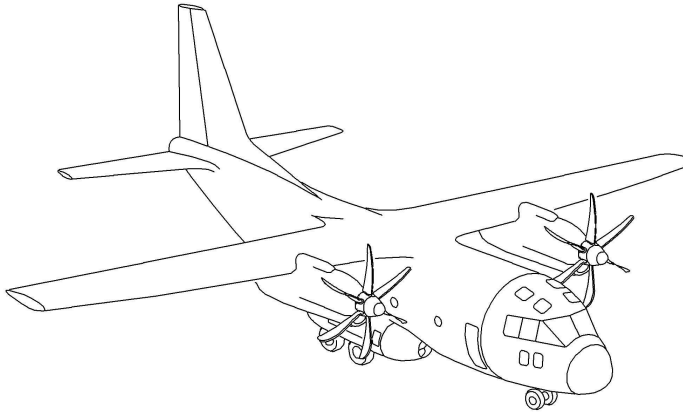
TECHNICAL MANUAL
JOB GUIDE

HYDRAULIC POWER

C-27J AIRCRAFT

ARMÉE DE L'AIR TCHADIENNE



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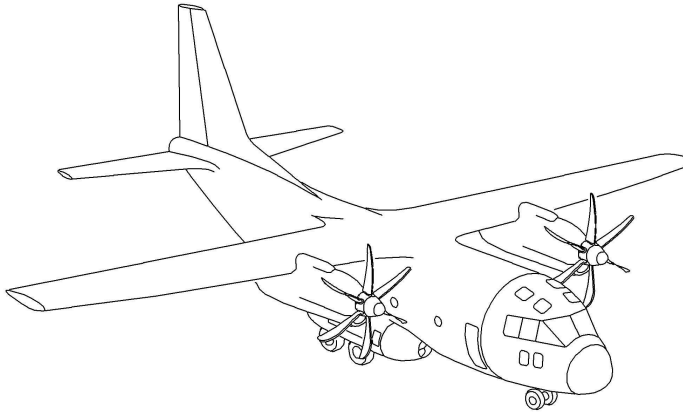

31 OCTOBER 2013

Alenia Aermacchi
A Finmeccanica Company

LIST OF EFFECTIVE PAGES

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INTRODUCTION

PURPOSE

This Job Guide Manual provides illustrated , step by step, Maintenance procedures for Functional test, Adjustment, Removal and Installation, etc., of C-27J aircraft system/subsystem components.

USE

Instructions in this manual are arranged in a task format with procedural steps, supported by illustrations which give components location and instructions about the maintenance procedure. Index numbers are provided in the illustrations to identify the components requiring action. These index numbers follow the component names in the procedural steps.

A "Table of Contents" provides a sequentially-ordered list of procedures identified with related paragraph and page number enabling the user to quickly find the procedure.

Each task of maintenance is identified by a progressive sub-paragraph number. A 6-digit code uniquely identifies the maintenance procedure by system, subsystem, sub-subsystem and unit. This code is located in the lower outer corner of each page and provides a quick reference for locating the desired maintenance procedure.

MAINTENANCE

Maintenance task consists of three basic sections (refer to figure 1, sheet 1/3) and (refer to figure 1, sheet 2/3):

- Input Condition: provides a quick identication of the Aircraft Applycability, the Required Conditions, the Recommended Personnel, the Aerospace Ground Equipments (AGE), the Consumable Material Required, the specific Safety Conditions and any other maintenance actions that must be performed to place the equipment or aircraft in the required condition before starting the maintenance task. The input condition section that doesn't contain informations, will contain the written "None".
- Procedure: provides how to execute the job; each maintenance task is supported by illustrations.
- Follow on Maintenance: provides details of how to return the aircraft to an operational condition following the completion of the maintenance tasks.

AIRCRAFT APPLICABILITY

Aircraft Applicability codes identify a specific aircraft or a group of aircrafts to which maintenance task is applicable. Aircraft Applicability Codes are identified by Manufacturer Serial Number (MSN) in the form (4162, 4180, etc.).

REQUIRED CONDITIONS

This paragraph provide the preventive procedures that must be carried out in order to prepare the aircraft for the maintenance procedure. The listed preventive procedures make reference to procedures described in others Job Guide (JG).

RECOMMENDED PERSONNEL

This paragraph provide information about recommended minimum personnel required to perform the maintenance task. Personnel identified by (*) shall be in control of the entire task.

AEROSPACE GROUND EQUIPMENTS (AGE)

A list of special tools and test equipment is included at the beginning of each task. Tools and test equipments listed are those recommended to ensure a maintenance activity is properly performed.

Special tools and test equipments are identified by Part Number, and Nomenclature. They are also associated to an AGE numbers (AGE NO.) for a quick identification in a list of the AGE. Special tools and test equipment AGE Part Numbers followed by an asterisk are loose equipment and they are stowed onboard the aircraft while those followed by two asterisks are Commercial Off The Shelf (COTS). Equivalent equipment is acceptable (unless otherwise specified), however, the procedures are written assuming the listed equipment is used. Equipment and tools that are not listed they are considered common and can be found in a commercial tool kit.

CONSUMABLE MATERIAL REQUIRED (LCM)

This paragraph provides Consumable Materials required to accomplish the Maintenance tasks, identified by LCM NO., Nomenclature, part number and quantity. Consumable materials are associated to a LCM numbers (LCM NO.) for a quick identification in the List of Consumable Materials (LCM).

SAFETY CONDITIONS

Maintenance procedures are written in a sequence to emphasize safety.General warnings applied to the maintenance procedure are listed in this paragraph. These warnings are not repeated elsewhere in the maintenance procedure unless it needs to be emphasized in a particular situation. Warnings that are unique to a particular situation are shown in the text prior to the actual operation.

ILLUSTRATIONS

Illustrations in the maintenance procedures (refer to figure 1, sheet 3/3) locate equipments on which the maintenance is being performed. To facilitate the "reading" of the illustration, the location of the equipment is represented by a blacken zone of the Assembly on the aircraft or the Subassembly/Component position on the main assembly.

Callout numbers are used to identify each item on the illustration and are identical to the item numbers that identify the components in the maintenance task. Every item is identified by a number and numbering of items follows a clockwise rotation. Illustration number and title is located to the bottom of the illustration. If the figure includes more sheets, the sheets number is shown in the title.

WARNINGS, CAUTIONS AND NOTES

WARNINGS, CAUTIONS and NOTES used in this Job Guide are defined as follows:

WARNING

AN OPERATING OR MAINTENANCE PROCEDURE, PRACTICE, CONDITION OR STATEMENT WHICH IF NOT STRICTLY OBSERVED, COULD RESULT IN INJURY TO OR DEATH OF PERSONNEL.

CAUTION

An operating or maintenance procedure, practice, condition or statement which if not strictly observed, could result in damage to, or destruction of equipment or loss of mission effectiveness or long term health hazards to personnel.

NOTE

An essential operating or maintenance procedure, practice, condition or statement which requires to be highlighted.

STANDARD MAINTENANCE PRACTICES

Instructions in this manual represent planned action for conditions normally encountered during maintenance.

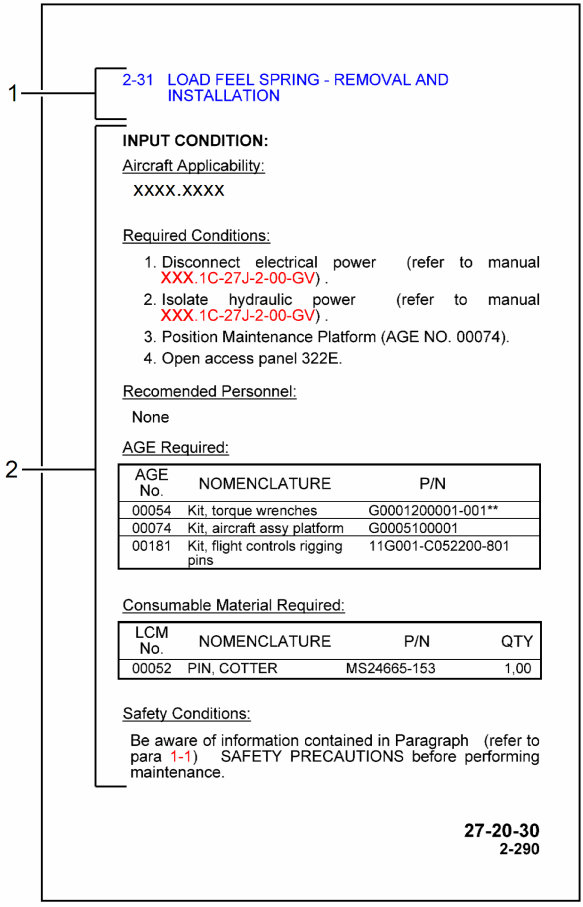
It is almost impossible to account for maintenance difficulties that may be only occasionally encountered. Therefore, the use of local decisions suitably authorized for general repair practices, not involving safety of flight, is acceptable to avoid unnecessary delay when there is no coverage in the manual. Standard practices are executed when performing maintenance such as: replace used o-rings, cotter pins, and self-locking nuts; cap and plug disconnected hoses, tubes, fittings, and ports; protect disconnected electrical plugs, receptacles, and bleed air ducts; and clean up spilled fluids.

ACCESS PANELS

All the access panels that must be removed/installed and all the doors that must be opened/closed in this job guide are illustrated in the "General Maintenance" section.

AIRCRAFT ZONING

The Aircraft Zoning used in this JG Manual has been established, quickly in order to locate and identify, from the recommended personnel, the areas and access panels in the aircraft. The Aircraft Zoning is based on three figure groups: major zone, minor zone, access doors and panels.



1

2-31 LOAD FEEL SPRING - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

XXXX.XXXX

Required Conditions:

1. Disconnect electrical power (refer to manual XXX.1C-27J-2-00-GV) .
2. Isolate hydraulic power (refer to manual XXX.1C-27J-2-00-GV) .
3. Position Maintenance Platform (AGE NO. 00074).
4. Open access panel 322E.

Recomended Personnel:

None

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**
00074	Kit, aircraft assy platform	G0005100001
00181	Kit, flight controls rigging pins	11G001-C052200-801

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00052	PIN, COTTER	MS24665-153	1,00

Safety Conditions:

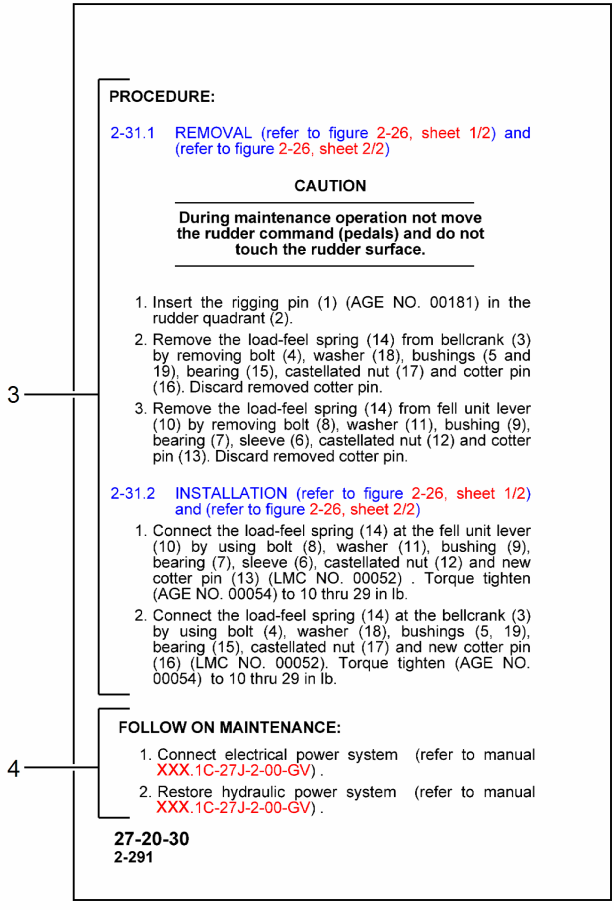
Be aware of information contained in Paragraph (refer to para 1-1) SAFETY PRECAUTIONS before performing maintenance.

27-20-30
2-290

1. MAINTENANCE PARAGRAPH AND TITLE.
2. INPUT CONDITION AREA.

C27J-JG-INTRO-001

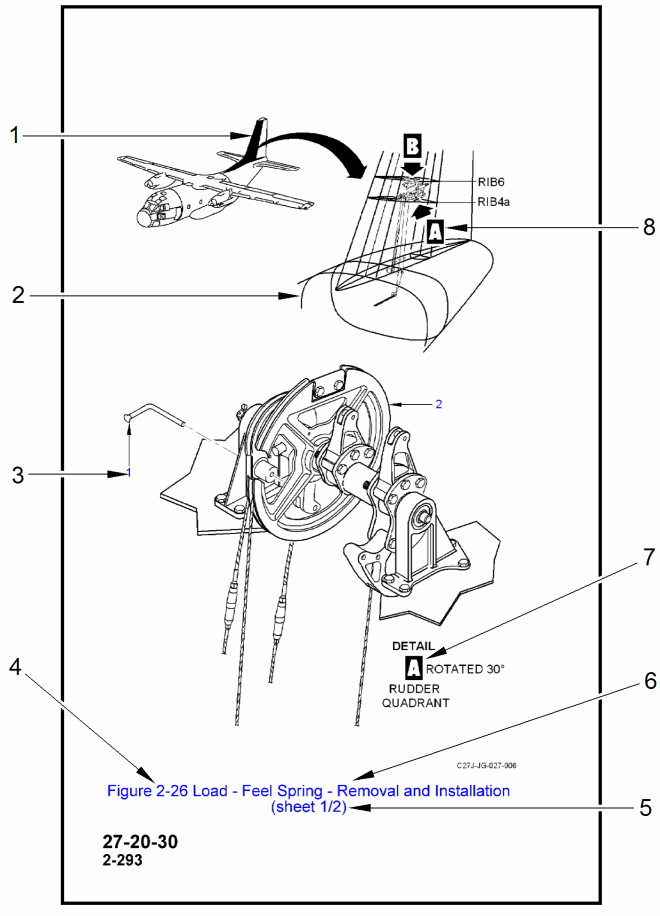
Figure 1
(sheet 1/3)



3. PROCEDURE AREA.
4. FOLLOW MAINTENANCE AREA.

C27J-JG-INTRO-002

Figure 1
(sheet 2/3)



1. LOCATION ZONE / SUB ZONES
2. LOCATION ASSEMBLY / SUB ASSEMBLY
3. ITEM NUMBER
4. FIGURE NUMBER
5. SHEET NUMBER
6. FIGURE TITLE
7. DETAIL IDENTIFICATION
8. DETAIL REFERENCE

C27J-JG-INTRO-003

Figure 1
(sheet 3/3)

LIST OF ABBREVIATION

ABBREVIATION	DESCRIPTION
AC	Alternating Current
ACMP	Alternate Current Motor Pump
ACOC	Air Cooled Oil Cooler
ADU	Annunciator Dimmer Unit
AGE	Aircraft Ground Equipment
AMP	Ampere
APU	Auxiliary Power Unit
AR	As Required
ASM	Air Separator Module
Assy	Assembly
ATU	Antenna Tuning Unit
BAU	Bus Adapter Unit
BIU	Bus Interface Unit
Bkdn	Breackdown
BOM	Bills of Material
BPCU	Bus Power Control Unit
C.I.R.	Cleaning, Inspection and Repair Manual
CCDL	Cross Channel Data Link
CDP	Compressor Discharge Pressure
CDT	Compressor Discharge Temperature
CDU	Cargo Dimmer Unit
CGV	Compressor Variable Geometry
CH	Chapter
CIP	Compressor Inlet Pressure
CIT	Compressor Inlet Temperature
CMDU	Color Multifunction Display Unit
CMM	Component Maintenance Manual
CNI-MU	Communication/Navigation/Information Management Unit
CNRP	Communication/Navigation Radio Panel
CPC	Cabin Pressure Controller

ABBREVIATION	DESCRIPTION
CS	Center Section
CSN	Catalogue Sequence Number
CSN	Catalogue Sequence Number
CSU	Central Switching Unit
CVG	Compressor Variable Geometry
CVR	Cockpit Voice Recorder
DA	Digital Autopilot
DADS	Distributed Air Data System
DASS	Defensive Aids Sub-System
DC	Direct Current
DFDR	Digital Flight Data Recorder
DITU	De-ice Timer Unit
DMM	Data Memory Module
DSDTU	Dual Slotted Data Transfer Unit
DSMCP	Defensive System Master Control Panel
ECDS	Enhanced Countermeasure Dispensing System
EDP	Engine Driven Pump
EMMU	External Mass Memory Unit
EPGS	Electrical Power Generation System
EWMU	Electronic Warfare Management Unit
Exh	Exhaust
Ext	External
F	Fahrenheit
FADEC	Fuel Authority Digital Electronic Control
FCOC	Fuel Cooled Oil Cooler
FCS	Flight Control System
FD	Flight Director
FFM	Fuel Flow Meter
FI	Fault Isolation
Fig.	Figure
Figs.	Figures
Flex	Flexible

ABBREVIATION	DESCRIPTION
FPMU	Fuel Pump Metering Unit
FQCU	Fuel Quantity Control Unit
Fr	Frame
FR	Fault Reporting
FSDU	Flight Station Dimmer Unit
FSN	Fleet Serial Numbers
FTEPS	Fuel Tanks Explosion Protection System
FWD	Forward
GCU	Generator Control Unit
GDMU	Global Digital Map Unit
GMAD	Gearbox Mounted Accessory Drive
GPS	Global Positioning System
GS	General System
GV	General Vehicle
HEU	Hud Electronic Unit
HIU	Headset Interface Unit
HLS	High Level Sensor
HP	High Pressure
HPA	High Power Amplifier
HUD	Head Up Display
Hz	Hertz
ICN	Illustration Control Number
ICS	Intercommunication System
IFRCU	In Flight Refuelling Control Unit
IGV	Inlet Guide Vane
Illus	Illustration
in	Inch
Instl	Installation
Intl	Internal
IPC	Illustrated Parts Catalogue
IPL	Illustrated Parts List
JG	Job Guide
JOM	Jam Override Mechanism

ABBREVIATION	DESCRIPTION
Kg	Kilogram
Kohm	Kilo Ohm
KVA	Kilo Volt Ampere
Latl	Lateral
Lb	Pound
Lbs	Pounds
LCM	List Consumable Material
LCU	Logic Control Unit
LE	Leading Edge
LH	Left Hand
LNA	Low Noise Amplifier
LOP	Low Oil Pressure
LSWD	Low Speed Warning Device
Lwr	Lower
LWS	Laser Warning System
m	Meter
MAX	Maximum
MDT	Mission Data Table
MFRC	Manufacturer Code
MGT	Measured Gas Temperature
MHIU	Modified Headset Interface Unit
MIN	Minute(s)
MLG	Main Landing Gear
mm	Millimeter
MM	Maintenance Manual
MMR	Multi Mode Receiver
MPU	Magnetic Pulse Unit
MWS	Missile Warning System
N	Newton
NHA	Next Higher Assembly
NI	Not Illustrated
NIU	Nacelle Interface Unit
NLG	Nose Landing Gear

ABBREVIATION	DESCRIPTION
NO. - No.	Number
Nos.	Numbers
NP	Non Procurable
OAT	Outside Air Temperature
OHU	Overhead Unit
OM	Operations Manual
OSG	Overspeed Governor
PBIT	Power-On Built In Test
PCU	Pitch Control Unit
PDU	Power Distribution Unit
PFD	Primary Flight Display
PGB	Propeller Gearbox
POrM	Plus or Minus
PSN	Product Sequence Numbers
PUAD	Power Unit Accessory Drive
PubN	Publication Number
PWR	Power
RCU	Remote Control Unit
Ref	Reference
RF	Radio Frequency
RH	Right Hand
RMI	Radio Magnetic Indicator
RRSC	Remote Radio Set Control
RT	Receiver Transmitter
RTLU	Rudder Travel Limitator Unit
RWR	Radar Warning Receiver
SAMU	Single Avionics Management Unit
SATCOM	Satellite Communications
SDU	Sequencer & Dispencer Unit
Sep.	Separate
Sht	Sheet
Shts	Sheets
SKC	Search Key Code

ABBREVIATION	DESCRIPTION
Spec	Specification
SUBCH	Sub-Chapter
SWS	Stall Warning System
T.O.	Technical Order
TBA	To Be Added
TBD	To Be Define
TE	Trailing Edge
Thkns	Thickness
TPCS	Temperature Compensated Pressure Switch
TRU	Transformer Rectifier Unit
UHF	Ultra High Frequency
ULB	Underwater Locator Beacon
V	Volt
VA	Volt Ampere
W	Watt
WHCU	Windshield Heating Control Unit
WOW	Weight on Wheels

LIST OF INCORPORATED MODIFICATION

This list contains only Prescrizione Tecnica Ditta (PTD) affecting the contents of this manual. Following embodiment of a modification in all affected aircraft, the corresponding number will not be deleted from this list, but the information regarding the pre-modification configuration will be deleted from the manual.

NOT APPLICABLE

SECTION I

GENERAL MAINTENANCE PROCEDURES

1-1 HYDRAULIC SYSTEM COMPONENTS - GENERAL MAINTENANCE

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	5,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 5 (Min.)
Total Time Detention System: 5 (Min.)

AGE Required:

None

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00043	HYDRAULIC FLUID	MIL-PRF-83282D	AR
00088	PRESERVATIVE OIL	MIL-PRF-6083F	AR

Safety Conditions:

PROCEDURE:

1. Before removing any hydraulic components it is recommended to mark its position and the tubes connection with sufficient data to permit correct assembly. When disassembling a device into its component parts, it is recommended that it is kept in its operating position or that every part is marked with sufficient data to permit correct reassembly.

CAUTION

In many cases, corrosion results from fingerprints caused by careless handling. Avoid handling the units when not necessary and keep all disassembled parts submerged in preservative oil, Specification (LCM NO. 00088).

---

2. Cylindrical devices with one or more moving pistons (rams, accumulators, dampers) should not be clamped in a vice. Take particular care to assemble valves according to the intended flow direction. This is indicated by arrows on the valves.

WARNING

ALWAYS RELEASE THE HYDRAULIC PRESSURE BEFORE REMOVING ANY PART FROM ITS SYSTEM.

CAUTION

After replacement of any components in the hydraulic system, restore the fluid level in the reservoirs and carry out a complete cycle of maneuvers of the related system before the next flight.

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1-2 TUBE ASSEMBLIES - GENERAL MAINTENANCE

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Installation	AFM	1	10,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 10 (Min.)
Total Time Detention System: 10 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

None

PROCEDURE:

1-2.1 TUBES

(Cont'd)

1-2.1 TUBES (Cont'd)

1. Corrosion resistant steel tubing is used throughout the aircraft for delivery lines, while light alloy tubing is used for return and pump suction lines. In particular areas such as the engine nacelle and the landing gear compartments, both delivery and return pipings are made of steel. The steel tubing is manufactured in 21-6-9 (SAE AMS 5561F) corrosion resistant steel while the light alloy tubing is manufactured in AL 6061-T6 alloy. In order to apply the correct torque to hydraulic tube fittings, it is necessary to identify the type of tubing concerned (see Table 1-1).

   Due to the high operating pressures and broad temperature range to which the hydraulic system is subjected, the following limitations must be adhered to:

   A. All pipes are connected by Permaswage, Harrison, MS type fittings and quick disconnect couplings. Furthemore they can be repaired by means of Permaswage method.

   B. All lines must be performed according to the specifications and in accordance with T.O. 1-1A-8. Steel tubing should not be formed manually except in emergency situations. Refer to AER(EP).1C-27J-4 for parts replacements.

   C. Assembly and disassembly of tubes, fittings, and components is critical. Sequences outlined in this manual must be observed to prevent distortion and subsequent leakage.

1-2.2 HOSES

(Cont'd)

1-2.2 HOSES (Cont'd)

1. The hoses are in Polytetrafluorethylene, covered with one or more layers of stainless steel braid. They are equipped with stainless steel swaged fittings, except for the suction and case drain line hoses which are equipped with a combination of aluminium and corrosion resistant steel swaged fittings. In the hydraulic system are used two types of hoses: one high pressure used for pressure and actuators lines. Precisely, EDP and ACMP delivery lines, NLG actuator, MLG actuators and MLG downlocks supply lines and the other, one medium pressure, used for EDP and ACMP suction and case drain lines.The use of flexible hoses in the hydraulic system is restricted to units whose movement does not permit the use of rigid lines, or where vibration would weaken rigid tubes, or where disconnections are frequently made. It is important that flexible hoses be closely inspected at frequent intervals, since damaged or deteriorated hose and loose connections are causes for excessive leakage. Flexible hoses are provided with a lengthwise marking that must always be straight after installation. This is important as pressure tends to straighten hose. If hose is twisted, it will tend to shear off hose or loosen fittings. If clamps are used, ensure that hose is not pulled, twisted, or forced to bend into a sharp radius while in service.

(Cont'd)

1-2.2 HOSES (Cont'd)

CAUTION

To avoid foreign material entering the hydraulic system, open ends of hoses must remain capped until immediately before they are reconnected to the rest of the system. Whenever a hose is disconnected, the open ends must be immediately sealed with plugs or caps. The use of rags or natural rubber plugs is not permitted.

1-2.3 TUBE NAMEPLATES

1. In addition to the part number, registration number and modification number, hydraulic tubing must also be identified by means of nameplate on which the application of the tube is written. Flexible hoses do not normally require the use of nameplates. When a tube is replaced, the nameplate of the same number should be affixed in the same position on the new tube. The rules contained in (refer to manual TCH.1C-27J-2-00GV) , however, be adhered to.

Table 1-1. Hydraulic fittings torque values

PIPE OUTSIDE DIAMETER		PIPE THICKNESS		TIGHTENING TORQUE			
				min		max	
mm	in	mm	in	mkg	in lb	mkg	in lb
21-6-9 (SAE AMS 5561F) STEEL TUBES							
4.76	3/16	0.41	0.016	1.04	90	1.26	110
4.76	3/16	0.51	0.020	1.04	90	1.26	110
6.35	1/4	0.41	0.016	1.26	110	1.61	140
6.35	1/4	0.51	0.020	1.26	110	1.61	140

(Cont'd)

Table 1-1. Hydraulic fittings torque values (Cont'd)

6.35	1/4	0.89	0.035	1.61	140	1.95	170
7.94	5/16	0.51	0.020	1.61	140	1.95	170
9.52	3/8	0.51	0.020	1.95	170	2.65	230
9.52	3/8	0.71	0.028	2.30	200	2.80	250
12.70	1/2	0.51	0.020	3.46	300	4.60	400
12.70	1/2	0.71	0.028	4.60	400	5.72	500
12.70	1/2	0.89	0.035	5.72	500	6.90	600
15.88	5/8	0.51	0.020	3.46	300	4.60	400
15.88	5/8	0.71	0.028	5.72	500	6.90	600
15.88	5/8	0.89	0.035	6.90	600	8.06	700
15.88	5/8	1.07	0.042	8.06	700	9.59	850
19.05	3/4	0.71	0.028	7.50	650	9.20	800
19.05	3/4	1.24	0.049	9.20	800	11.06	560
25.40	1	0.51	0.020	9.20	800	0.94	950
25.40	1	1.65	0.065	18.43	1600	20.20	1750
6061 - T6 ALUMINIUM TUBES							
6.35	1/4	0.89	0.035	1.26	110	2.02	140
7.94	5/16	0.89	0.035	1.44	125	1.95	170
9.52	3/8	0.89	0.035	1.67	145	2.02	175
12.70	1/2	0.89	0.035	3.11	270	3.89	330
12.70	1/2	1.24	0.049	3.69	320	4.38	380
15.88	5/8	0.89	0.035	4.15	360	5.07	440
15.88	5/8	1.24	0.049	4.90	425	6.05	525
19.05	3/4	0.89	0.035	4.38	380	5.41	470
25.40	1	0.89	0.035	8.50	750	10.37	900
31.75	11/4	0.89	0.035	10.37	900	12.60	1100
NOTE: Assembly of universal and bulkhead couplings on threaded seats must be carried out as described in T.O. 1-1A-8, Section 13.							

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1-3 FITTING - GENERAL MAINTENANCE

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	1,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 1 (Min.)
Total Time Detention System: 1 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

None

PROCEDURE:

1. There are three types of fittings used in the hydraulic system:
   A. Swaged fittings
      (1) Permaswage: permanent and removable flareless swaged fittings;
      (2) Harrison: removable flareless internally swaged fittings.
   B. Removable unswaged fittings
      (1) MS type fittings: removable flareless fitting

C. Quick disconnected couplings.

1-4 QUICK-DISCONNECT COUPLINGS - GENERAL MAINTENANCE

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	3,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 3 (Min.)
Total Time Detention System: 3 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

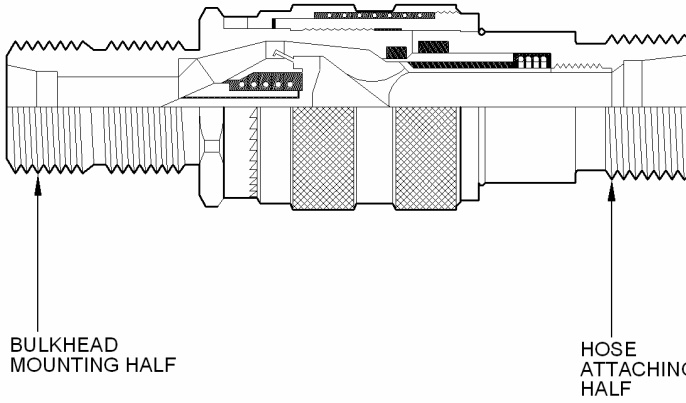
None

PROCEDURE:

1. The quick-disconnect couplings (refer to figure 1-1) allow separation and connection of two pipes in a hydraulic circuit ensuring automatic sealing of the two separated pipes, thus avoiding any loss of hydraulic fluid. The coupling consists of a fixed part bulkhead mounting half which is attached to the aircraft structure and moveable part hose attaching half fitting. The fixed part can be used as a socket for ground tests and is provided with a protective cap and retention chain. All quick-disconnect couplings, independently on their diameter, are tightened only by hand after having ensured that the fixed part is correctly clamped.

Table 1-2. Swaging pressure table

PIPE O.D.			PIPE WALL THIKNESS		SWAGE R Model	WORKING PRESSURE psi		MAX SAFE PR ESSURE
SIZE	inch	mm	inch	mm		21-6-9 CRES	T6 Al Alloy	
-4	1/4	6.35	0.020 0.028	0.510.71	5175 E	500 - -	- - 200	580
-5	5/16	7.94	0.0200.028	0.510.71		750 - -	- - 350	1050
-6	3/8	9.52	0.0200.028	0.510.71		1150 - -	- - 400	1900
-8	1/2	12.70	0.0260.035	0.560.89		2070 - -	- - 950	2700
-10	5/8	15.87	0.0330.049	0.911.24	5720 E	850 - -	- - 590	1650
-12	3/4	19.05	0.0390.058	0.991.47		1600 - -	- - 1050	2500
-16	1	25.40	0.0520.065	1.321.65		3050 - -	- - 1200	5000



ICN-02-A-290020-A-A0170-00097-A-01-1

Figure 1-1 Quick-Disconnect Couplings - General Maintenance

1-5 BULKHEAD FITTINGS - GENERAL MAINTENANCE

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	1,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 1 (Min.)
Total Time Detention System: 1 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

None

PROCEDURE:

1. Bulkhead fittings use the same method of connection as MS couplings except for the fact that they must be fixed to the bulkhead before being connected to the pipe. For the installation of bulkhead fittings, refer to T.O. 1-1A-8.

1-6 FILTERS - GENERAL MAINTENANCE

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	3,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 3 (Min.)
Total Time Detention System: 3 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

PROCEDURE:

1. To maintain the level of contamination of the hydraulic fluid within acceptable limits and for protection of certain components in the system, 6 filters with a 15 micron filtration efficiency and 2 filters with a 5 micron filtration efficiency are provided. The 15 micron filters are installed as follows (refer to figure 1-2) :
   - 2 filters (3) on the delivery of No. 1 system pumps.
   - 1 filter (5) on the case drain line of No. 1 system pumps (installed on reservoir No. 1).

- 2 filters (2) on the delivery of No. 2 system pumps.
- 1 filter (6) on the case drain line of No. 2 system pumps (installed on reservoir No. 2).

2. The 5 micron filters are installed as follows (refer to figure 1-2) :
   - 1 filter (4) on the return line of No. 1 system (installed on reservoir No. 1).
   - 1 filter (1) on the return line of No. 2 system (installed on reservoir No. 2).

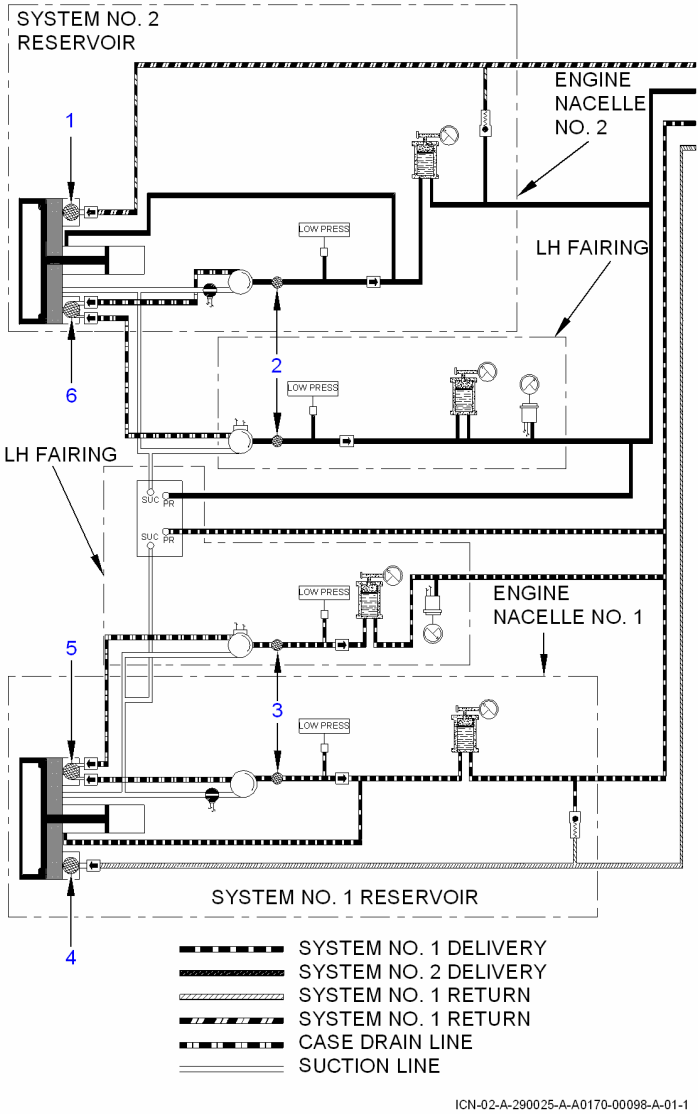
CAUTION

Do not clean filter elements with petrol or other non approved methods.

Before fitting the filter element, immerse it completely in clean hydraulic fluid.

---

3. Devices in the hydraulic system such as brake valves, selector valves, rams etc. are supplied with small protective filters. These filters are an integral part of the device and must not be removed during ordinary filter cleaning operations. Such operations should be carried out at the overhaul center or in departments suitably qualified and equipped for 2nd level maintenance operations on those devices.



ICN-02-A-290025-A-A0170-00098-A-01-1

Figure 1-2 Filters - General Maintenance

1-7 HYDRAULIC ACTUATORS - GENERAL MAINTENANCE

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	3,00	
Follow Maintenance	AFM	1	10,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 13 (Min.)
Total Time Detention System: 13 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

None

PROCEDURE:

1. When fitting new actuators which have been stored for a long time, or before flight or hydraulic tests after the aircraft has been out of service for more than 15 days, the following procedure should be carried out to avoid loss of hydraulic fluid from actuators:

A. Thoroughly clean working surfaces and lightly cover the entire surface of the rod with hydraulic fluid.

B. Detach, if necessary, seals from actuator rod by carrying out some slow maneuvers by means of a hand pump or with the hydraulic stand regulated to minimum flow.

C. Thoroughly dry the rods.

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1-8 SAFETY PRECAUTIONS - GENERAL MAINTENANCE

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	5,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 5 (Min.)
Total Time Detention System: 5 (Min.)

AGE Required:

None

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00043	HYDRAULIC FLUID	MIL-PRF-83282D	1,00

Safety Conditions:

PRECAUTIONS FOR HYDRAULIC COMPONENTS REMOVAL AND INSTALLATION

Before removing any hydraulic component, perform the following:

WARNING

DISCHARGE SYSTEM PRESSURE BEFORE REMOVING ANY HYDRAULIC COMPONENT.

WARNING

WHEN MAINTINING NO.1 HYDRAULIC SYSTEM, DISCHARGE THE PARKING / EMERGENCY BRAKE ACCUMULATOR PRESSURE BY PULLING THE MANUAL RELEASE HANDLE.

CAUTION

Some aircraft equipment (i.e. tyres, etc.) can be damaged by corrosive action of the used hydraulic fluid (LCM NO. 00043). In order to avoid such contamination it is necessary to protect the parts by means of appropriate covers/coatings when performing maintenance activities on components containing the above mentioned hydraulic fluid.

CAUTION

Cap the disconnected hydraulic pipes immediately after removing the component. After having fitted the hydraulic component, fill and bleed the system, pressurize it and check for leaks.

PROCEDURE:

1-8.1 HYDRAULIC POWTBA ER SYSTEM

1. Refer to paragraph GROUND HANDLING SAFETY PRECAUTIONS (refer to manual TCH.1C-27J-2-09JG) and paragraph GROUND SAFETY RULES (refer to manual TCH.1C-27J-2-00GV) for general safety instructions to be considered in performing maintenance on aircraft.
2. Be aware of information contained (refer to para TCH.1C-27J-2-29GS) and (refer to para 1-1) before performing maintenance on hydraulic power system.
3. After replacement of any component in the hydraulic system, restore the fluid level in the reservoirs and carry out a complete cycle of manoeuvres of the related system before the next flight
4. If hydraulic contamination is detected, check and eventually replace the filter elements.
5. Hydraulic fluid is acid. Prevent contact with skin. Tighten tops must be fixed on pipes after removal.
6. In many cases, corrosion results from fingerprints caused by careless handling. Avoid handling the units when not necessary and keep all disassembled parts submerged in preservative oil, Specification (LCM NO. 00083).
7. Use the test stand to operate both systems separately. This will localise the failure in the component of one or the other system. Since the two hydraulic power systems are independent ofone another, troubleshooting procedure is the same for both. Refer to the related table for this procedure.

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1-9 AEROSPACE GROUND EQUIPMENT (AGE) LIST

AGE No.	NOMENCLATURE	P/N
00014	Jack spherical adapter	A34511-100
00015	Jack spherical adapter	A34511-100A
00043	Sleeve, seal compression	DAPT60-0173-00
00054	Kit, torque wrenches	G0001200001-001**
00055	Kit adapter for hydraulic hand pump stand	G0001200002
00074	Kit, aircraft assy platform	G0005100001
00076	Ladder	G0005100003
00262	Test stand, hydraulic system (diesel engine)	846805-D**
00264	Stand, hydraulic, hand pump	867105-000

1-10 LIST OF CONSUMABLE MATERIAL

LCM No.	NOMENCLATURE	P/N
00015	NUT, SELF-LOCKING	MS21042-L3
00016	LOCK WIRE	MS20995C32
00026	RETAINER, PACKING	MS28773-08
00027	PACKING, PREFORMED	M83461/2-908
00028	TUBE PLUG	MS21913-6
00029	CUPS	MS21914-6J
00031	PACKING, PREFORMED	M83461/2-904
00032	O-RING, PREFORMED	M83461/2-906
00035	NUT, SELF-LOCKING	MS21042L4
00043	HYDRAULIC FLUID	MIL-PRF-83282D
00044	O-RING	M83461-2-916
00045	PACKING, PREFORMED	M83461-1-214
00046	PLASTIC WRAPPER	PLT4S-C76
00048	FILTER ELEMENT	7579642
00049	LOCK WIRE	MS20995NC32
00073	PACKING, RETAINER	MS28773-04
00088	PRESERVATIVE OIL	MIL-PRF-6083F
00106	NUT, SELF-LOCKING	MS21042-3

SECTION II

HYDRAULIC POWER

2-1 TEST STANDS FOR HYDRAULIC GROUND TESTS - GENERAL MAINTENANCE

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

None

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	5,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 5 (Min.)
Total Time Detention System: 5 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

None

PROCEDURE:

2-1.1 GENERAL

1. The hydraulic stands, apart from effecting functional tests on the system, are employed for the replenishing and flushing of the hydraulic systems. For the functional test of the hydraulic system, a stand capable of supplying a fluid pressure and flow rate at least equal to that employed in the system must be used. The stand must have a fluid reserve adequate to allow replenishing and draining of the various circuits and permit extended functional tests to be carried out without overheating the hydraulic fluid and system components.

