



AIRCRAFT MAINTENANCE MANUAL

HIGHLIGHTS

REVISION NO. 43 Jun 01/22

Pages which have been revised are outlined below, together with the Highlights of the Revision

CH/SE/SU C PAGES	REASON FOR CHANGE	EFFECTIVITY

CHAPTER 54

L.E.P. 1- 3 Revised to Reflect this revision indicating new, revised, and/or deleted pages

54-51-85 Minor additions and amplification

601- 602 ADDED CAGE CODE "07482" FOR CMM REFERENCE.

54-55-00 Minor additions and amplification

401- 402, CORRECTED CROSS REFERENCES.

404, 409

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CHAPTER 54

NACELLES/PYLONS

LIST OF EFFECTIVE PAGES

N, R or D indicates pages which are New, Revised or Deleted respectively
 Remove and insert the affected pages and complete the Record of Revisions and
 the Record of Temporary Revisions as necessary

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REVISION				54-50-00		602	Sep01/92	54-51-00		609	Sep01/92
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NACELLES/PYLONS - GENERAL

1. Nacelles Section
(Ref. 71-10-00, P. Block 1).

2. Pylons
(Ref. 54-50-00, P. Block 1).

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PYLONS - DESCRIPTION AND OPERATION**1. General**

The role of the engine pylon on each wing is:

- to support the engine
- to transmit loads to wing center box
- to support and route electrical wiring, hydraulic and fuel lines up to the engine and all return lines.

Each engine pylon consists of a main frame, an auxiliary structure and main/auxiliary attach fittings. All engine cowls are attached to engine pylon main frame or auxiliary structure forward section.

The main frame and auxiliary structure forward section are identical for each pylon.

2. Description

(Ref. Fig. 001)

(Ref. Fig. 002)

A. Engine Pylon Structure

The engine pylon consists of two main structures which serve for the routing of the various systems from wing to engine and secure engine under wing.

The two structures are the following:

- the main frame
- the auxiliary structure

(1) Main frame

The main frame is the engine pylon primary structure which supports the engine and forms the junction with the wing center box.

The main frame is fitted with doors which enable access to be gained to the various systems routed in this area and with attach fittings providing pylon-to-engine and pylon-to-wing attachment.

The engine pylon is attached in two points to the wing spar box.

The engine is attached in two points to the engine pylon. Engine cowls are hinged to and supported by auxiliary fittings.

The main frame under its forward section is equipped with a hydraulic and fuel junction base plate.

(2) Auxiliary structure

The auxiliary structure is the engine pylon main fairing and houses most of the system components.

The auxiliary structure is divided into three sections:

- the auxiliary structure forward section (between RIBA1 and RIB10A)
- the auxiliary structure center section (between RIB10A AND RIB18)
- the auxiliary structure aft section (between RIB18 and aft tip)

(a) Auxiliary structure forward section (RIBA1 to RIB10A)

It provides the aerodynamic profile between the engine nose cowl upper section and the wing leading edge. It is fitted with two pressure relief doors which avoid damage in the event of pipe bursting and with removable panels giving access to the various system routing.

