



AIRCRAFT MAINTENANCE MANUAL

MAIN HYDRAULIC SYSTEM - ADJUSTMENT/TEST

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to do the check of hydraulic systems 1 and 2 for internal leakage and operational check of the Electric Motor-Driven Pump Input Signals.
- 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
29-10-00-700-801-A ♦	INTERNAL LEAKAGE OF HYDRAULIC SYSTEM - FUNCTIONAL CHECK	ALL
29-10-00-700-804-A ♦	ELECTRIC MOTOR-DRIVEN PUMP INPUT SIGNALS - OPERATIONAL CHECK	ALL



EMB145 - EMB135

AIRCRAFT
MAINTENANCE MANUAL

TASK 29-10-00-700-801-A

EFFECTIVITY: ALL

2. INTERNAL LEAKAGE OF HYDRAULIC SYSTEM - FUNCTIONAL CHECK

A. General

- (1) The amperage consumption of the electric motor-driven pump (EMDP) will show you if there is an internal leakage in the hydraulic system.

B. References

REFERENCE	DESIGNATION
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 29-10-04-000-801-A/400	EMDP - REMOVAL
AMM TASK 29-10-04-400-801-A/400	EMDP - INSTALLATION

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
226		Cockpit

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	Outside of aircraft
1	Helps the other technician	Cockpit and outside of aircraft

I. Preparation

SUBTASK 841-002-A

- (1) Aircraft on the ground.
(2) Energize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

J. Functionally Check for Internal Leakage

SUBTASK 790-002-A

- (1) Do the check for internal leakage in hydraulic system 1 and/or system 2 as follows:

NOTE: Do not operate the systems that use hydraulic power.

- (a) Write the amperage value read on the ammeter of the external electrical power source.
- (b) Turn on the EMDP of hydraulic system 1 or system 2.
- (c) After the pressure becomes stable at 2900 ± 200 psi, write the amperage value read on the ammeter of the external electrical-power source.
- (d) If the difference between the amperage value of steps (c) and (a) is less than 80 amperes, no procedure is necessary.
- (e) If the difference between the amperage value of steps (c) and (a) is more than 80 amperes, turn off the EMDP, disconnect the EMDP pressure hose from the manifold, and seal it with a plug.
- (f) Turn on the EMDP of hydraulic system 1 or system 2.
- (g) After the pressure becomes stable at 2900 ± 200 psi, write the amperage value read on the ammeter of the external electrical-power source.
- (h) If the difference between the amperage value of steps (g) and (a) is more than 65 amperes, replace the EMDP ([AMM TASK 29-10-04-000-801-A/400](#)) and ([AMM TASK 29-10-04-400-801-A/400](#)).
- (i) If the difference between the amperage value of steps (g) and (a) is less than 65 amperes, connect the hose and look for internal leakage in the hydraulic system.
- (j) With the EMDP "on", examine the locations where hydraulic components are installed.
 - Listen for noise typical of internal leakage.
 - Touch the pressure and return hydraulic lines and components to find unusually high temperature at the internal leakage path.
- (k) Examine these locations:
 - Nose hydraulic compartment (System 1 only).
 - Nose landing-gear compartment.
 - Main landing-gear compartment.
 - Hydraulic racks.
 - Hydraulic compartment at wing stub.
 - Aileron PCA compartment.
 - Thrust-reverser isolation valve (rear fuselage).
 - Rudder PCU's.
- (l) Turn off the EMDP of hydraulic system 1 and/or system 2.

K. Follow-on

SUBTASK 842-002-A

- (1) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

TASK 29-10-00-700-804-A
EFFECTIVITY: ALL
3. ELECTRIC MOTOR-DRIVEN PUMP INPUT SIGNALS - OPERATIONAL CHECK
A. General

- (1) This task gives the procedures to do a check of the inputs to automatically drive the Electric Motor-Driven Pump (EMDP).

The inputs to automatically drive the pump are:

- Signal from N2 FADEC A.
- Signal from N2 FADEC B.
- Signal of the pressure (ENG PUMP PRESSURE SWITCH).

- (2) This procedure is applicable to the EMDP of hydraulic systems 1 and 2.

B. References

<i>REFERENCE</i>	<i>DESIGNATION</i>
AMM MPP 06-41-01/100	-
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE

C. Zones and Accesses

<i>ZONE</i>	<i>PANEL/DOOR</i>	<i>LOCATION</i>
226		Cockpit
193	193BL	Hydraulic compartment of system 1
193	193CR	Hydraulic compartment of system 2

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

Not Applicable

F. Consumable Materials

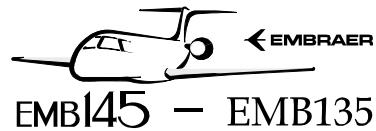
Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

<i>QTY</i>	<i>FUNCTION</i>	<i>PLACE</i>
1	Does the task	Cockpit



EMB145 – EMB135

AIRCRAFT
MAINTENANCE MANUAL

I. Preparation

SUBTASK 841-003-A

- (1) Make sure the engines are stopped.
- (2) Remove access panel(s) 193BL and/or 193CR (AMM MPP 06-41-01/100).
- (3) On the RH electrical-power control/distribution box, open the PITOT HTG 3 and the HEATING/PITOT 2 circuit breakers and attach a DO-NOT-OPEN tag to it.
- (4) On the LH electrical-power control/distribution box, open the HEATING/PITOT 1 circuit breaker and attach a DO-NOT-CLOSE tag to it.
- (5) In the cockpit, open these circuit breakers:
 - N2 SIGNAL 1A
 - N2 SIGNAL 1B
 - N2 SIGNAL 2A
 - N2 SIGNAL 2B
- (6) Energize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).
- (7) Set both the EMDP1 and EMDP2 switches in "OFF" position.