2-1.2 MAINTENANCE

1. Contamination in a test stand can be transmitted to the hydraulic systems of the aircraft; for this reason the maintenance of the hydraulic circuit of the stand is of the same importance as that of the circuits in the aircraft. The hydraulic stand and connecting pipes must always be kept clean. The filter elements of the stand must be removed periodically, inspected and replaced. Between a periodic removal and a replacement it is necessary to frequently check the pressure drop across every filter element. If the pressure drop exceeds the prescribed limit or an inspection reveals foreign matter in the element of a filter, the reservoir of the stand must be drained and the hydraulic system of the stand drained and flushed with clean fluid.

   The following procedure should be used when using the hydraulic stand:

   A. Carefully connect the quick-disconnect couplings, avoiding damage to the threads.

   B. Be sure that the system under test has a sufficient quantity of hydraulic fluid (if the stand used is not provided with an adequate reservoir).

(Cont'd)

2-1.2 MAINTENANCE (Cont'd)

C. Before starting up or shutting down the stand, be sure that its bypass valve is open, preventing flow to the aircraft.

D. If the test stand has the capability of using its own hydraulic fluid reservoir in addition to that of the aircraft, use this capability.

E. Regulate the stand to obtain a very low rate of flow and operate the hydraulic system for at least one complete cycle at minimum operating pressure before increasing it to full operating pressure.

F. Regularly check the hydraulic fluid temperature in the stand: it must not exceed + 160 °F (+ 71 °C).

G. If the flow rate from the stand can be regulated, always reduce it to a minimum before shutting down.

H. Replace the caps on the quick-disconnect couplings of the aircraft and the test stand immediately after disconnection of the stand hoses from the aircraft.

I. Keep the stand hydraulic hoses capped when not in use.

FOLLOW ON MAINTENANCE:

None

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2-2 PERMISSIBLE HYDRAULIC FLUID LEAKAGE - LEAK CHECK

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

None

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	5,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 5 (Min.)
Total Time Detention System: 5 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

None

PROCEDURE:

2-2.1 GENERAL

(Cont'd)

2-2.1 GENERAL (Cont'd)

1. With all types of hydraulic seals, the necessary pressure to produce a seal even at low hydraulic pressure is produced by having an interference fit between the rubber and the metal parts. There is however, a limit to the amount of squeeze that can be used because of the increased difficulty of installation, increased friction at low pressure, and increased flattening or deformation of the O-rings in its groove. O-rings normally do not fail in a manner which can cause complete system failure. O-rings can fail as a result of spiraling, due to faulty installation. Static rings can be blown out and moving rings can be torn out due to excessive clearance when O-rings of incorrect size are used. O-rings are subject to leaks of the seepage or drip variety. As pressure is built up or decreased in a unit the O-ring moves in its groove. If it moves, it tends to roll because of its shape, causing a slight pumping action.
2. In cases where instructions read "There shall be no external leakage", light stain or wetting of the joint, which does not actually form a measurable drop, is acceptable. Ordinary units such as landing gear, that only operate a few times during flight, should be considered satisfactory if, upon inspection after flight, only a seepage of oil has been collected. Any increase in the leakage rate from one flight to the next one should be viewed with suspicion. The above units should be allowed some drippage while the aircraft is parked, for example, a few drops overnight. Any appreciable increase in leakage over a period of time would be the signal to replace the unit or the seals.

2-2.1 GENERAL (Cont'd)

3. For flight control servoactuators, since operation is continuous during flight, the leakage over a period of time, rather than the number of cycles, is the only method. For example a leakage rate of five drops per minute from a rod seal would produce a leakage of 0.915 cu in (15 cm^3) per hour of operation. While this quantity represents a considerable wetting of surfaces exposed to leakage, it is not particularly detrimental to the operation of the hydraulic system or the aircraft. Up to this degree, it is more convenient to wipe up the excess oil and to check the reservoir level than to replace the seals in the control actuators. The most important indication must be immediate evidence of an increase in the quantity of leakage.
4. Before deciding to remove and replace a hydraulic component, evaluate the effect of a leak in any unit and in any system to determine what amount of leakage can be tolerated, and what amount might be a hazard to the safe and effective operation of the aircraft. It is important that piston rods are cleaned and lubricated periodically in order to keep wipers and seals wet with fluid. This procedure will aid in cutting down leakage and will reduce the number of seal failures.

FOLLOW ON MAINTENANCE:

None

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2-3 PERMASWAGE FITTING - INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

None

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	15,00	
Installation	AFM	1	45,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 60 (Min.)
Total Time Detention System: 60 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

None

PROCEDURE:

2-3.1 TUBE INSERTION MARKING BAND

(Cont'd)

2-3.1 TUBE INSERTION MARKING BAND (Cont'd)

1. Select the appriopriate marking tool in accordance with size of tubing to be swaged according to Table 2-2. If insertion tool is not available, refer to dimensions "A" and "B" as per Table 2-2. and (refer to figure 2-1, sheet 1/4) and (refer to figure 2-1, sheet 2/4) .
2. Contact lip stop of marking tool with end of tubing and mark tube with proper pen through the slot at least two places 180° apart, as per (refer to figure 2-1, sheet 1/4) and (refer to figure 2-1, sheet 2/4) .

Table 2-1. Marking dimension

FITTING SIZE	TUBE O.D.		MARKING TOOL	DIMENSIONS mm	
	inch.	mm		A	B
-4	1/4	6.35		15.6	23.2
-5	5/16	7.94		16.6	24.3
-6	3/8	9.52		17.5	25.1
-8	1/2	12.70		30.3	37.9
-10	5/8	15.88		31.3	38.9
-12	3/4	19.05		33.1	40.7
-16	1	25.40		36.8	44.4

(Cont'd)

2-3.2 SWAGING PROCEDURE FOR 10.000 PSI TOOLING

1. Before operating new tools, when the hose from the power source to the tool is replaced or when a tool is overhauled, an air bleed procedure is required. Fittings to swaged shall not be removed from their package until they are required for installation.
2. Select proper power unit and head assembly based on tube O.D. for 10000 psig Pump (Refer to Table 2-3.). Push lower die block assembly out of head assembly, making sure that upper and lower halves of die have the same P/N and the same S/N. Joint lower die block assembly to top of power unit (refer to figure 2-1, sheet 1/4) and (refer to figure 2-1, sheet 2/4) , this assembly will fit only one way. Connect one end of hydraulic hose to portable hydraulic pump making sure that the pump has a label indicating that it delivers 10000 ± 250 psig. Connect other end of hydraulic hose to power unit.
3. Slide head assembly over fitting / tubing to be swaged, make sure bevelling end of die is towards centre of fitting. Slide power unit into swage head ensuring knurled area on swage head matches the knurled area on the power unit otherwise the two cannot be assembled. Ensure balls in lower die block engage with a " click " and swage head is centered on power unit. Move power unit toward centre of fitting, until fitting stop hits end of fitting (the fitting stop is the larger black plate on head assembly).
4. Position fitting on tube so that part of tube insertion mark (Refer to previously step 2 of TUBE INSERTION MARKING BAND) is covered by fitting and that part of tube insertion mark is outside of fitting (refer to figure 2-1, sheet 1/4) , (refer to figure 2-1, sheet 2/4) and (refer to figure 2-1, sheet 3/4) .

(Cont'd)

2-3.2 SWAGING PROCEDURE FOR 10.000 PSI TOOLING (Cont'd)

5. Apply hydraulic pressure 10000 ± 250 psig to swage tool maintaining power unit, fitting and tube in the position described in steps 3 and 4. After dies halves have opened, slide power unit out of head assembly.
6. Remove head assembly from swaged fitting/tubing.

Table 2-2. Swage tools

FITTING SIZE	TUBE O.D.		FOR10000 psig PUMP "DTL Series"	
	inch.	mm	SWAGE HEAD ASSEMBLY	POWER UNIT
-4	1/4	6.35		
-5	5/16	7.94		
-6	3/8	9.52		
-8	1/2	12.70		
-10	5/8	15.88		
-12	3/4	19.5		
-16	1	25.40		

2-3.3 TUBING REPAIR PROCEDURES (refer to figure 2-1, sheet 4/4)

1. Three basic types of tubing system failures lend themselves to permanent repair using PERMASWAGE techniques. The failure types and recommended repair procedures are the follows:
   A. TYPE 1: small hole or short crack in tube
      (a) Make one or two cuts as necessary to allow removal of damaged tube section (if two cuts are required and the distance between cuts exceeds 0.299 in (7.6 mm), use repair TYPE 2). Make cuts only after checking to make sure enough space in which to operate swage tool.
      (b) Replace removed section of tube with a compatible PERMASWAGE union fitting.
   B. TYPE 2: lengthwise crack in tube (crack longer than 0.299 in (7.6 mm))
      (a) Make two cuts to allow removal of damaged section of tube. Make cuts only after checking to make sure enough space in which to operate swage tool.
      (b) Use a tube splice and two compatible PERMASWAGE union fittings to recreate the section of tubing which was removed. Assemble these parts into the line being repaired before you swage the fittings.
      (c) Swage each end of fittings.
   C. TYPE 3: leaking elbow, tee, or cross.
      (a) Cut out defective elbow, tee, or cross. Make cuts only after checking to make sure enough space in which to operate swage tool.
   D. Swage tube splices to a compatible PERMASWAGE elbow, tee, or cross fitting. Do this to re-create section of tubing system which was removed.

(Cont'd)

2-3.3 TUBING REPAIR PROCEDURES (refer to figure 2-1, sheet 4/4) (Cont'd)

(a) Swage each leg (tube) of this assembly to the tubing being repaired. Use PERMASWAGE union fittings.

FOLLOW ON MAINTENANCE:

None

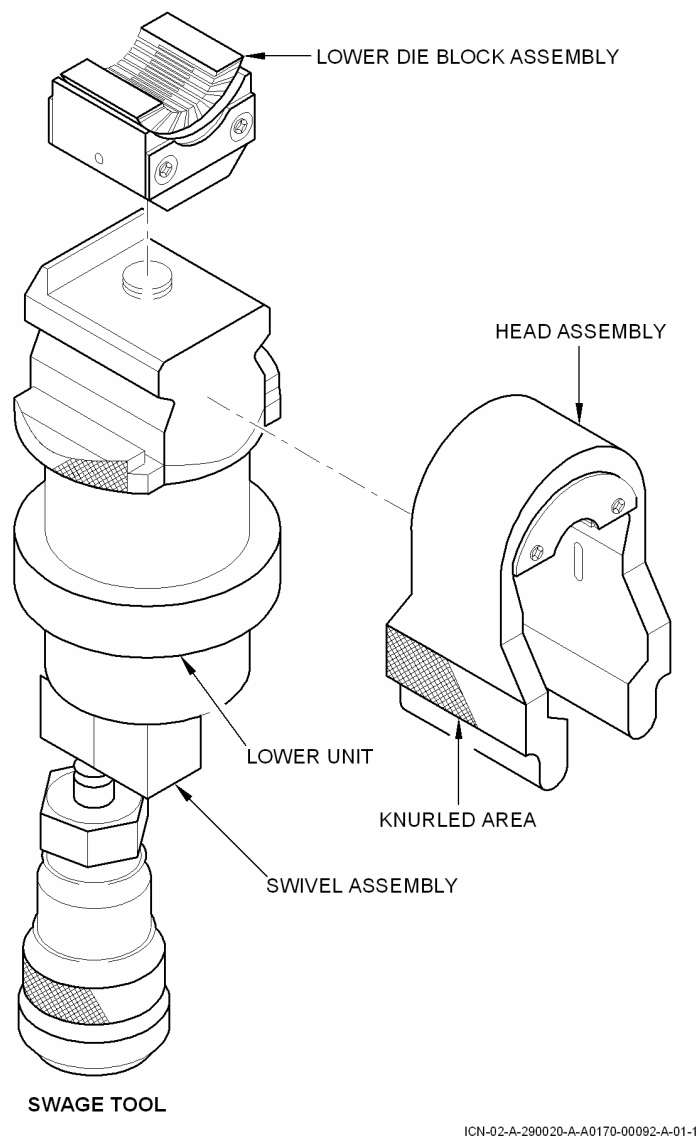
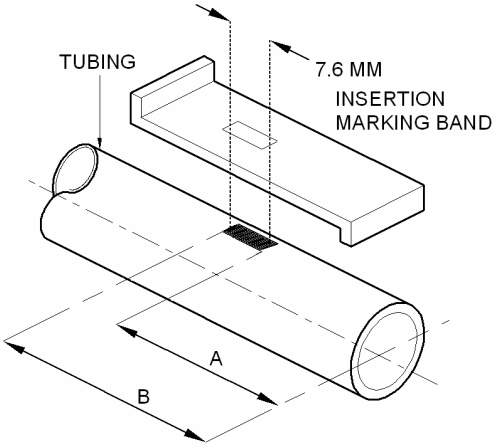


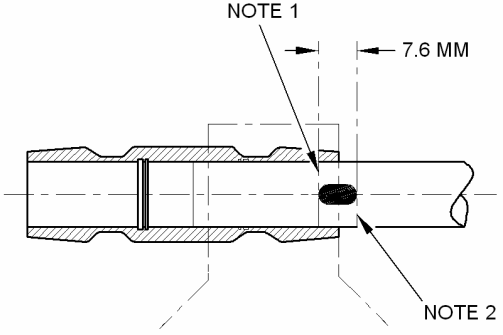
Figure 2-1 Permaswage Fitting - Installation
(sheet 1/4)



INSERTION MARKING TOOL

NOTE 1 - LEADING EDGE OF TUBE MARK IN LINE WITH OUTSIDE EDGE OF FITTING: MAX TUBE END GAP.

NOTE 2 - BACK EDGE OF MARK ON TUBE IN LINE WITH OUTSIDE EDGE OF FITTING: NO TUBE END GAP.



TUBE/FITTING INSTALLATION

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Figure 2-1 Permaswage Fitting - Installation
(sheet 2/4)

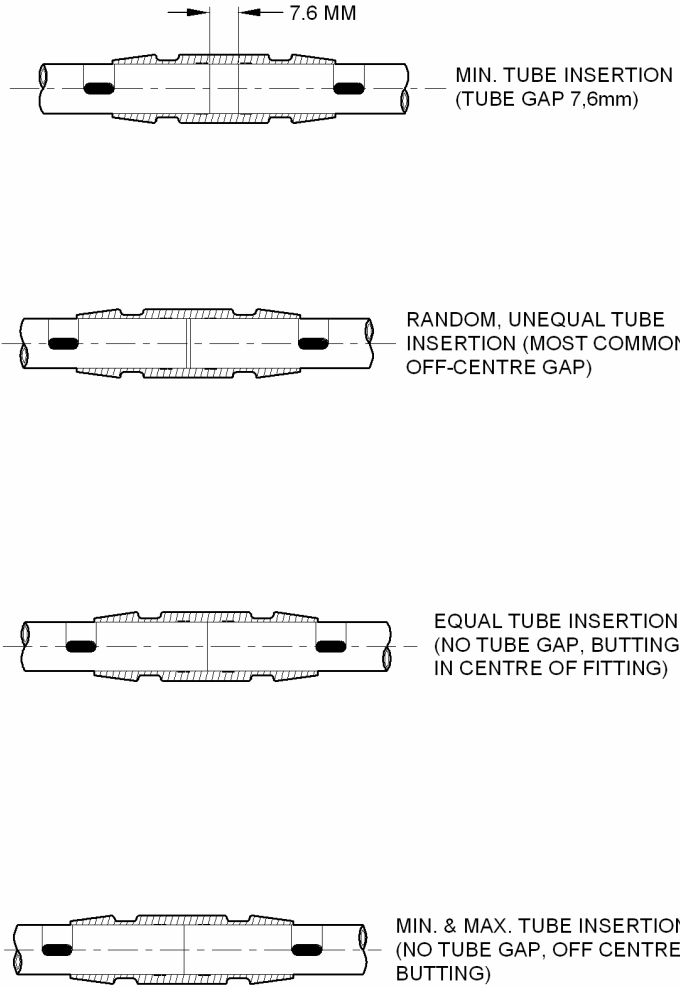

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Figure 2-1 Permaswage Fitting - Installation (sheet 3/4)

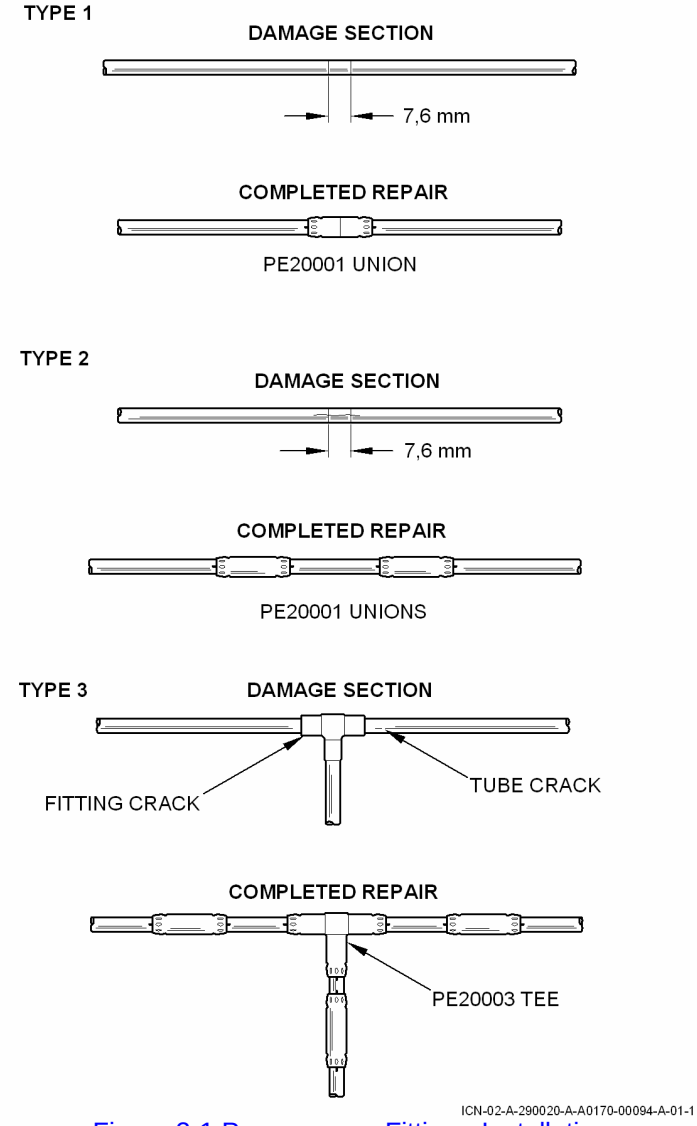


Figure 2-1 Permaswage Fitting - Installation
(sheet 4/4)

2-4 HARRISON FITTING - INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	15,00	
Installation	AFM	1	45,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 60 (Min.)
Total Time Detention System: 60 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

PROCEDURE:

2-4.1 DESCRIPTION OF EQUIPMENT

1. All swaging equipment is supplied by SIERRACIN/HARRISON and is composed of following:

(Cont'd)

2-4.1 DESCRIPTION OF EQUIPMENT (Cont'd)

A. BASIC TOOLING: portable swager Model 5175E and 5270E comprising swaging head assembly and electric pump.

Model 5175E for tubing OD 1/4" to 1/2" (-04 to -08)

Model 5720E for tubing OD 5/8" to 1/2" (-10 to -24)

B. EXTERNAL TOOLING: jaws and anvils for sizes of tubing and fitting shape (union of sleeve) (refer to figure 2-2, sheet 1/3) and (refer to figure 2-2, sheet 2/3) and refer to internal swaging process for details and specific P/N.

C. INTERNAL TOOLING: drawbolt, expander, pair of seal rings, bushing and anti-extrusion ring. Internal tooling is assembled for use as shown in (refer to figure 2-2, sheet 1/3) and (refer to figure 2-2, sheet 2/3) .

2-4.2 INTERNAL SWAGING PROCEDURE

1. PREPARATION. Prior to assembly, each part must be checked for freedom from contamination (chips, dirt) and damage. Contamination must be removed by a clean cloth dampened with methylethylketone. The machine must be equipped in the following order:

A. Insert the adapter corresponding to the drawbolt in the tool head, and tighten.

B. Insert the appropriate anvil for the pipe diameter and the fitting shape used (union of sleeve); arrest it by means of the retaining nut, and select the corresponding jaws.

C. Equip the drawbolt per internal tooling depending on the pipe wall thickness and the fitting shape (union of sleeve) to be swaged, and install it in the already fitted adapter.

2-4.3 PROCEDURE

1. Lightly lubricate the pipe end interior and the expander outside diameter with neutral vaseline or another approved lubricant. If several expanding operations are performed in succession, lubrication of the expander must be repeated when necessary (usually every third swage).
2. Wipe the pipe end exterior with a white clean cloth to prevent inclusion of foreign matter and lubricant when expanding the pipe.
3. Slide the pipe and the fitted connecting piece over the appropriate internal tool. Make sure that the pipe and the sleeve or union rest against the corresponding stops of the anvil.
4. Install jaws and slide retainer ring over them. In the case of Model 5175E swager, the retainer ring is slid firmly over jaws by hand. In the case of Model 5720E swager, the threaded bolts are installed in the retainer ring by hand and then tightened by means of a wrench.
5. Set swaging pressure on the machine according to the following procedure.
   A. Disconnect hose.
   B. Close dump valve (clockwise) and press switch to position No. 1.
   C. Hold switch at position No. 1 and adjust pressure to value shown in Table 2-4. by turning the pressure control valve.
   D. Release switch to position No. 2, open dump valve, close dump valve, and repressurize (press switch to position No. 1). Repeat 2 times, to make sure pressure repeatability.
   E. Release switch and open dump valve.
6. Perform the internal swaging according to the following procedure.

(Cont'd)

2-4.3 PROCEDURE (Cont'd)

A. Connect hose; tooling are positioned as shown in step 1 thru 4.

B. Close dump valve, press switch to position No. 1, and allow pressure to reach value from step 5(c).

C. Release switch to position No. 2, open dump valve and remove swaged fitting.

7. The swaging pressures shown in Table 2-4. are the minimum pressures to obtain proper swaging. If the after-swage groove depth (dimension 2A) is below minimum tolerance shown in Figure (refer to figure 2-2, sheet 3/3) , the internal swaging procedure can be repeated twice with increased pressure.

Table 2-3. Swaging pressure table

PIPE O.D			PIPE WALL THIKNESS		SWAGER model	WORKING PRESSURE psi		MAX SAFE PRESSURE
SIZE	inch	mm	inch	mm		21-6- 9 CRES	T6 Al Alloy	
-4	1/4	6.35	0.020 0.028	0.510.71	5175 E	500- -	- -200	580
-5	5/16	7.94	0.0200.028	0.510.71		750- -	- -350	1050
-6	3/8	9.52	0.0200.028	0.510.71		1150- -	- -400	1900
-8	1/2	12.70	0.0260.035	0.560.89		2070- -	- -950	2700
-10	5/8	15.87	0.0330.049	0.911.24	5720 E	850- -	- -590	1650
-12	3/4	19.05	0.0390.058	0.991.47		1600- -	- -1050	2500
-16	1	25.40	0.0520.065	1.321.65		3050- -	- -1200	5000

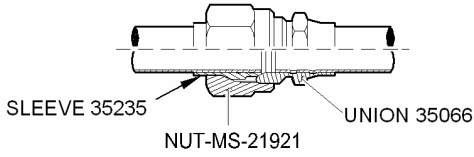
2-4.4 PIPE DEFORMATION AFTER SWAGE

1. To obtain a connection able to withstand the operating loads, the deformation 2A (groove depth) indicated in Figure (refer to figure 2-2, sheet 3/3) must be chieved. The dimension 2A is measured only at the second groove as shown in Figure (refer to figure 2-2, sheet 3/3) calculation example.

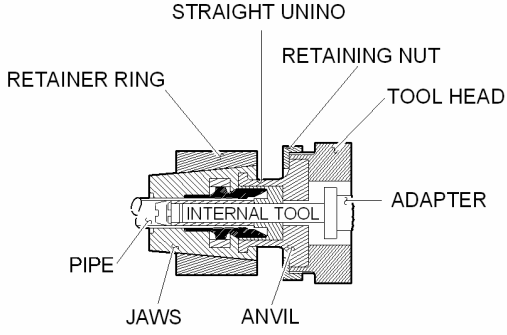
FOLLOW ON MAINTENANCE:

None

HARRISON REMOVABLE SWAGED FITTING



EXTERNAL TOOL HEAD EQUIPPED FOR UNION



EXTERNAL TOOL HEAD EQUIPPED FOR SLEEVE

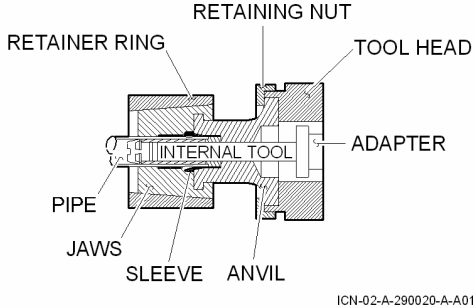


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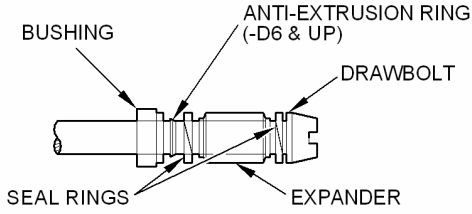
Figure 2-2 Harrison Fitting - Installation
(sheet 1/3)

STANDARD INTERNAL TOOLING



SPECIALIZED INTERNAL TOOLING FOR SIZE -4 TUBING ONLY

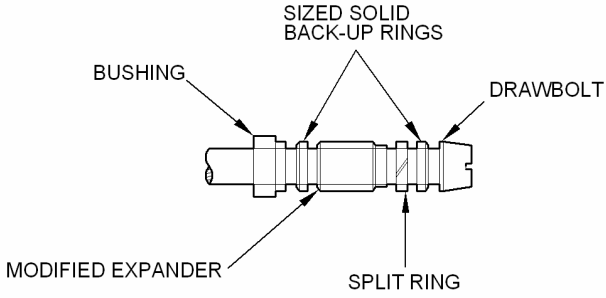


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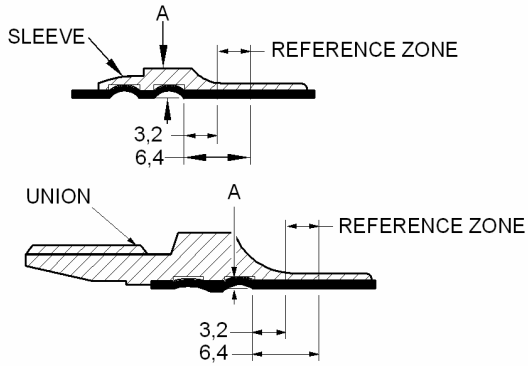
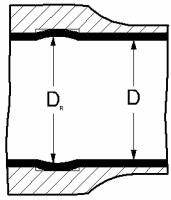
Figure 2-2 Harrison Fitting - Installation
(sheet 2/3)

PIPE DEFORMATION AFTER SWAGE



CALCULATION EXAMPLE



$2A = D_R - D$

PIPE DEFORMATION AFTER SWAGE TABLE

PIPE O.D.			DEFORMATION 2A GROOVE DEPTH							
			SLEEVE				UNION			
SIZE	INCH	MM	INCH		MM		INCH		MM	
			MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
-4	1/4	6.35	0.020	0.032	0.51	0.81	0.017	0.028	0.43	0.71
-5	5/16	7.94	0.020	0.032	0.51	0.81	0.017	0.028	0.43	0.71
-6	3/8	9.52	0.020	0.032	0.51	0.81	0.017	0.028	0.43	0.71
-8	1/2	12.70	0.020	0.032	0.51	0.81	0.023	0.034	0.58	0.86
-10	5/8	15.87	0.022	0.034	0.56	0.86	0.021	0.032	0.53	0.81
-12	3/4	19.05	0.026	0.038	0.66	0.96	0.023	0.034	0.58	0.86
-16	1	25.40	0.028	0.040	0.71	1.02	0.029	0.040	0.74	1.02

ICN-02-A-290020-A-A0170-00096-A-01-1

Figure 2-2 Harrison Fitting - Installation
(sheet 3/3)

2-5 DRAINING OF HYDRAULIC FLUID FOR SAMPLING PROCEDURE - DRAIN

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Open the access panels 414D and 414J (424D and 424J).
2. Connect the external electrical supply from the aircraft (refer to manual TCH.1C-27J-2-00GV) and (refer to manual TCH.1C-27J-2-00GV) .

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	20,00	
Removal	AFM	1	2,00	
Installation	AFM	1	5,00	
Follow Maintenance	AFM	2	20,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 87 (Min.)
Total Time Detention System: 47 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00262	Test stand, hydraulic system (diesel engine)	846805-D**

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00016	LOCK WIRE	MS20995C32	AR
00043	HYDRAULIC FLUID	MIL-PRF-83282D	AR

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

2-5.1 Carry out sampling procedure as follows:

NOTE

Hydraulic fluid must be at ambient temperature.

A. Open the access panel 414J (424J) and 414D (424D) located in the LH (RH) nacelle.

B. Cut the lockwire of reservoir drain cock.

NOTE

It is possible to operate with the ACMP1 (ACMP2).

C. Connect the external electrical supply from the aircraft.

D. Set up the hydraulic test stand as follows: delivery pressure 3000 psi (210 kg/cm2).

NOTE

Use graduated container for discarded hydraulic fluid.

E. By opening very slowly the reservoir drain cock, drain and discard about 500 c.c. of hydraulic fluid.

F. Using a steril sampler take the necessary quantity of fluid and send to laboratory.

(Cont'd)

2-5.1 Carry out sampling procedure as follows: (Cont'd)

G. Annul the hydraulic pressure in the No. 1 (No. 2) Hydraulic System.

H. Close the reservoir drain cock reservoir and restore the lockwire.

I. Check the hydraulic fluid quantity throughout the reservoir visual fluid level quantity indicator and,if necessary replenish.

J. Close the access panel 414J (424J) and 414D (424D) located in the LH (RH) nacelle.

K. Disconnect the external electrical supply from the aircraft.

The aircraft system hydraulic fluid shall meet the criteria as specified in Table 1-1 (NAS 1638):

- Class 7 for a new aircraft
- Class 8 for an aircraft under normal operating conditions
- Class 9 represents the maximum contamination limit allowed. If this limit is exceeded, it will benecessary, with proper flushings, to have the fluid in same condition as for class 7.

Table 2-4. Hydraulic system max contamination limits (on 100 sample size)

PARTICLE SIZE RANGER (microns)	CLASSES		
	7	8	9
From 5 to 15	32000	64000	128000
From 15 to 25	5700	11400	22800
From 25 to 50	1012	2025	4050
From 50 to 100	180	360	720
Above 100	32	64	128

FOLLOW ON MAINTENANCE:

1. Close the access panel 414J (424J) and 414D (424D) located in the LH (RH) nacelle.
2. Disconnect the external electrical supply from the aircraft (refer to manual TCH.1C-27J-2-00GV) and (refer to manual TCH.1C-27J-2-00GV).

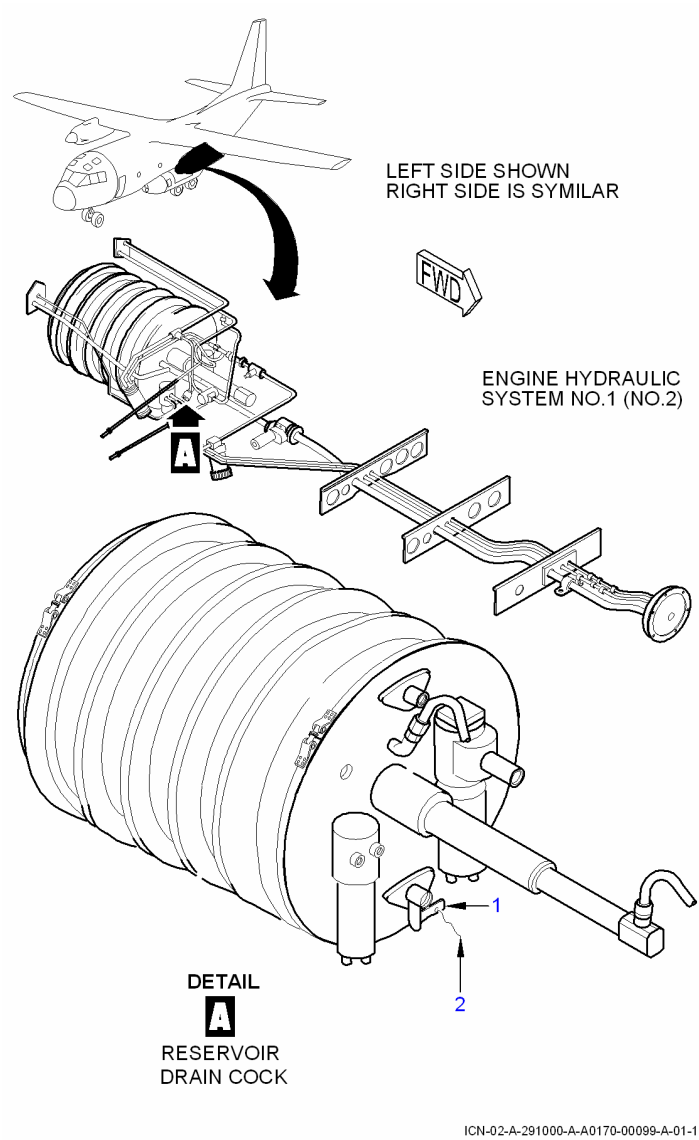


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Figure 2-3 Draining of Hydraulic Fluid for Sampling Procedure - Drain (sheet 1/2)

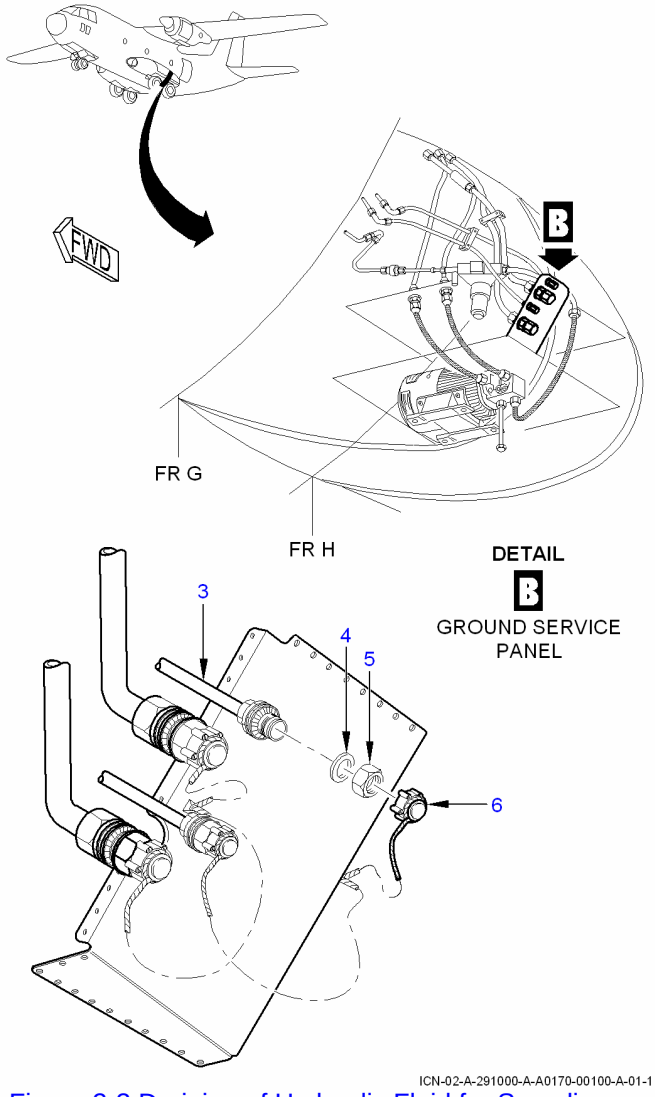

Figure 2-3 Draining of Hydraulic Fluid for Sampling Procedure - Drain (sheet 2/2)

2-6 BLEEDING HYDRAULIC SYSTEM - BLEED

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

NOTE

To ensure the best results, the following rules should be observed whenever a hydraulic component is refitted.

1. To avoid a large volume of air entering the system, fill the component concerned with hydraulic fluid before fitting.
2. Before reconnecting the coupling, bleed the section of piping upstream the disconnected component using the hand pump hydraulic stand (AGE NO. 00264).
3. All hydraulic actuators removed should be refilled with fluid and bled before being refitted.
4. Check the test stand reservoir (AGE NO. 00262) and top up if necessary to the correct level. The test stand reservoir must be at least 3/4 full.
5. After having carried out a bleeding operation, pressurize with hand pump hydraulic stand (AGE NO. 00264) before starting up engine.
6. Open the access panels 913A and 913B.

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	6,00	
Test	AFM	2	26,00	
Follow Maintenance	AFM	2	6,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 76 (Min.)
Total Time Detention System: 38 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00055	Kit adapter for hydraulic hand pump stand	G0001200002
00262	Test stand, hydraulic system (diesel engine)	846805-D**
00264	Stand, hydraulic, hand pump	867105-000

Consumable Material Required:

None

Safety Conditions:

None

PROCEDURE:

2-6.1 GENERAL

1. Hydraulic system bleeding is required whenever component connections are disturbed during maintenance operations or when system operation indicated that air is present.

2-6.2 BLEEDING NO. 1 SYSTEM (refer to figure 2-4, sheet 1/2) and (refer to figure 2-4, sheet 2/2) .

1. Set up the hydraulic test stand (AGE NO. 00262) as follows: flow 8 gpm (30 l/min), pressure 1422 psi (98.9 kg/cm^2), operating with stand reservoir depressurized (aircraft reservoir empty) and return pressure 17 psi (1.20 kg/cm^2).
2. Connect delivery and return hoses of the hydraulic test stand to respective No. 1 system test ports of ground service panel by removing caps (2 and 3) of the delivery hoses (1) and return hoses (8).

(Cont'd)

2-6.2 BLEEDING NO. 1 SYSTEM (refer to figure 2-4, sheet 1/2) and (refer to figure 2-4, sheet 2/2) . (Cont'd)

3. Supply the circuit from the test stand, then operate the following controls several times in order to bleed No. 1 system: flaps (normal circuit), spoilers, elevators and rudder.

NOTE

Perform step 4 and step 6 only in case of bleeding due to a complete system replenishment or the Reservoir installation.

4. Bleed the aircraft reservoir pressurization pipe by slacking the pipe fitting (9) from union (10) of the reservoir No. 1 system.
5. The system is bled when the hydraulic fluid, visible through the test stand transparent pipe, is free of air bubbles.
6. Retighten the pipe fitting (9) at the union (10) after bleeding.
7. Stop the hydraulic test stand (AGE NO. 00262) and annul the pressure.

2-6.3 BLEEDING NO. 2 SYSTEM (refer to figure 2-4, sheet 1/2) and (refer to figure 2-4, sheet 2/2)

1. Set up the hydraulic test stand (AGE NO. 00262) as follows: flow 8 gpm (30 l/min), pressure 1422 psi (98.9 kg/cm^2), operating with stand reservoir depressurized (aircraft reservoir empty) and return pressure 17 psi (1.20 kg/cm^2).
2. Connect delivery and return hoses of the hydraulic test stand to respective No. 2 system test ports of ground service panel by removing caps (4 and 5) of the delivery hoses (7) and return hoses (6).

(Cont'd)

2-6.3 BLEEDING NO. 2 SYSTEM (refer to figure 2-4, sheet 1/2) and (refer to figure 2-4, sheet 2/2) (Cont'd)

3. Supply the circuit from the test stand, then operate the following controls several times in order to bleed No. 2 system: flaps (emergency circuit), spoilers, elevators, rudder, lift dumper, landing gear, ramp and cargo door.

NOTE

Perform step 4 and step 6 only in case of bleeding due to a complete system replenishment or the Reservoir installation.

4. Bleed the aircraft reservoir pressurization pipe by slacking the pipe fitting (9) from union (10) of the reservoir No. 2 system.
5. The system is bled when the hydraulic fluid, visible through the test stand transparent pipe, is free of air bubbles.
6. Retighten the pipe fitting (9) at the union (10) after bleeding.
7. Stop the hydraulic test stand (AGE NO. 00262) and annul the pressure.

FOLLOW ON MAINTENANCE:

1. Refill the reservoir. Refer to REFILLING NO. 1 AND NO. 2 HYDRAULIC SYSTEM RESERVOIRS described (refer to manual TCH.1C-27J-2-12JG).
2. Close the access panels 913A and 913B.

