to AMM TASK 20-10-03-000-801-A/400.

(h) Remove the V- coupling (11).

(i) Put protective cap/plugs on all openings.

(j) Cut the lock wire (8) (AMM MPP 20-10-02/200) and remove the clamp (12) from the support structure.

(k) Disconnect the rubber connections (19) and remove Y-duct (17).

NOTE: You can find the rubber connections stuck on the ducts. You can use a polyethylene spatula or a tie-down strap in association with a this layer of P-80 lubricant to unbind the rubber connections from the tubes. Be careful not to damage the connection and the tubes.

(l) Remove the bolts (10) and washers (7) that attach the support (5) to the aircraft structure.

(m) Remove the dual temperature control valve (6) and Y-duct (17) from the aircraft.

(n) On a bench, carefully remove the rubber connections (19) and disconnect the Y-duct (17) from the dual temperature control valve (6).

(o) Remove the dual temperature control valve (6).

(2) To remove the LH dual temperature control valve, do as follows:

NOTE: The removal procedure is almost the same for both LH and RH dual temperature control valves.

(a) Disconnect the electrical connector (13).

CAUTION: USE ONLY PROTECTIVE CAPS FOR THE PROTECTION OF CONNECTOR PINS OR SOCKETS IN ELECTRICAL CONNECTORS. OTHER MATERIALS CAN CAUSE DAMAGE TO THE CONNECTOR PINS OR SOCKETS, OR LET UNWANTED MATERIALS STAY IN THE CONNECTOR

(b) Put a protective cap on the electrical connector.

CAUTION: PUT CAPS ON ALL LINES AND FITTINGS AND MAKE SURE THAT THE AREA IS CLEAN AND FREE OF ALL UNWANTED FLUID. DIRT CAN CAUSE SYSTEM CONTAMINATION, LEAKAGE, AND DAMAGE TO COMPONENTS

(c) Disconnect the servo tubes (4) and (9).

(d) Cut the lock wire (8) (AMM MPP 20-10-02/200) and remove the clamp (12) from the support structure

(e) Remove the V- coupling (11).

(f) Loosen the clamps (3) and (14), (16) and (18).

(g) Disconnect the rubber connections (20) and tubes (1), (2).

NOTE: You can find the rubber connections stuck on the ducts. You can use a polyethylene spatula in association with a thin layer of P-80 lubricant to unbind the rubber connections from the tubes. Be careful not to damage the connection and the tubes.

(h) Remove the bolts (10) and washers (7) that attach the support (5) to the aircraft structure.

(i) Remove the dual temperature control valve (6) and Y-duct (17) from the aircraft.

(j) On a bench, carefully remove the rubber connections (19) and disconnect the Y-duct (17) from the dual temperature control valve (6).