J. Operationally Check Electric Motor-Driven Pump Input Signals

SUBTASK 710-002-A

WARNING: THE HYDRAULIC SYSTEM CONTAINS PHOSPHATE-ESTER HYDRAULIC FLUID. THE FLUID CAN CAUSE IRRITATION IN YOUR SKIN OR INJURY TO YOUR EYES. USE APPLICABLE GOGGLES AND RUBBER GLOVES. IF THE FLUID TOUCHES YOU, FLUSH YOUR SKIN WITH WATER. IF IT GETS IN YOUR EYES, FLUSH THEM WITH WATER AND GET MEDICAL HELP.

- (1) Do the check of the signal from N2 FADEC 1A SYS 1 as follows:
 - (a) Close the N2 SIGNAL 1A circuit breakers.
 - (b) Make sure that the N2 SIGNAL 1B circuit breakers is open.
 - (c) Disconnect connector P0365 of the ENG PUMP pressure switch.
 - (d) Set the EMDP1 switch in "AUTO" position.
Result:
1 The EMDP1 in the AUTO mode is turned on.
 - (e) Open the N2 SIGNAL 1A circuit breakers.
Result:
1 The EMDP1 is turned off.
 - (f) Set the EMDP1 switch in "OFF" position.
- (2) Do the check of the signal from N2 FADEC 1B SYS 1 as follows:
 - (a) Close the N2 SIGNAL 1B circuit breakers.
 - (b) Make sure that the N2 SIGNAL 1A circuit breakers is open.

- (c) Make sure that the connector P0365 of the ENG PUMP pressure switch is disconnected.
 - (d) Set the EMDP1 switch in "AUTO" position.
Result:
 - 1 The EMDP1 in the AUTO mode is turned on.
 - (e) Open the N2 SIGNAL 1B circuit breakers.
Result:
 - 1 The EMDP1 is turned off.
 - (f) Set the EMDP1 switch in "OFF" position.
- (3) Do the check of the signal of pressure (ENG PUMP PRESSURE SWITCH) SYS 1 as follows:
- (a) Make sure that the N2 SIGNAL 1A circuit breakers is open.
 - (b) Make sure that the N2 SIGNAL 1B circuit breakers is open.
 - (c) Connect connector P0365 of the ENG PUMP pressure switch.
 - (d) Set the EMDP1 switch in "AUTO" position.
Result:
 - 1 The EMDP1 in the AUTO mode is turned on.
 - (e) Set the EMDP1 switch in "OFF" position.
Result:
 - 1 The EMDP1 is turned off.
- (4) Do the check of the signal from N2 FADEC 2A SYS 2 as follows:
- (a) Close the N2 SIGNAL 2A circuit breakers.
 - (b) Make sure that the N2 SIGNAL 2B circuit breakers is open.
 - (c) Disconnect connector P0366 of the ENG PUMP pressure switch.
 - (d) Set the EMDP2 switch in "AUTO" position.
Result:
 - 1 The EMDP2 in the AUTO mode is turned on.
 - (e) Open the N2 SIGNAL 2A circuit breakers.
Result:
 - 1 The EMDP2 is turned off.
 - (f) Set the EMDP2 switch in "OFF" position.
- (5) Do the check of the signal from N2 FADEC 2B SYS 2 as follows:
- (a) Close the N2 SIGNAL 2B circuit breakers.
 - (b) Make sure that the N2 SIGNAL 2A circuit breakers is open.
 - (c) Make sure that the connector P0366 of the ENG PUMP pressure switch is disconnected.
 - (d) Set the EMDP2 switch in "AUTO" position.
Result:
 - 1 The EMDP2 in the AUTO mode is turned on.

- (e) Open the N2 SIGNAL 2B circuit breakers.
Result:
1 The EMDP2 is turned off.
 - (f) Set the EMDP2 switch in "OFF" position.
- (6) Do the check of the signal of pressure (ENG PUMP PRESSURE SWITCH) SYS 2 as follows:
 - (a) Make sure that the N2 SIGNAL 2A circuit breakers is open.
 - (b) Make sure that the N2 SIGNAL 2B circuit breakers is open.
 - (c) Connect connector P0366 of the ENG PUMP pressure switch.
 - (d) Set the EMDP2 switch in "AUTO" position.
Result:
1 The EMDP2 in the AUTO mode is turned on.
 - (e) Set the EMDP2 switch in "OFF" position.
Result:
1 The EMDP2 is turned off.

K. Follow-on

SUBTASK 842-003-A

- (1) Make sure that the both EMDP1 and EMDP2 switches are in "OFF" position.
- (2) Close these circuit breakers:
 - N2 SIGNAL 1A
 - N2 SIGNAL 1B
 - N2 SIGNAL 2A
 - N2 SIGNAL 2B
- (3) On the RH electrical-power control/distribution box, close the PITOT HTG 3 and the HEATING/PITOT 2 circuit breakers and remove the DO-NOT-OPEN tag from it.
- (4) On the LH electrical-power control/distribution box, close the HEATING/PITOT 1 circuit breaker and remove the DO-NOT-CLOSE tag from it.
- (5) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).
- (6) Install access panel(s) 193BL and/or 193CR (AMM MPP 06-41-01/100).