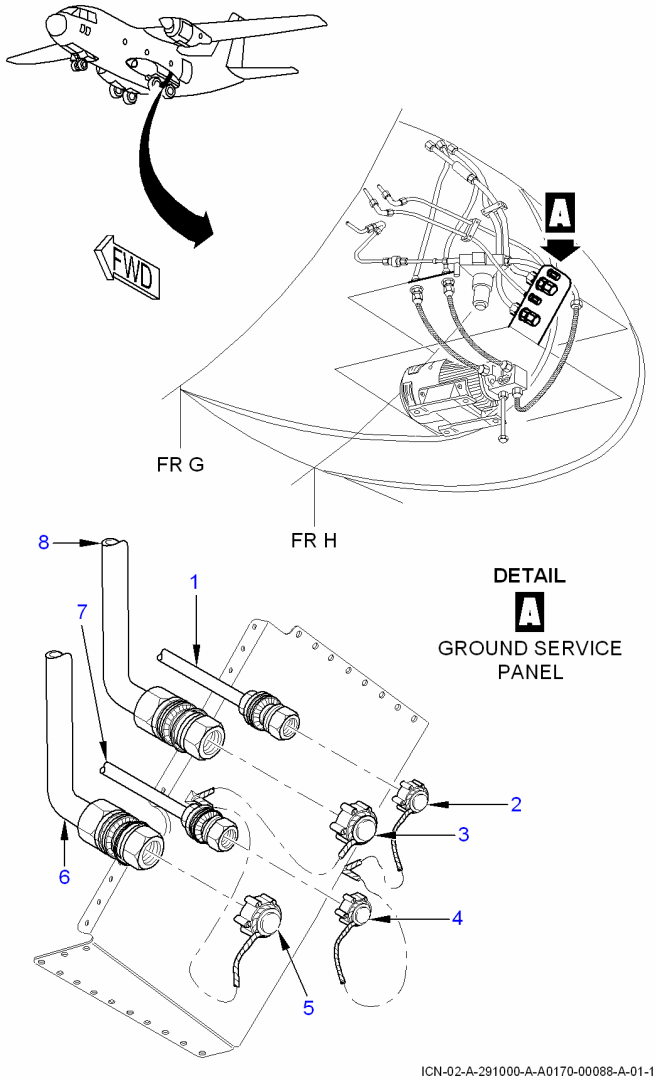

Figure 2-4 Bleeding Hydraulic System - Bleed
(sheet 1/2)

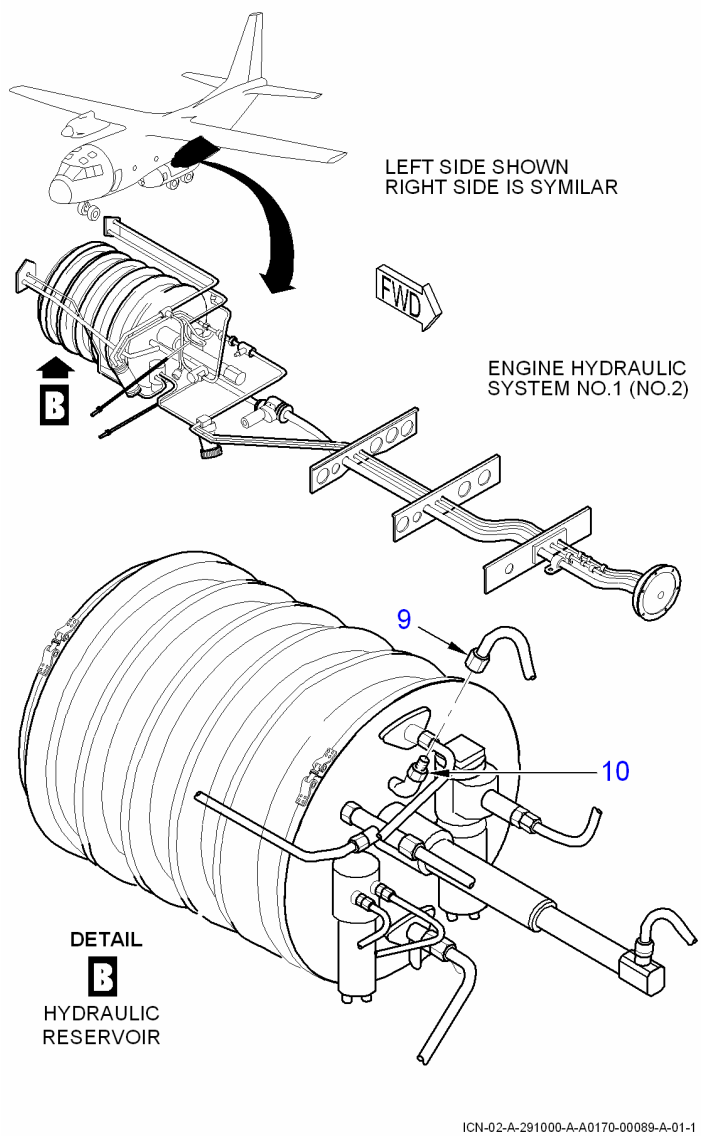

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Figure 2-4 Bleeding Hydraulic System - Bleed
(sheet 2/2)

2-7 FLUSHING HYDRAULIC SYSTEM - REMOVAL CONTAMINATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

None

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	5	45,00	
Test	AFM	2	110,00	
Follow Maintenance	AFM	5	45,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 670 (Min.)
Total Time Detention System: 200 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00014	Jack spherical adapter	A34511-100
00015	Jack spherical adapter	A34511-100A
00262	Test stand, hydraulic system (diesel engine)	846805-D**

Consumable Material Required:

None

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

2-7.1 PROCEDURE FOR ROUTINE FLUSHING AND SAMPLING OF HYDRAULIC SYSTEMS TO REMOVE FINE PARTICULATE CONTAMINATION

CAUTION

Hydraulic fluid samples can be analyzed at the field or laboratory using proper equipment

NOTE

Contamination in the hydraulic system can have a very adverse effect upon the operation of the aircraft and system components. Every effort shall be made to prevent contamination inside the system. The flushing and oil sampling procedures shall be accomplished in an area as clean and dust free as possible. The hydraulic test stand shall be properly serviced and maintained and all equipment shall be clean. All hoses, ports and connections shall have dust caps or plugs in place when not in use.

2-7.2 FLUSHING NO. 2 SYSTEM (refer to figure 2-5, sheet 2/2) and (refer to figure 2-5, sheet 1/2)

(Cont'd)

2-7.2 FLUSHING NO. 2 SYSTEM (refer to figure 2-5, sheet 2/2) and (refer to figure 2-5, sheet 1/2) (Cont'd)

1. Remove the return filter element (6) of No. 2 system and replace it with a new one, (refer to para 2-11) . In alternative, and in order to reduce filter element scraping, modify a new cartridge, by drilling it with three holes of at least of 0.39 in (10 mm) each, to be performed on the lateral cylindrical surface separated by not less than 0.39 in (10 mm) (longitudinally) and 120° degree (laterally). After that, clean and install on aircraft for flushing procedure. This cartridge will be used for the future flushing operation.
2. Connect the pressure hose and suction hose from the hydraulic test stand (AGE NO. 00262) to No. 2 system pressure ground sockets (3 and 4).
3. Verify that the hydraulic test stand (AGE NO. 00262) reservoir has sufficient quantity of hydraulic fluid since a substantial amount of fluid will be lost during flushing.
4. Set test stand reservoir selector valve to aircraft reservoir.
5. Regulate the test stand at flow rate of 5 gpm (19 l/min), and the pressure line at 900 psi (63 kg/cm^2).
6. Start and operate the test stand according to the applicable rules.
7. With hydraulic test stand (AGE NO. 00262) in operation, drain the reservoir by opening the reservoir drain cock (8) after cutting lock wire (7). After the reservoir has been emptied, refill it again as per applicable procedure.

(Cont'd)

2-7.2 FLUSHING NO. 2 SYSTEM (refer to figure 2-5, sheet 2/2) and (refer to figure 2-5, sheet 1/2) (Cont'd)

NOTE

If a not modified cartridge has been used : If the clogging indicator of the return filter comes out during the flushing procedure, stop the operation. Visually check return filter cartridge. In case of heavy contamination replace the filter element, and restart the procedure afterwards.

8. Regulate the test stand (AGE NO. 00262) at flow rate of 13 gpm (50 l/min), the pressure line at 3000 psi (211 kg/cm^2).
9. Start and operate the test stand according to the applicable procedures.
10. Cycle rudder, ailerons and elevator through their full deflection by moving rudder pedals and control wheel for 15 minutes. Actuate wheel brakes (normal) for 15 minutes. Use caution to prevent damage to components.
11. Actuate ramp and cargo door, attitude variation system and flaps through 10 complete cycles.
12. Jack the Aircraft (AGE NO. 00014 and AGE NO. 00015) and actuate the Landing Gear through 10 complete cycles.
13. With hydraulic test stand (AGE NO. 00262) regulated as per above step 6, drain reservoir by opening the reservoir drain cock (8). After emptying reservoir, refill it again.
14. Take an hydraulic fluid sample from the system in accordance with (refer to para) .

(Cont'd)

2-7.2 FLUSHING NO. 2 SYSTEM (refer to figure 2-5, sheet 2/2) and (refer to figure 2-5, sheet 1/2) (Cont'd)

NOTE

If the hydraulic fluid sample exceeds the maximum contamination limit, restart the procedure from step 8, before replacing the filter elements.

15. Disconnect the pressure hose and suction hose from hydraulic test stand (AGE NO. 00262) to No. 2 system pressure ground sockets (3 and 4).
16. Remove all the filter elements of NO.2 system and replace them with a new one, (refer to para 2-12) , (refer to para 2-9) and (refer to para 2-11) .

NOTE

Once the flushing procedure is completed, make sure that the "Dummy" filter has been removed.

2-7.3 FLUSHING NO. 1 SYSTEM (refer to figure 2-5, sheet 2/2) and (refer to figure 2-5, sheet 1/2)

1. Remove the return filter element (6) of NO. 1 system and replace it with a new one, (refer to para 2-11) . In alternative, and in order to reduce filter element scraping, modify a newcartridge, by drilling it with three holes of at least of 0.39 in (10 mm) each, to be performed on the lateral cylindrical surface separated by not less than 0.39 in (10 mm) (longitudinally) and 120° degree (laterally). After that, clean and install on aircraft for flushing procedure. This cartridge will be used for the future flushing operation.
2. Connect the pressure hose and suction hose to the hydraulic test stand (AGE NO.00262) to No. 1 system pressure ground sockets (1 and 2).

(Cont'd)

2-7.3 FLUSHING NO. 1 SYSTEM (refer to figure 2-5, sheet 2/2) and (refer to figure 2-5, sheet 1/2) (Cont'd)

3. Verify that the hydraulic test stand (AGE NO. 00262) reservoir has sufficient quantity of hydraulic fluid since a substantial amount of fluid will be lost during flushing.
4. Set test stand reservoir selector valve to aircraft reservoir.
5. Regulate the test stand (AGE NO. 00262) at flow rate of 5 gpm (19 l/min), and the pressure line at 900 psi (63 kg/cm²).
6. Start and operate the test stand according to the applicable rules.
7. With hydraulic test stand (AGE NO. 00262) in operation, drain the reservoir (5) by opening the reservoir drain cock (8) after cutting wire lock (7). After the reservoir (5) has been emptied, refill it again as per applicable procedure.

NOTE

If a not modified cartridge has been used : If the clogging indicator of the return filter comes out during the flushing procedure, stop the operation. Visually check return filter cartridge. In case of heavy contamination replace the filter element, and restart the procedure afterwards.

8. Regulate the test stand (AGE NO. 00262) at flow rate of 13 gpm (50 l/min), the pressure line at 3000 psi (211 kg/cm²).
9. Start and operate the test stand according to the applicable procedures.

(Cont'd)

2-7.3 FLUSHING NO. 1 SYSTEM (refer to figure 2-5, sheet 2/2) and (refer to figure 2-5, sheet 1/2) (Cont'd)

10. Cycle rudder, ailerons and elevator through their full deflection by moving rudder pedals and control wheel for 15 minutes. Actuate wheel brakes (parking/emergency) for 15 minutes. Use caution to prevent damage to components.
11. Actuate flaps through 10 complete cycles.
12. With hydraulic test stand (AGE NO. 00262) regulated as per above step 6, drain the reservoir by opening the reservoir drain cock (6). After emptying reservoir, refill it again.
13. Take an hydraulic fluid sample from the system in accordance with (refer to para).

NOTE

If the hydraulic fluid sample exceeds the maximum contamination limit, restart the procedure from step 8. before replacing the filter elements.

14. Disconnect the pressure hose and suction hose from hydraulic test stand (AGE NO.00262) to No. 1 system pressure ground sockets (1 and 2).
15. Remove all the filter elements of No.2 system and replace them with a new one, (refer to para 2-12) , (refer to para 2-9) and (refer to para 2-11) .

NOTE

Once the flushing procedure is completed, make sure that the "Dummy" filter has been removed.

FOLLOW ON MAINTENANCE:

None

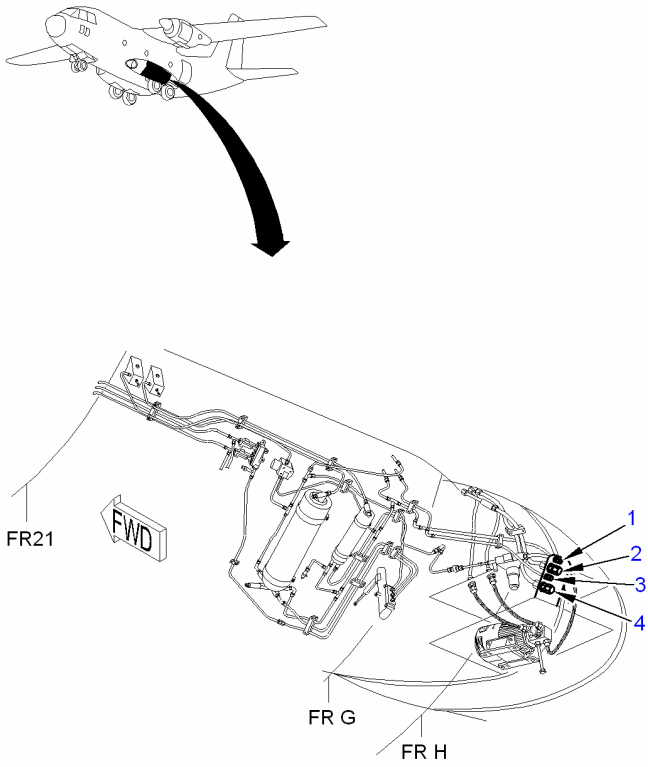

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Figure 2-5 Flushing Hydraulic System - Remove Contamination (sheet 1/2)

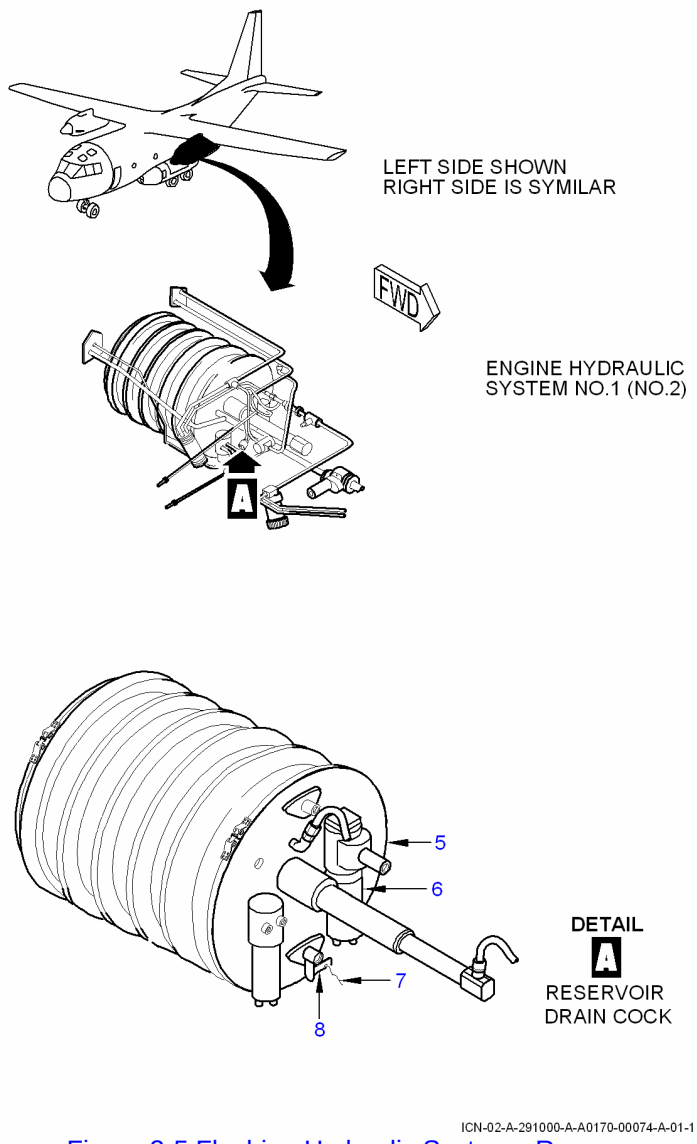

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Figure 2-5 Flushing Hydraulic System - Remove Contamination (sheet 2/2)

2-8 HYDRAULIC RESERVOIRS - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Position maintenance platform (AGE NO. 00074).
2. Open the access panels 414D, 414J (424D,424J) and 913A, 913B.
3. Connect the external electrical supply to the aircraft (refer to manual TCH.1C-27J-2-00GV) .
4. Electrically close the Fire Shut-Off valve.
5. Disconnect the external electrical supply to the aircraft. (refer to manual TCH.1C-27J-2-00GV)

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	25,00	
Removal	AFM	2	40,00	
Installation	AFM	2	55,00	
Test	AFM	2	45,00	
Follow Maintenance	AFM	2	25,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 380 (Min.)
Total Time Detention System: 190 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**
00074	Kit, aircraft assy platform	G0005100001
00262	Test stand, hydraulic system (diesel engine)	846805-D**
00264	Stand, hydraulic, hand pump	867105-000

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00015	NUT, SELF-LOCKING	MS21042-L3	1,00
00016	LOCK WIRE	MS20995C32	AR
00027	PACKING, PREFORMED	M83461/2-908	1,00
00031	PACKING, PREFORMED	M83461/2-904	2,00
00032	O-RING, PREFORMED	M83461/2-906	1,00
00043	HYDRAULIC FLUID	MIL-PRF-83282D	AR
00044	O-RING	M83461-2-916	1,00

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance

PROCEDURE:

NOTE

This procedure is valid for LH hydraulic reservoir. For RH hydraulic reservoir is similar.

2-8.1 REMOVAL (refer to figure 2-6, sheet 1/2) and (refer to figure 2-6, sheet 2/2)

WARNING

BEFORE YOU REMOVE ANY HYDRAULIC COMPONENT, RELEASE SYSTEM PRESSURE. THIS WILL PREVENT INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

WARNING

USE TWO PERSONS FOR REMOVAL OF THE RESERVOIR TO PREVENT INJURY.

WARNING

HYDRAULIC FLUID IS ACID. AVOID CONCTACT WITH SKIN AND WEAR APPROPRIATE, IMPERVIOUS CLOTHING WHEN HANDLING THE HYDRAULIC FLUIDS. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

CAUTION

Do not use drained fluid from Hydraulic System. A hydraulic fluid leak may occur. This would cause damage to the equipment and loss of mission effectiveness.

(Cont'd)

2-8.1 REMOVAL (refer to figure 2-6, sheet 1/2) and (refer to figure 2-6, sheet 2/2) (Cont'd)

CAUTION

Install protection caps on the disconnected electrical connectors and hoses.

1. Connect hydraulic test stand (AGE NO. 00262) to No. 1 (No. 2) system pressure and suction ground test sockets (ground service panel).
2. Using the hydraulic test stand (AGE NO. 00262), discharge the hydraulic reservoir system No. 1 (No. 2).
3. Verify that the reservoir (2) is empty through the visual fluid level indicator.
4. Disconnect the electrical connector (12) on the reservoir level transmitter (11).
5. Use a container to collect drained fluid (about 1 litre).
6. Loose the return union (14), remove the lock wire (42), open the reservoir drain cock (41) and discharge the remaining hydraulic fluid.
7. Close reservoir drain cock (41).
8. Disconnect drain pipe (44) from the reservoir (2).
9. Disconnect the clamps (45 and 20) connecting the draining pipe (44) to the hydraulic accumulator sensing pipe (19) by removing screw (17), flat washer (18) and self locking nut (46). Discard removed self locking nut.
10. Remove the draining pipe (44).
11. Disconnect the ACMP and EDP drain ports pipe (28 and 35) from the case drain filter (32).
12. Disconnect the suction port (leading to EDP) from the TEE union (36) on the reservoir (2).

(Cont'd)

2-8.1 REMOVAL (refer to figure 2-6, sheet 1/2) and (refer to figure 2-6, sheet 2/2) (Cont'd)

13. Disconnect the jumper (24) by removing screw (27), flat washers (26, 25 and 23), self locking nut (22). Discard removed self locking nuts.
14. Disconnect the wig-o-flex (21) on the other side of the suction pipe (EDP) (35) and remove suction pipe (EDP) (35).
15. Disconnect the other suction pipe (ACMP) (28) from the reservoir (2).
16. On return filter (7) disconnect the return pipe (15).
17. Disconnect pressurization pipe (4) from the reservoir (2).
18. Disconnect the pressurization pipe (4) from the TEE union (47) on the pressurization line and remove this pipe.
19. Disconnect air bleeding pipe (16).
20. Cut the lock wires (39 and 9).
21. Remove the case drain and return filter bowls (40 and 8) from the two filters (32 and 7) on the reservoir (2) and empty them.
22. On the front and rear side of the reservoir (2) loose the bolt fastening the clamps (1 and 3) connecting the reservoir (2) to the nacelle structure providing that the task is performed by one person and the reservoir is held by another person.
23. Taking care to no damage pipes and the reservoir (2) move off the reservoir from the nacelle frame on the rear side and remove the reservoir (2).
24. Tighten the case drain and return filter bowls (40 and 8) to the two filters (32 and 7) on the reservoir (2).
25. Undress the reservoir (2) by removing unions (5, 14, 38, 30, 34 and 43) and O-rings (6, 13, 29, 31, 33 and 10). Discard removed O-rings.

2-8.2 INSTALLATION (refer to figure 2-6, sheet 1/2) and (refer to figure 2-6, sheet 2/2)

WARNING

TWO PEOPLE ARE NEEDED FOR THE RESERVOIR INSTALLATION TO PREVENT INJURY.

WARNING

HYDRAULIC FLUID IS ACID. AVOID CONCTACT WITH SKIN AND WEAR APPROPRIATE, IMPERVIOUS CLOTHING WHEN HANDLING THE HYDRAULIC FLUIDS. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

NOTE

Remove protection caps from the electrical connectors and hoses to be installed.

1. Dress reservoir (2) by installing new O-rings (5, 14, 38, 30, 34 and 43) (LCM NO. 00027, 00031 and 00032) and tighten draining union (43) torque to 155 inlb thru 165 inlb (1.8 mkg thru 1.9 mkg) (AGE NO. 00054), tighten case drain EDP union (34) torque to 155 inlb thru 165 inlb (1.8 mkg thru 1.9 mkg) (AGE NO. 00054), tighten case drain ACMP union (38) torque to 95 inlb thru 105 inlb (1.1 mkg thru 1.2 mkg) (AGE NO. 00054), tighten return union (14) torque to 280 inlb thru 305 inlb (3.2 mkg thru 3.5 mkg) (AGE NO. 00054), tighten union (30) torque to 800 inlb thru 900 inlb (9.2 mkg thru 10 mkg) (AGE NO. 00054) and tighten pressurization union (5) torque to 95 inlb thru 105 inlb (1.1 mkg thru 1.2 mkg) (AGE NO. 00054).

(Cont'd)

2-8.2 INSTALLATION (refer to figure 2-6, sheet 1/2) and (refer to figure 2-6, sheet 2/2) (Cont'd)

2. Cut the lock wires (39 and 9), loosen the filter bowls (40 and 8) and check the presence of filter elements.
3. Position the reservoir (2) into the rear side of the LH (RH) nacelle and connect it to the structure supports fastening the bolts of two connecting clamps (1 and 3) with a torque value of 50 in lb (0.6 m kg) (AGE NO. 00054).
4. Connect air bleeding pipe (16). Torque tighten to 120 inlb thru 135 inlb (1.4 mkg thru 1.6 mkg) (AGE NO. 00054).
5. Position pressurization pipe (4) and connect one side to the Tee (47) on the pressurization line and the other side to the reservoir HP port. Torque tighten to 135 inlb thru 190 inlb (1.6 m kg thru 2.2 mkg) (AGE NO. 00054).
6. On the return filter (7) on the reservoir return line connect the return pipe (15). Torque tighten to 3,1 mkg thru 4,0 mkg (270 inlb thru 350 inlb) (AGE NO. 00054).
7. Connect the suction port to the TEE union (36) on the reservoir (2). Torque tighten to 5,3 mkg thru 6,3 mkg (460 inlb thru 550 inlb) (AGE NO. 00054).
8. Position suction pipe (35) and connect the suction port (from EDP) to the reservoir (2). Torque tighten to 8,1 mkg thru 9,7 mkg (700 inlb thru 840 inlb) (AGE NO. 00054).
9. Connect the wig-o-flex (21) to the other side of suction pipe (EDP) (35).
10. Connect the jumper (24) using screw (27), flat washers (26, 25 and 23) and new self locking nut (22) (LCM NO. 00015).

(Cont'd)

2-8.2 INSTALLATION (refer to figure 2-6, sheet 1/2) and (refer to figure 2-6, sheet 2/2) (Cont'd)

11. On the case drain filter (32), on the reservoir case drain line, connect the ACMP and EDP case drain ports pipes (28 and 35). Torque tighten the ACMP port to 1,6 mkg thru 2,2 mkg (135 inlb thru 190 inlb) (AGE NO. 00054). Torque tighten the EDP port to 1,7 mkg thru 2,2 mkg (150 inlb thru 195 inlb) (AGE NO. 00054).
12. Position and connect the draining pipe (44) to the reservoir (2). Torque tighten to 1,7 mkg thru 2,2 mkg (150 inlb thru 195 inlb) (AGE NO. 00054).
13. Tighten the clamps (45 and 20) connecting the draining pipe (44) to the hydraulic accumulator sensing pipe (19) using screw (17), flat washer (18) and new self locking nut (46) (LCM NO. 00015).
14. Connect electrical connector (12) on the reservoir level transmitter (11).
15. Fill case drain and return filter bowls (40 and 8) with clean hydraulic fluid (LCM NO. 00043).
16. Torque tighten the return filter bowl (8) to 354 in lb thru 443 in lb (4.1 m kg thru 5.1 m kg) (AGE NO. 00054) and restore lock wire.
17. Torque tighten the case drain filter bowl (40) to 283 in lb thru 336 in lb (3.3 m kg thru 3.9 m kg) (AGE NO. 00054) and restore lock wires (39 and 9).

FOLLOW ON MAINTENANCE:

1. Connect hydraulic test stand (AGE NO. 00262) to No. 1 (No. 2) system pressure and suction ground test sockets (ground service panel).
2. Set up the hydraulic test stand (AGE NO. 00262) as follows: delivery pressure 900 psi (63.3 kg/cm^2).

WARNING

ENSURE THE RUDDER CAN MOVE FREELY AND DOES NOT CAUSE INJURY TO PERSONNEL.

3. Operate twenty times the rudder.
4. Annul the hydraulic pressure in the No.1 (No. 2) hydraulic system.
5. Loosen the reservoir pressurization pipe nut (4).
6. Disconnect the hydraulic test stand (AGE NO. 00262) and connect the hand pump (AGE NO. 00264) stand to the suction ground test sockets (ground service panel).

CAUTION

Avoid hydraulic fluid spilling using a clean cloth. This will reduce fluid leakage.

7. Operate the hand pump (AGE NO. 00264) until the reservoir (2) is full (check on reservoir visual fluid level indicator).
8. Verify that the reservoir visual fluid level indicator is on "F" (Full) position.
9. Tighten the reservoir pressurization pipe nut (4) to 135 in lb thru 190 in lb (1.6 m kg thru 2.2 m kg) (AGE NO. 00054).
10. Disconnect the hand pump stand (AGE NO. 00264).
11. Connect hydraulic test stand (AGE NO. 00262) to No. 1 (No. 2) system pressure and suction ground test sockets (ground service panel).

CAUTION

Avoid hydraulic fluid spilling using a clean cloth. This will reduce fluid leakage.

---

12. Set up the hydraulic test stand (AGE NO. 00262) as follows: delivery pressure 900 psi (63.3 kg/ cm^2).

CAUTION

Check for absence of air bubbles in the fluid flow.

---

13. Annul the hydraulic pressure in the No.1 (No. 2) hydraulic system.
14. Connect the external electrical supply to the aircraft (refer to manual TCH.1C-27J-2-00GV) .
15. Electrically open the Fire Shut-Off valve.
16. Disconnect the external electrical supply to the aircraft (refer to manual TCH.1C-27J-2-00GV) .
17. Refill the reservoir with the used hydraulic fluid (LCM NO. 00043) (refer to manual TCH.1C-27J-2-12JG).
18. Close the access panels 414D, 414J (424D,424J) and 913A, 913B.
19. Remove maintenance platform (AGE NO. 00074).

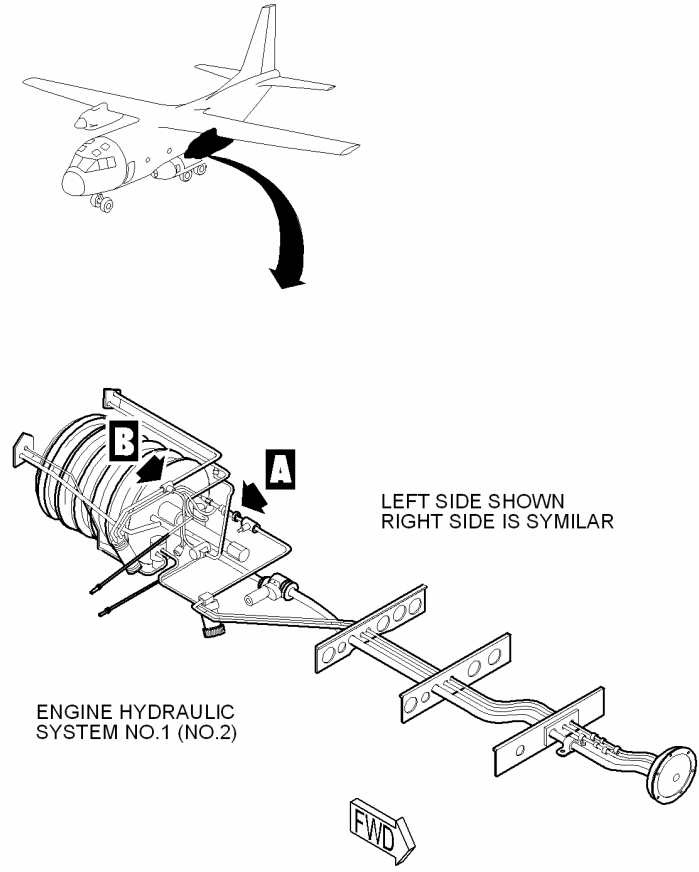

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Figure 2-6 Hydraulic Reservoir - Removal and Installation (sheet 1/2)

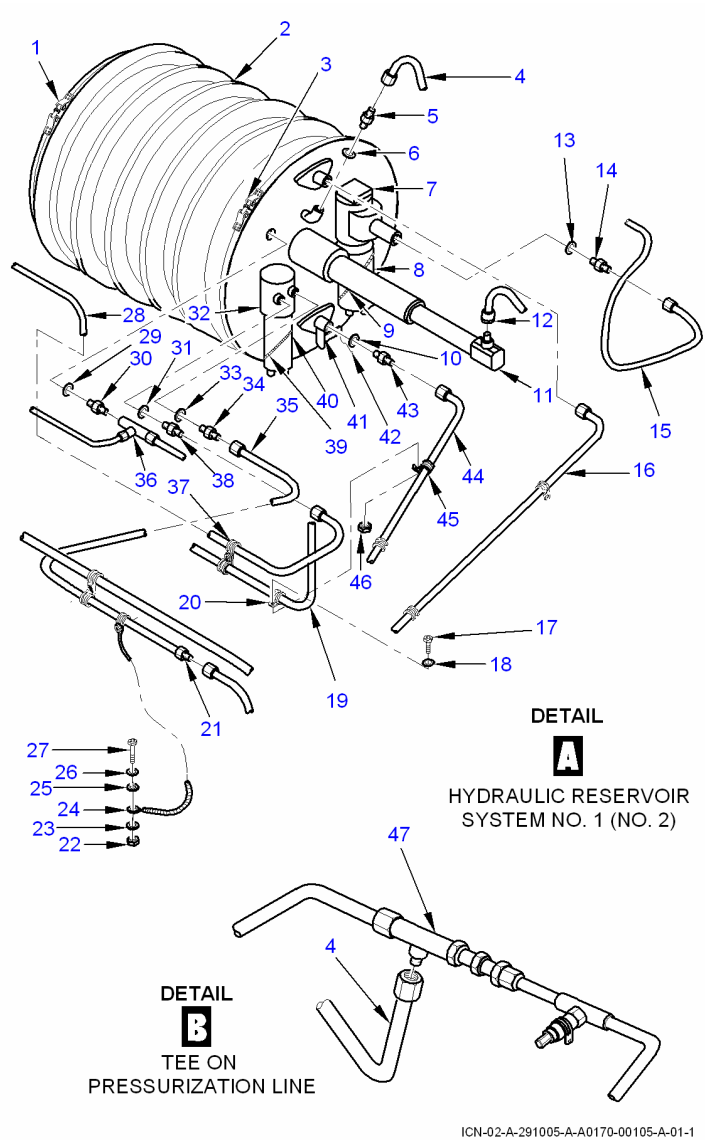

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Figure 2-6 Hydraulic Reservoir - Removal and Installation (sheet 2/2)

2-9 LOW PRESSURE FILTERS (CASE DRAIN FILTERS ELEMENT) - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect the external supply from the aircraft (refer to manual TCH.1C-27J-2-00GV) .
2. Position maintenance platform (AGE NO. 00074).
3. Open the access panel 414E (424E).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	9,00	
Removal	AFM	1	4,00	
Installation	AFM	1	8,00	
Follow Maintenance	AFM	2	9,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 48 (Min.)
Total Time Detention System: 30 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**
00074	Kit, aircraft assy platform	G0005100001

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00043	HYDRAULIC FLUID	MIL-PRF-83282D	AR
00049	LOCK WIRE	MS20995NC32	AR

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

NOTE

This procedure is valid for LH case drain filter element. For RH engine driven pump is similar.

2-9.1 REMOVAL (refer to figure 2-7)

WARNING

BEFORE YOU REMOVE ANY HYDRAULIC COMPONENT, RELEASE SYSTEM PRESSURE, IN ORDER TO PREVENT INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

(Cont'd)

2-9.1 REMOVAL (refer to figure 2-7) (Cont'd)

WARNING

HYDRAULIC FLUID IS ACID. AVOID CONCTACT WITH SKIN AND WEAR APPROPRIATE, IMPERVIOUS CLOTHING WHEN HANDLING THE HYDRAULIC FLUIDS. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

CAUTION

Do not use drained fluid from Hydraulic System. A hydraulic fluid leak may occur. This would cause damage to the equipment and loss of mission effectiveness.

1. Cut lock wire (1).
2. Loosen filter bowl (2).
3. Remove filter element.

2-9.2 INSTALLATION (refer to figure 2-7)

1. Install a new filter element into filter bowl (2).
2. Fill filter bowl (2) with clean hydraulic fluid (LCM NO. 00043).
3. Torque tighten the filter bowl (2) to 283 in lb thru 336 in lb (3.3 m kg thru 3.9 m kg) (AGE NO. 00054).
4. Install the new lock wire (1).

FOLLOW ON MAINTENANCE:

1. Close the access panel 414E (424E).
2. Remove maintenance platform (AGE NO. 00074).

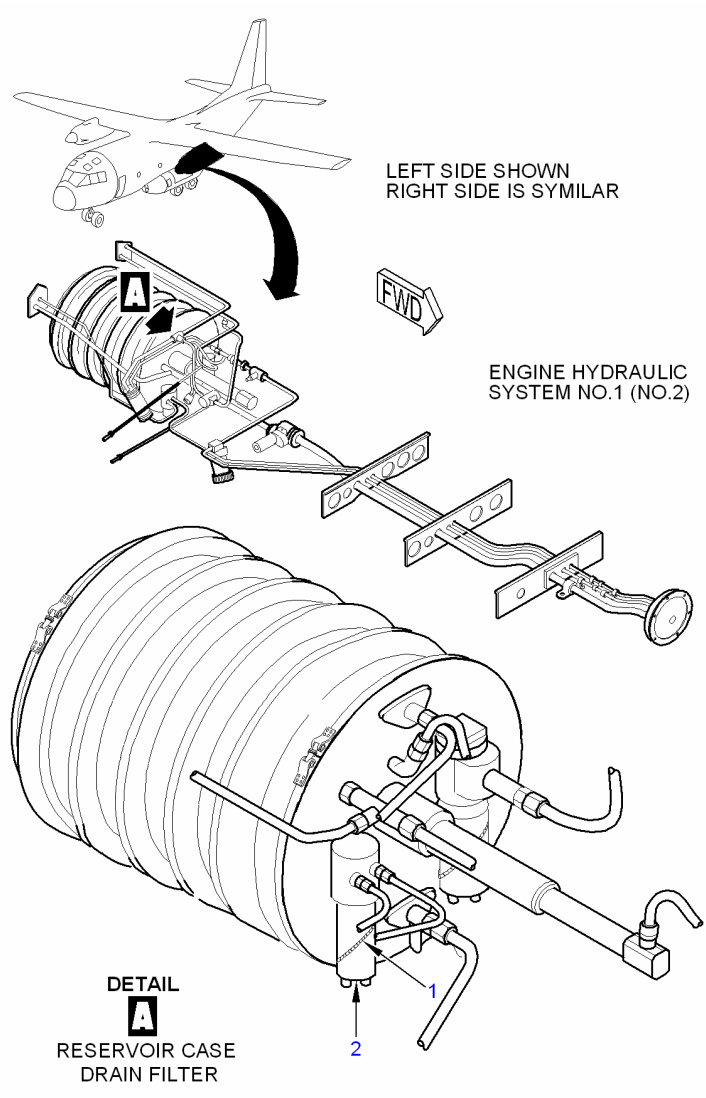

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Figure 2-7 Low Pressure Filters (Case Drain Filters Element) - Removal and Installation

2-10 LOW PRESSURE FILTERS (RETURN FILTERS) - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Position maintenance platform (AGE NO. 00074).
2. Open the access panel 414J (424J).
3. Disconnect external electrical supply (refer to manual TCH.1C-27J-2-00GV) .

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	9,00	
Removal	AFM	1	7,00	
Installation	AFM	1	14,00	
Follow Maintenance	AFM	2	9,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 57 (Min.)
Total Time Detention System: 39 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**
00074	Kit, aircraft assy platform	G0005100001

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00027	PACKING, PREFORMED	M83461/2-908	10,00
00043	HYDRAULIC FLUID	MIL-PRF-83282D	AR
00049	LOCK WIRE	MS20995NC32	AR

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

NOTE

This procedure is valid for LH return filter.
For RH return filter pump is similar.

2-10.1 REMOVAL (refer to figure 2-8)

WARNING

YOU MUST RELEASE THE PRESSURE IN THE SYSTEM BEFORE YOU DO THIS PROCEDURE.

CAUTION

Do not use drained fluid from hydraulic system.

CAUTION

Install protection caps on the disconnected hoses.

(Cont'd)

2-10.1 REMOVAL (refer to figure 2-8) (Cont'd)

1. Use a container to collect drained fluid.
2. Loosen the nut and disconnect the return hydraulic pipe (3).
3. Remove union (4) and preformed packing (3). Discard removed preformed packing.
4. Cut the lock wire (7).
5. Disconnect the return filter (1) by removing the two screws (2).
6. Remove the nipple from the return filter (1).
7. Remove and discard two packing from return filter (1).

2-10.2 INSTALLATION (refer to figure 2-8)

NOTE

Remove protection caps from the hoses to be installed.

1. Loosen the filter bowl (6).
2. Install two new packings into the groove of the nipple.
3. Carefully, insert the nipple into the return filter (1).
4. Install the return filter (1) using two screws (2).
5. Install the new lock wire (7).
6. Torque tighten both screws (2) to 22 in lb (0.255 m kg) thru 31 in lb (0.357 m kg) (AGE NO. 00054).
7. Connect union (4) and new preformed packing (3) (LCM NO. 00027) to return filter (1).
8. Connect the return hydraulic pipe (5) and tighten the nut.
9. Fill filter bowl (6) with clean hydraulic fluid (LCM NO. 00043).
10. Torque tighten the filter bowl (6) to 354 in lb thru 443 in lb (4.1 m kg thru 5.1 m kg) (AGE NO. 00054).