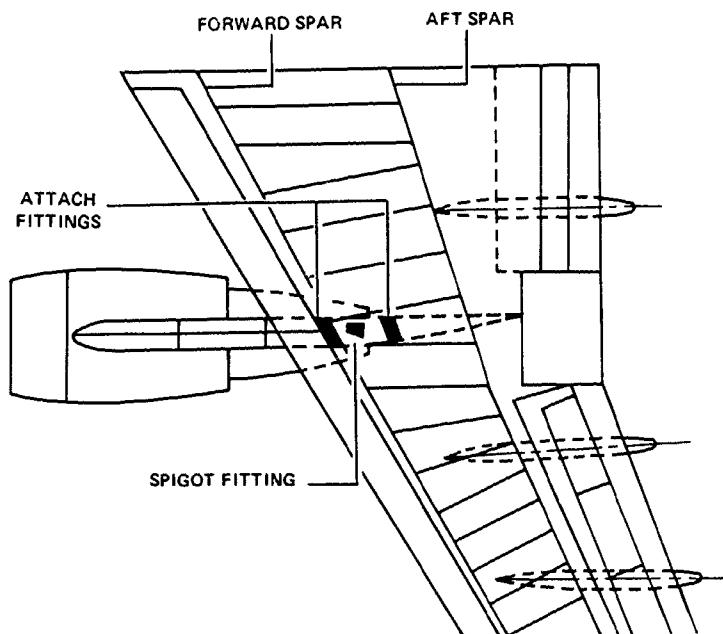
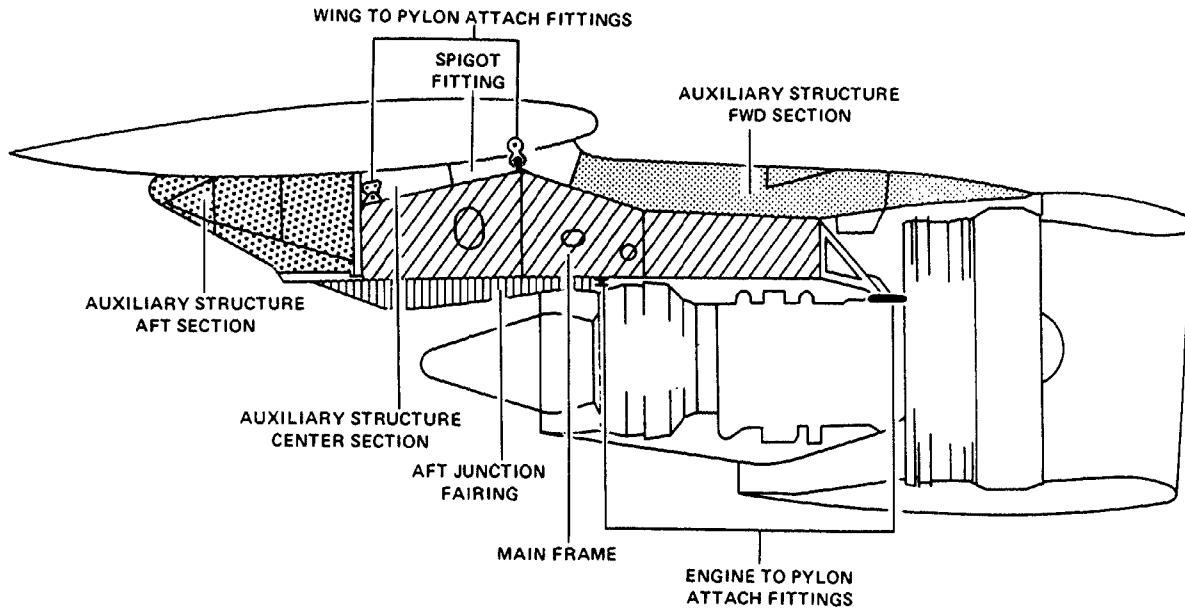
The centilever beam of this structure is fitted with an electrical junction box between RIBA7 and RIBA5 on left side, a center junction box located above pylon-to-engine attach fitting.