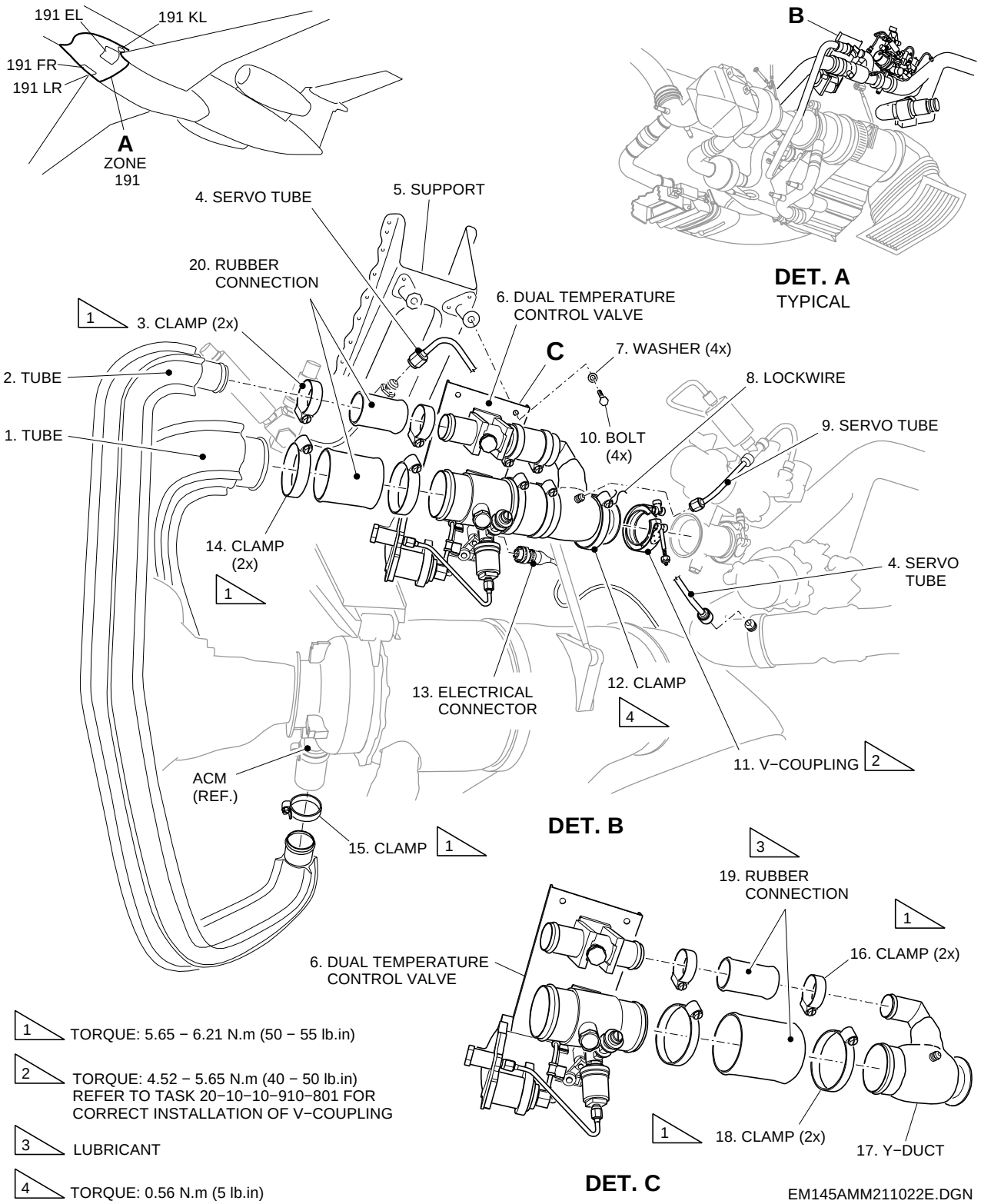
(k) Remove the dual temperature control valve (6).

CAUTION: PUT CAPS ON ALL LINES AND FITTINGS AND MAKE SURE THAT THE AREA IS CLEAN AND FREE OF ALL UNWANTED FLUID. DIRT CAN CAUSE SYSTEM CONTAMINATION, LEAKAGE, AND DAMAGE TO COMPONENTS.

(l) Put protective cap/plugs on all openings.

EFFECTIVITY: ALL

Dual Temperature Control Valve - Removal/Installation
Figure 401



TASK 21-60-01-400-801-A
EFFECTIVITY: ALL

3. DUAL TEMPERATURE CONTROL VALVE - INSTALLATION

A. General

(1) This task gives the procedure to install the dual temperature control valves.

(2) The dual temperature control valves are installed in the forward lower fairing, zone 191.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-41-01/100	-
AMM MPP 20-10-02/200	- MAINTENANCE PRACTICES
AMM MPP 21-51-14/600	- INSPECTION/CHECK
AMM TASK 20-10-03-400-801-A/400	TUBING - INSTALLATION
AMM TASK 20-10-10-910-801-A/200	V-BAND CLAMPS - INSTALLATION
AMM TASK 21-51-00-700-802-A/500	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
191	191KL	LH side of the forward lower fairing
191	191EL	LH side of the forward lower fairing
191	191LR	RH side of the forward lower fairing
191	191FR	RH side of the forward lower fairing

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Torque wrench (Range: 0-100 lb.in)	To tighten the clamps	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
Temporary Rubber Lubricant	P- 80 RUBBER LUBRICANT	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	LH or RH side of the forward lower fairing

I. Installation (Figure 401)

SUBTASK 420-002-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.