FOLLOW ON MAINTENANCE:

1. Close the access panel 414J (424J).
2. Remove maintenance platform (AGE NO. 00074).

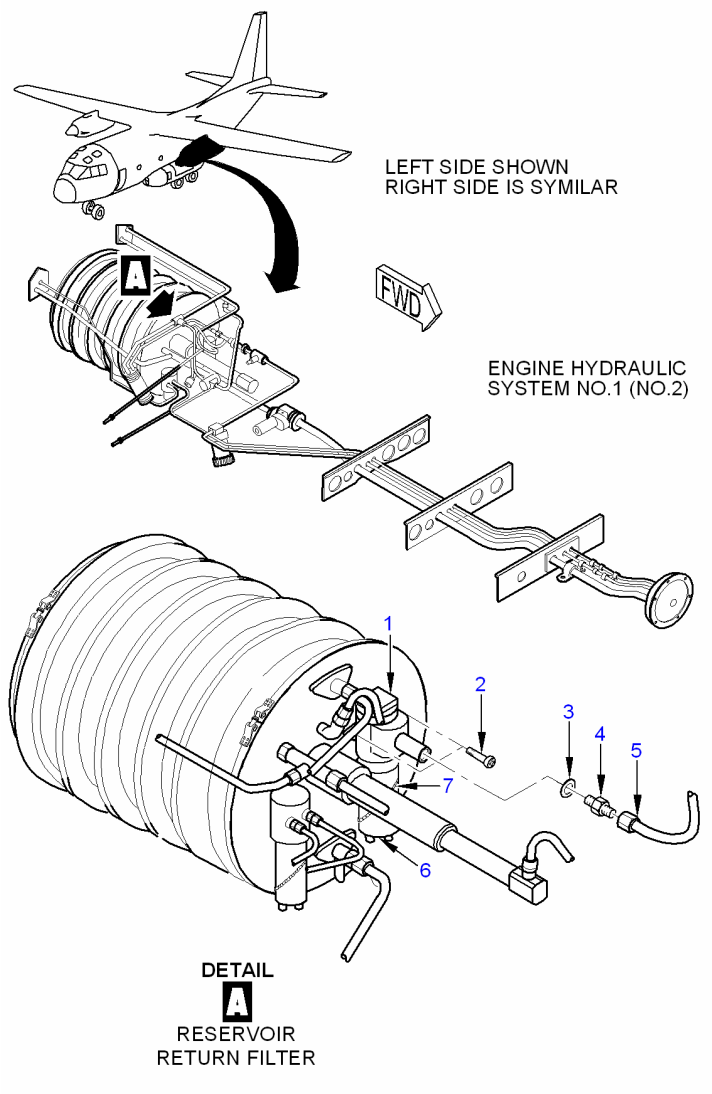

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Figure 2-8 Low Pressure Filters (Returns Filter) - Removal and Installation

2-11 LOW PRESSURE FILTERS (RETURN FILTERS ELEMENT) - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect the external electrical supply from the aircraft (refer to manual TCH.1C-27J-2-00GV) .
2. Position maintenance platform (AGE NO. 00074).
3. Open the access panel 414E (424E).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	9,00	
Removal	AFM	1	4,00	
Installation	AFM	1	8,00	
Follow Maintenance	AFM	2	9,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 48 (Min.)
Total Time Detention System: 30 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**
00074	Kit, aircraft assy platform	G0005100001

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00043	HYDRAULIC FLUID	MIL-PRF-83282D	AR
00048	FILTER ELEMENT	7579642	1,00
00049	LOCK WIRE	MS20995NC32	AR

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

NOTE

This procedure is valid for LH return filter element. For RH return filter element is similar.

2-11.1 REMOVAL (refer to figure 2-9)

WARNING

BEFORE YOU REMOVE ANY HYDRAULIC COMPONENT, RELEASE SYSTEM PRESSURE, IN ORDER TO PREVENT INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

2-11.1 REMOVAL (refer to figure 2-9) (Cont'd)

WARNING

HYDRAULIC FLUID IS ACID. AVOID CONCTACT WITH SKIN AND WEAR APPROPRIATE, IMPERVIOUS CLOTHING WHEN HANDLING THE HYDRAULIC FLUIDS. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

CAUTION

Do not use drained fluid from Hydraulic System. A hydraulic fluid leak may occur. This would cause damage to the equipment and loss of mission effectiveness.

1. Cut lock wire (1).
2. Loosen filter bowl (2).
3. Remove filter element.

2-11.2 INSTALLATION (refer to figure 2-9)

1. Install new filter element into filter bowl (2).
2. Fill filter bowl (2) with clean hydraulic fluid (LCM NO. 00043).
3. Torque tighten the filter bowl (2) to 354 in bl thru 443 in bl (4.1 m kg thru 5.1 m kg) (AGE NO. 00054).
4. Install lock wire (1).

FOLLOW ON MAINTENANCE:

1. Close the access panel 414E (424E).
2. Remove maintenance platform (AGE NO. 00074).

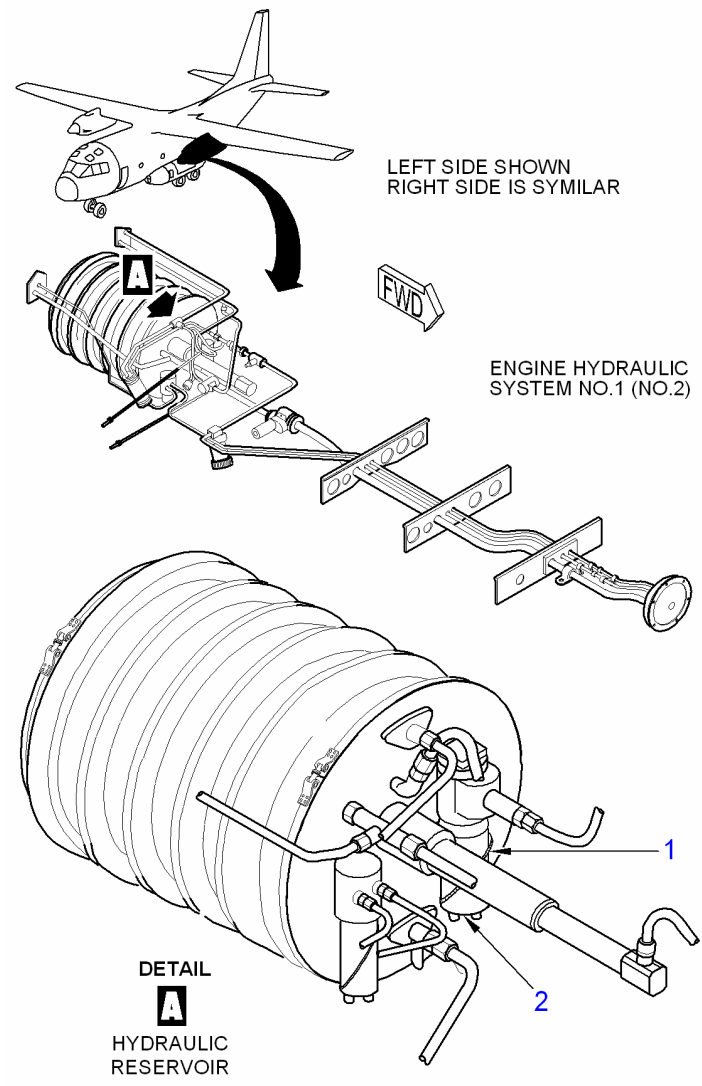

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Figure 2-9 Low Pressure Filters (Return Filters Element) - Remove and Installation

2-12 HIGH PRESSURE FILTERS IN LH (RH) ENGINE NACELLE - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Position maintenance platform (AGE NO. 00074).
2. Open the access panels 414D and 414J (424D and 424J).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	20,00	
Removal	AFM	1	6,00	
Installation	AFM	2	35,00	
Follow Maintenance	AFM	2	20,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 156 (Min.)
Total Time Detention System: 81 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**
00074	Kit, aircraft assy platform	G0005100001
00262	Test stand, hydraulic system (diesel engine)	846805-D**

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00027	PACKING, PREFORMED	M83461/2-908	2,00
00035	NUT, SELF-LOCKING	MS21042L4	3,00
00043	HYDRAULIC FLUID	MIL-PRF-83282D	AR
00046	PLASTIC WRAPPER	PLT4S-C76	AR

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

WARNING

BEFORE YOU REMOVE ANY HYDRAULIC COMPONENT, RELEASE SYSTEM PRESSURE, IN ORDER TO PREVENT INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

WARNING

HYDRAULIC FLUID IS ACID. AVOID CONCTACT WITH SKIN AND WEAR APPROPRIATE, IMPERVIOUS CLOTHING WHEN HANDLING THE HYDRAULIC FLUIDS. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

CAUTION

Do not use drained fluid from Hydraulic System. A hydraulic fluid leak may occur. This would cause damage to the equipment and loss of mission effectiveness.

NOTE

This procedure is valid for left high pressure filter. For right high pressure filter is similar.

2-12.1 REMOVAL (refer to figure 2-10, sheet 1/2) and (refer to figure 2-10, sheet 2/2)

CAUTION

Install protection caps on the disconnected hoses.

1. Use a container to collect drained fluid.
2. Loosen the nut and disconnect the inlet hydraulic pipe (4).
3. Loosen the nut and disconnect the outlet hydraulic pipe (8).
4. Remove the three bolts (1), flat washers (2 and 6) and self locking nuts (5). Discard removed self locking nut.
5. Remove the filter (3).

2-12.2 INSTALLATION (refer to figure 2-10, sheet 1/2) and (refer to figure 2-10, sheet 2/2)

NOTE

Remove protection caps from the hoses to be installed.

1. Loosen the filter bowl (7).
2. Check presence of filter element.

(Cont'd)

2-12.2 INSTALLATION (refer to figure 2-10, sheet 1/2) and (refer to figure 2-10, sheet 2/2) (Cont'd)

3. Fill filter bowl with clean hydraulic fluid (LCM NO. 00043).
4. Torque tighten the filter bowl (7) to 354 in lb thru 443 in lb (4.1 m kg thru 5.1 m kg) (AGE NO. 00054).
5. Position the high pressure filter (3).
6. Install the high pressure filter (3) using bolts (1), flat washers (2 and 6) and new self locking nuts (5) (LCM NO. 00035). Torque tighten to 81 in lb thru 89 in lb (0.9 m kg thru 1.0 m kg) (AGE NO. 00054)
7. Connect the outlet pipe (8) and torque tighten the nut to 470 in lb thru 550 in lb (5.4 m kg thru 6.3 m kg) (AGE NO. 00054).
8. Connect the inlet pipe (4) and tighten the nut lightly.

CAUTION

Avoid the hydraulic fluid spilling using a clean cloth. This will prevent damage to the equipment due to corrosion.

9. Connect hydraulic test stand (AGE NO. 00262) to No. 1 (No. 2) hydraulic system pressure and suction ground test sockets (ground service panel).
10. Set up the hydraulic test stand (AGE NO. 00262) as follows: delivery pressure 900 psi (63.3 kg/cm^2), suction pressure 15 psi (1.05 kg/cm^2).
11. Rotate the propeller by hand until the hydraulic fluid flows free from bubbles.
12. Torque tighten the nut inlet pipe (4) to 470 in lb thru 550 in lb (5.4 m kg thru 6.3 m kg) (AGE NO. 00054).
13. Loosen the pressure switch tee downstream nut (9).
14. Rotate the propeller by hand until the hydraulic fluid flows free from bubbles.

(Cont'd)

2-12.2 INSTALLATION (refer to figure 2-10, sheet 1/2) and (refer to figure 2-10, sheet 2/2) (Cont'd)

15. Torque tighten the fitting upstream the check valve (9) to 470 in lb thru 550 in lb (5.4 m kg thru 6.3 m kg) (AGE NO. 00054).
16. Set up the hydraulic test stand (AGE NO. 00262) as follows: delivery pressure 3000 psi (210 kg/cm^2).
17. Verify that the EDP1 (EDP2) FAULT (12 and 11) located on the Hydraulic/Smoke Detection Control Panel (204VE) (10) is illuminated.
18. Rotate the propeller by hand until the EDP1 (EDP2) FAULT (12 and 11) is extinguished.
19. Continue to rotate the propeller and verify the absence of leakage.

FOLLOW ON MAINTENANCE:

1. Close the access panels 414D and 414J (424D and 424J).
2. Remove maintenance platform (AGE NO. 00074).
3. Annul the pressure and disconnect the hydraulic test stand (AGE NO. 00262).

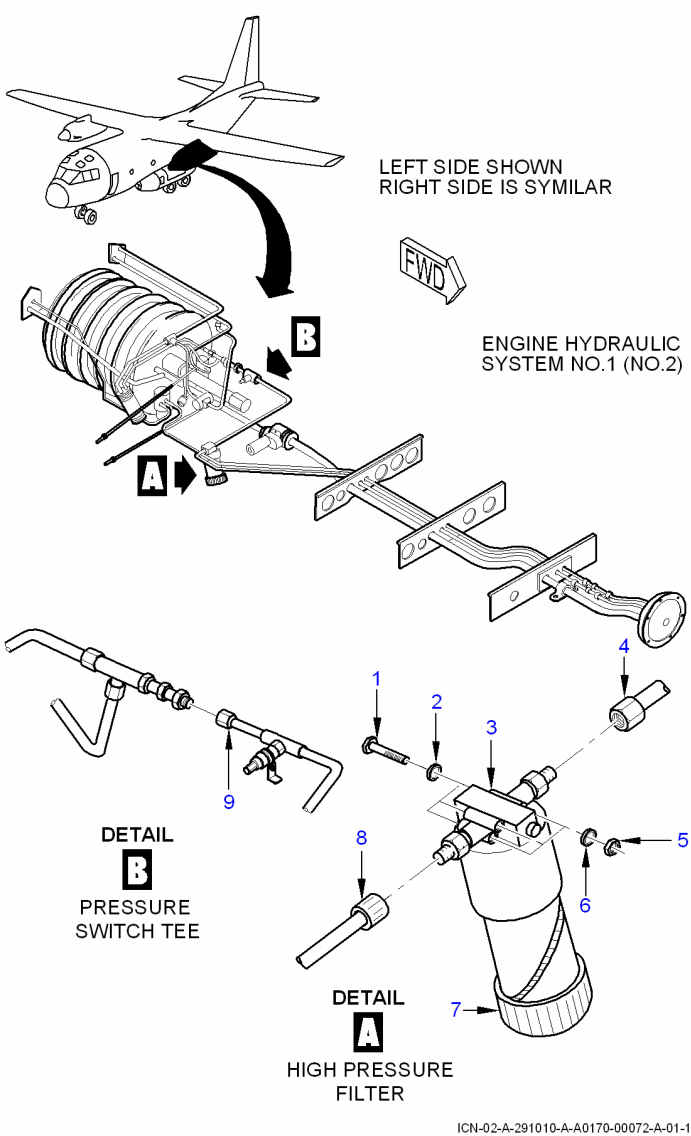

Figure 2-10 High Pressure Filter in LH (RH) Engine Nacelle - Removal and Installation (sheet 1/2)

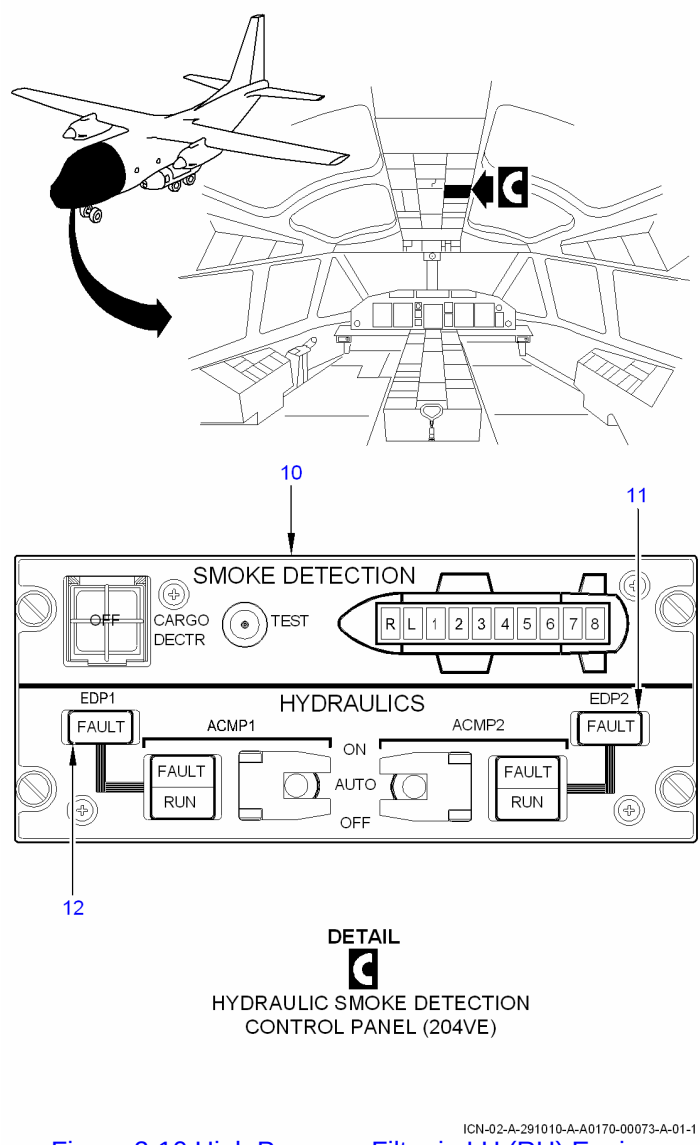

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Figure 2-10 High Pressure Filter in LH (RH) Engine Nacelle - Removal and Installation (sheet 2/2)

2-13 HIGH PRESSURE FILTERS IN LH (RH) MAIN LANDING GEAR FAIRING - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect external electrical power (refer to manual TCH.1C-27J-2-00GV) .
2. Open the access panels 913A and 913B (923A and 923B).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	1,00	
Removal	AFM	1	13,00	
Installation	AFM	1	38,00	
Test	AFM	1	30,00	
Follow Maintenance	AFM	1	1,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 83 (Min.)
Total Time Detention System: 83 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**
00264	Stand, hydraulic, hand pump	867105-000

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00016	LOCK WIRE	MS20995C32	AR
00026	RETAINER, PACKING	MS28773-08	1,00
00027	PACKING, PREFORMED	M83461/2-908	2,00
00028	TUBE PLUG	MS21913-6	1,00
00029	CUPS	MS21914-6J	2,00

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

WARNING

BEFORE YOU REMOVE ANY HYDRAULIC COMPONENT, RELEASE SYSTEM 0PRESSURE, IN ORDER TO PREVENT INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

WARNING

HYDRAULIC FLUID IS ACID. AVOID CONCTACT WITH SKIN AND WEAR APPROPRIATE, IMPERVIOUS CLOTHING WHEN HANDLING THE HYDRAULIC FLUIDS. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

CAUTION

Do not use drained fluid from Hydraulic System. A hydraulic fluid leak may occur. This would cause damage to the equipment and loss of mission effectiveness.

NOTE

This procedure is valid for left fairing. For right fairing is similar.

2-13.1 REMOVAL (refer to figure 2-11)

CAUTION

Install protection caps on the disconnected electrical connectors and hoses.

---

1. Provide two flareless tube plug (LCM NO. 00028) and two cups (LCM NO. 00029).
2. Use a container to collect the drained fluid.
3. Disconnect electrical connector (29DEA) (13) from Low Pressure Switch (12).
4. Disconnect ACMP1 (ACMP2) (8) delivery pipe through quick disconnection.
5. Remove the Low Pressure Switch outlet pipe (1) (only LH installation remove the pipe clamp) and install the caps.
6. Remove from high pressure filter (9), bolts (10) and washers (11).
7. Remove the high pressure filter (9) from the left fairing (right fairing).
8. Hold the filter (9) and loosen the HP filter nut (3) and install the plug (LCM NO. 00028) and cap (LCM NO. 00029).

(Cont'd)

2-13.1 REMOVAL (refer to figure 2-11) (Cont'd)

9. Remove from high pressure filter (9) the union (7) and the performed packing (6). Discard removed performed packing.
10. Remove the outlet side TEE reducer (2) from high pressure filter (9) and remove retainer packing (4) and performed packings (5). Discard removed retainer and performed packings.

2-13.2 INSTALLATION (refer to figure 2-11)

NOTE

Remove protection caps from the electrical connectors and hoses to be installed.

1. Connect at the high pressure filter (9) the new performed packing (6) (LCM NO. 00027) and the union (7). Torque tighten (AGE NO. 00054) to 3,2 mkg thru 3,5 mkg (280 in lb thru 305 in lb).
2. Install a new retainer packing (4) and new performed packings (5) (LCM NO. 00027) and connect outlet side TEE reducer (2) at the high pressure filter (9). Torque tighten nut (AGE NO. 00054) to 280 in lb thru 305 in lb (3.2 mKg thru 3.5 mKg).
3. Position the high pressure filter (9) and insert the inlet pipe (8) in the filter inlet port.
4. Install at the high pressure filter (9), bolts (10) and washers (11). Torque tighten (AGE NO. 00054) to 80 thru 88 in lb (0.9 mKg thru 1.0 mKg).Install the three bolts and washers and tighten to 0,9 mkg thru 1,0 mkg (80 thru 88 in lb).
5. Install the Low Pressure Switch outlet pipe (1) and torque tighten the TEE reducer nut (3) to 3,2 mkg thru 3,5 mkg (280 in lb thru 305 in lb) (only for LH install the pipe clamp).
6. Connect electrical connector (29DEA) (13) to Low Pressure Switch (12).

(Cont'd)

2-13.2 INSTALLATION (refer to figure 2-11) (Cont'd)

7. Loosen filter bowl and check presence of filter element. If not present install a new filter element (refer to para 2-14) .
8. Fill filter bowl with clean (class 5) hydraulic fluid.
9. Torque tighten the filter bowl to 4,1 mkg thru 5,1 mkg (354 in lb thru 443 in lb).
10. Connect the hand pump hydraulic stand (AGE NO. 00264) to ACMP1 (ACMP2) delivery quick disconnection.

CAUTION

Avoid hydraulic fluid spilling using a clean cloth. This will prevent damage to the equipment due to corrosion.

11. Operate the hand pump hydraulic stand (AGE NO. 00264) and check that the hydraulic fluid flowing from the filter inlet pipe nut (8) is free from bubbles.
12. Torque tighten (AGE NO. 00054) the inlet pipe nut (8) to 143 in lb thru 215 in lb (1.6 mKg thru 2.4 mKg).

CAUTION

Avoid hydraulic fluid spilling using a clean cloth. This will prevent damage to the equipment due to corrosion.

13. Operate the hand pump hydraulic stand (AGE NO. 00264) and check that the hydraulic fluid flowing from the filter tee reducer pipe (1) downstream nut is free from bubbles.
14. Torque tighten (AGE NO. 00054) the tee reducer pipe (1) downstream nut to 143 in lb thru 215 in lb (1.6 mKg thru 2.4 mKg).

(Cont'd)

2-13.2 INSTALLATION (refer to figure 2-11) (Cont'd)

15. Disconnect the hand pump hydraulic stand (AGE NO. 00264) delivery from ACMP1 (ACMP2) delivery quick disconnection.
16. Connect ACMP1 (ACMP2) delivery pipe through quick disconnection.

FOLLOW ON MAINTENANCE:

1. Perform the FUNCTIONAL TEST OF ALTERNATE CURRENT MOTOR PUMP ACMP 1 (ACMP 2) (refer to para 2-17) .
2. Check for absence of leakage and verify that the HP filter clogging indicator is not popping out.
3. Close the access panels 913A and 913B (923A and 923B).

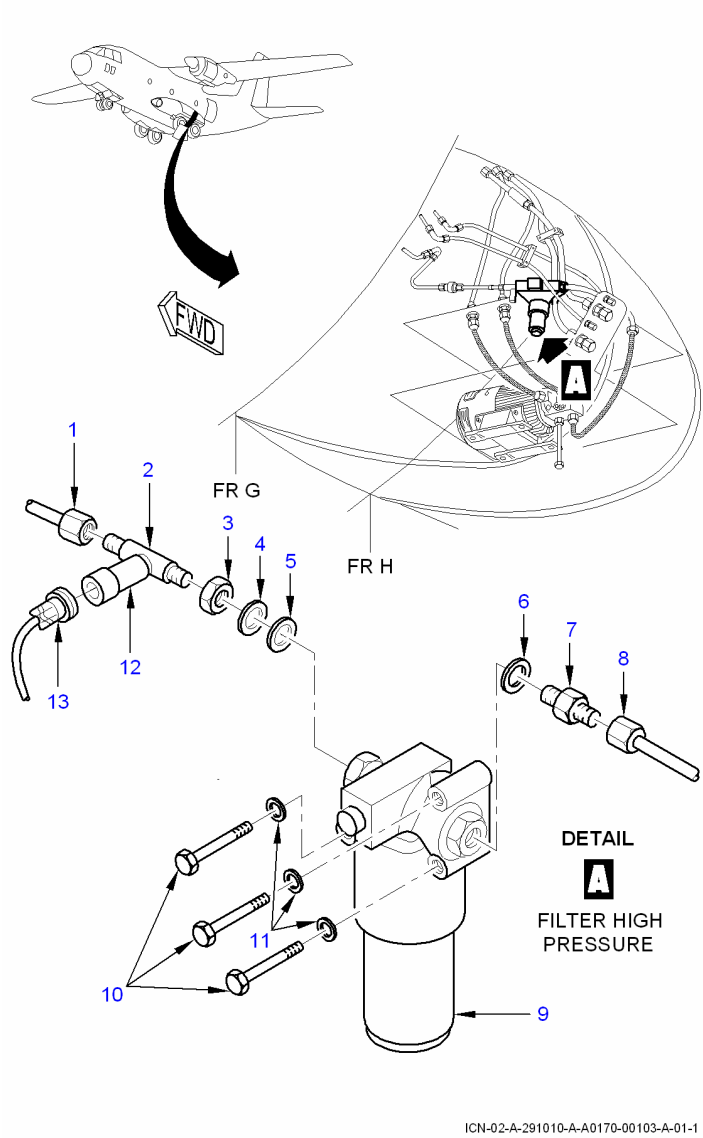

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Figure 2-11 High Pressure Filters in LH (RH) Main Handing Gear Fairing - Removal and Installation

2-14 HIGH PRESSURE FILTERS ELEMENT IN LH (RH) MAIN LANDING GEAR FAIRING - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect external electrical power (refer to manual TCH.1C-27J-2-00GV) .
2. Open the access panels 913A and 913B (923A and 923B).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	1,00	
Removal	AFM	1	4,00	
Installation	AFM	1	8,00	
Follow Maintenance	AFM	1	1,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 14 (Min.)
Total Time Detention System: 14 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00043	HYDRAULIC FLUID	MIL-PRF-83282D	AR

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

NOTE

This procedure is valid for left high pressure filter. For right high pressure filter is similar

2-14.1 REMOVAL (refer to figure 2-12)

WARNING

BEFORE YOU REMOVE ANY HYDRAULIC COMPONENT, RELEASE SYSTEM 0PRESSURE, IN ORDER TO PREVENT INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

WARNING

HYDRAULIC FLUID IS ACID. AVOID CONCTACT WITH SKIN AND WEAR APPROPRIATE, IMPERVIOUS CLOTHING WHEN HANDLING THE HYDRAULIC FLUIDS. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

(Cont'd)

2-14.1 REMOVAL (refer to figure 2-12) (Cont'd)

CAUTION

Do not use drained fluid from Hydraulic System. A hydraulic fluid leak may occur. This would cause damage to the equipment and loss of mission effectiveness.

1. Cut lock wire (2).
2. Loosen filter bowl (1).
3. Remove filter element.

2-14.2 INSTALLATION (refer to figure 2-12)

1. Install a new filter element into filter bowl (1).
2. Fill filter bowl with clean hydraulic fluid (LCM NO. 00043).
3. Torque tighten (AGE NO. 00054) the filter bowl to 354 in lb thru 443 in lb (4.1 mKg thru 5.1 mKg).
4. Install lock wire (2).

FOLLOW ON MAINTENANCE:

1. Close the access panels 913A and 913B (923A and 923B).
2. Connect external electrical power (refer to manual TCH.1C-27J-2-00GV) .

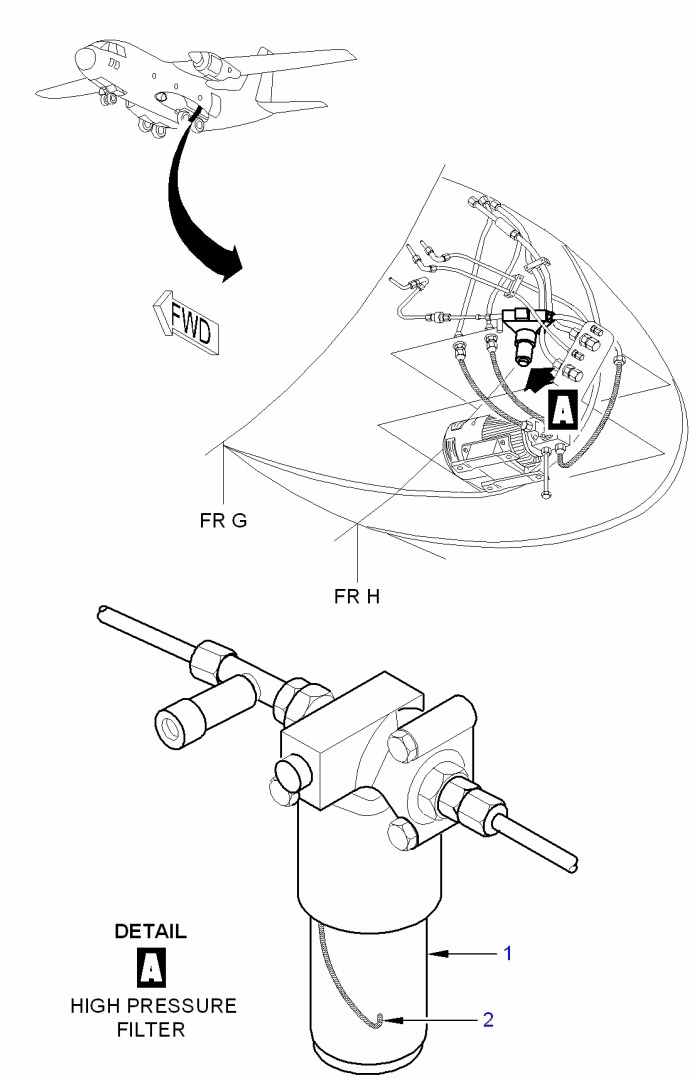

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Figure 2-12 High Pressure Filters Element in LH (RH) Main Landing Gear - Removal and Installation

2-15 ENGINE DRIVEN PUMP EDP1 (EDP2) - FUNCTIONAL TEST

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Connect external electrical supply to the aircraft (refer to manual TCH.1C-27J-2-00GV) .

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	10,00	
Test	AFM	1	10,00	
	ENG	1	30,00	
Follow Maintenance	AFM	1	10,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 60 (Min.)
Total Time Detention System: 50 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

Be aware of information contained in SAFETY PROCEDURE - FUNCTIONAL TEST (refer to para 2-34) before performing functional test.

PROCEDURE:

CAUTION

Make sure that No. 1 (No. 2) Hydraulic System is filled and bled before you start this functional test. This will prevent damage to the equipment and loss of mission effectiveness.

NOTE

Aim of the test described in this paragraph is to verify the correct electro-hydraulic functionality of the Hydraulic System.

NOTE

This procedure is valid for EDP1. For EDP2 is similar.

2-15.1 PROCEDURE (refer to figure 2-13)

CAUTION

Before carrying out this functional test, the hydraulic system No.1 (No.2) is intended filled and bled.

1. Start the Engine 1 (2) (refer to manual TCH.1C-27J-2-71JG) and stabilize it at GND IDLE.
2. Verify that the hydraulic triple pressure indicator (4) pointer HYD SYS 1 (HYD SYS 2) located on central main instrument panel shows 3000 psi - 0/+ 150 psi (210 kg/cm ^{2} - 0/+ 10.5 kg/cm ^{2}).
3. On the Hydraulic/Smoke Detection Control Panel (204VE) (1), verify that the EDP1 (3) (EDP2) (2) FAULT light is extinguished.
4. Increase both engines rating to FLT IDLE and stabilize it.

(Cont'd)

2-15.1 PROCEDURE (refer to figure 2-13) (Cont'd)

5. Verify that the hydraulic triple pressure indicator (4) HYD SYS 1 (HYD SYS 2) still shows 3000 psi - 0/+ 150 psi (210 kg/cm ² - 0/+ 10.5 kg/cm ²).
6. Return the Engine 1 (2) rating to GND IDLE.
7. Shut down the Engine 1 (2) (refer to manual TCH.1C-27J-2-71JG) .

FOLLOW ON MAINTENANCE:

1. Disconnect external electrical supply from the aircraft (refer to manual TCH.1C-27J-2-00GV) .

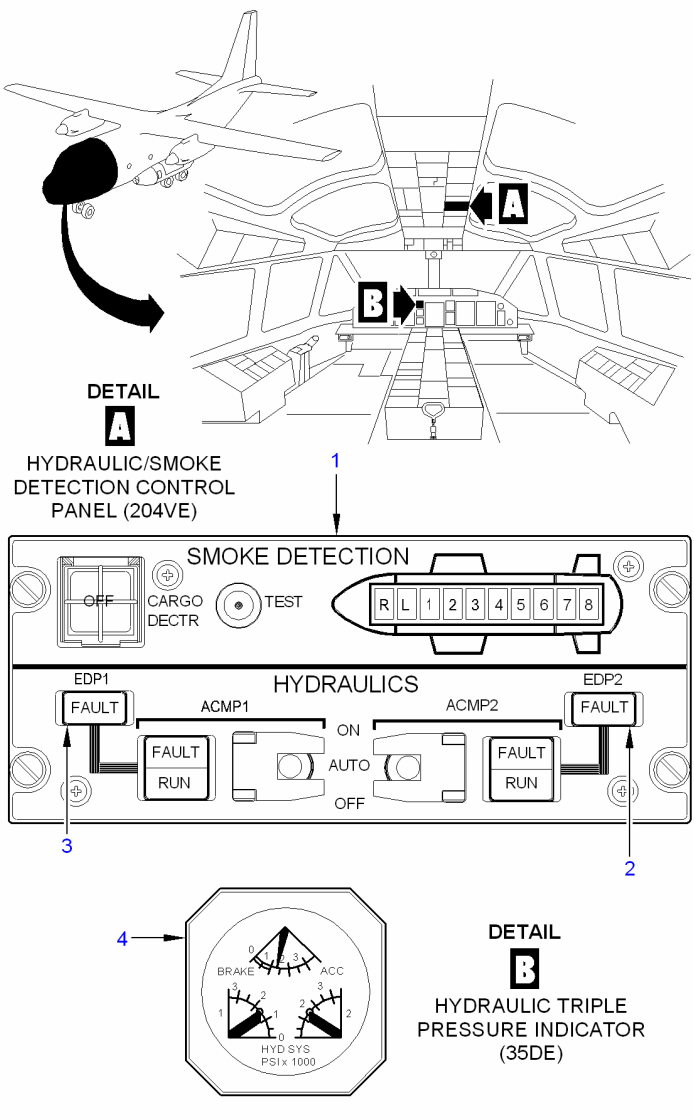

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Figure 2-13 Engine Driven Pump EDP1 (EDP2) - Functional Test

2-16 ENGINE DRIVEN PUMPS - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Connect the external electrical supply to the aircraft (refer to manual TCH.1C-27J-2-00GV) .
2. Position maintenance platform (AGE NO. 00074).
3. Open the access panel 413D (423D).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	6,00	
Removal	AFM	3	40,00	
Installation	AFM	3	60,00	
Test	AFM	1	50,00	
	ENG	1	30,00	
Follow Maintenance	AFM	2	6,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 404 (Min.)
Total Time Detention System: 162 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**
00074	Kit, aircraft assy platform	G0005100001

AGE No.	NOMENCLATURE	P/N
00262	Test stand, hydraulic system (diesel engine)	846805-D**

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00046	PLASTIC WRAPPER	PLT4S-C76	AR
00106	NUT, SELF-LOCKING	MS21042-3	5,00

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance on hydraulic power system.

PROCEDURE:

NOTE

This procedure is valid for LH engine driven pump. For RH engine driven pump is similar

2-16.1 REMOVAL (refer to figure 2-14, sheet 1/5) , (refer to figure 2-14, sheet 2/5) , (refer to figure 2-14, sheet 3/5) , (refer to figure 2-14, sheet 4/5) and (refer to figure 2-14, sheet 5/5)

WARNING

BEFORE YOU REMOVE ANY HYDRAULIC COMPONENT, RELEASE SYSTEM PRESSURE, IN ORDER TO PREVENT INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

(Cont'd)

2-16.1 REMOVAL (refer to figure 2-14, sheet 1/5) , (refer to figure 2-14, sheet 2/5) , (refer to figure 2-14, sheet 3/5) , (refer to figure 2-14, sheet 4/5) and (refer to figure 2-14, sheet 5/5) (Cont'd)

WARNING

FOR REMOVAL USE THREE PERSONS TO PREVENT INJURY.

CAUTION

Don't use drained fluid from hydraulic system.

CAUTION

Use precaution when you remove the engine driven pump to prevent damage to driven shaft.

1. Close the HYDRAULICS SOV ENG 1 (61DE) (1) (HYDRAULICS SOV ENG 2 (34DE) (2)) circuit breaker, located on the overhead circuit breakers panel (271VE) in position B 1 (B 2).

(Cont'd)

2-16.1 REMOVAL (refer to figure 2-14, sheet 1/5) , (refer to figure 2-14, sheet 2/5) , (refer to figure 2-14, sheet 3/5) , (refer to figure 2-14, sheet 4/5) and (refer to figure 2-14, sheet 5/5) (Cont'd)

WARNING

OPEN THE CIRCUIT BREAKERS FIRE ENGINES EXTG 1 (1WE) (3) AND FIRE ENGINES EXTG 2 (2WE) (4) LOCATED ON OVERHEAD CIRCUIT BREAKERS PANEL (271VE) IN POSITIONS D 21 AND D 23 AND THE CIRCUIT BREAKERS FIRE EXTG ENG 1 (3WE) (5) AND FIRE EXTG ENG 2 (4WE) (6) LOCATED ON REAR MID CIRCUIT BREAKERS PANEL (451VE) IN POSITIONS K 11 AND K 12.

WARNING

TO PREVENT INJURY TO PERSONEL DO NOT ROTATE THE FIRE HANDLE. ONLY PULL OUT THE FIRE HANDLE.

2. Pull the FIRE 1 PULL (FIRE 2 PULL) handle (5 and 6) and verify visually, through the see-feel (lever) on the valve body itself, that the lever on left fire shut-off valve 39 DE (38DE) (9), in the left (right) nacelle, indicates "CLOSE" (or "GROUND").
3. Disconnect the external electrical supply from the aircraft (refer to manual TCH.1C-27J-2-00GV) .

CAUTION

Take care to avoid loss of hydraulic fluid from flex hoses.

(Cont'd)

2-16.1 REMOVAL (refer to figure 2-14, sheet 1/5) , (refer to figure 2-14, sheet 2/5) , (refer to figure 2-14, sheet 3/5) , (refer to figure 2-14, sheet 4/5) and (refer to figure 2-14, sheet 5/5) (Cont'd)

4. Disconnect the clamps (21, 48, 24, 46, 35, 39, 43 and 44) by removing screws (19, 22, 37 and 41), flat washers (20, 23, 38 and 42) and self locking nuts (47, 40 and 45). Discard removed self locking nut.
5. Disconnect plate (29) and clamps (30, 36, 31 and 34) by removing screws (25 and 27), flat washers (26 ands 28) and self locking nuts (33 and 32). Discard removed self locking nut.
6. On each hose end connected to the pump cut the plastic wrapper (11, 17, 15, 49, 62 and 63), free the fittings of the flex hose (12, 13 and 14) from the spray shields (10, 18, 16, 50, 61 and 64). Discard removed plastic wrapper.
7. Remove the six flat washers (54) and nuts (53) connecting the EDP (56) to the engine gear box.

CAUTION

Install protection caps on the disconnected hoses.

---

8. Loosen the nut on the end (near the engine driven pump) of the supply flex hose (12, 13 and 14).
9. Position the engine driven pump (56) higher than the firewall fittings.
10. Disconnect the supply flex hose (12).
11. Position the engine driven pump (56) on the gear box.
12. Loosen the nuts on the ends (near the engine driven pump) of the suction flex hose (14) and of the case drain flex hose (13).