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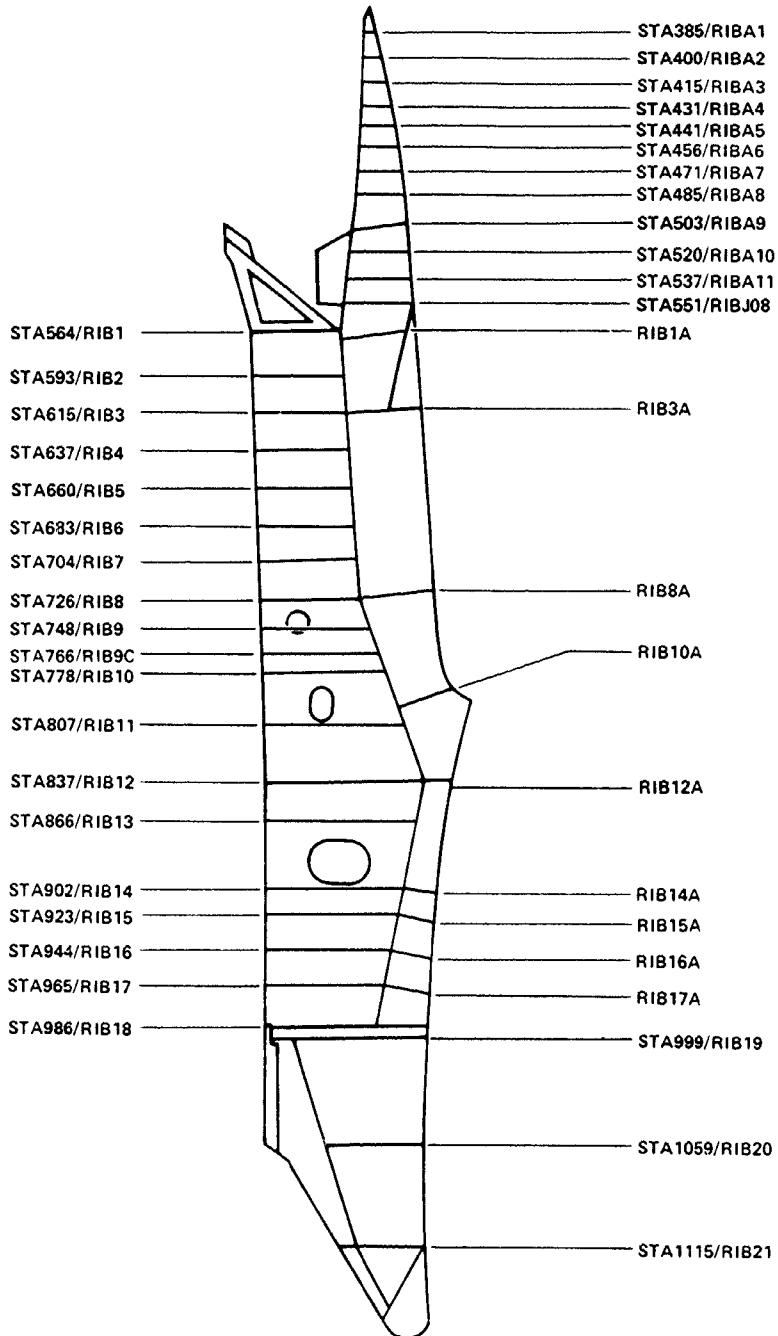
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Engine Pylon
Figure 001

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Engine Pylon - Zoning
Figure 002

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(b) Auxiliary structure center section

It provides junction between the wing lower surface and the main frame. It is fitted with removable fillets, thus resulting in an adequate aerodynamic profile. The auxiliary structure center section is equipped with a pressure relief door reducing damage due to bursting of air bleed duct routing in the vicinity.

(c) Auxiliary structure aft section

It is attached to the wing lower surface and improves fillet aerodynamic contour.

It is fitted with removable panels giving access to the circuit routing in this area.

A fairing located under the main frame ensures continuity of aerodynamic profile between the main frame and the engine nozzle.

(3) Access doors and removable panels

Access to the various equipment located inside the pylon is obtained by opening main structure access doors or by removing auxiliary structure skin panels. The location of the various access doors and panels, together with additional descriptions, are given in table 001 and (Ref. Fig. 003)

NOTE : Access door 413AZ (423AZ) (Ref. Fig. 003) gives access to throttle control primary transmission relay. The access door is located inside the pylon, under the bleed air precooler outlet duct.