WARNING: DO NOT TOUCH THE COOLING PACK SYSTEM DUCTS OR COMPONENTS IMMEDIATELY AFTER THE SYSTEM IS TURNED OFF. THE HIGH AIR TEMPERATURE CAN CAUSE INJURY TO YOU.

CAUTION: BE CAREFUL WHEN YOU HANDLE THE PACKS, VALVES, SENSING ELEMENTS, AND AIR CONDITIONING DUCTS. DO NOT LET OIL, GREASE OR RESIN GET ON THESE COMPONENTS.

(1) NOTE: The installation procedure is almost the same for the two LH and RH dual temperature control valves.

To install the LH dual temperature control valve, do as follows:

(a) Remove the protective cap/plugs from the ducts.

(b) Remove the protective cap/plug from the servo tubes.

(c) Remove the protective cap from the electrical connector (13).

(d) Apply a thin layer of lubricant P - 80 RUBBER LUBRICANT EMULSION on the rubber connections (19).

(e) On a bench, connect the rubber connections (19) to the Y-duct (17), and tighten the clamps (16) and (18).

(f) Put the dual temperature control valve (6) and Y-duct (17) on the support (5) at the fuselage.

(g) Install the washers (7) and bolts (10) that attach the dual temperature control valve (6) to its structure support.

(h) Connect the tubes and flexible connections (1) and (2) to the adjacent tubes and attach the clamps (3) and (14).

NOTE: Before installation, make sure that the duct flanges and clamps are in good conditions (AMM MPP 21-51-14/600). If any duct and/or clamp shows signs of damage, replace it (them) as applicable.

(i) Use a torque wrench to torque the clamps (3), (14), (16), (18) to 5.65 - 6.21 N.m (50 - 55 lb.in).

NOTE: When you install the clamps (3), (14), (16), (18), pay attention to the correct position of the inner shield during the torque application, to not

block the inner shield tip with the hex bolt head or with the convoluted spring.

(j) After the initial torque is complete, use a torque wrench and apply a torque of 5.65 - 6.21 N.m (50 - 55 lb.in) to the clamps (3), (14), (16), (18) again.

(k) Install the clamp (12) that attaches the Y-duct (17) to the aircraft structure.

(l) Use a torque wrench to torque the clamp (12) to 0.56 N.m (5.0 lb.in).

(m) Install the lock wire (8) to the clamp (12) as necessary (AMM MPP 20-10-02/200).

(n) Install the V-coupling (14) that attach the tubes (6) and (7) to the pack valve (REF).

(o) Use a torque wrench to torque the V- coupling (11) to 4.52 - 5.65 N.m (40 - 50 lb.in). Refer to AMM TASK 20-10-10-910-801-A/200 for correct coupling installation.

(p) If you disconnected or removed the servo tubes (4) and (9), connect or install them again. Refer to AMM TASK 20-10-03-400-801-A/400.

(q) Connect the electrical connector (13).

(2) To install the RH dual temperature control valve, do as follows:

(a) Remove the protective cap/plugs from the ducts.

(b) Remove the protective cap/plug from the servo tubes.

(c) Remove the protective cap from the electrical connector (13).

(d) Apply a thin layer of lubricant P - 80 RUBBER LUBRICANT EMULSION on the rubber connections (19).

(e) On a bench, connect the rubber connections (19) to Y-duct (17), and tighten the clamps (16) and (18).

(f) Put the dual temperature control valve (6) and Y-duct (17) on the support (6) at the fuselage.

NOTE: Make sure that the Y-duct (17) are correctly aligned with the adjacent ducts.

(g) Install the washers (7) and bolts (10) that attach the dual temperature control valve (6) to its structure support.

(h) Install the V-coupling (11) that attach the Y-duct (17) to the pack valve (REF). Refer to AMM TASK 20-10-10-910-801-A/200 for correct coupling installation.

(i) Use a torque wrench to torque the V- coupling (17) to 4.52 - 5.65 N.m (40 - 50 lb.in).