(Cont'd)

2-16.1 REMOVAL (refer to figure 2-14, sheet 1/5) , (refer to figure 2-14, sheet 2/5) , (refer to figure 2-14, sheet 3/5) , (refer to figure 2-14, sheet 4/5) and (refer to figure 2-14, sheet 5/5) (Cont'd)

13. Position the engine driven pump (56) higher than the firewall fittings.
14. Disconnect the suction flex hose (14) and the case drain flex hose (13).
15. Discard the engine driven pump gasket (55)
16. Remove the engine driven pump (56).
17. Undress the engine driven pump (56) by removing unions (51, 60 and 59) and O-rings (52, 58 and 57). Discard removed O-rings.

2-16.2 INSTALLATION (refer to figure 2-14, sheet 1/5) , (refer to figure 2-14, sheet 2/5) , (refer to figure 2-14, sheet 3/5) , (refer to figure 2-14, sheet 4/5) and (refer to figure 2-14, sheet 5/5)

WARNING

FOR INSTALLATION USE THREE PERSONS TO PREVENT INJURY.

NOTE

Remove protection caps from the hoses to be installed.

1. Perform dressing of the pump installing new O-rings (54, 58 and 57) and tighten supply union (51) torque to 280 thru 305 in lb (3.2 thru 3.5 m kg) (AGE NO. 00054), tighten suction union (60) torque to 800 thru 900 in lb (9.2 thru 10 m kg) (AGE NO. 00054) and case drain union (59) to 155 thru 165 in lb (1.8 thru 1.9 m kg) (AGE NO. 00054).
2. Position the engine driven pump (25) higher than the firewall fittings.

(Cont'd)

2-16.2 INSTALLATION (refer to figure 2-14, sheet 1/5) , (refer to figure 2-14, sheet 2/5) , (refer to figure 2-14, sheet 3/5) , (refer to figure 2-14, sheet 4/5) and (refer to figure 2-14, sheet 5/5) (Cont'd)

CAUTION

Avoid hydraulic fluid spilling.

3. Connect the case drain flex hose (13) to the engine driven pump (56).
4. Position the engine driven pump (56) on the gear box. Torque tighten the case drain flex hose nut to 215 thru 280 in lb (2.5 thru 3.2 m kg) (AGE NO. 00054).
5. Remove the engine driven pump (56) and position it than the firewall fittings.

CAUTION

Avoid hydraulic fluid spilling.

6. Connect the suction flex hose (14) to the engine driven pump (56).
7. Position the engine driven pump (56) on the gear box. Torque tighten the suction flex hose nut to 1140 thru 1370 in lb (13.1 thru 15.8 m kg) (AGE NO. 00054).
8. Remove the engine driven pump (56) and position it than the firewall fittings.

CAUTION

Avoid hydraulic fluid spilling.

9. Connect the supply flex hose (12) to the engine driven pump (56).

(Cont'd)

2-16.2 INSTALLATION (refer to figure 2-14, sheet 1/5) , (refer to figure 2-14, sheet 2/5) , (refer to figure 2-14, sheet 3/5) , (refer to figure 2-14, sheet 4/5) and (refer to figure 2-14, sheet 5/5) (Cont'd)

10. Position the engine driven pump (56) on the gear box. Torque tighten the supply flex hose nut to 470 thru 550 in lb (5.4 thru 6.3 m kg) (AGE NO. 00054).
11. Apply grease to engine driven pump shaft.
12. Install the engine driven pump (56) with new gasket (24) on the engine gear box flange using six flat washers (54) and six nuts (53). Tighten to 265 in lb thru 300 in lb (3.1 m kg thru 3.5 m kg) (AGE NO. 00054).
13. Connect the clamps (21, 48, 24, 46, 35, 39, 43 and 44) using screws (19, 22, 37 and 41), flat washers (20, 23, 38 and 42) and new self locking nuts (47, 40 and 45) (LCM NO. 00106).
14. Connect the plate (29) and the clamps (30, 36, 31 and 34) using screws (25 and 27), flat washers (26 and 28) and new self locking nuts (33 and 32) (LCM NO. 00106).
15. Connect the external electrical supply to the aircraft (refer to manual TCH.1C-27J-2-00GV) .
16. Close the HYDRAULICS SOV ENG 1 (61DE) (1) (HYDRAULICS SOV ENG 2 (34DE) (2)) circuit breaker, located on the Overhead Circuit Breakers Panel (271VE) in position B 1 (B 2).

(Cont'd)

2-16.2 INSTALLATION (refer to figure 2-14, sheet 1/5) , (refer to figure 2-14, sheet 2/5) , (refer to figure 2-14, sheet 3/5) , (refer to figure 2-14, sheet 4/5) and (refer to figure 2-14, sheet 5/5) (Cont'd)

WARNING

OPEN THE CIRCUIT BREAKERS FIRE ENGINES EXTG 1 (1WE) (3) AND FIRE ENGINES EXTG 2 (2WE) (4) LOCATED ON OVERHEAD CIRCUIT BREAKERS PANEL (271VE) IN POSITIONS D 21 AND D 23 AND THE CIRCUIT BREAKERS FIRE EXTG ENG 1 (3WE) (7) AND FIRE EXTG ENG 2 (4WE) (8) LOCATED ON REAR MID CIRCUIT BREAKERS PANEL (451VE) IN POSITIONS K 11 AND K 12.

WARNING

TO PREVENT INJURY TO PERSONEL DO NOT ROTATE THE FIRE HANDLE. ONLY PULL OUT THE FIRE HANDLE.

17. Push fully the FIRE 1 PULL (FIRE 2 PULL) handle (5 and 6) and verify visually that the lever on left (right) fire shut-off valve (9) indicates "OPEN" (or "FLIGHT").
18. Disconnect the external electrical supply from the aircraft (refer to manual TCH.1C-27J-2-00GV) .

FOLLOW ON MAINTENANCE:

1. Connect hydraulic test stand (AGE NO. 00262) to No. 1 (No. 2) system pressure and suction ground test sockets (ground service panel).
2. Set up the hydraulic test stand as follows: delivery pressure 900 psi (63.3 kg/cm^2).

CAUTION

Rotating the propeller clockwise (facing the propeller) can cause damage to the engine.

3. Rotate by hand the propeller LH (RH) anticlockwise (facing the propeller) for 10 rides.
4. Close the access panel 413D (423D).
5. Install the spray shield and put the plastic wrapper.
6. Disconnect the hydraulic test stand (AGE NO. 00262).
7. Remove the maintenance platform.
8. Perform the functional check ENGINE DRIVEN PUMP EDP1 (EDP2). (refer to para 2-15) .
9. Position the maintenance platform (AGE NO. 00074).
10. Open the access panel 413D (423D).
11. Check the unions on the EDP hydraulic flex hoses for leakage.
12. Annul the pressure and disconnect the hydraulic test stand (AGE NO. 00262).
13. Close the access panel 413D (423D).
14. Remove maintenance platform (AGE NO. 00074).
15. Disconnect the external electrical supply to the aircraft (refer to manual TCH.1C-27J-2-00GV) .

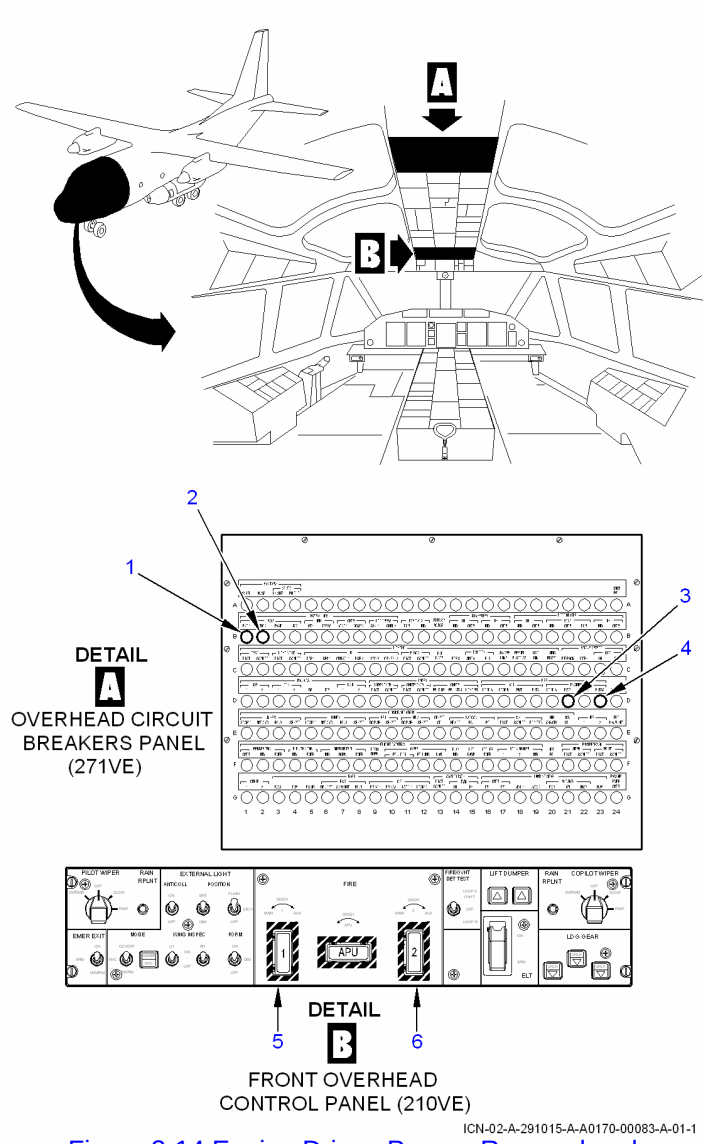

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Figure 2-14 Engine Driven Pump - Removal and Installation (sheet 1/5)

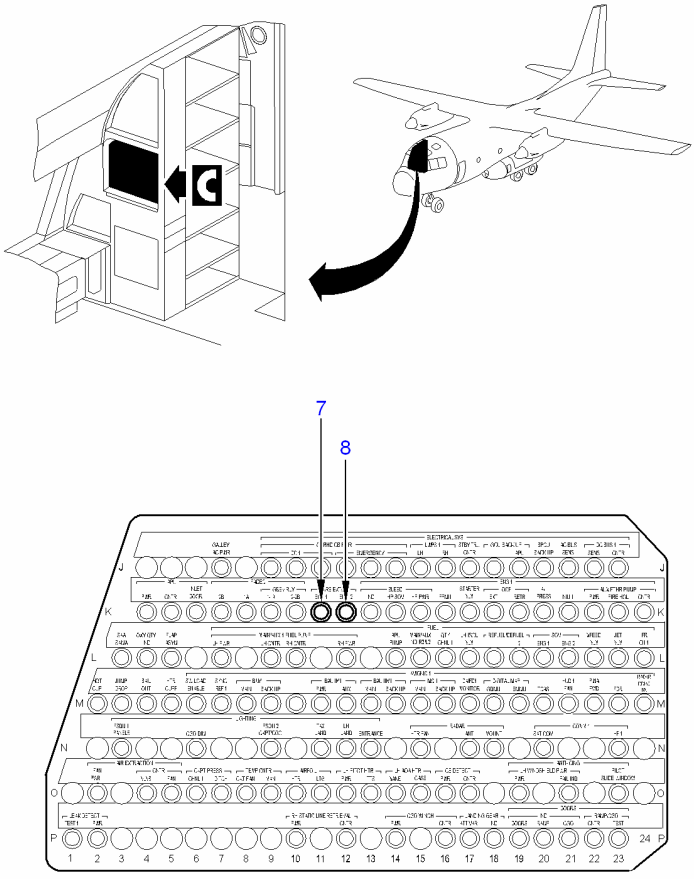

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Figure 2-14 Engine Driven Pump - Removal and Installation (sheet 2/5)

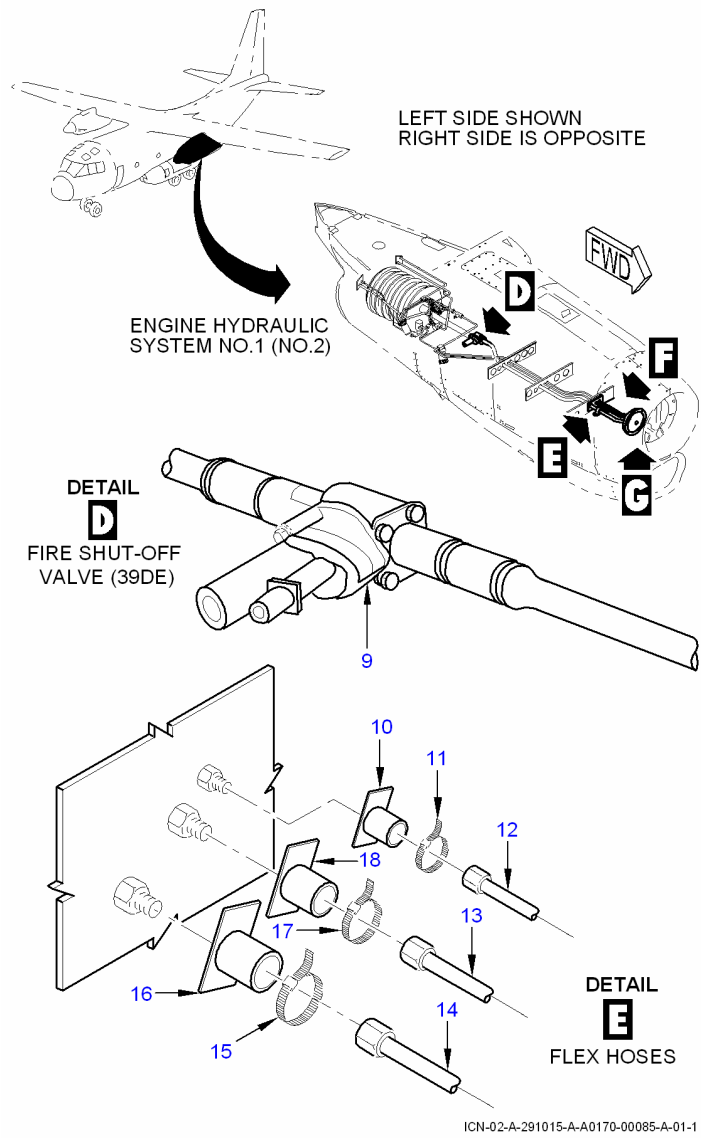

Figure 2-14 Engine Driven Pump - Removal and Installation (sheet 3/5)

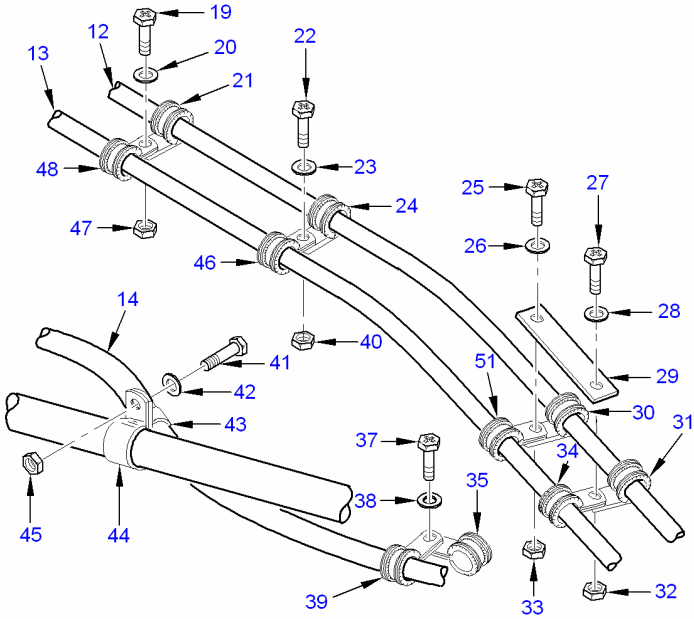

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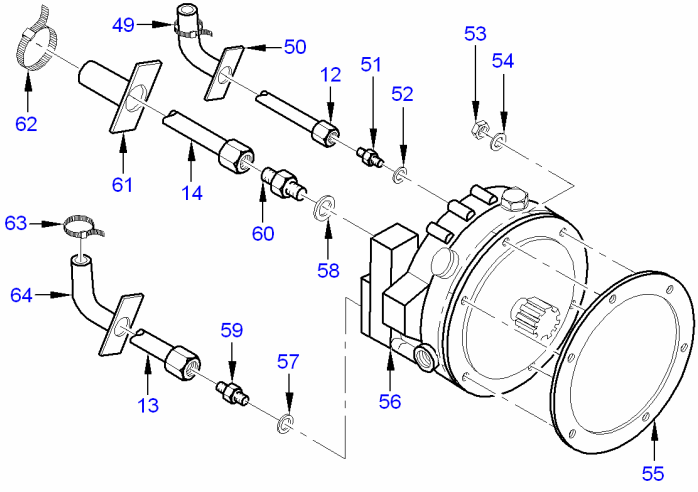
Figure 2-14 Engine Driven Pump - Removal and Installation (sheet 4/5)



DETAIL
G
ENGINE DRIVEN
PUMP

ICN-02-A-291015-A-A0170-00115-A-01-1

Figure 2-14 Engine Driven Pump - Removal and Installation (sheet 5/5)

2-17 ALTERNATE CURRENT MOTOR PUMP ACMP NO. 1 (ACMP NO. 2) - FUNCTIONAL TEST

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Connect external electrical supply to the aircraft (refer to manual TCH.1C-27J-2-00GV).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	10,00	
Test	AFM	1	10,00	
Follow Maintenance	AFM	1	10,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 30 (Min.)
Total Time Detention System: 30 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

Be aware of information contained in SAFETY PROCEDURE - FUNCTIONAL TEST (refer to para 2-34) before performing functional test.

PROCEDURE:

CAUTION

Make sure that No. 1 (No. 2) Hydraulic System is filled and bled before you start this functional test. This will prevent damage to the equipment and loss of mission effectiveness.

NOTE

Aim of the test described in this paragraph is to verify the correct electro-hydraulic functionality of the Hydraulic System.

NOTE

This procedure is valid for ACMP1. For ACMP 2 is similar.

2-17.1 FUNCTIONAL TEST OF ALTERNATE CURRENT MOTOR PUMP ACMP 1 (ACMP 2) - FUNCTIONAL TEST (refer to figure 2-15, sheet 1/3) , (refer to figure 2-15, sheet 2/3) and (refer to figure 2-15, sheet 3/3)

CAUTION

Before carrying out this functional test, the hydraulic system No.1 (No.2) is intended filled and bled.

---

1. Ensure that the ACMP 1 (ACMP 2) switches (4 and 5), on the Hydraulic/Smoke Detection Control Panel (204VE) (1), is selected to OFF (guard raised).
2. Ensure that the following circuit breakers located on Rear Lower Circuit Breakers Panel (455VE) are closed :
   A. HYD ACMP 2 (1DE) (16) located in position R 11;

(Cont'd)

2-17.1 FUNCTIONAL TEST OF ALTERNATE CURRENT MOTOR PUMP ACMP 1 (ACMP 2) - FUNCTIONAL TEST (refer to figure 2-15, sheet 1/3) , (refer to figure 2-15, sheet 2/3) and (refer to figure 2-15, sheet 3/3) (Cont'd)

B. HYD ACMP 1 (2DE) (15) located in position R 8;
C. 115 VAC BUS 1 OFF (63XA) (18) located in position T 5;
D. 115 VAC BUS 2 OFF (64XA) (17) located in position T 9.

3. Ensure that the following circuit breakers located on Overhead Circuit Breakers Panel (271VE) are closed:
   A. HYDRAULICS CNTR ACMP 2 (3DE) (12) located in position B 8;
   B. HYDRAULICS CNTR ACMP 1 (4DE) (9) located in position B 7;
   C. HYDRAULICS LOW PREE CHNL 1 (18DE) (13) located in position B 9;
   D. HYDRAULICS LOW PRESS CHNL 2 (19DE) (14) located in position B 10;
   E. HYDRAULICS IND PRESS (31DE) (11) located in position B 6;
   F. HYDRAULICS IND QTY (33DE) (10) located in position B 5.
4. Select to ACMP 1 (ACMP 2) switches (4 and 5) to ON position.
5. Verify that the ACMP 1 (ACMP 2) starts to run.
6. Verify that the hydraulic triple pressure indicator (8) pointer HYD SYS 1 (HYD SYS 2) located on central main instrument panel shows 3000 psi - 0/+ 150 psi (210 kg/cm² - 0/+ 10.5 kg/cm²).
7. On the Hydraulic/Smoke Detection Control Panel (204VE) (1), verify that:

2-17.1 FUNCTIONAL TEST OF ALTERNATE CURRENT MOTOR PUMP ACMP 1 (ACMP 2) - FUNCTIONAL TEST (refer to figure 2-15, sheet 1/3) , (refer to figure 2-15, sheet 2/3) and (refer to figure 2-15, sheet 3/3) (Cont'd)

A. ACMP 1 (ACMP 2) FAULT light (3 and 6) not illuminated;

B. ACMP 1 (ACMP 2) RUN light (2 and 7) illuminated.

8. Select the ACMP 1 (ACMP 2) switches (2 and 3) to OFF position and verify that the ACMP 1 (ACMP 2) stops to run.

9. Check that the HYD SYS 1 (HYD SYS 2) pressure is to zero.

10. On the Hydraulic/Smoke Detection Control Panel (204VE) (1), verify that:

A. ACMP 1 (ACMP 2) RUN light (2 and 7) extinguished.

FOLLOW ON MAINTENANCE:

1. Disconnect external electrical supply from the aircraft (refer to manual TCH.1C-27J-2-00GV) .

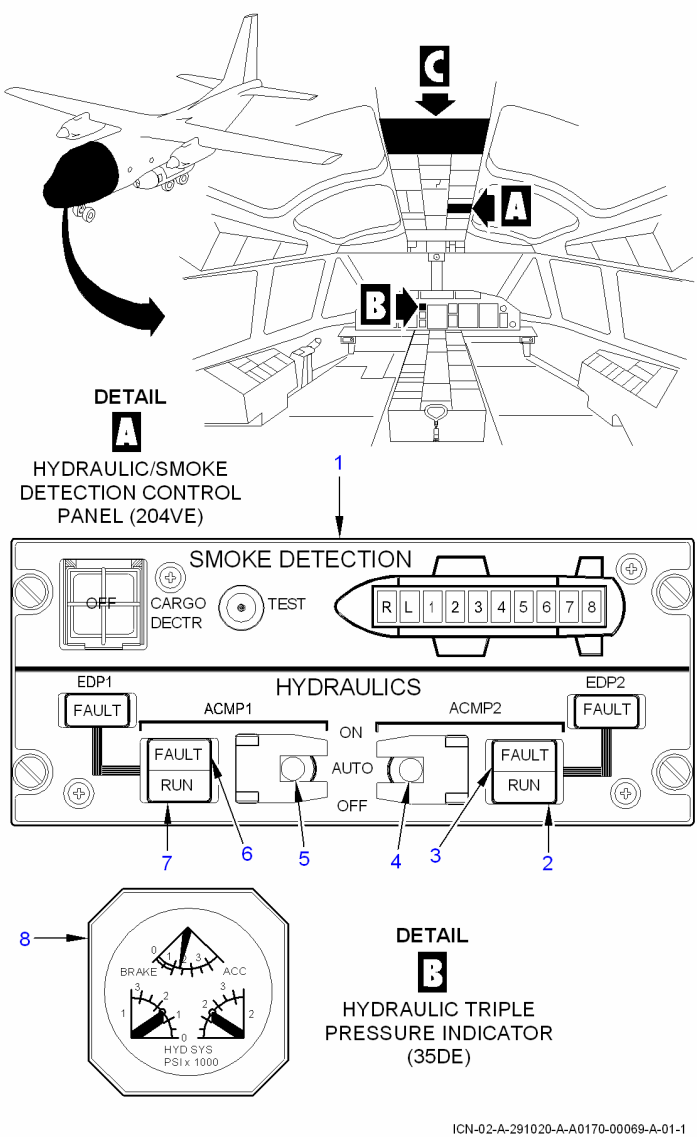


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Figure 2-15 Alternate Current Motor Pump ACMP No. 1 (ACMP No. 2) - Functional Test (sheet 1/3)

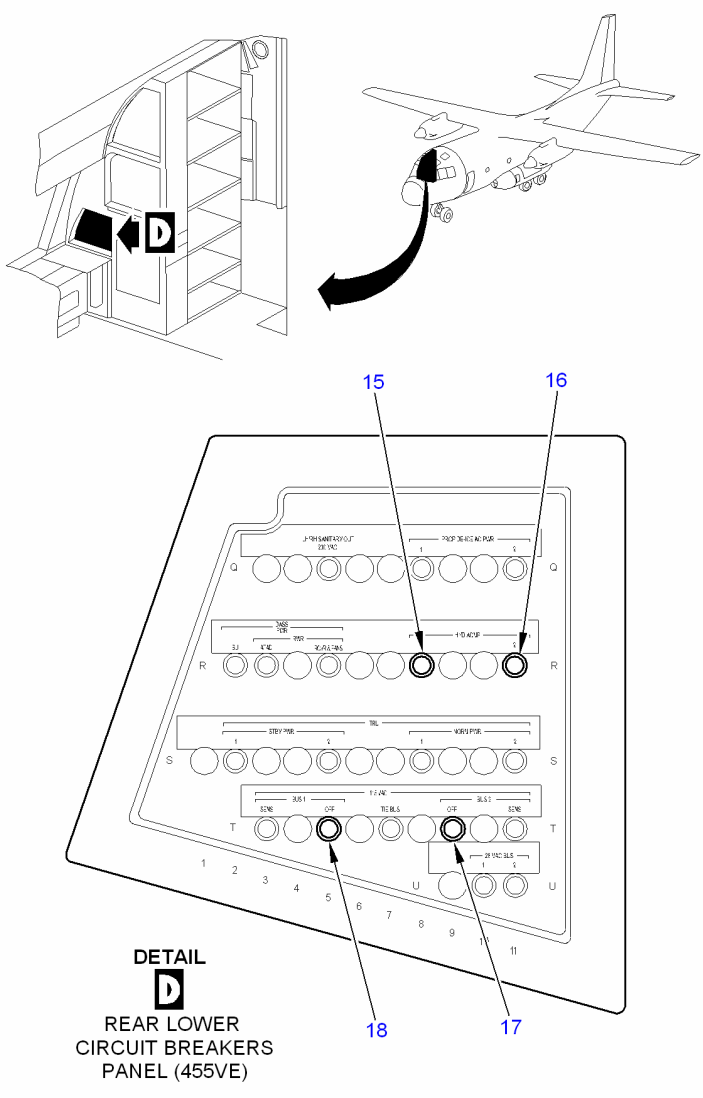

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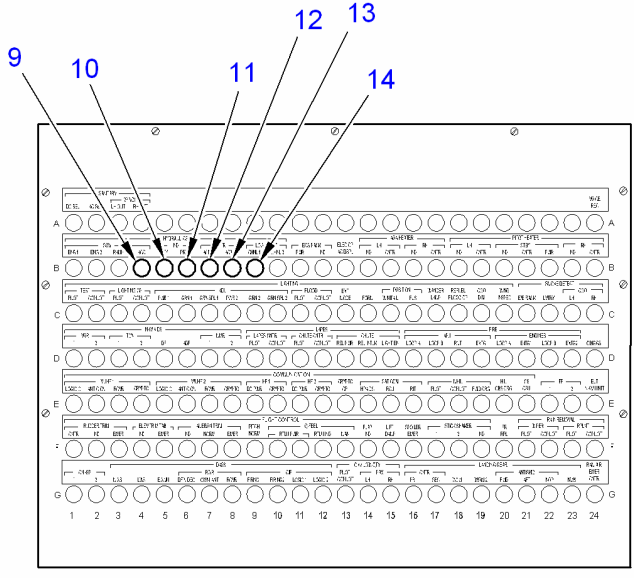
Figure 2-15 Alternate Current Motor Pump ACMP No. 1 (ACMP No. 2) - Functional Test (sheet 2/3)



DETAIL

C

OVERHEAD CIRCUIT
BREAKERS PANEL
(271VE)

ICN-02-A-291020-A-A0170-00071-A-01-1

Figure 2-15 Alternate Current Motor Pump ACMP No. 1 (ACMP No. 2) - Functional Test (sheet 3/3)

2-18 EDP1 (EDP2) LINE ACCUMULATORS IN LH (RH) ENGINE NACELLE - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect external electrical power (refer to manual TCH.1C-27J-2-00GV) .
2. Position maintenance platform (AGE NO. 00074).
3. Open the access panels 414D and 414J (424D and 424J).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	20,00	
Removal	AFM	1	12,00	
Installation	AFM	1	19,00	
Test	AFM	2	20,00	
Follow Maintenance	AFM	2	20,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 151 (Min.)
Total Time Detention System: 91 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**
00074	Kit, aircraft assy platform	G0005100001

AGE No.	NOMENCLATURE	P/N
00262	Test stand, hydraulic system (diesel engine)	846805-D**

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00031	PACKING, PREFORMED	M83461/2-904	AR
00032	O-RING, PREFORMED	M83461/2-906	2,00
00043	HYDRAULIC FLUID	MIL-PRF-83282D	AR

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

NOTE

This procedure is valid for left engine nacelle. For right engine nacelle is similar

2-18.1 REMOVAL (refer to figure 2-16)

WARNING

BEFORE YOU REMOVE THE LINE ACCUMULATOR, RELEASE THE PRESSURE IN THE SYSTEM AND DISCHARGE THE NITROGEN FROM THE ACCUMULATORS. THIS WILL HELP TO PREVENT INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

(Cont'd)

2-18.1 REMOVAL (refer to figure 2-16) (Cont'd)

WARNING

NITROGEN VAPOR IS TOXIC. OPEN THE NITROGEN CHARGING VALVE VERY SLOWLY TO PREVENT NITROGEN VAPOR FROM COMING IN TOUCH WITH THE EYES. DO NOT BREATHE THE NITROGEN VAPOR COMING OUT FROM THE NITROGEN CHARGING VALVE. IT COULD BE MIXED WITH HYDRAULIC FLUID. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

WARNING

HYDRAULIC FLUID IS ACID. AVOID CONCTACT WITH SKIN AND WEAR APPROPRIATE, IMPERVIOUS CLOTHING WHEN HANDLING THE HYDRAULIC FLUIDS. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

CAUTION

Do not use drained fluid from Hydraulic System. A hydraulic fluid leak may occur. This would cause damage to the equipment and loss of mission effectiveness.

1. Use a container to collect drained fluid.

(Cont'd)

2-18.1 REMOVAL (refer to figure 2-16) (Cont'd)

2. Release the nitrogen pressure from refill valve (9) of the hydraulic accumulator (5), to prevent injury to personnel or damage to equipment.

CAUTION

Install protection caps on the disconnected hoses.

3. Disconnect nut of the sensing pipe (13) that connecting the accumulator (5) to the manometer.
4. Disconnect nuts of the pipes (1 and 2).
5. Remove the two clamps (6) by removing bolts (8) and washers (7 and 10).
6. Remove the accumulator (5).
7. Remove from accumulator (5) the unions (3 and 12) and the preformed packings (4 and 11). Discard removed preformed packings.

2-18.2 INSTALLATION (refer to figure 2-16)

NOTE

Lubricate all packings and preformed packings with hydraulic fluid (LCM NO. 00043)

NOTE

Remove protection caps from the hoses to be installed.

1. Install to the accumulator (5) the unions (3 and 12) and the new preformed packings (4 and 11) (LCM NO. 00031). Torque tighten (AGE NO. 00054) unions to 280 in lb thru 305 in lb (3.2 mKg thru 3.5 mKg).
2. Refill the accumulator (5) with clean hydraulic fluid (LCM NO. 00043).

(Cont'd)

2-18.2 INSTALLATION (refer to figure 2-16) (Cont'd)

3. Connect the two clamps (6) by using bolts (8) and washers (7 and 10). Torque tighten (AGE NO. 00054) bolts to 29 in lb thru 33 in lb (0.3 mKg thru 0.4 mKg).
4. Connect the pipes (1 and 2). Torque tighten (AGE NO. 00054) nuts to 470 in lb thru 550 in lb (5.4 mKg thru 6.3 mKg).
5. Connect the sensing pipe (13) that connecting the accumulator (5) to the manometer. Torque tighten (AGE NO. 00054) nut to 80 in lb thru 120 in lb (0.9 mKg thru 1.4 mKg).

FOLLOW ON MAINTENANCE:

1. Connect hydraulic test stand (AGE NO.00262) to No. 1 (No.2) hydraulic system pressure and suction ground test sockets (ground service panel).
2. Set up the hydraulic test stand as follows: delivery pressure 500 psi (35.2 Kg/cm^2).

CAUTION

Avoid the hydraulic fluid spilling using a clean cloth. This will prevent damage to the equipment due to corrosion.

3. Loosen reservoir pressurization TEE downstream pipe nut (1) and check that the hydraulic fluid flowing free from bubbles.
4. Torque tighten (AGE NO. 00054) the nut downstream the TEE fitting to 470 in lb thru 550 in lb (5.4 mKg thru 6.3 mKg).
5. Perform the nitrogen pre charge:
   A. CHARGING THE PRESSURE ACCUMULATORS refer (refer to manual TCH.1C-27J-2-12JG).

6. Set up the hydraulic test stand (AGE NO. 00262) as follows: delivery pressure 3000 psi (210 Kg/cm²);
7. Check the pressure gauge on the nacelle line accumulator of the No.1 (No.2) hydraulic system indicate 3000 psi +/- 150 psi (210 Kg/cm² +/- 10.5 Kg/cm²);
8. Annul the hydraulic pressure in the No.1 (No.2) hydraulic system and check after 5 minutes that the pressure gauges indicate 1450 psi (100 Kg/cm²).
9. Disconnect hydraulic test stand (AGE NO. 00262) from the No.1 (No.2) hydraulic system pressure and suction ground test sockets (ground service panel).
10. Close access panels 414J (424J) and 414D (424D) located in LH (RH) nacelle.
11. Remove maintenance platform (AGE NO. 00074).
12. Connect external electrical power (refer to manual TCH.1C-27J-2-00GV) .

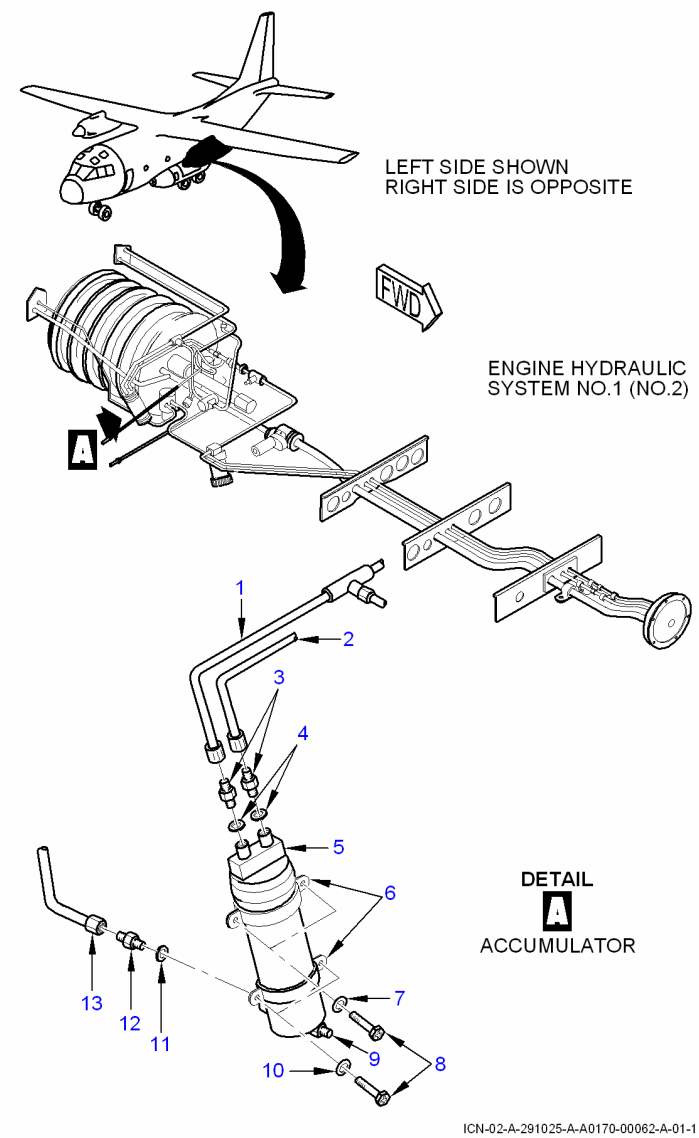


Figure 2-16 EDP1 (EDP2) Line Accumulator in LH (RH) Engine Nacelle - Removal and Installation

2-19 EDP1 (EDP2) LINE ACCUMULATOR NITROGEN CHARGING VALVE IN LH (RH) ENGINE NACELLE - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect external electrical power (refer to manual TCH.1C-27J-2-00GV) .
2. Position maintenance platform (AGE NO. 00074).
3. Open the access panels 414D and 414J (424D and 424J).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	20,00	
Removal	AFM	1	5,00	
Installation	AFM	1	22,00	
Follow Maintenance	AFM	2	20,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 107 (Min.)
Total Time Detention System: 67 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**
00074	Kit, aircraft assy platform	G0005100001

AGE No.	NOMENCLATURE	P/N
00262	Test stand, hydraulic system (diesel engine)	846805-D**

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00016	LOCK WIRE	MS20995C32	AR
00031	PACKING, PREFORMED	M83461/2-904	1,00

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

NOTE

This procedure is valid for left engine nacelle. For right engine nacelle is similar

2-19.1 REMOVAL (refer to figure 2-17)

WARNING

OPEN ALL NITROGEN CHARGING VALVE VERY SLOWLY TO PREVENT NITROGEN VAPOUR FROM COMING IN TOUCH WITH THE EYES. DO NOT BREATHE THE NITROGEN VAPOUR COMING OUT FROM THE NITROGEN CHARGING VALVE; IT COULD BE MIXED WITH HYDRAULIC FLUID

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1. Remove the protective cap (3) on the charging valve (1).

(Cont'd)

2-19.1 REMOVAL (refer to figure 2-17) (Cont'd)

2. Loose nut (2) very slowly to prevent injuries to personnel and wait for complete nitrogen discharge.
3. Cut the lock wire (4) and remove the charging valve (1) by loosening nut (2) and removing preformed packing (5). Discard removed preformed packing.

2-19.2 INSTALLATION (refer to figure 2-17)

NOTE

Lubricate all packings and preformed packings with hydraulic fluid

1. Install charging valve (1) by tightening nut (2) and using new preformed packing (5) (LCM NO. 00031). Torque tighten (AGE NO. 00054) to 102 in lb thru 111 in lb (1.2 mKg thru 1.3 mKg).
2. Install new locking wire (4).
3. Perform nitrogen pre-charge. CHARGING THE PRESSURE ACCUMULATORS (refer to manual TCH.1C-27J-2-12JG).
4. Set up the hydraulic test stand (AGE NO. 00262) as follows: delivery pressure 3000 psi (210 Kg/cm^2).
5. Annul the hydraulic pressure in the No.1 (No.2) hydraulic system and check after 5 minutes that the pressure gauges indicate 1450 psi (100 Kg/cm^2).
6. Replace the protective cap (3) on the charging valve (1) and tighten nut (2). Torque tighten (AGE NO. 00054) nut to 15.5 in lb thru 26 in lb (0.2 mKg thru 0.3 mKg).

FOLLOW ON MAINTENANCE:

1. Close the access panels 414D and 414J (424D and 424J).
2. Remove maintenance platform (AGE NO. 00074).
3. Connect external electrical power (refer to manual TCH.1C-27J-2-00GV) .