Air duct removal is required for door opening (Ref. 36-11-00, P. Block 401)

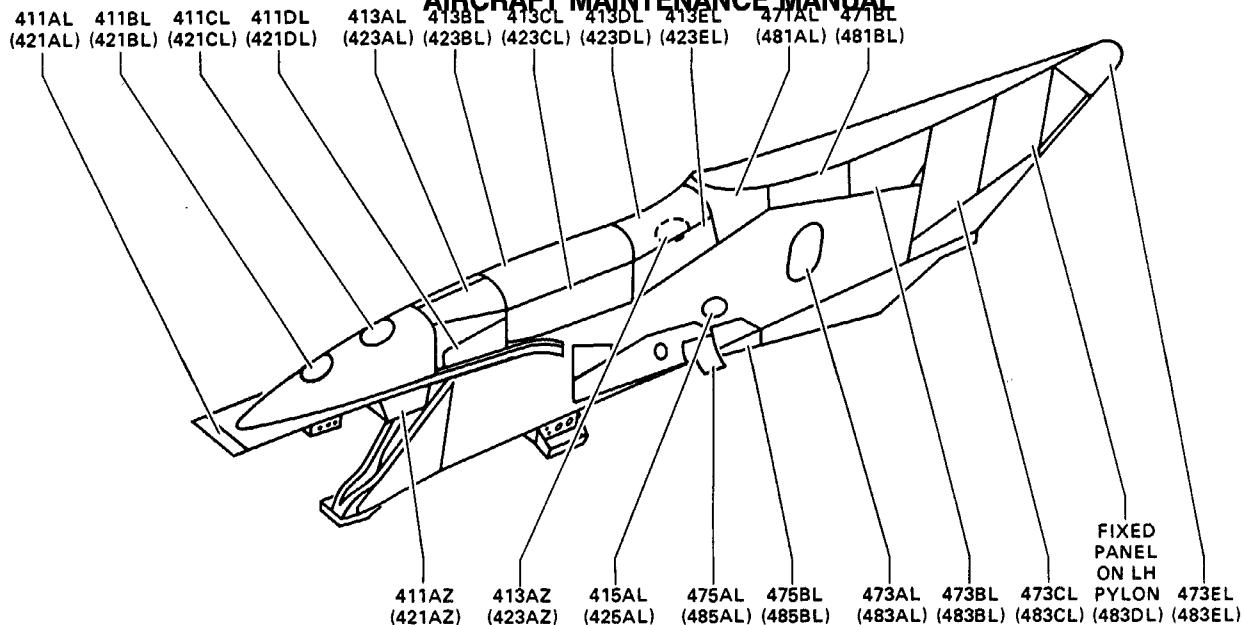
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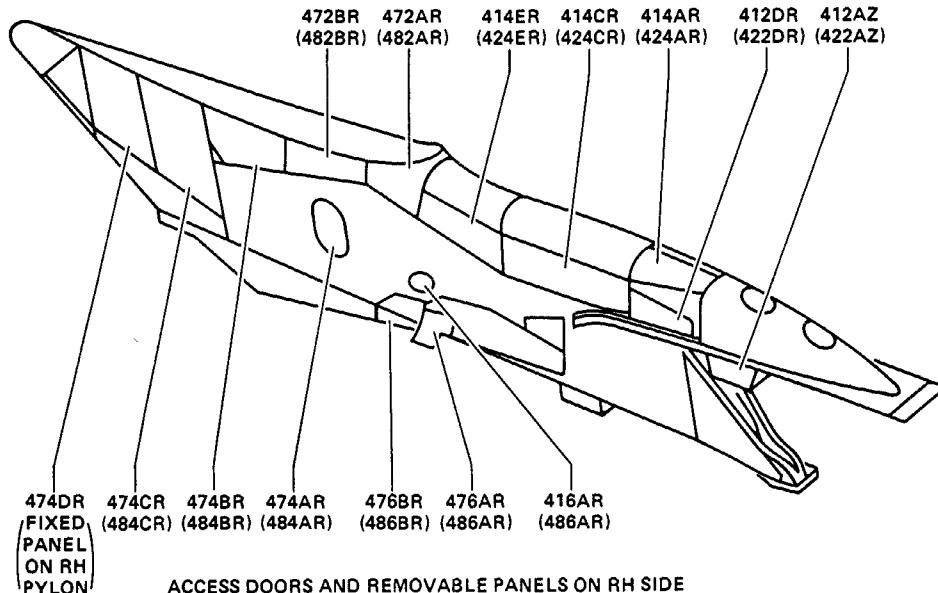
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ACCESS DOORS AND REMOVABLE PANELS ON LH SIDE
OF LH AND RH PYLONS