(j) Install the clamp (12) that attaches the Y-duct (17) to the aircraft structure.

(k) Use a torque wrench to torque the clamp (11) to 0.56 N.m (5.0 lb.in).

(l) Install the lock wire (8) to the clamp (12) as necessary (AMM MPP 20-10-02/200).

(m) If you disconnected or removed the servo tubes (4) and (9), connect or install them again. Refer to AMM TASK 20-10-03-400-801-A/400.

(n) Connect the rubber connections (20) and ducts (1) and (2) to the dual temperature control valve (6) and attach the clamps (3) and (14).

NOTE: Before installation, make sure that the duct flanges and clamps are in good conditions (AMM MPP 21-51-14/600). If any duct and/or clamp shows signs of damage, replace it (them) as applicable.

(o) Use a torque wrench to torque the clamps (3), (14), (16), (18) and (15) to 5.65 - 6.21 N.m (50 - 55 lb.in).

NOTE: When you install the clamps (3), (14), (16), (18) and (15), pay attention to the correct position of the inner shield during the torque application, to not block the inner shield tip with the hex bolt head or with the convoluted spring.

(p) After the initial torque is complete, use a torque wrench and apply a torque of 5.65 - 6.21 N.m (50 - 55 lb.in) to the clamps (3), (14), (16), (18) again.

(q) If you removed tube (2) from aircraft, install it again.

NOTE: Before installation, make sure that the duct flanges and clamps are in good conditions (AMM MPP 21-51-14/600). If any duct and/or clamp shows signs of damage, replace it (them) as applicable.

(r) Use a torque wrench to torque the clamp (15) to 5.65 - 6.21 N.m (50 - 55 lb.in).

NOTE: When you install the clamps (15), pay attention to the correct position of the inner shield during the torque application, to not block the inner shield tip with the hex bolt head or with the convoluted spring.

(s) After the initial torque is complete, use a torque wrench and apply a torque of 5.65 - 6.21 N.m (50 - 55 lb.in) to clamp (15) again.

(t) Connect the electrical connector (13).

(3) On the Circuit Breaker Panel, close the PACK 1 and PACK 2 circuit breakers and remove the DO-NOT-CLOSE tag from them.

(4) Install access panels as applicable:

- 191KL and 191EL (AMM MPP 06-41-01/100), for LH dual temperature control valve.
- 191LR and 191FR (AMM MPP 06-41-01/100), for RH dual temperature control valve.

(5) Do an operational test of the cooling pack system (AMM TASK 21-51-00-700-802-A/500).

NOTE: Let the cooling packs operate for 5 minutes.

WARNING: DO NOT TOUCH THE COOLING PACK SYSTEM DUCTS OR COMPONENTS IMMEDIATELY AFTER THE SYSTEM IS TURNED OFF. THE HIGH AIR TEMPERATURE CAN CAUSE INJURY TO YOU.

CAUTION: BE CAREFUL WHEN YOU HANDLE THE PACKS, VALVES, SENSING ELEMENTS, AND AIR CONDITIONING DUCTS. DO NOT LET OIL, GREASE OR RESIN GET ON THESE COMPONENTS.

(6) After the operational test is complete, get access to the valves again. Remove access panels as applicable:

- 191KL and 191EL (AMM MPP 06-41-01/100), for LH dual temperature control valve.
- 191LR and 191FR (AMM MPP 06-41-01/100), for RH dual temperature control valve.

(7) On the Circuit Breaker Panel, open the PACK 1 and PACK 2 circuit breakers and attach a DO-NOT-CLOSE tag to them.

(8) Use a torque wrench and apply a torque of 5.65 - 6.21 N.m (50 - 55 lb.in) to the clamps (3), (14), (16), (18) and (15) again.

J. Follow-on

SUBTASK 842-002-A

(1) On the Circuit Breaker Panel, close the PACK 1 and PACK 2 circuit breakers and remove the DO-NOT-CLOSE tag from them.

(2) Install access panels as applicable:

- 191KL and 191EL (AMM MPP 06-41-01/100), for LH dual temperature control valve.
- 191LR and 191FR (AMM MPP 06-41-01/100), for RH dual temperature control valve.