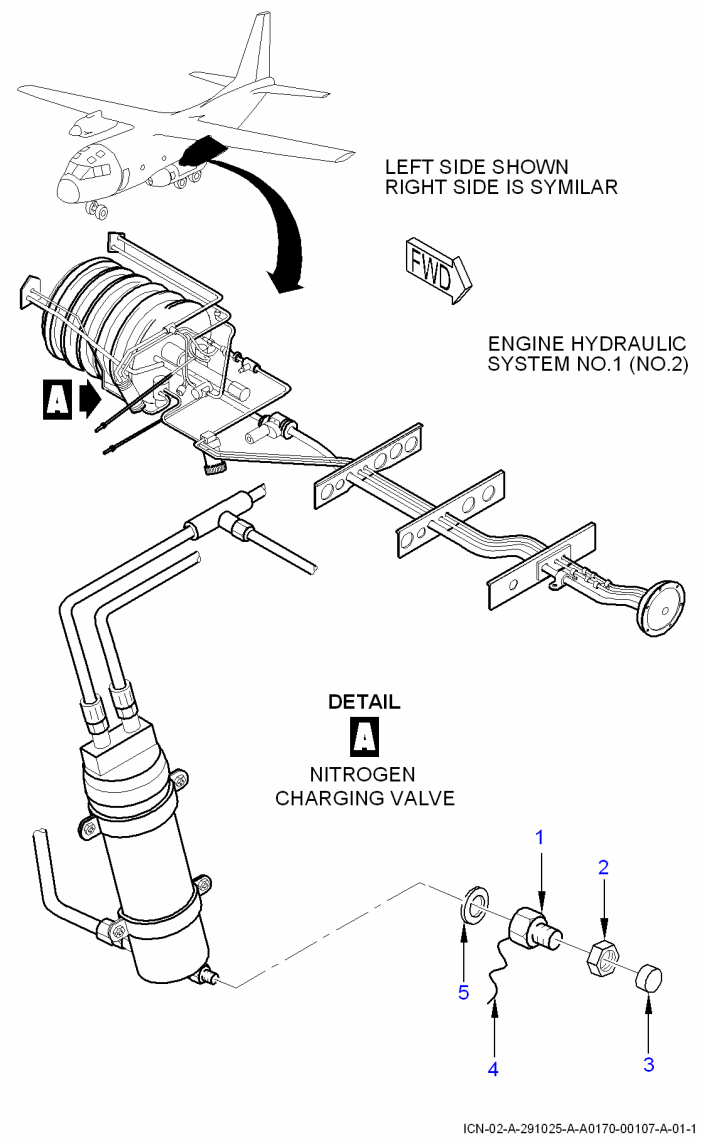

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Figure 2-17 EDP1 (EDP2) Line Accumulator Nitrogen Cherging Valve in LH (RH) Engine Nacelle - Removal and Installation

2-20 LINE ACCUMULATOR IN LH MAIN LANDING GEAR FAIRING - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect external electrical supply from the aircraft (refer to manual TCH.1C-27J-2-00GV) .
2. Open the access panel 912J located in the LH Main Landing Gear fairing.
3. Remove the bolt (6), washers (5 and 4), castellated nut (2) and cotter pin (3) on the lower side of the rod (1) connecting the panel 912E (7) to fuselage structure. Discard removed cotter pin.
4. Remove the anti-fod shield panel 912Q.

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	50,00	
Removal	AFM	1	15,00	
Installation	AFM	1	30,00	
Test	AFM	1	60,00	
Follow Maintenance	AFM	2	50,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 305 (Min.)
Total Time Detention System: 205 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00026	RETAINER, PACKING	MS28773-08	1,00
00027	PACKING, PREFORMED	M83461/2-908	2,00
00031	PACKING, PREFORMED	M83461/2-904	1,00

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

2-20.1 REMOVAL (refer to figure 2-18, sheet 3/4) , (refer to figure 2-18, sheet 1/4) , (refer to figure 2-18, sheet 2/4) and (refer to figure 2-18, sheet 4/4)

WARNING

BEFORE YOU REMOVE THE LINE ACCUMULATOR, RELEASE THE PRESSURE IN THE SYSTEM AND DISCHARGE THE NITROGEN FROM THE ACCUMULATORS. THIS WILL HELP TO PREVENT INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

(Cont'd)

2-20.1 REMOVAL (refer to figure 2-18, sheet 3/4) , (refer to figure 2-18, sheet 1/4) , (refer to figure 2-18, sheet 2/4) and (refer to figure 2-18, sheet 4/4) (Cont'd)

WARNING

NITROGEN VAPOR IS TOXIC. OPEN THE NITROGEN CHARGING VALVE VERY SLOWLY TO PREVENT NITROGEN VAPOR FROM COMING IN TOUCH WITH THE EYES. DO NOT BREATHE THE NITROGEN VAPOR COMING OUT FROM THE NITROGEN CHARGING VALVE. IT COULD BE MIXED WITH HYDRAULIC FLUID. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

WARNING

HYDRAULIC FLUID IS ACID. AVOID CONCTACT WITH SKIN AND WEAR APPROPRIATE, IMPERVIOUS CLOTHING WHEN HANDLING THE HYDRAULIC FLUIDS. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

(Cont'd)

2-20.1 REMOVAL (refer to figure 2-18, sheet 3/4) , (refer to figure 2-18, sheet 1/4) , (refer to figure 2-18, sheet 2/4) and (refer to figure 2-18, sheet 4/4) (Cont'd)

CAUTION

Do not use drained fluid from Hydraulic System. A hydraulic fluid leak may occur. This would cause damage to the equipment and loss of mission effectiveness.

CAUTION

Install protection caps on the disconnected hoses.

1. Use a container to collect drained fluid.
2. Remove the protection cap on the nitrogen charging valve (4).
3. Loosen nut of the pipe (8) very slowly to prevent injuries to personnel and wait for complete nitrogen discharge.
4. Loosen the nut of the sensing pipe (8) that connects the accumulator (12) with the manometer.

CAUTION

Be careful when you disconnect the outlet pipe. A gross hydraulic fluid leakage may occur. Be ready to place cap as soon as possible.

5. Loosen nut and disconnect inlet pipe (15).

(Cont'd)

2-20.1 REMOVAL (refer to figure 2-18, sheet 3/4) , (refer to figure 2-18, sheet 1/4) , (refer to figure 2-18, sheet 2/4) and (refer to figure 2-18, sheet 4/4) (Cont'd)

6. Loosen the nuts of the outlet pipe (10) that connects the two TEE reducer (16 and 19) and remove the pipe.
7. Loosen the nut of the pressure transducer pipe (18) on TEE reducer side (19).
8. Hold the accumulator (12) and loose the clamps (23).
9. Remove the accumulator (12) and its two clamps (23) from the support.
10. Collect the two metallic clamps (23).
11. Remove union reducer (14) of hydraulic fluid inlet side and discard packing (13).
12. Remove TEE union reducer nut (20). Collect nut (20) and discard retainer (22) and packing (21).
13. Remove union (9) on nitrogen side of accumulator and discard packing (10).

2-20.2 INSTALLATION (refer to figure 2-18, sheet 3/4) , (refer to figure 2-18, sheet 1/4) , (refer to figure 2-18, sheet 2/4) and (refer to figure 2-18, sheet 4/4)

NOTE

Lubricate all packings and performed packings with hydraulic fluid

NOTE

Remove protection caps from the hoses to be installed.

1. Install the new packing (LCM NO. 00031) (10) on the union (9), install the union (9) on the nitrogen inlet port of the accumulator (12) and torque tighten (AGE NO. 00054) to 1,1 mkg thru 1,2 mkg (95 in lb thru 105 in lb).

(Cont'd)

2-20.2 INSTALLATION (refer to figure 2-18, sheet 3/4) , (refer to figure 2-18, sheet 1/4) , (refer to figure 2-18, sheet 2/4) and (refer to figure 2-18, sheet 4/4) (Cont'd)

2. Install the new Packing (LCM NO. 00027) (13) on the union reducer (14), install the union reducer (14) on the inlet port of the accumulator (12). Torque tighten (AGE NO. 00054) to 3,2 mkg thru 3,5 mkg (280 in lb thru 305 in lb).
3. Install the new packing (LCM NO. 00027) (22) and the retainer (LCM NO. 00026) (21) on the outlet TEE reducer (19), install the outlet TEE reducer (12) on outlet port of the accumulator (12).
4. Install the two metallic clamps (23) on the accumulators (12).
5. Position the accumulator (12) and anchor the two clamps (23) on supports.
6. Tighten the metallic clamp (23) lightly in order to hold the accumulator (12).
7. Install the inlet pipe (15) and tighten the nuts.
8. Connect the sensing pipe (8) that connect the accumulator (12) with the manometer and tighten the nut.
9. Align the TEE reducer port with the pressure transducer pipe (18). Verify correct installation. Tighten the nut on the pressure transducer pipe (18).
10. Install the outlet pipe (17) between the two TEE reducer (16 and 19) and tighten the nuts.
11. Verify correct installation of outlet pipes assy (17 and 18).
12. Torque tighten (AGE NO. 00054) the nut of TEE reducer (19) on accumulator (12) to 3,2 mkg thru 3,5 mkg (280 in lb thru 305 in lb).

(Cont'd)

2-20.2 INSTALLATION (refer to figure 2-18, sheet 3/4) , (refer to figure 2-18, sheet 1/4) , (refer to figure 2-18, sheet 2/4) and (refer to figure 2-18, sheet 4/4) (Cont'd)

13. Torque tighten (AGE NO. 00054) the nut on transducer pipe (18) to 1,1 mkg thru 1,6 mkg (90 in lb thru 135 in lb).
14. Torque tighten (AGE NO. 00054) the outlet pipe nut (20) to 1,6 mkg thru 2,4 mkg (143 in lb thru 215 in lb).
15. Torque tighten (AGE NO. 00054) the nut of inlet pipe (15) to 1,6 mkg thru 2,4 mkg (143 in lb thru 215 in lb).
16. Torque tighten (AGE NO. 00054) the nut of sensing line pipe (8) to 1,1 mkg thru 1,6 mkg (90 in lb thru 135 in lb).
17. Tighten the two metallic clamps (23).

FOLLOW ON MAINTENANCE:

1. Perform nitrogen pre-charge:
   A. CHARGING THE PRESSURE ACCUMULATORS (refer to manual TCH.1C-27J-2-12JG).
   B. After the nitrogen charging check unions for leakage by means of soap and water solution.
   C. Select the ACMP 1 (ACMP 2) (24 and 25) switch to ON position (refer to figure 2-18, sheet 4/4) and keep it in ON position for five minutes.

WARNING

BEFORE YOU EXECUTE NEXT STEP, MAKE SURE THAT NO PERSONNEL AND NO OBSTACLES ARE IN THE ELEVATOR MOVEMENT AREA. SEVERE INJURY TO PERSONNEL MAY OCCUR IF THIS SAFETY INSTRUCTION IS NOT OBEYED.

D. Operate the elevator aproximately 20 times.

E. Check for absence of leakage.

2. Perform the BLEENDING NO. 1 (NO. 2) System (refer to para 2-6) .
3. Select the ACMP 1 (ACMP 2) (24 and 25) switch to OFF position.
4. Wait for five minutes and check the pre-charge pressure on the manometer and, eventually, restore the correct value 1450 psi (100 Kg/cm^2).
5. Install the anti-fod shield panel 912Q.
6. Install the bolt (6), washers (5 and 4), castellated nut (2) and new cotter pin (3) on the lower side of the rod (1) connecting the panel 912E (7) to fuselage structure.
7. Close the access panel 912J located in the LH Main Landing Gear fairing.
8. Connect external electrical power (refer to manual TCH.1C-27J-2-00GV).

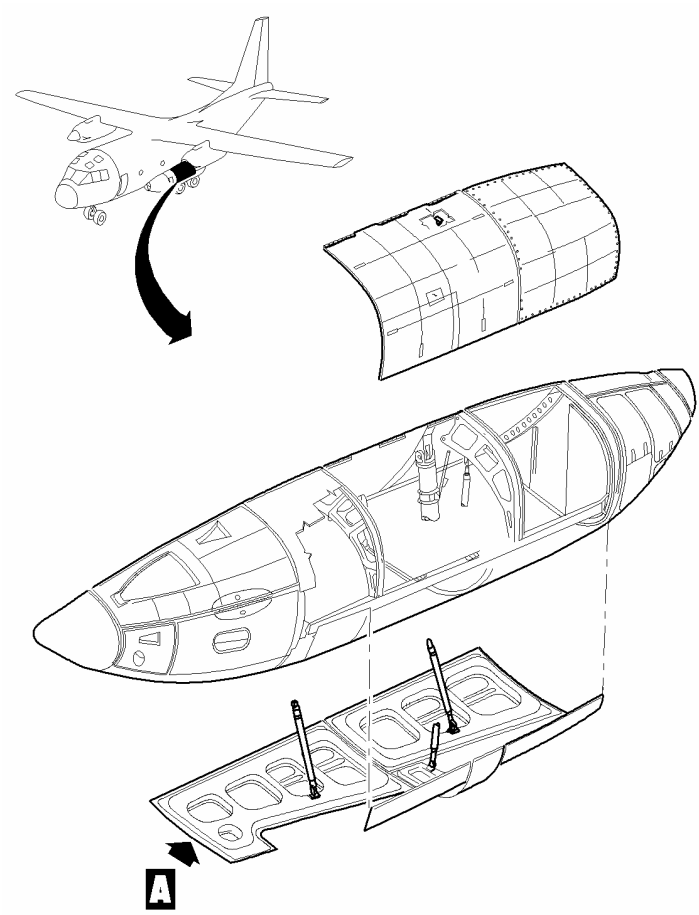

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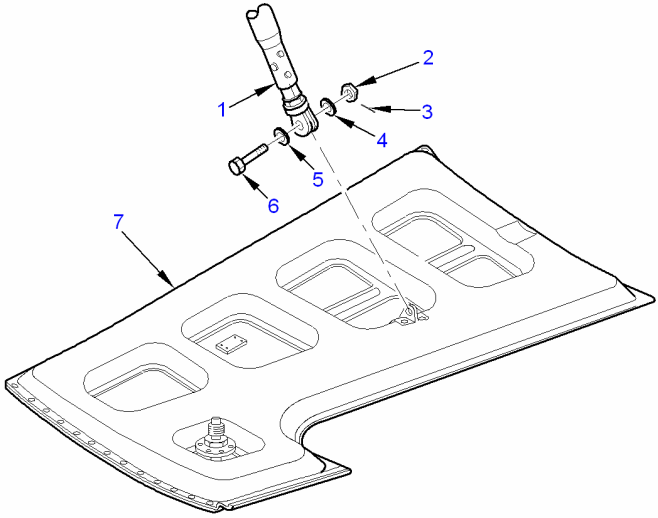
Figure 2-18 Line Accumulator in LH Main Landing Gear Fairing - Removal and Installation (sheet 1/4)



DETAIL
A
PANEL 912 E

ICN-02-A-291025-A-A0170-00124-A-01-1

Figure 2-18 Line Accumulator in LH Main Landing Gear Fairing - Removal and Installation (sheet 2/4)

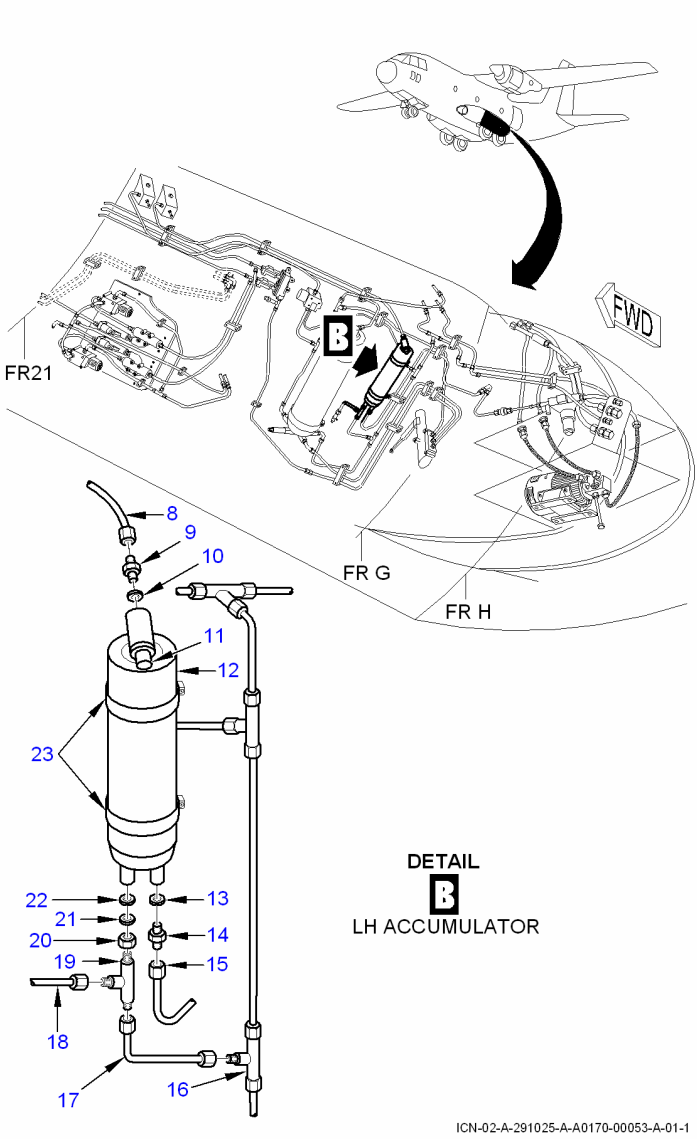
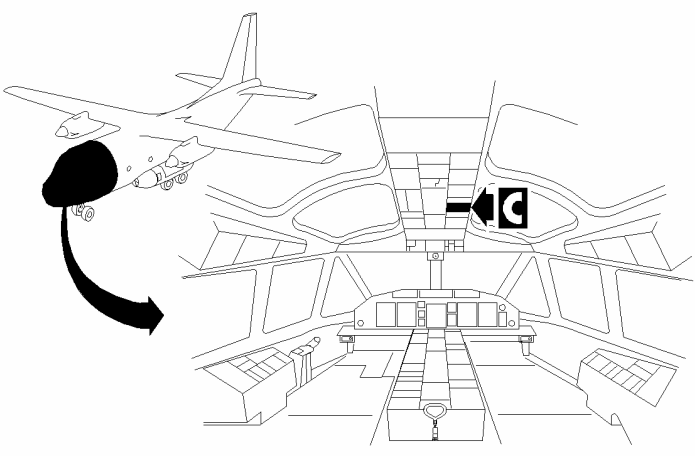
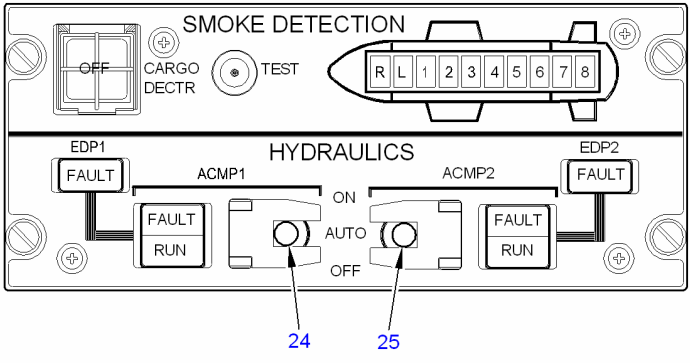


Figure 2-18 Line Accumulator in LH Main Landing Gear Fairing - Removal and Installation (sheet 3/4)





DETAIL

HYDRAULIC/SMOKE
DETECTION CONTROL
PANEL (204VE)

ICN-02-A-291025-A-A0170-00125-A-01-1

Figure 2-18 Line Accumulator in LH Main Landing Gear Fairing - Removal and Installation (sheet 4/4)

2-21 LINE ACCUMULATOR IN RH MAIN LANDING GEAR FAIRING - REMOVAL AND INSTALATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect external electrical power (refer to manual TCH.1C-27J-2-00GV) .
2. Open the access panels 912E, 922Q and 922J.

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	50,00	
Removal	AFM	1	15,00	
Installation	AFM	1	30,00	
Test	AFM	1	60,00	
Follow Maintenance	AFM	2	50,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 305 (Min.)
Total Time Detention System: 205 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00026	RETAINER, PACKING	MS28773-08	1,00
00027	PACKING, PREFORMED	M83461/2-908	2,00
00031	PACKING, PREFORMED	M83461/2-904	1,00
00073	PACKING, RETAINER	MS28773-04	1,00

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-7) before performing maintenance.

PROCEDURE:

2-21.1 REMOVAL (refer to figure 2-19, sheet 1/3) and (refer to figure 2-19, sheet 2/3)

WARNING

BEFORE YOU REMOVE THE LINE ACCUMULATOR, RELEASE THE PRESSURE IN THE SYSTEM AND DISCHARGE THE NITROGEN FROM THE ACCUMULATORS. THIS WILL HELP TO PREVENT INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

(Cont'd)

2-21.1 REMOVAL (refer to figure 2-19, sheet 1/3) and (refer to figure 2-19, sheet 2/3) (Cont'd)

WARNING

NITROGEN VAPOR IS TOXIC. OPEN THE NITROGEN CHARGING VALVE VERY SLOWLY TO PREVENT NITROGEN VAPOR FROM COMING IN TOUCH WITH THE EYES. DO NOT BREATHE THE NITROGEN VAPOR COMING OUT FROM THE NITROGEN CHARGING VALVE. IT COULD BE MIXED WITH HYDRAULIC FLUID. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

WARNING

HYDRAULIC FLUID IS ACID. AVOID CONCTACT WITH SKIN AND WEAR APPROPRIATE, IMPERVIOUS CLOTHING WHEN HANDLING THE HYDRAULIC FLUIDS. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

CAUTION

Do not use drained fluid from Hydraulic System. A hydraulic fluid leak may occur. This would cause damage to the equipment and loss of mission effectiveness.

(Cont'd)

2-21.1 REMOVAL (refer to figure 2-19, sheet 1/3) and (refer to figure 2-19, sheet 2/3) (Cont'd)

CAUTION

Install protection caps on the disconnected hoses.

1. Use a container to collect drained fluid.
2. Remove the protection cap on the nitrogen charging valve (9).
3. Loosen nut of the pipe (4) very slowly to prevent injuries to personnel and wait for complete nitrogen discharge.
4. Loosen nut of sensing pipe (4) that connects the accumulator with the manometer (take care not damage the hydraulic pipe).
5. Remove the P-clamp (3) on the sensing pipe (4) and collect screw (2) and washer (1).
6. Loosen nut and disconnect inlet pipe (16).

CAUTION

Be careful when you disconnect the outlet pipe (14). A gross hydraulic fluid leakage may occur. Be ready to place the cap as soon as possible.

7. Loosen the nuts of the outlet pipe (14) that connects the Tee reducers (13) and remove the pipe.
8. Remove the pipe (15) that connects the accumulator Tee union reducer (13) to flow selector valve (21) by loosening nut.
9. Hold the accumulator (19) and loose the clamps (20).
10. Remove the accumulator (19) and its two clamps (20) from the support.

(Cont'd)

2-21.1 REMOVAL (refer to figure 2-19, sheet 1/3) and (refer to figure 2-19, sheet 2/3) (Cont'd)

11. Collect the two metallic clamps (20).
12. Remove union reducer (17) of hydraulic fluid inlet side and discard packing (18).
13. Remove tee union reducer (13) on the accumulator (19) and collect retainer (11) and nut (12). Discard packing (10).
14. Remove elbow (5) of nitrogen side on accumulator (19) and collect retainer (8) and nut (6). Discard packing (7).

2-21.2 INSTALLATION (refer to figure 2-19, sheet 1/3) and (refer to figure 2-19, sheet 2/3)

NOTE

Lubricate all packings and performed packings with hydraulic fluid.

NOTE

Remove protection caps from the hoses to be installed.

1. Install the new packing (LCM NO. 00031) (7) and the retainer (LCM NO. 00073) (8) on the elbow (5), install the elbow (5) on the nitrogen inlet port of the accumulator (19) and orque tighten (AGE NO. 00054) to 95 in lb thru 105 in lb (1.1 mkg thru 1.2 mkg).
2. Install the new packing (LCM NO. 00027) (18) on the union reducer (17), install the union reducer (17) on the inlet port of the accumulator (19). Torque tighten (AGE NO. 00054) to 280 in lb thru 305 in lb (3.2 mkg thru 3.5 mkg).
3. Install the new packing (LCM NO. 00027) (10) and the retainer (LCM NO. 00026) (11) on the outlet tee reducer (13), install the outlet tee reducer (13) on outlet port of the accumulator (19).

(Cont'd)

2-21.2 INSTALLATION (refer to figure 2-19, sheet 1/3) and (refer to figure 2-19, sheet 2/3) (Cont'd)

4. Install the two metallic clamps (20) on the accumulator (19).
5. Position the accumulator (19) and anchor the two clamps (20) on supports.
6. Tighten the metallic clamps (20) lightly in order to hold the accumulator (19).
7. Tighten the nut of the inlet pipe (16) and tighten lightly.
8. Connect the sensing pipe (4) that connect the accumulator (19) with the manometer and tighten the nut.
9. Install and tighten the P-clamp (3) using screw (2) and washer (1).
10. Install the pipe (15) that connects accumulator Tee union reducer (13) to flow selector valve (21). Align the tee reducer port with the pipe and tighten the nuts. Verify correct installation.
11. Install the outlet pipe (14) to the tee reducer (13) and tighten the nut.
12. Verify correct installation of outlet pipes assy.
13. Torque tighten (AGE NO. 00054) the tee reducer nut (12) on accumulator at 280 through 305 lb in.
14. Torque tighten (AGE NO. 00054) the nut (6) on transducer pipe to 90 in lb thru 135 in lb (1.1 mkg thru 1.6 mkg).
15. Torque tighten (AGE NO. 00054) the outlet pipe nuts to 143 in lb thru 215 in lb (1.6 mkg thru 2.4 mkg).
16. Torque tighten (AGE NO. 00054) the inlet side nut to 143 in lb thru 215 in lb (1.6 mkg thru 2.4 mkg).
17. Torque tighten (AGE NO. 00054) the sensing line pipe nut to 90 in lb thru 135 in lb (1.1 mkg thru 1.6 mkg).
18. Tighten the two metallic clamps (20).

FOLLOW ON MAINTENANCE:

1. Perform nitrogen pre-charge:
   A. CHARGING THE PRESSURE ACCUMULATORS (refer to manual TCH.1C-27J-2-12JG);
   B. after the nitrogen charging check unions for leakage by means of soap and water solution;
   C. select the ACMP 1 (ACMP 2) switch (22 and 23) to ON position (refer to figure 2-19, sheet 3/3) and keep it in ON position for five minutes;

WARNING

ENSURE THAT THE ELEVATOR IS FREE IN MOVEMENT AND DO NOT CAUSE INJURY TO PERSONNEL.

2. Operate twenty times the elevator.
3. Check for absence of leakage.
4. Perform the BLEENDING NO. 1 (NO. 2) System (refer to para 2-6) .
5. Select the ACMP 1 (ACMP 2) (22 and 23) switch to OFF position.
6. Wait for five minutes and check the pre-charge pressure on the manometer and, eventually, restore the correct value 1450 psi (100 Kg/cm^2).
7. Close the access panels 912E, 922Q and 922J.
8. Connect external electrical power (refer to manual TCH.1C-27J-2-00GV) .

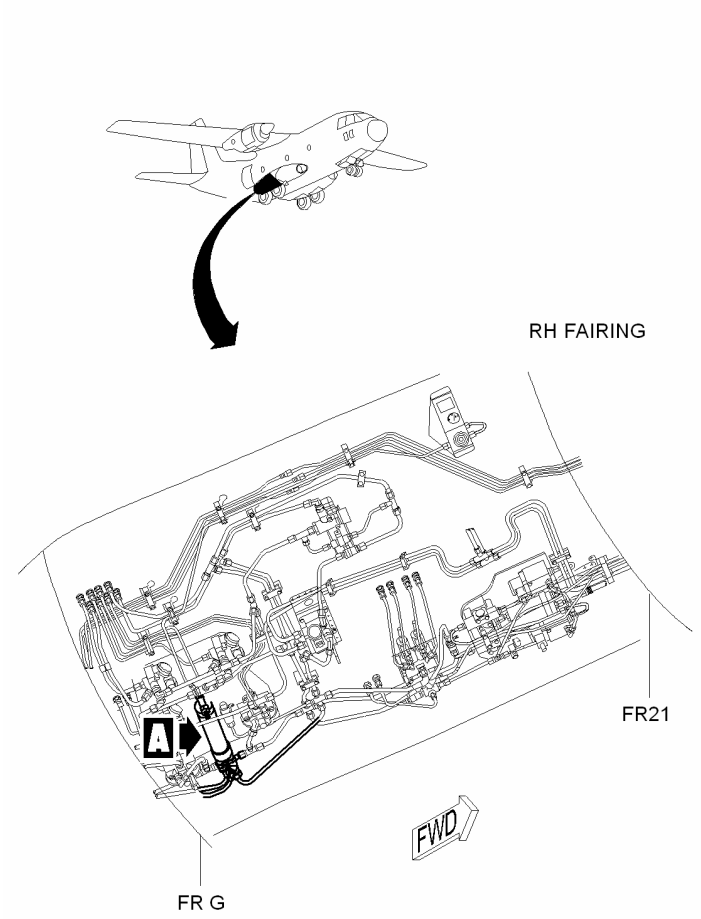


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Figure 2-19 Line Accumulator in RH Main Landing Gear Fairing - Removal and Installation (sheet 1/3)

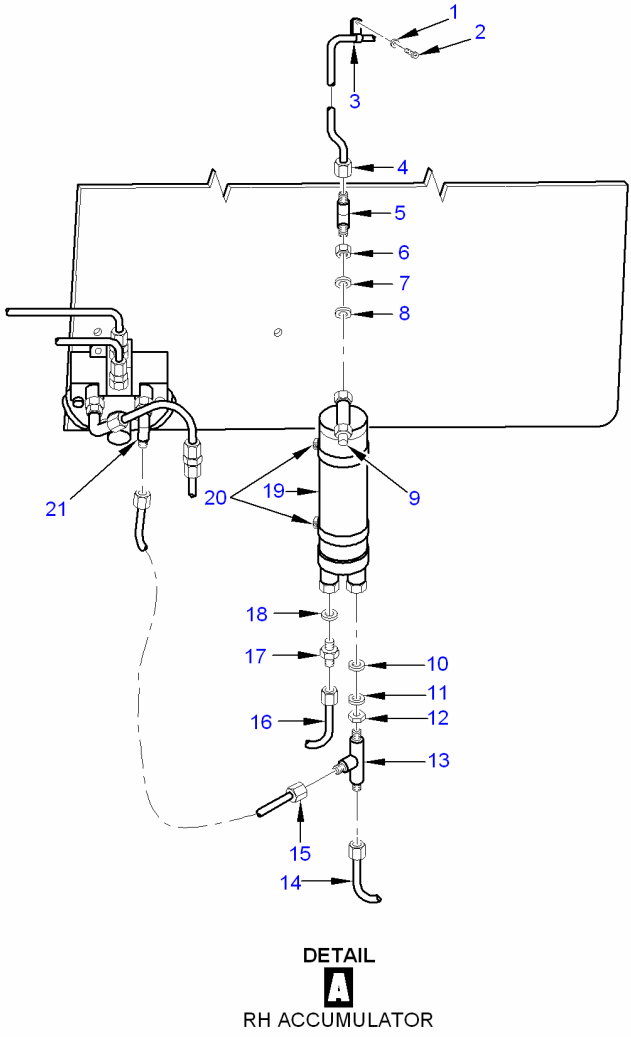

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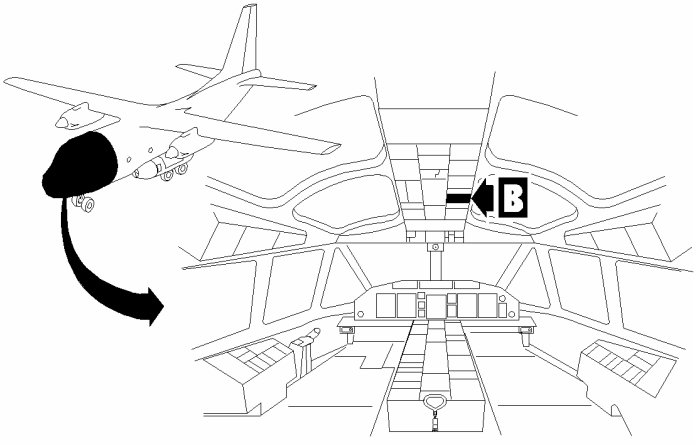
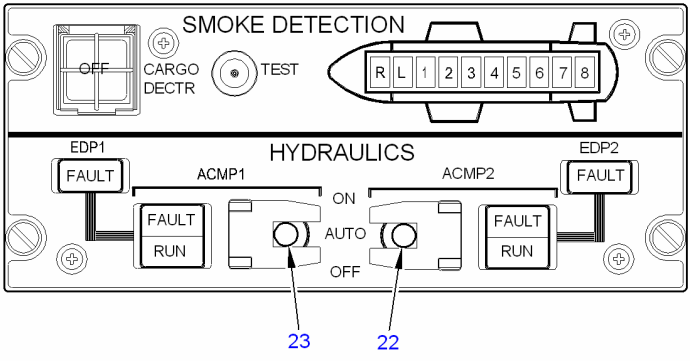
Figure 2-19 Line Accumulator in RH Main Landing Gear Fairing - Removal and Installation (sheet 2/3)





DETAIL
B
HYDRAULIC/SMOKE
DETECTION CONTROL
PANEL (204VE)

ICN-02-A-291025-A-A0170-00116-A-01-1

Figure 2-19 Line Accumulator in RH Main Landing Gear Fairing - Removal and Installation (sheet 3/3)

2-22 RELIEF VALVES - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect external electrical power .
2. Position maintenance platform (AGE NO. 00074).
3. Open the access panels 414J and 414D (424J and 424D).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	20,00	
Removal	AFM	1	7,00	
Installation	AFM	2	34,00	
Follow Maintenance	AFM	2	20,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 155 (Min.)
Total Time Detention System: 81 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**
00074	Kit, aircraft assy platform	G0005100001
00262	Test stand, hydraulic system (diesel engine)	846805-D**

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00027	PACKING, PREFORMED	M83461/2-908	2,00

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

NOTE

This procedure is valid for left engine nacelle. For right engine nacelle is similar.

2-22.1 REMOVAL (refer to figure 2-20)

WARNING

BEFORE YOU REMOVE ANY HYDRAULIC COMPONENT, RELEASE SYSTEM PRESSURE, IN ORDER TO PREVENT INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

WARNING

HYDRAULIC FLUID IS ACID. AVOID CONCTACT WITH SKIN AND WEAR APPROPRIATE, IMPERVIOUS CLOTHING WHEN HANDLING THE HYDRAULIC FLUIDS. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

(Cont'd)

2-22.1 REMOVAL (refer to figure 2-20) (Cont'd)

CAUTION

Do not use drained fluid from Hydraulic System. A hydraulic fluid leak may occur. This would cause damage to the equipment and loss of mission effectiveness.

1. Use a container to collect drained fluid.

CAUTION

Install protection caps on the disconnected hoses.

2. Loosen nut of the outlet pipe (6) and disconnect it.
3. Loosen nut of the inlet pipe (1) and disconnect it.
4. Remove the relief valve (4) by removing bolts (2) and washers (3).
5. Remove from relief valve (4), the unions (7 and 9) and the preformed packings (5 and 8). Discard removed preformed packing.

2-22.2 INSTALLATION (refer to figure 2-20)

NOTE

Remove protection caps from the hoses to be installed.

1. Install at the relief valve (4), the unions (7 and 9) and the new preformed packings (5 and 8) (LCM NO. 00027). Torque tighten (AGE NO. 00054) unions to 280 in lb thru 305 in lb (3.2 mKg thru 3.5 mKg).
2. Install the relief valve (4) by using bolts (2) and washers (3). Torque tighten (AGE NO.00054) bolts to 29 in lb thru 33 in lb (0.3 mKg thru 0.4 mKg).

(Cont'd)

2-22.2 INSTALLATION (refer to figure 2-20) (Cont'd)

3. Tighten nut of the inlet pipe (1) and connect it.
4. Tighten nut of the outlet pipe (6) and connect it.
5. Connect hydraulic test stand (AGE NO.00262) No.1 (No.2) hydraulic system pressure and suction ground test sockets (ground service panel).
6. Set up the hydraulic test stand (AGE NO. 00262) as follows: delivery pressure 500 psi (35.2 kg/cm^2).

CAUTION

Avoid hydraulic fluid spilling using a clean cloth. This will prevent damage to the equipment due to corrosion.

7. Loosen the nut pf the inlet pipe (1) until the hydraulic fluid flows free from bubbles. Torque tighten (AGE NO. 00054) nut to 470 in lb thru 550 in lb (5.4 mKg thru 6.3 mKg).
8. Loosen the nut pf the outlet pipe (6) until the hydraulic fluid flows free from bubbles. Torque tighten (AGE NO. 00054) nut to 270 in lb thru 350 in lb (3.1 mKg thru 4.0 mKg).
9. Annul the hydraulic test stand (AGE NO. 00262) in the No.1 (No.2) hydraulic system and check the pressure gauges indicate 1450 psi (100 kg/cm^2).
10. Set up the hydraulic test stand (AGE NO. 00262) as follows: delivery pressure 3000 psi (210 kg/cm^2).
11. Check for absence of leakage.
12. Annul the hydraulic pressure and disconnect hydraulic test stand (AGE NO. 00262) from the No.1 (No.2) hydraulic system pressure and suction ground test sockets (ground service panel).

FOLLOW ON MAINTENANCE:

1. Close the access panels 414J and 414D (424J and 424D).
2. Remove maintenance platform (AGE NO. 00074).
3. Connect external electrical power .

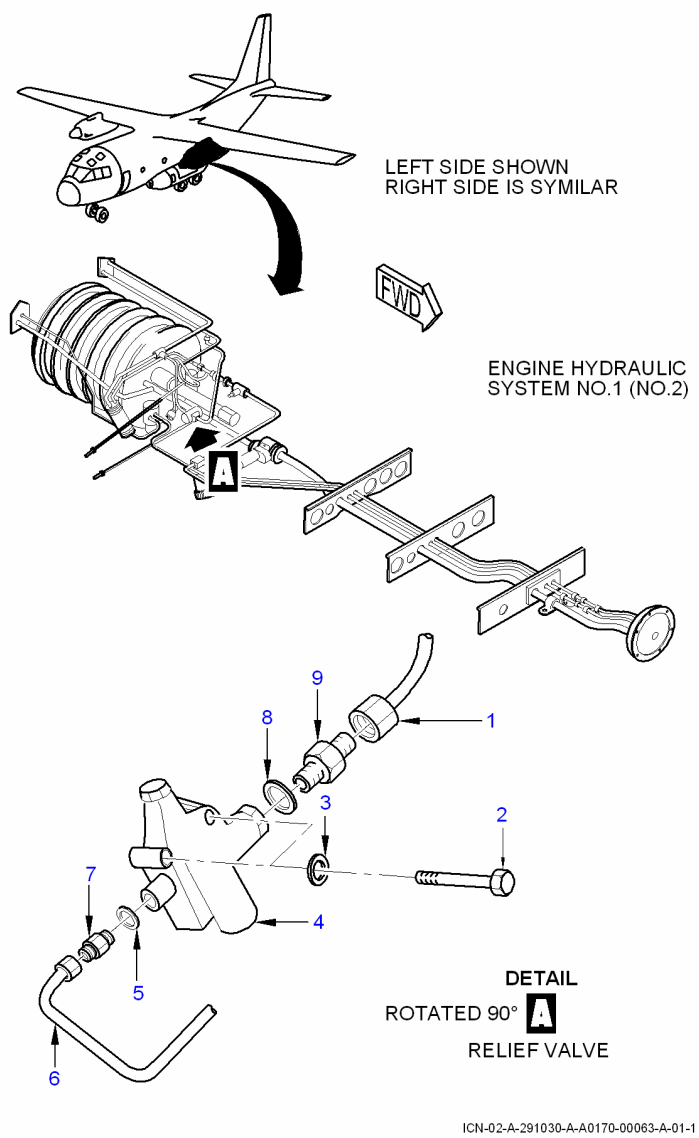


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Figure 2-20 Relief Valve - Removal and Installation

2-23 CHECK VALVE IN LH (RH) ENGINE NACELLE - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect external electrical power (refer to manual TCH.1C-27J-2-00GV).
2. Position maintenance platform (AGE NO. 00074).
3. Open the access panels 414J and 414D (424J and 424D).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	20,00	
Removal	AFM	1	9,00	
Installation	AFM	2	36,00	
Test	AFM	2	28,00	
Follow Maintenance	AFM	2	20,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 217 (Min.)
Total Time Detention System: 113 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**
00074	Kit, aircraft assy platform	G0005100001

AGE No.	NOMENCLATURE	P/N
00262	Test stand, hydraulic system (diesel engine)	846805-D**

Consumable Material Required:

None

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

NOTE

This procedure is valid for left engine nacelle. For right engine nacelle is similar.

2-23.1 REMOVAL (refer to figure 2-21, sheet 1/2)

WARNING

BEFORE YOU REMOVE ANY HYDRAULIC COMPONENT, RELEASE SYSTEM PRESSURE, IN ORDER TO PREVENT INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

2-23.1 REMOVAL (refer to figure 2-21, sheet 1/2) (Cont'd)

WARNING

HYDRAULIC FLUID IS ACID. AVOID CONCTACT WITH SKIN AND WEAR APPROPRIATE, IMPERVIOUS CLOTHING WHEN HANDLING THE HYDRAULIC FLUIDS. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

CAUTION

Do not use drained fluid from Hydraulic System. A hydraulic fluid leak may occur. This would cause damage to the equipment and loss of mission effectiveness.

CAUTION

Install protection caps on the disconnected electrical connectors and hoses.

1. Use a container to collect drained fluid.
2. Disconnect electrical connector (26DEA) (7) from low pressure switch (12).

NOTE

For the right side disconnect the electrical connector (27DEA).

3. Remove clamp (11) by removing bolt (10), washer (8) and nut (6) from support.

(Cont'd)

2-23.1 REMOVAL (refer to figure 2-21, sheet 1/2) (Cont'd)

4. Loosen the HP Filter downstream nut (9) and the pressure switch tee downsteam nut (4).
5. Remove the tee pipe (5).
6. Loosen the check valve downsteam nut (1) and remove the check valve (2).

2-23.2 INSTALLATION (refer to figure 2-21, sheet 1/2) and (refer to figure 2-21, sheet 2/2)

NOTE

Remove protection caps from the electrical connectors and hoses to be installed.

1. Install the check valve (2) by tightening the nut (1) downstream of the valve lightly (the arrow must be in the direction of the reservoir).
2. Reconnect the tee pipe (5) torque (AGE NO. 00054) tightening the HP filter downstream pipe nut (9) to 470 in lb thru 550 in lb (5.4mkg thru 6.3mkg) and tighten the pressure switch tee downstream nut (4) lightly.

CAUTION

Avoid the hydraulic fluid spilling using a clean cloth. This will prevent damage to the equipment due to corrosion.

---

3. Connect hydraulic test stand (AGE NO. 00262) to No.1 (No.2) hydraulic system pressure and suction ground test sockets (ground service panel).
4. Set up the hydraulic test stand (AGE NO. 00262) as follows: delivery pressure 300 psi (21.1 Kg / cm^2).
5. Loosen the check valve downstrem nut (1) and check for fluid free of bubbles.
6. Torque tighten (AGE NO. 00054) the check valve downstream nut (1) to 470 in lb thru 550 in lb (5.4 mkg thru 6.3 mkg).

(Cont'd)

2-23.2 INSTALLATION (refer to figure 2-21, sheet 1/2) and (refer to figure 2-21, sheet 2/2) (Cont'd)

7. Loosen the upstrem check valve nut (3).

CAUTION

Rotating the propeller clockwise (facing the propeller) can cause damage to the engine

8. Rotate by hand the propeller LH (RH) anticlockwise (facing the propeller) until the hydraulic fluid flows free from bubbles.
9. Torque tighten (AGE NO. 00054) the check valve upstream nut (3) to 470 in lb thru 550 in lb (5.4 mkg thru 6.3 mkg).
10. Connect clamp (11) to support by using bolt (10), washer (8) and nut (6).
11. Connect electrical connector (26DEA) (7) at the low pressure switch (12).

NOTE

For the right side connect the electrical connector (27DEA).

12. Set up the hydraulic test stand (AGE NO. 00262) as follows: delivery pressure 3000 psi (210 Kg/cm^2) for three minutes.
13. Verify that the EDP1 (EDP2) FAULT (13 and 14) located on the Hydraulic / Smoke Detection Control Panel (204VE) (15) is still illuminated.
14. Annul the pressure and disconnect the hydraulic test stand (AGE NO.00262).

FOLLOW ON MAINTENANCE:

1. Perform the test:
   A. FUNCTIONAL TEST OF LH (RH) ENGINE NACELLE LOW PRESSURE SWITCH (refer to para 2-28).
2. Close the access panels 414J and 414D (424J and 424D).
3. Remove maintenance platform (AGE NO. 00074).
4. Connect external electrical power (refer to manual TCH.1C-27J-2-00GV).

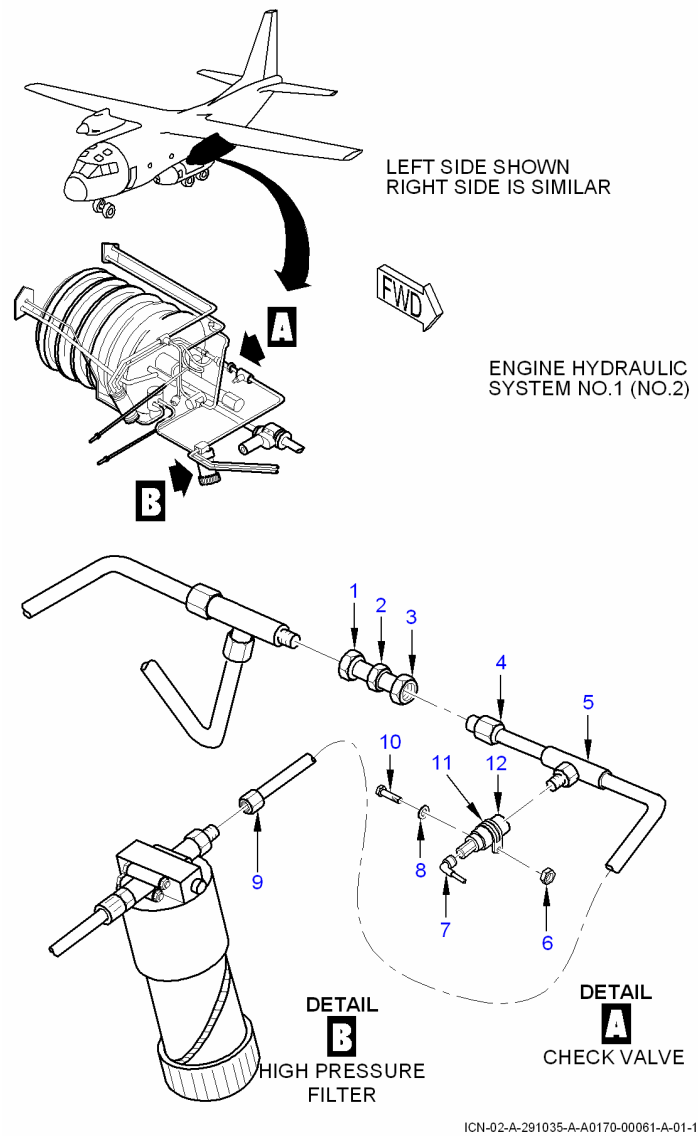

Figure 2-21 Check Valve in LH (RH) Engine Nacelle - Removal and Installation (sheet 1/2)

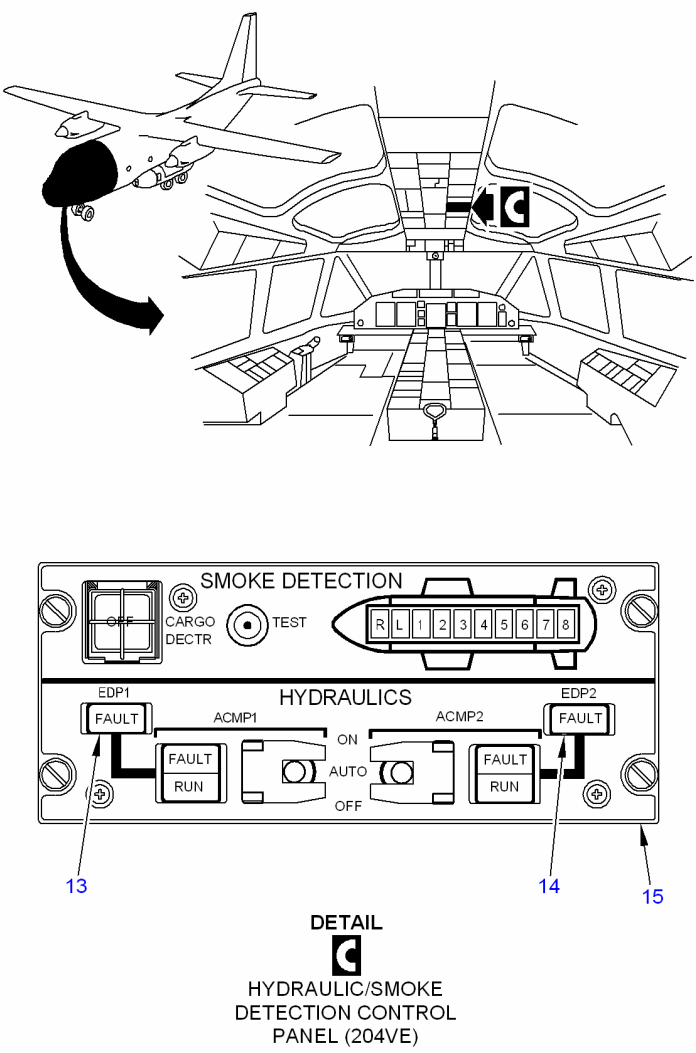

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Figure 2-21 Check Valve in LH (RH) Engine Nacelle - Removal and Installation (sheet 2/2)

2-24 CHECK VALVE IN LH MAIN LANDING GEAR FAIRING - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect external electrical power (refer to manual TCH.1C-27J-2-00GV).
2. Open the access panels 913A and 913B.

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	1,00	
Removal	AFM	1	7,00	
Installation	AFM	1	12,00	
Test	AFM	2	50,00	
Follow Maintenance	AFM	1	1,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 121 (Min.)
Total Time Detention System: 71 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**

Consumable Material Required:

None

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

2-24.1 REMOVAL (refer to figure 2-22, sheet 1/2)

WARNING

YOU MUST RELEASE THE PRESSURE IN THE SYSTEM BEFORE YOU DO THIS PROCEDURE.

CAUTION

Do not use drained fluid from hydraulic system.

1. Use a container to collect drained fluid.
2. Take note of the correct valve orientation (look for the arrow indication located on the body of the valve).
3. Disconnect the clamps (1 and 5) by removing screws (7 and 9) and washers (6 and 8).

CAUTION

Install the protection cups on the pipes that you disconnect.

4. Loosen nuts and remove the pipes (2 and 4).

(Cont'd)

2-24.1 REMOVAL (refer to figure 2-22, sheet 1/2) (Cont'd)

CAUTION

Be careful when you disconnect the outlet pipe nut. A gross hydraulic fluid leakage may occur. Be ready to cap the pipe as soon an possible

5. Remove the check valve (3).

2-24.2 INSTALLATION (refer to figure 2-22, sheet 1/2)

1. Install the check valve (3). Verify correct valve orientation.

NOTE

Remove the protection cups from the pipes that you connect.

2. Install the pipes (2 and 4) to the check valve (3). Torque tighten (AGE NO. 00054) to 143 in lb thru 215 in lb (1.6 mKg thru 2.4 mKg).
3. Connect the clamps (1 and 5) by using screws (7 and 9) and washers (6 and 8).

FOLLOW ON MAINTENANCE:

1. Select the ACMP 1 switch to ON position.

WARNING

ENSURE THAT THE ELEVATOR IS FREE IN MOVEMENT AND DO NOT CAUSE INJURY TO PERSONNEL.

2. Operate twenty times the elevator.
3. Check for absence of leakage.
4. Select the ACMP 1 switch (10) to OFF position (refer to figure 2-22, sheet 2/2) .

5. Close the access panels 913A and 913B.
6. Connect external electrical power (refer to manual TCH.1C-27J-2-00GV).
7. Perform the Bleeding:
   A. PERFORM THE BLEEDING NO. 1 (NO. 2) SYSTEM (refer to para 2-6).

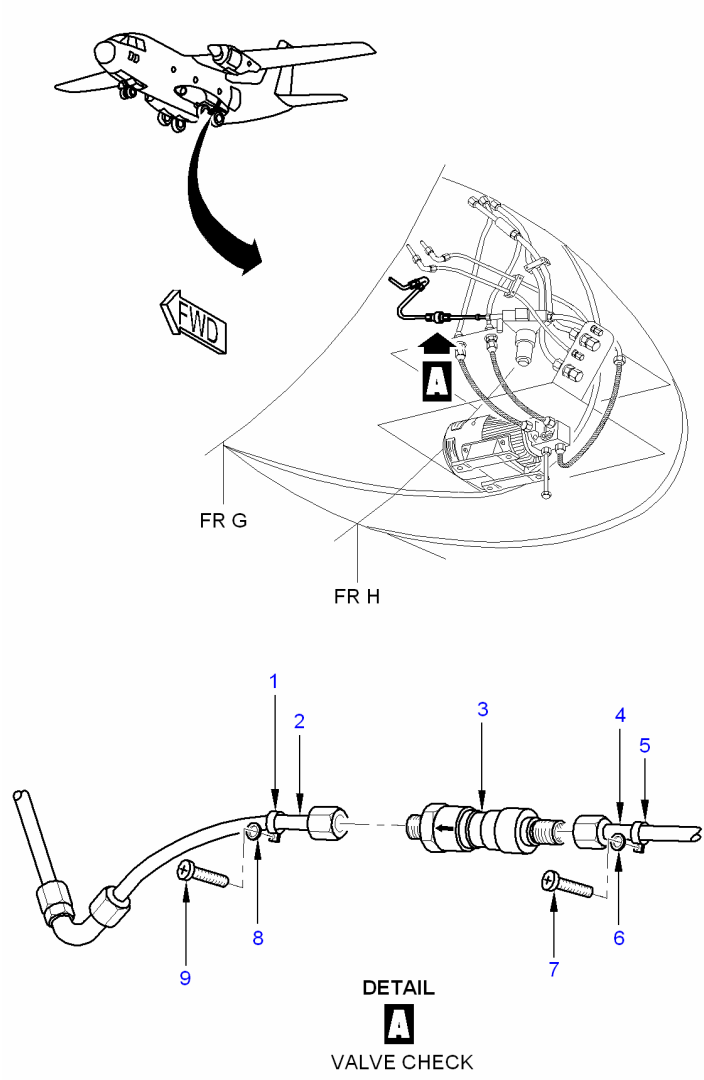

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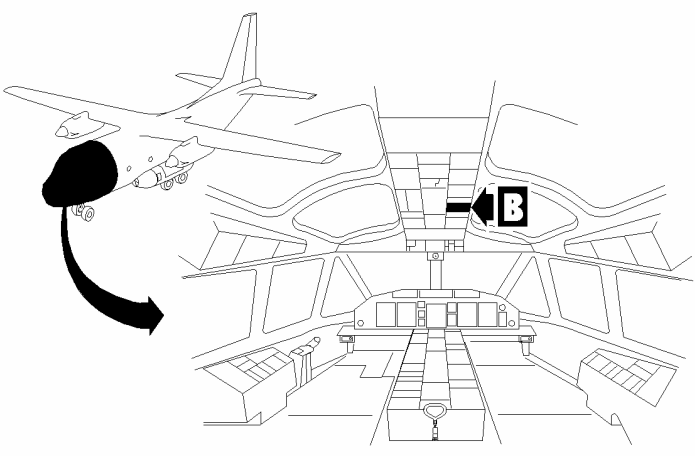
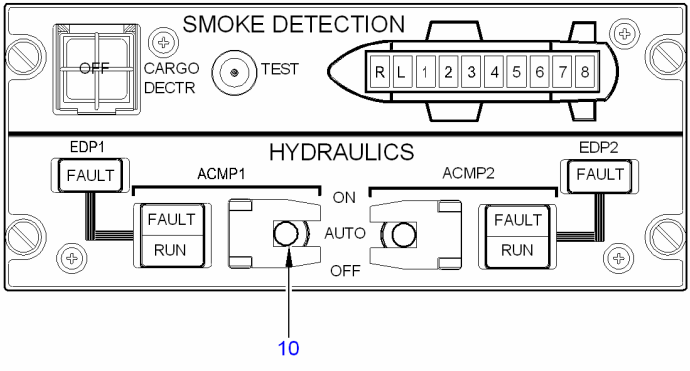
Figure 2-22 Check Valve in LH Main Landing Gear Fairing - Removal and Installation (sheet 1/2)





DETAIL
A
HYDRAULIC/SMOKE
DETECTION CONTROL
PANEL (204VE)

ICN-02-A-291035-A-A0170-00114-A-01-1

Figure 2-22 Check Valve in LH Main Landing Gear Fairing - Removal and Installation (sheet 2/2)

2-25 CHECK VALVE IN RH MAIN LANDING GEAR FAIRING - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect external electrical power (refer to manual TCH.1C-27J-2-00GV).
2. Open the access panels 922J, 922Q and 922S.

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	50,00	
Removal	AFM	1	7,00	
Installation	AFM	1	14,00	
Test	AFM	2	54,00	
Follow Maintenance	AFM	2	50,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 329 (Min.)
Total Time Detention System: 175 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**

Consumable Material Required:

None

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

2-25.1 REMOVAL (refer to figure 2-23)

WARNING

YOU MUST RELEASE THE PRESSURE IN THE SYSTEM BEFORE YOU DO THIS PROCEDURE.

CAUTION

Do not use drained fluid from hydraulic system.

1. Use a container to collect drained fluid.
2. Take note of the correct valve orientation (look for the arrow indication located on the body of the valve).
3. Loosen the check valve clamp (4) and collect washer (3) and screw (2).

CAUTION

Install protection caps on the disconnected hoses.

4. Loosen the nuts of inlet hydraulic line pipe (1) on check valve (5) and on bulkhead union, remove the pipe (1).

(Cont'd)

2-25.1 REMOVAL (refer to figure 2-23) (Cont'd)

CAUTION

Be careful when you disconnect the outlet pipe nut. A gross hydraulic fluid leakage may occur.

5. Loosen the outlet end of hydraulic line (6).
6. Remove the check valve (5) taking care not to flex the pipe.

2-25.2 INSTALLATION (refer to figure 2-23)

1. Install the check valve (5) by tighten the outlet pipe nut. Verify correct valve orientation (look for thearrow on the body of the valve. For RH side only in must be directed upside down). Torque tighten to 143 in lb thru 215 in lb (1.6 mkg thru 2.4 mkg).

NOTE

Remove protection caps from the hoses to be installed.

2. Install the inlet pipe (1). Tighten the nut on body filter side and the inlet pipe nut on check valve (5) at 143 in lb thru 215 in lb (1.6 mkg thru 2.4 mkg);
3. Fasten the retaining clamp (3) using screw (2) and washer (3).

FOLLOW ON MAINTENANCE:

1. Connect external electrical power (refer to manual TCH.1C-27J-2-00GV).
2. Select the ACMP 2 switch to ON position.

WARNING

BEFORE YOU EXECUTE NEXT STEP, MAKE SURE THAT NO PERSONNEL AND NO OBSTACLES ARE IN THE ELEVATOR MOVEMENT AREA. SEVERE INJURY TO PERSONNEL MAY OCCUR IF THIS SAFETY INSTRUCTION IS NOT OBEYED.

---

3. Operate twenty times the elevator.
4. Check for absence of leakage.
5. Select the ACMP 2 switch to OFF position.
6. Close the access panels 922J, 922Q and 922S.
7. Perform the functional test:
   A. BLEEDING NO. 2 SYSTEM (refer to para 2-6).

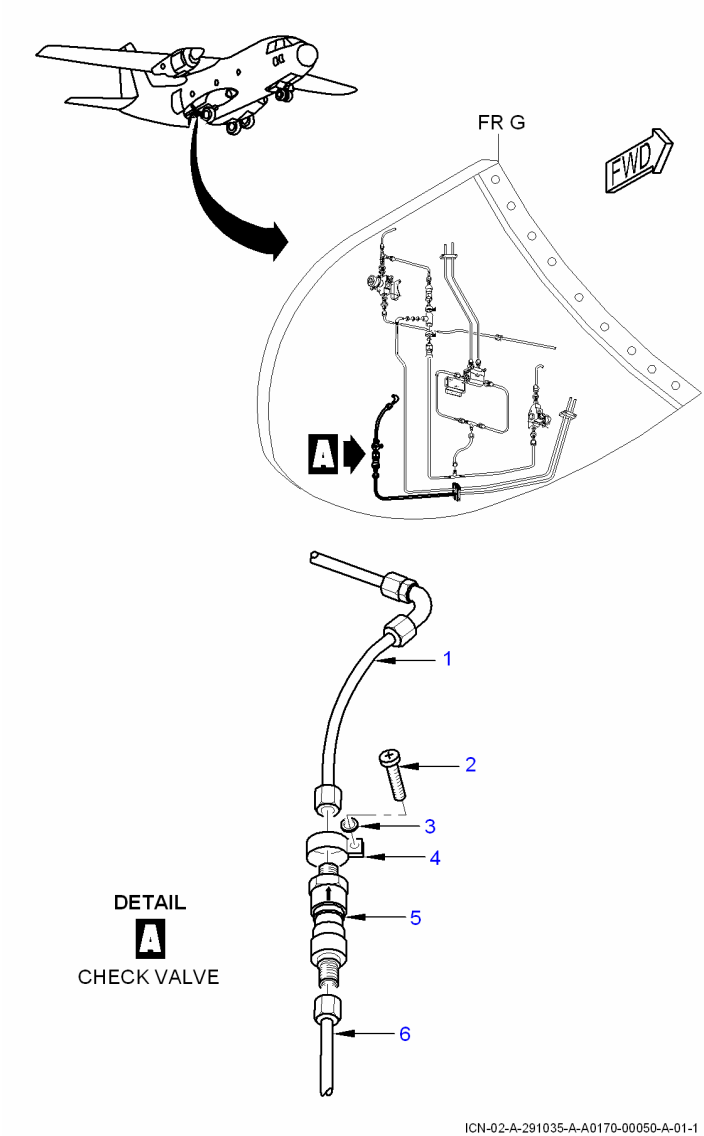


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Figure 2-23 Check Valve in RH Main Landing Gear Fairing - Removal and Installation

2-26 FIRE SHUT-OFF VALVES - FUNCTIONAL TEST

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Connect external electrical supply to the aircraft (refer to manual TCH.1C-27J-2-00GV).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	10,00	
Test	AFM	2	6,00	
Follow Maintenance	AFM	1	10,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 32 (Min.)
Total Time Detention System: 26 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

Be aware of information contained in SAFETY PROCEDURE - FUNCTIONAL TEST (refer to para 2-34) before performing functional test.

PROCEDURE:

NOTE

Aim of the test described in this paragraph is to verify the correct electro-hydraulic functionality of the Hydraulic System.

NOTE

This procedure is valid for left nacelle. For right nacelle is similar.

2-26.1 FUNCTIONAL TEST OF FIRE SHUT-OFF VALVES - FUNCTIONAL TEST (refer to figure 2-24, sheet 1/3) , (refer to figure 2-24, sheet 2/3) and (refer to figure 2-24, sheet 3/3)

WARNING

TO PREVENT INJURY TO PERSONEL DO NOT ROTATE THE FIRE HANDLE. ONLY PULL OUT THE FIRE HANDLE.

WARNING

OPEN THE CIRCUIT BREAKERS FIRE ENGINES EXTG 1 (1WE) (3) AND FIRE ENGINES EXTG 2 (2WE) (4) LOCATED ON OVERHEAD CIRCUIT BREAKERS PANEL (271VE) IN POSITIONS D 21 AND D 23 AND THE CIRCUIT BREAKERS FIRE EXTG ENG 1 (3WE) (7) AND FIRE EXTG ENG 2 (4WE) (8) LOCATED ON REAR MID CIRCUIT BREAKERS PANEL (451VE) IN POSITIONS K 11 AND K 12.

(Cont'd)

2-26.1 FUNCTIONAL TEST OF FIRE SHUT-OFF VALVES - FUNCTIONAL TEST (refer to figure 2-24, sheet 1/3) , (refer to figure 2-24, sheet 2/3) and (refer to figure 2-24, sheet 3/3) (Cont'd)

1. Close the HYDRAULICS SOV ENG 1 (61DE) (1) (HYDRAULICS SOV ENG 2 (34DE) (2)) circuit breaker, located on the Overhead Circuit Breakers Panel (271VE) in position B 1 (B 2).
2. Pull the FIRE 1 PULL (6) (FIRE 2 PULL (5)) handle and verify visually, through the see-feel (lever) on the valve body itself, that the lever on left fire shut-off valve 39 DE (38DE) (9), in the left (right) nacelle, indicates 'CLOSE' (or 'GROUND').
3. Push fully the FIRE 1 PULL (6) (FIRE 2 PULL (5)) handle and verify visually that the lever on left (right) fire shut-off valve (9) indicates "OPEN" (or "FLIGHT").

FOLLOW ON MAINTENANCE:

1. Disconnect external electrical supply from the aircraft (refer to manual TCH.1C-27J-2-00GV).

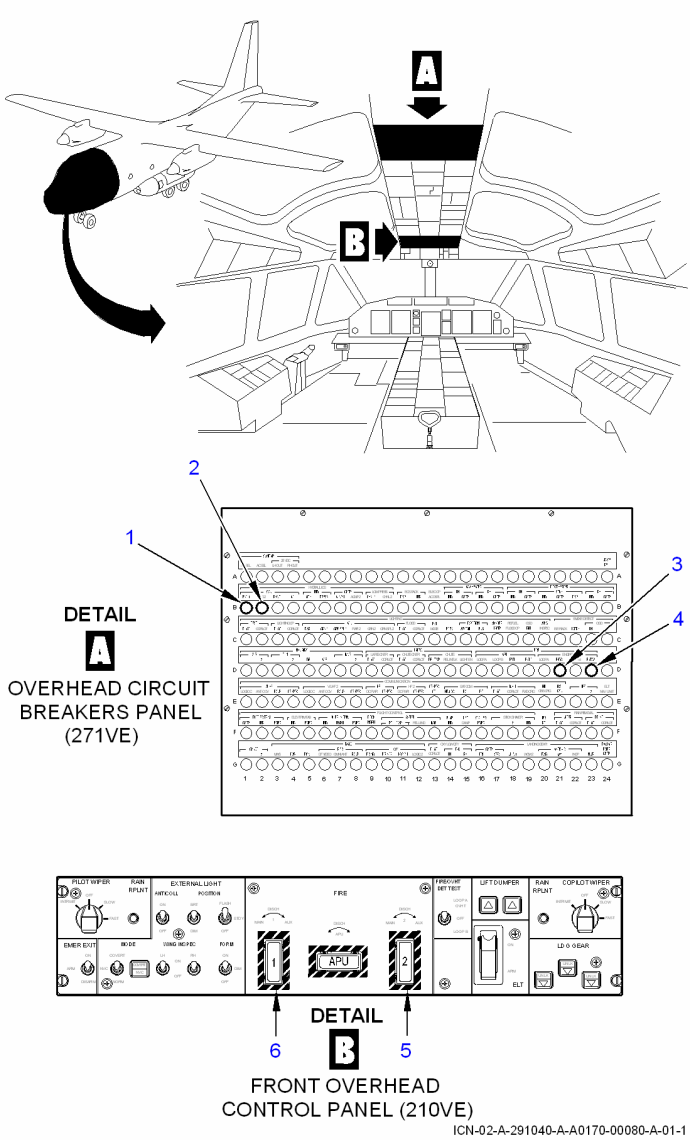

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Figure 2-24 Fire Shut-Off Valves - Functional Test (sheet 1/3)

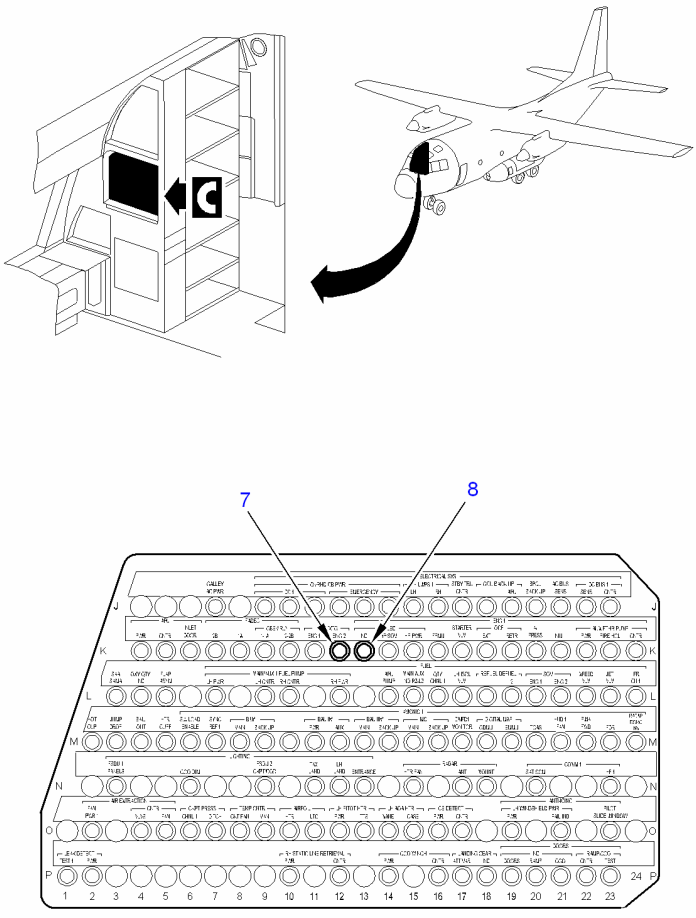

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Figure 2-24 Fire Shut-Off Valves - Functional Test (sheet 2/3)

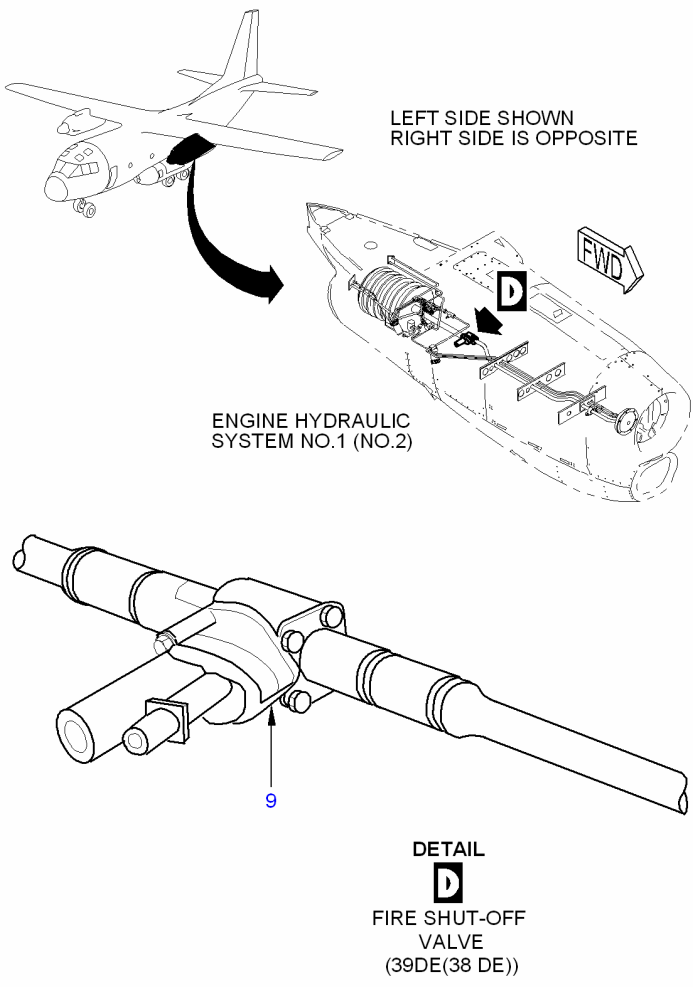

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Figure 2-24 Fire Shut-Off Valves - Functional Test (sheet 3/3)

2-27 FIRE SHUT-OFF VALVES - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect external electrical power (refer to manual TCH.1C-27J-2-00GV).
2. Position maintenance platform (AGE NO. 00074).
3. Open the access panels 414J, 414D and 414F (424J and 424D).
4. Open the access panels 913A and 913B.

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	25,00	
Removal	AFM	2	20,00	
Installation	AFM	2	20,00	
Test	AFM	2	60,00	
Follow Maintenance	AFM	2	25,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 300 (Min.)
Total Time Detention System: 150 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**
00074	Kit, aircraft assy platform	G0005100001

AGE No.	NOMENCLATURE	P/N
00262	Test stand, hydraulic system (diesel engine)	846805-D**

Consumable Material Required:

LCM No.	NOMENCLATURE	P/N	QTY
00045	PACKING, PREFORMED	M83461-1-214	4,00

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

NOTE

This procedure is valid for left engine nacelle. For right engine nacelle is similar.

2-27.1 REMOVAL (refer to figure 2-25, sheet 1/3) , (refer to figure 2-25, sheet 3/3) and (refer to figure 2-25, sheet 2/3)

WARNING

BEFORE YOU REMOVE ANY HYDRAULIC COMPONENT, RELEASE SYSTEM PRESSURE, IN ORDER TO PREVENT INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

(Cont'd)

2-27.1 REMOVAL (refer to figure 2-25, sheet 1/3) , (refer to figure 2-25, sheet 3/3) and (refer to figure 2-25, sheet 2/3) (Cont'd)

WARNING

HYDRAULIC FLUID IS ACID. AVOID CONCTACT WITH SKIN AND WEAR APPROPRIATE, IMPERVIOUS CLOTHING WHEN HANDLING THE HYDRAULIC FLUIDS. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

CAUTION

Do not use drained fluid from Hydraulic System. A hydraulic fluid leak may occur. This would cause damage to the equipment and loss of mission effectiveness.

1. Connect hydraulic test stand (AGE NO. 00262) to No.1 (No.2) system pressure and suction ground test sockets (ground service panel).
2. Using the hydraulic test stand (AGE NO. 00262), discharge the hydraulic reservoir system No.1 (No.2).
3. Annul pressure in both hydraulic system.
4. Verify that the reservoir is empty trough the visual fluid level indicator.
5. Use a container to collect drained fluid (about 1 liter).
6. Loose the return union (1), cut the lock wire (2), open the reservoir drain cock (3) and discharge the remaining hydraulic fluid.

(Cont'd)

2-27.1 REMOVAL (refer to figure 2-25, sheet 1/3) , (refer to figure 2-25, sheet 3/3) and (refer to figure 2-25, sheet 2/3) (Cont'd)

7. Close the reservoir drain cock (3) and install the new lock wire (2) on reservoir drain cock.
8. Open the HYDRAULICS SOV ENG 1 (61DE) (22) (HYDRAULICS SOV ENG 2 (34DE) (23)) circuit breaker, located on the Overhead Circuit Breakers Panel (271VE) in position B 1 (B 2).
9. Use a container to collect drained fluid.

CAUTION

Install protection caps on the disconnected electrical connectors and hoses.

10. Disconnect electrical connector 39 DEA (38DEA) (15).

CAUTION

Be careful when you disconnect the pipe nut. A gross hydraulic fluid leakage may occur. Be ready to cap the pipes as soon possible.

11. Cut the lock wire of the HYDRAFLOW and disconnect the nut of the pipe (4) and preformed packing (5). Discard removed preformed packing.
12. Cut the lock wire of the HYDRAFLOW and disconnect the nut of the pipe (14) and preformed packing (13). Discard removed preformed packing.
13. Remove the shut-off valve (10) by removing the three bolts (16), washers (8 and 17) and nuts (9).

(Cont'd)

2-27.1 REMOVAL (refer to figure 2-25, sheet 1/3) , (refer to figure 2-25, sheet 3/3) and (refer to figure 2-25, sheet 2/3) (Cont'd)

14. Remove from shut-off valve (10) the couplings (6 and 12) and the preformed packings (7 and 11). Discard removed preformed packings.

2-27.2 INSTALLATION (refer to figure 2-25, sheet 1/3) , (refer to figure 2-25, sheet 3/3) and (refer to figure 2-25, sheet 2/3)

NOTE

Lubricate all elements with hydraulic fluid before installation.

1. Install at the shut-off valve (10) the couplings (6 and 12) and the new preformed packings (7 and 11) (LCM NO. 00045).
2. Install the shut-off valve (10) by using the three bolts (16), washers (8 and 17) and nuts (9).

NOTE

Remove protection caps from the electrical connectors and hoses to be installed.

3. Connect the nut of the pipe (14) and new preformed packing (13) (LCM NO. 00045). Torque tighten (AGE NO. 00054) nut to 120 in lb (1.4 mKg). Install the new lock wire at the HYDRAFLOW.
4. Connect the nut of the pipe (4) and new preformed packing (5) (LCM NO. 00045). Torque tighten (AGE NO. 00054) nut to 120 in lb (1.4 mKg). Install the new lock wire at the HYDRAFLOW.
5. Torque tighten (AGE NO. 00054) bolts (16) to 29 in lb thru 33 in lb (0.3 mKg thru 0.4 mKg).
6. Connect electrical connector 39 DEA (38DEA) (15).

(Cont'd)

2-27.2 INSTALLATION (refer to figure 2-25, sheet 1/3) , (refer to figure 2-25, sheet 3/3) and (refer to figure 2-25, sheet 2/3) (Cont'd)

7. Close the HYDRAULIC SOV ENG 1 (61DE) (22) (HYDRAULIC SOV ENG 2 (34DE) (23)) circuit breaker, located on the Overhead Circuit Breakers Panel (271VE) in position B1 (B2).

FOLLOW ON MAINTENANCE:

1. Open the access panels 413F and 413D (423F and 423D).
2. Connect hydraulic test stand (AGE NO. 00262) to the delivery and suction piping to the respective ground test connections (Ground Service Panel) of the system reservoir to be replenished.
3. Set up the test stand (AGE NO. 00262) with flow 5 gpm (19 l/min), pressure 900 psi (63 kg/cm^2), operating with stand reservoir pressurized and return pressure 15 psi (1 kg/cm^2).
4. Perform the reservoir filling by slightly increasing the test stand return pressure until the level of 12.5 liters is reached (read on the visual fluid level indicator on the reservoir).
5. Reduce hydraulic test stand pressure to zero.

CAUTION

Avoid the hydraulic fluid spilling using a clean cloth. This will prevent damage to the equipment due to corrosion.

---

6. Cut the plastic wrapper (21), free the fitting from the shield (20) and loosen suction flex hose (19) on the EDP union (18).
7. Set up the test stand (AGE NO. 00262) pressure to 1200 psi (84.4 Kg/cm^2).

8. Allow the hydraulic fluid flows from suction fitting free from air bubble.
9. Tighten the suction flex hose (19) nut on the EDP union (18) torque tightening (AGE NO. 00054) to 1140 in lb thru 1370 in lb (13.1 mkg thru 15.8 mkg).
10. Set up the hydraulic test stand (AGE NO. 00262) pressure to 3000 psi (210 kg/cm^2), operating with test stand reservoir pressurized and suction pressure 50 psi (3.5 kg/cm^2).
11. Check for absence of leakage in fire shut off hydraflow couplings No. 1 (No. 2) and EDP suction fitting.
12. Check the reservoir hydraulic fluid quantity and, if necessary, refill by slightly increasing the test stand (AGE NO. 00262) suction pressure.
13. Annul the hydraulic pressure and disconnect hydraulic test stand from the No. 1 (No. 2) hydraulic system pressure and suction ground test sockets (ground service panel).
14. Install the spray shield and put the plastic wrapper on the EDP suction fitting.
15. Perform the FIRE SHUT-OFF VALVES ELECTRICAL TEST (refer to para 2-26) .
16. Close the access panels 413D and 413F (423D and 423F).
17. Close the access panels 913A and 913B.
18. Close the access panels 414F, 414D and 414J (424D and 424J).
19. Remove maintenance platform (AGE NO. 00074).

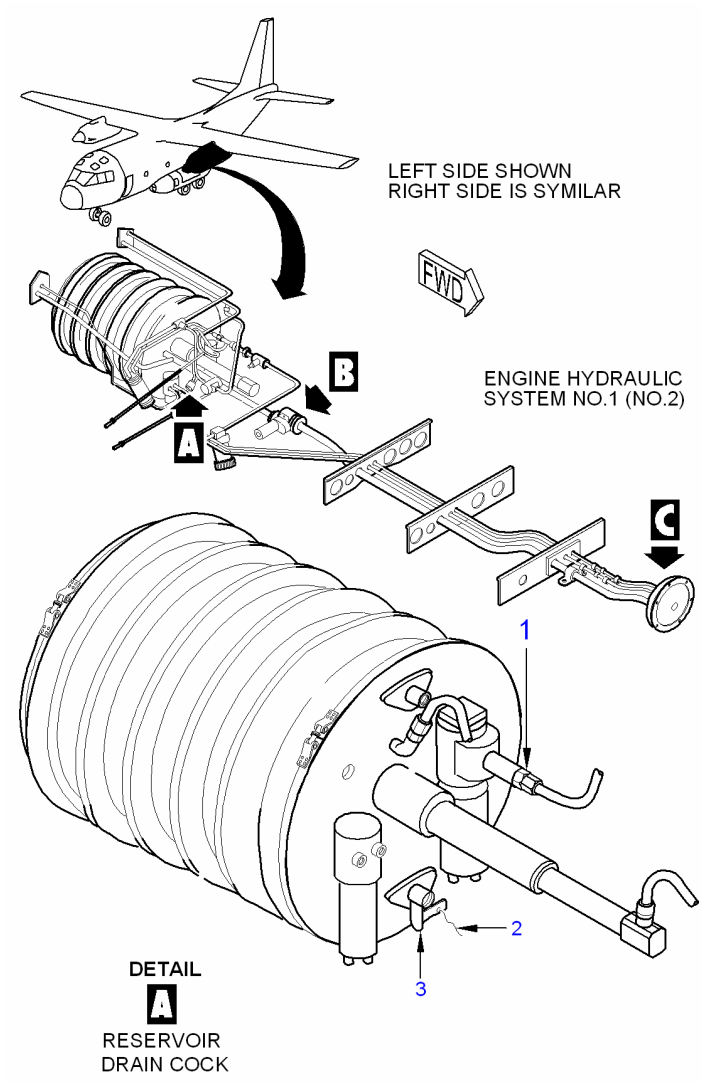

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Figure 2-25 Fire Shut-Off Valves - Removal and Installation (sheet 1/3)

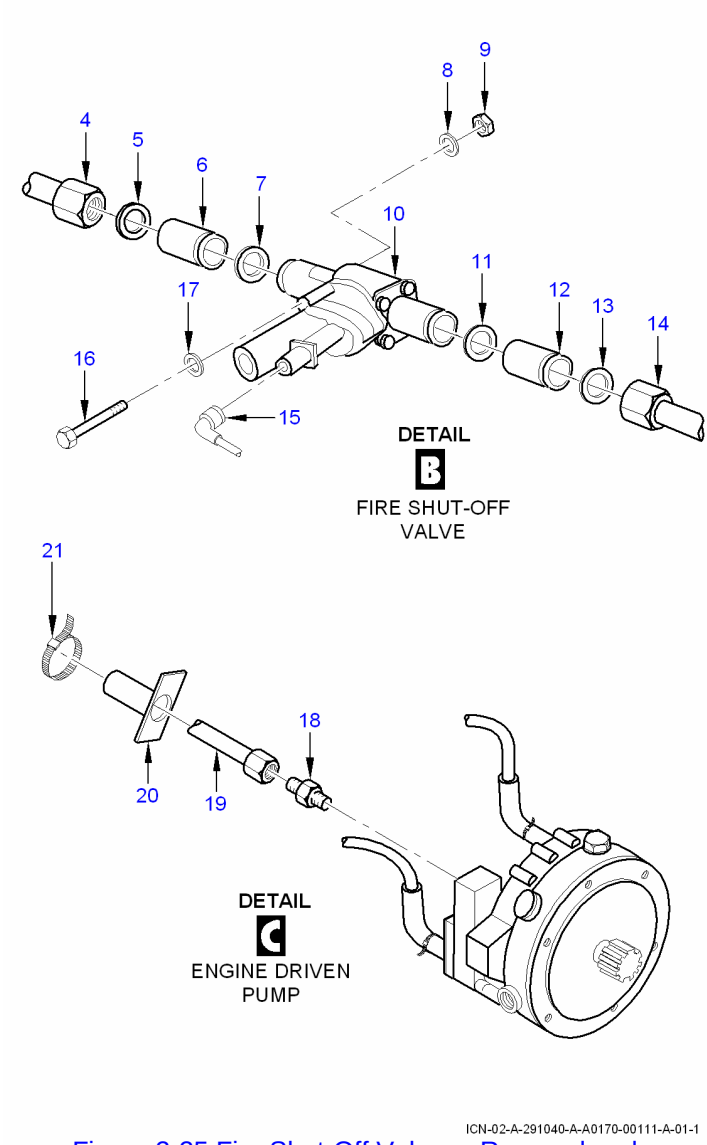

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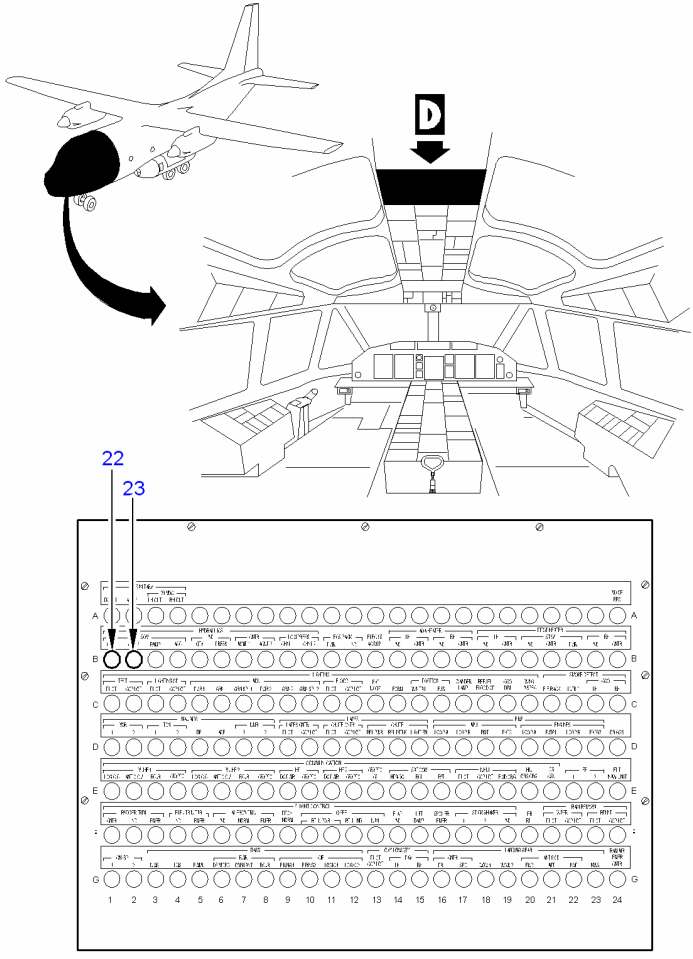
Figure 2-25 Fire Shut-Off Valves - Removal and Installation (sheet 2/3)



DETAIL
D
OVERHEAD CIRCUIT
BREAKERS PANEL
(271VE)

ICN-02-A-291040-A-A0170-00067-A-01-1

Figure 2-25 Fire Shut-Off Valves - Removal and Installation (sheet 3/3)

2-28 LH (RH) ENGINE NACELLE LOW PRESSURE SWITCH - FUNCTIONAL TEST

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Connect external electrical supply to the aircraft (refer to manual TCH.1C-27J-2-00GV).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	10,00	
Test	AFM	2	8,00	
Follow Maintenance	AFM	1	10,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 36 (Min.)
Total Time Detention System: 28 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

Be aware of information contained in SAFETY PROCEDURE - FUNCTIONAL TEST (refer to para 2-34) before performing functional test.

PROCEDURE:

NOTE

Aim of the test described in this paragraph is to verify the correct electro-hydraulic functionality of the Hydraulic System.

NOTE

This procedure is valid for left engine nacelle low pressure switch. For right engine nacelle low pressure switch is similar.

2-28.1 FUNCTIONAL TEST OF LH (RH) ENGINE NACELLE LOW PRESSURE SWITCH - FUNCTIONAL TEST (refer to figure 2-26)

1. Verify that the EDP1 (6) (EDP2 (2)) FAULT light located on Hydraulic/Smoke Detection Control Panel (204VE) (1) is illuminated (low pressure due to engine not running).
2. Ensure that the quantity indicator pointer SYS 1 (SYS 2) in the Hydraulic Fluid Quantity Indicator (4), located on the main instrument panel (right side) indicates about "Full".
3. Start the ACMP 1 (ACMP 2), by setting the ACMP 1 (5) (ACMP 2 (3)) switch to ON position.
4. Check that the EDP1 (6) (EDP2 (2)) fault light is still illuminated.
5. Manually rotate the propeller 1(2) counter clockwise so that it performs half turn (looking the propeller from the front of the aircraft).
6. Check that the EDP1 (6) (EDP2 (2)) fault light extinguishes (due to high pressure).
7. Switch off the ACMP 1 (ACMP 2), by setting the ACMP 1 (5) (ACMP 2 (3)) switch to OFF position.

FOLLOW ON MAINTENANCE:

1. Disconnect external electrical supply from the aircraft (refer to manual TCH.1C-27J-2-00GV).

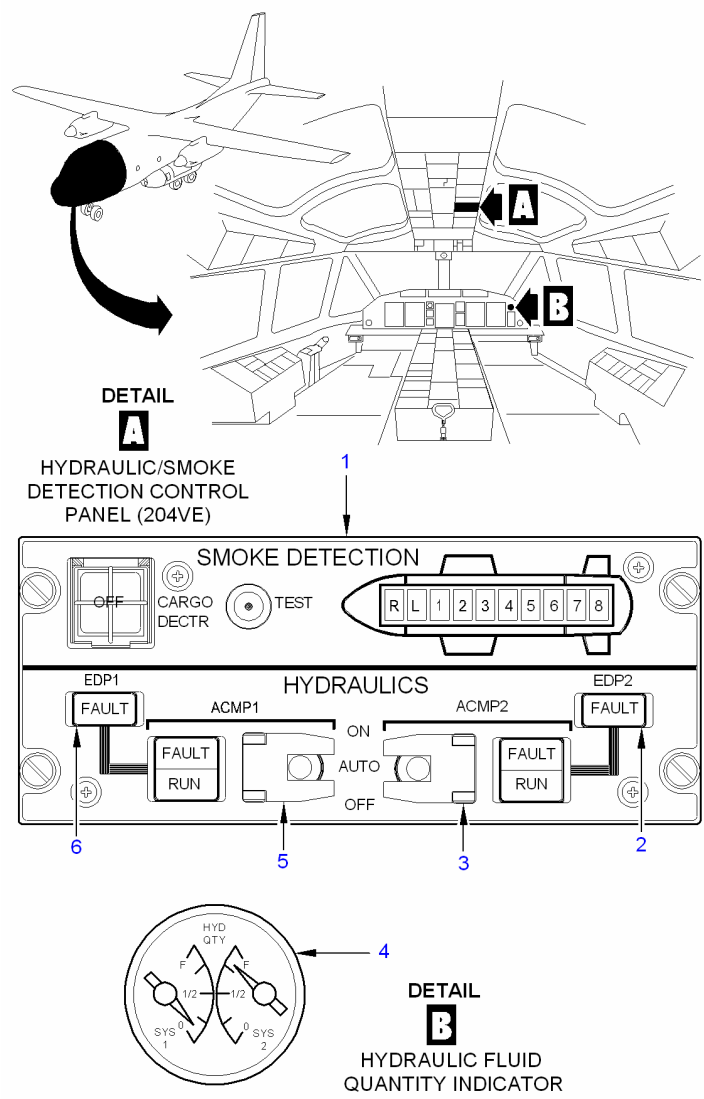


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Figure 2-26 LH (RH) Engine Nacelle Low Pressure Switch - Functional Test

2-29 LOW PRESSURE SWITCHES IN LH (RH) ENGINE NACELLE - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect external electrical power (refer to manual TCH.1C-27J-2-00GV).
2. Position maintenance platform (AGE NO. 00074).
3. Open the access panels 414J (424J) and 414D (424D).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	20,00	
Removal	AFM	1	6,00	
Installation	AFM	2	22,00	
Test	AFM	2	28,00	
Follow Maintenance	AFM	2	20,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 186 (Min.)
Total Time Detention System: 96 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00054	Kit, torque wrenches	G0001200001-001**
00074	Kit, aircraft assy platform	G0005100001

Consumable Material Required:

None

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

NOTE

This procedure is valid for left engine nacelle. For right engine nacelle is similar.

2-29.1 REMOVAL (refer to figure 2-27, sheet 1/2)

WARNING

BEFORE YOU REMOVE ANY HYDRAULIC COMPONENT, RELEASE SYSTEM PRESSURE, IN ORDER TO PREVENT INJURIES TO PERSONNEL AND DAMAGE TO THE EQUIPMENT.

WARNING

HYDRAULIC FLUID IS ACID. AVOID CONCTACT WITH SKIN AND WEAR APPROPRIATE, IMPERVIOUS CLOTHING WHEN HANDLING THE HYDRAULIC FLUIDS. IF YOU DO NOT OBEY THESE SAFETY PRECAUTIONS, SEVERE INJURY MAY OCCUR.

(Cont'd)

2-29.1 REMOVAL (refer to figure 2-27, sheet 1/2) (Cont'd)

CAUTION

Do not use drained fluid from Hydraulic System. A hydraulic fluid leak may occur. This would cause damage to the equipment and loss of mission effectiveness.

NOTE

Seal all open pipes and components holes to prevent entrance of unwanted dust.

1. Use a container to collect drained fluid.

CAUTION

Install protection caps on the disconnected electrical connectors and hoses.

2. Disconnect electrical connector (26DEA (27DEA)) (5) from low pressure switch (6) after cutting the lock wire.
3. Remove clamp (9) by removing bolt (7), washer (8) and nut (3) from support (4).
4. Remove the low pressure switch (6) from tee pipe (1) by loosen nut (2).

2-29.2 INSTALLATION (refer to figure 2-27, sheet 1/2) and (refer to figure 2-27, sheet 2/2)

NOTE

Remove protection caps from the electrical connectors and hoses to be installed.

1. Install the low pressure switch (6) on tee pipe (1) by screw nut (2).

(Cont'd)

2-29.2 INSTALLATION (refer to figure 2-27, sheet 1/2) and (refer to figure 2-27, sheet 2/2) (Cont'd)

2. Select the ACMP 1 (ACMP 2) switch (10 and 11) to ON position (cover down).

CAUTION

Avoid the hydraulic fluid spilling using a clean cloth. This will prevent damage to the equipment due to corrosion.

3. Tighten the low pressure switch (6) to tee pipe (1) by screw nut (2).
4. Rotate the propeller by hand until the hydraulic fluid flows free from bubbles.
5. Torque tighten (AGE NO. 00054) the pressure switch nut (2) to 135 in lb thru 190 in lb (1.6 mKg thru 2.2 mKg).
6. Install clamp (9) by using bolt (7), washer (8) and nut (3) to the support (4).
7. Connect electrical connector (26DEA (27DEA)) (5) at the low pressure switch (6) and install the new lock wire.

FOLLOW ON MAINTENANCE:

1. Close the access panels 414J (424J) and 414D (424D).
2. Remove maintenance platform (AGE NO. 00074).
3. Connect external electrical power (refer to manual TCH.1C-27J-2-00GV).
4. Perform the test:
   A. FUNCTIONAL TEST OF LH(RH) ENGINE NACELLE LOW PRESSURE SWITCH (refer to para 2-28).

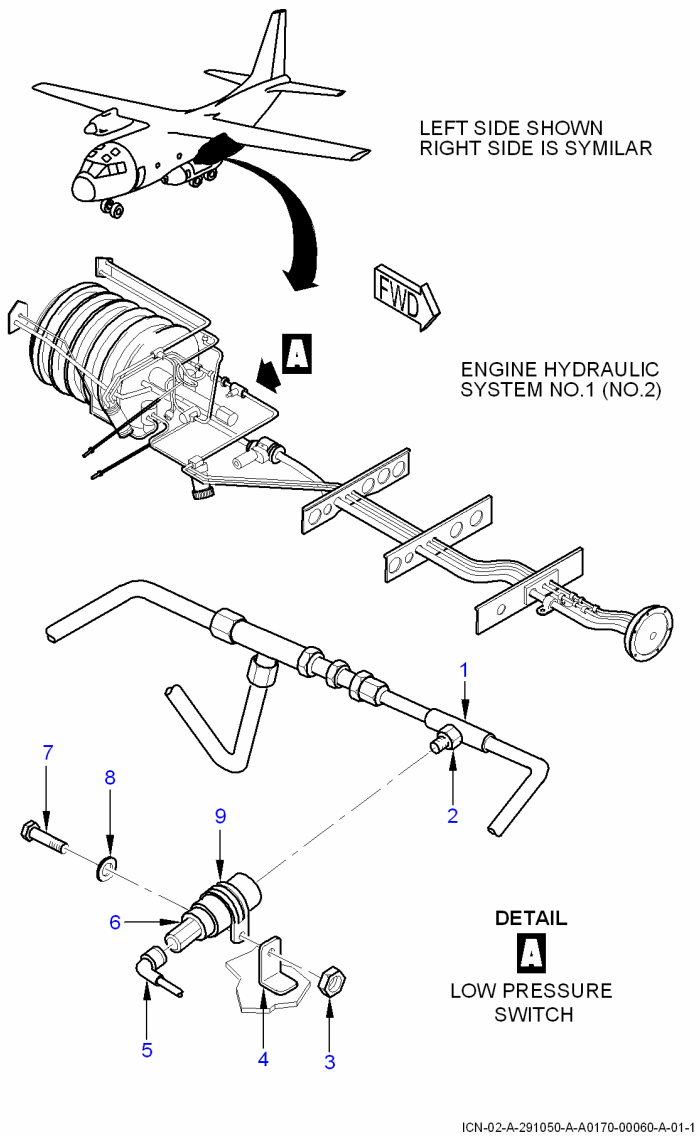

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Figure 2-27 Low Pressure Switches in LH (RH) Engine Nacelle - Removal and Installation (sheet 1/2)

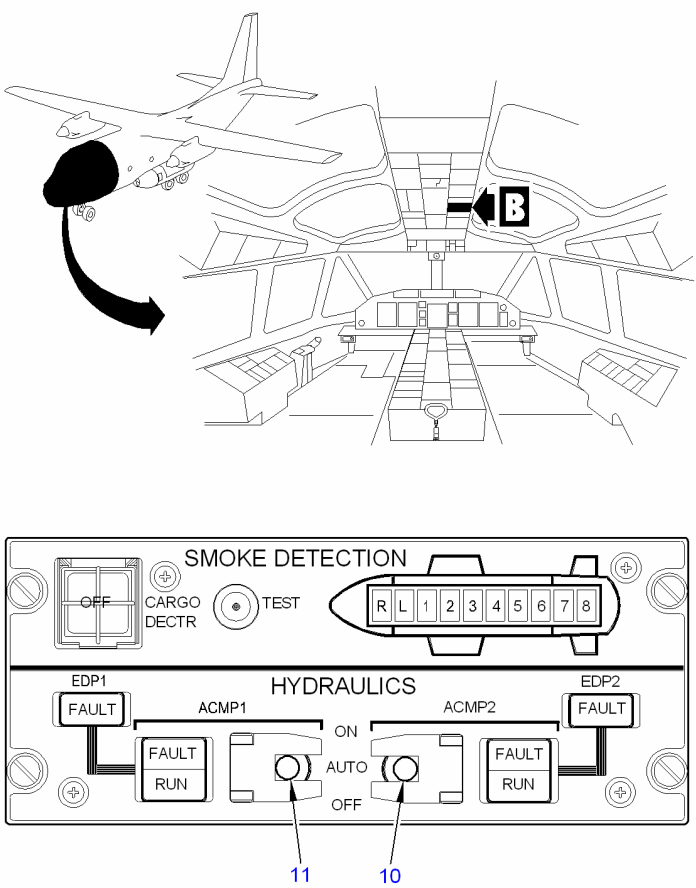

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Figure 2-27 Low Pressure Switches in LH (RH) Engine Nacelle - Removal and Installation (sheet 2/2)

2-30 LH (RH) MLG FAIRING LOW PRESSURE SWITCH - FUNCTIONAL TEST

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Connect external electrical supply to the aircraft (refer to manual TCH.1C-27J-2-00GV).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	10,00	
Test	AFM	1	5,00	
Follow Maintenance	AFM	1	10,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 25 (Min.)
Total Time Detention System: 25 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

Be aware of information contained in SAFETY PROCEDURE - FUNCTIONAL TEST (refer to para 2-34) before performing functional test.

PROCEDURE:

CAUTION

Make sure that No. 1 (No. 2) Hydraulic System is filled andbled before you start this functional test.This will prevent damage to the equipment and loss of mission effectiveness.

2-30.1 Carry out the functional test of LH (RH) MLG low pressure switch in according to the following procedure:

A. Connect external electrical supply to the aircraft.

B. Open the circuit breaker HYD ACMP1 2DE (HYD ACMP2 1DE) located on Rear Lower CircuitBreakers Panel (455VE) in positions R 8 (R 11).

C. Place the ACMP1 (ACMP2) switch located on Hydraulic/Smoke Detection Control Panel (204VE)in ON position.

D. Verify that the ACMP1 (ACMP2) FAULT light located on Hydraulic/Smoke Detection Control Panel(204VE) illuminates.

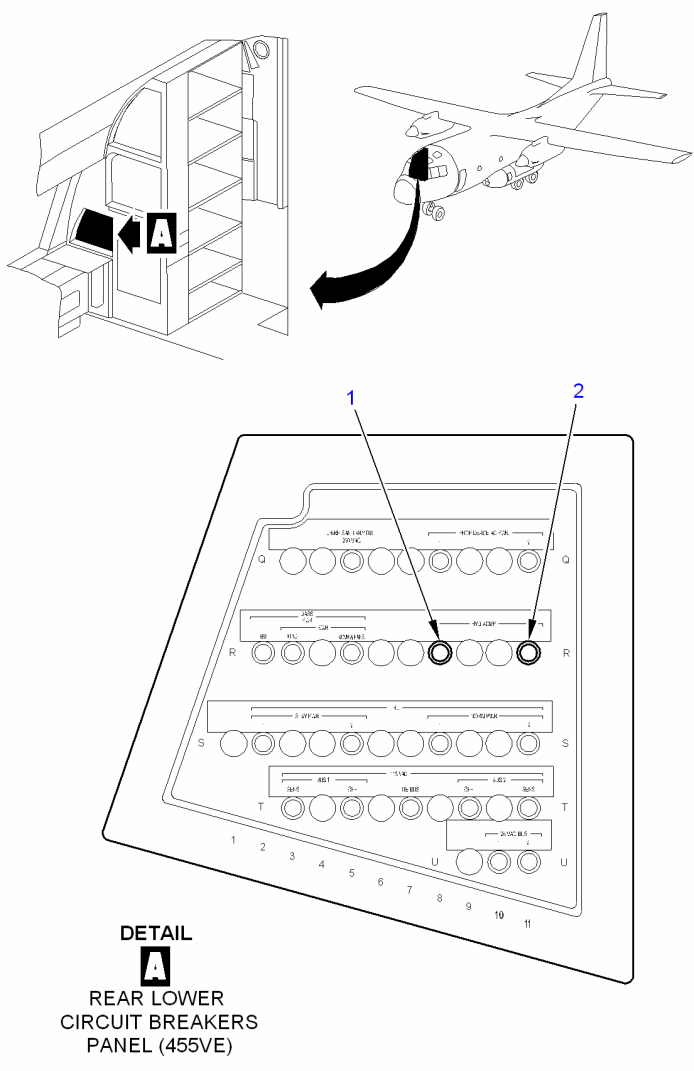
E. Operate the ACMP1 (ACMP2) by engaging the circuit breaker HYD ACMP1 2DE (HYD ACMP21DE) located on Rear Lower Circuit Breakers Panel (455VE).

F. Verify that the ACMP1 (ACMP2) FAULT light located on Hydraulic/Smoke Detection Control Panel(204VE) extinguishes.

G. Disconnect the external electrical supply from the aircraft.

FOLLOW ON MAINTENANCE:

1. Disconnect external electrical supply from the aircraft (refer to manual TCH.1C-27J-2-00GV).



ICN-02-A-291050-A-A0170-00076-A-01-1

Figure 2-28 LH (RH) Mlg Fairing Low Pressure Switch - Functional Test (sheet 1/2)

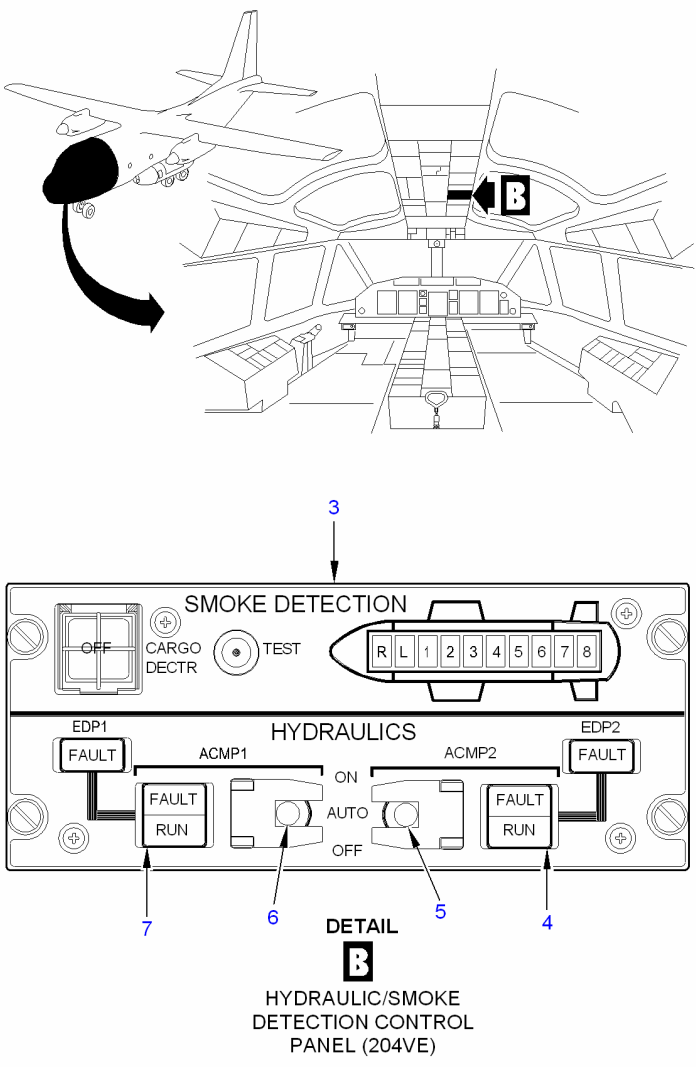


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Figure 2-28 LH (RH) Mlg Fairing Low Pressure Switch - Functional Test (sheet 2/2)

2-31 ACMP1 (ACMP2) PUMP CONTACTOR (15DE (16DE)) - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect the external electrical supply (refer to manual TCH.1C-27J-2-00GV).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	1	1,00	
Removal	ELT	1	9,00	
Installation	ELT	1	16,00	
Test	AFM	1	30,00	
Follow Maintenance	AFM	1	1,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 57 (Min.)
Total Time Detention System: 57 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00076	Ladder	G0005100003

Consumable Material Required:

None

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

2-31.1 REMOVAL (refer to figure 2-29)

1. Position the stepladder (AGE NO. 00076) in the working area.

WARNING

REMEMBER THE EXACT SEQUENCE OF THE CABLES TIGHTENED ON CONTACTOR TERMINALS.

2. Remove the Velcro cover.

CAUTION

Install protection caps on the disconnected electrical connectors.

3. Disconnect connector (15 DEA) (16) from pump contactor (15 DE) (15).
4. Disconnect connector (16 DEA) (7) from pump contactor (16 DE) (14).
5. Disconnect nuts (1 and 9) of the inlet cables (2 and 8) and disconnect it.
6. Disconnect nuts (5 and 12) of the outlet cables (6 and 13) and disconnect it.
7. Loosen the screws (3) and washers (4) from pump contactor (15 DE) (15).

(Cont'd)

2-31.1 REMOVAL (refer to figure 2-29) (Cont'd)

8. Loosen the screws (11) and washers (10) from pump contactor (16 DE) (14).
9. Remove the pump contactors (14 and 15).

2-31.2 INSTALLATION (refer to figure 2-29)

1. Position the ACMP1 (ACMP2) pump contactors (14 and 15).
2. Tighten the screws (11) and washers (10) at the pump contactor (16 DE) (14).
3. Tighten the screws (3) and washers (4) at the pump contactor (15 DE) (15).
4. Connect the outlet cables (6 and 13) and the nuts (5 and 12).
5. Connect the inlet cables (2 and 8) and the nuts (1 and 9).

NOTE

Remove protection caps from the electrical connectors to be installed.

6. Connect connector (16 DEA) (7) at the pump contactor (16 DE) (14).
7. Connect connector (15 DEA) (16) at the contactor (15 DE) (15).
8. Install the Velcro cover.
9. Remove the stepladder (AGE NO. 00076) from working area.

FOLLOW ON MAINTENANCE:

1. Connect the external electrical supply (refer to manual TCH.1C-27J-2-00GV).
2. Perform the FUNCTIONAL TEST OF ALTERNATE CURRENT MOTOR PUMP ACMP 1 (ACMP 2) (refer to para 2-17).

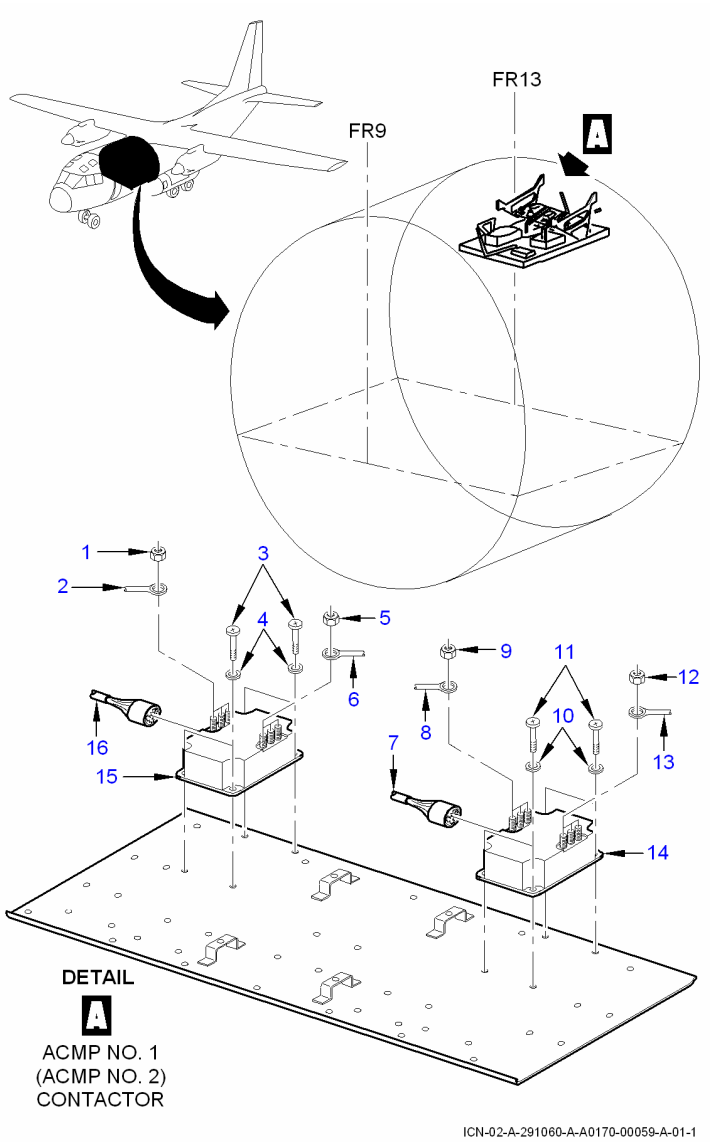

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Figure 2-29 ACMP No.1 (ACMP No.2) Pump Contactor 15 DE (16 DE) - Removal and Installation

2-32 HYDRAULIC FLUID QUANTITY INDICATOR CORRECT INDICATION CHECK - FUNCTIONAL TEST

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Position maintenance platform (AGE NO. 00074).
2. Open the access panel 414F (424F).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Input Condition	AFM	2	10,00	
Removal	AFM	1	10,00	
	ELT	1	20,00	
Follow Maintenance	AFM	2	10,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 70 (Min.)
Total Time Detention System: 40 (Min.)

AGE Required:

AGE No.	NOMENCLATURE	P/N
00074	Kit, aircraft assy platform	G0005100001

Consumable Material Required:

None

Safety Conditions:

Be aware of information contained in SAFETY PROCEDURE - FUNCTIONAL TEST (refer to para 2-34) before performing functional test.

PROCEDURE:

2-32.1 This test is to be performed after the replacement of the Hydraulic Fluid Quantity Indicator.

A. Throughout the window check on the reservoir No. 1 (No. 2) visual fluid level quantity indicatorthat the hydraulic fluid quantity is about 12.5 litres.

B. Connect the external electrical power supply 115 V ac (six pin plug) to the aircraft and switch-on.

C. Power on the aircraft as follows:

- On the Electrical Power Generation System Control Panel (202VE) set the battery switch to ON;
- On the Electrical Power Generation System Control Panel (202VE) check that the light AVAIL(on the pushbutton AC EXT) illuminates;
- On the Electrical Power Generation System Control Panel (202VE), press the pushbutton ACEXT and check that the light ON illuminates.

D. Ensure that the circuit breaker HYDRAULICS IND QTY (33DE), located on Overhead Circuit Breakers Panel (271VE) in position B 5, is closed.

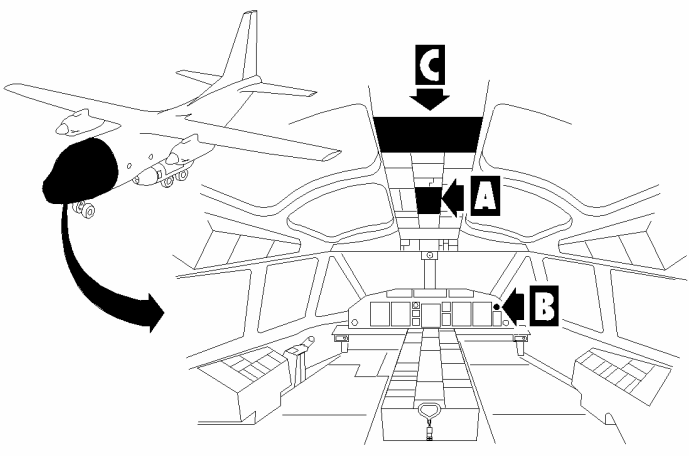
E. Check that the quantity indicator pointer SYS 1 (SYS 2) in the Hydraulic Fluid Quantity Indicator,located on the main instrument panel (RH side) indicates about Full.

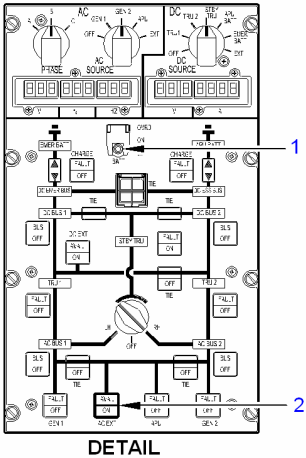
F. Power off the aircraft (battery switch to OFF) and depress the AC EXT pushbutton.

G. Switch-off the external power supply and disconnect the six pin plug from the aircraft.

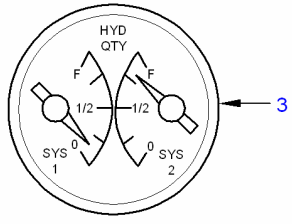
FOLLOW ON MAINTENANCE:

1. Close the access panel 414F (424F).
2. Remove maintenance platform (AGE NO. 00074).





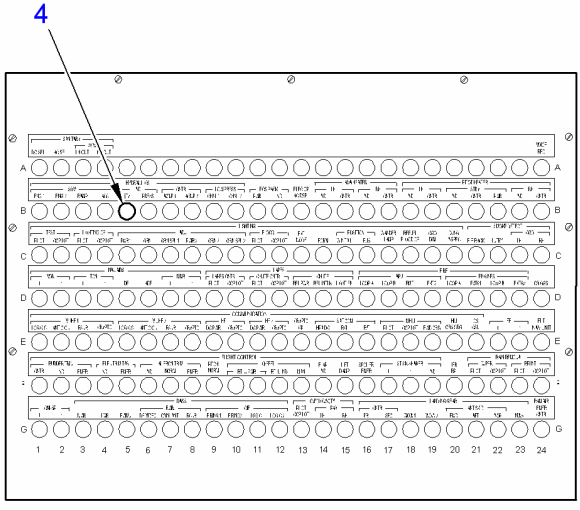
DETAIL
A
POWER GENERATION SYSTEM
CONTROL PANEL (202VE)



DETAIL
B
HYDRAULIC FLUID
QUANTITY INDICATOR

ICN-02-A-293020-A-A0170-00078-A-01-1

Figure 2-30 Hydraulic Fluid Quantity Indicator Correct Indication Check - Functional Test (sheet 1/2)



DETAIL

OVERHEAD CIRCUIT
BREAKERS PANEL
(271VE)

ICN-02-A-293020-A-A0170-00079-A-01-1

Figure 2-30 Hydraulic Fluid Quantity Indicator Correct Indication Check - Functional Test (sheet 2/2)

2-33 HYDRAULIC/SMOKE DETECTION CONTROL PANEL (204VE) - REMOVAL AND INSTALLATION

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

1. Disconnect the external electrical supply (refer to manual TCH.1C-27J-2-00GV).

Recomended Personnel:

PROCEDURE	MECH. CODE	QTY	TOTAL TIME (MIN.)	WORK ZONE
Removal	AFM	1	6,00	
Installation	AFM	1	12,00	
Test	AFM	1	30,00	

Periodicity: AR - AS REQUIRED
Total Maintenance Time: 48 (Min.)
Total Time Detention System: 48 (Min.)

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

Be aware of information contained in SAFETY PRECAUTIONS (refer to para 1-8) before performing maintenance.

PROCEDURE:

2-33.1 REMOVAL (refer to figure 2-31)

1. Remove the Hydraulic/Smoke Detection Control Panel (204VE) (2) by removing screws (1 and 3).

CAUTION

Install protection caps on the disconnected electrical connectors.

2. Disconnect electrical connector (204VEA) (5) and (204VEB) (4).

2-33.2 INSTALLATION (refer to figure 2-31)

NOTE

Remove protection caps from the electrical connectors to be installed.

1. Connect electrical connector (204VEA) (5) and (204VEB) (4).
2. Install the panel 204VE (2) by using screws (1 and 3).

FOLLOW ON MAINTENANCE:

1. Connect the external electrical supply (refer to manual TCH.1C-27J-2-00GV).
2. Perform functional test:
   A. FUNCTIONAL TEST OF ALTERNATE CURRENT MOTOR PUMP ACMP 1 (ACMP 2) (refer to para 2-17).

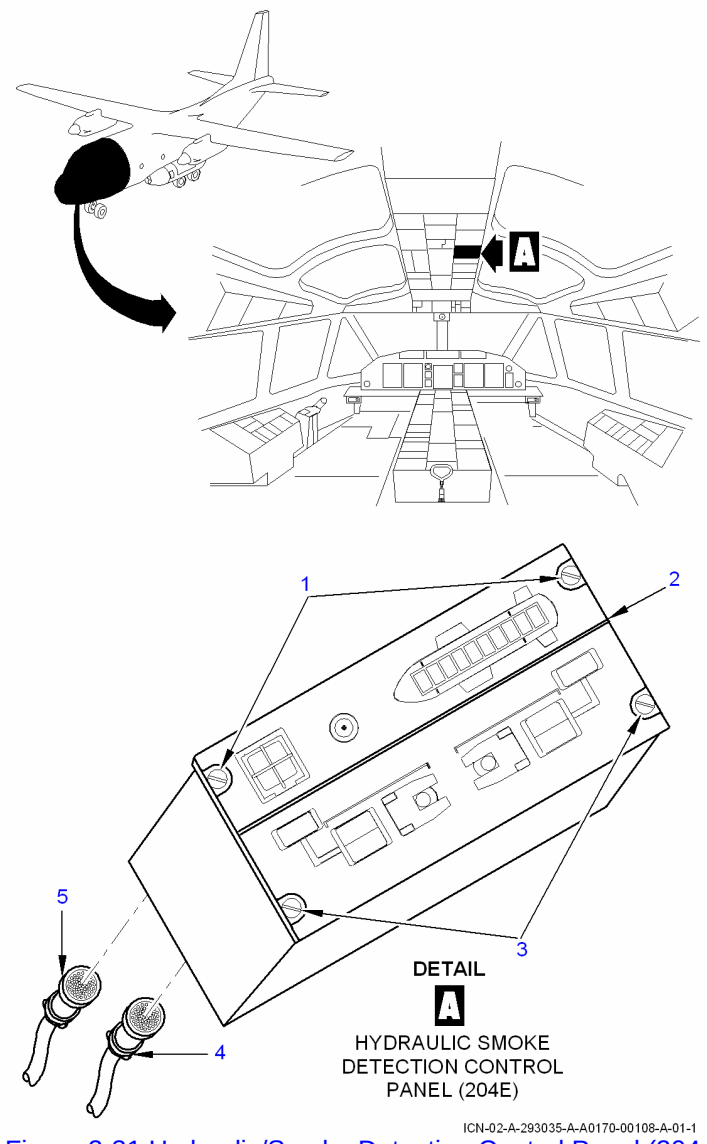


Figure 2-31 Hydraulic/Smoke Detection Control Panel (204 VE) - Removal and Installation

2-34 SAFETY PROCEDURE - FUNCTIONAL TEST

INPUT CONDITION:

Aircraft Applicability:

04162, 04180

Required Conditions:

None

Recomended Personnel:

Not Provided

AGE Required:

None

Consumable Material Required:

None

Safety Conditions:

Before performing the test, refer to paragraph GROUND HANDLING SAFETY PRECAUTIONS (refer to manual TCH.1C-27J-2-09JG) and paragraph GROUND SAFETY RULES (refer to manual TCH.1C-27J-2-00GV) .

PROCEDURE:

None

FOLLOW ON MAINTENANCE:

None

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