NOTE : DESIGNATIONS OF RIGHT PYLON DOORS AND
REMOVABLE PANELS ARE BETWEEN PARENTHESIS



ACCESS DOORS AND REMOVABLE PANELS ON RH SIDE
OF LH AND RH PYLONS

NOTE : DESIGNATIONS OF RIGHT PYLON DOORS AND
REMOVABLE PANELS ARE BETWEEN PARENTHESIS

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Engine Pylon - Access Doors and Removable Panels
Figure 003

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Table 001

ACCESS DOOR OR REMOVABLE PANEL IDENTIFICATION	MAINTENANCE MANUAL SECTION REFERENCE
411AL (421AL)	(Ref. 54-52-00)
411AZ (421AZ)	
411BL (421BL)	
411CL (421CL)	
411DL (421DL)	
412AZ (422AZ)	
412DR (422DR)	
413AL (423AL)	
413AZ (423AZ)	
413BL (423BL)	
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415AL (425AL)	(Ref. 54-51-00)
416AR (426AR)	

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Table 001

ACCESS DOOR OR REMOVABLE PANEL IDENTIFICATION	MAINTENANCE MANUAL SECTION REFERENCE
471AL (481AL) 471BL (481BL)	(Ref. 54-53-00)
472AR (482AR) 472BR (482BR)	
473AL (483AL)	(Ref. 54-51-00)
473BL (483BL)	(Ref. 54-53-00)
473CL (483CL) (483DL) 473EL (483EL)	(Ref. 54-54-00)
474AR (484AR)	(Ref. 54-51-00)
474BR (484BR)	(Ref. 54-53-00)
474CR (484CR) 474DR	(Ref. 54-54-00)
475AL (485AL) 475BL (485BL)	(Ref. 54-51-00)
476AR (486AR) 476BR (486BR)	

NOTE : Installation gaps for the various panels are given in 54-50-00,
P. Block 601

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(4) Pressure relief doors

Some access doors have pressure relief doors or valves limiting damage in case of pipe bursting.

Identification of the access doors and their detailed description is given in Table 002.

Table 002

IDENTIFICATION OF PANEL FITTED WITH PRESSURE RELIEF DOOR	MAINTENANCE MANUAL SECTION REFERENCE
411DL (421DL)	(Ref. 54-52-00)
413AL (423AL) 414AR (424AR)	(Ref. 54-52-00) and (Ref. 54-52-61)
471BL (482BR)	(Ref. 54-53-00)

NOTE : Installation gaps for the various panels are given in 54-50-00, P. Block 601).

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B. Engine Pylon Layout

(Ref. Fig. 004, 005, 006)

(Ref. Fig. 007, 008)

For safety purposes, the engine pylon is divided into six compartments (A to F), each housing a particular type of equipment.

Engine compartment layout and cooling air pressure have been designed so that hydraulic fluid or fuel leakage cannot come into contact with an ignition source. Pylon area in contact with the combustion chamber is protected by a torch flame shield and a fire detection system. Pylon area in contact with turbine core is protected by a heat shield.

(1) Compartment A

This compartment located at the L upper forward part of the engine pylon between RIBJ08 and RIB10A.

This compartment includes:

- pressure lines for thrust reverser cowl opening system
- the upstream section of the fuel line running from wing to engine
- thrust and remove interlock flexible controls.

Compartment A is cooled by air bled from fan discharge on LH side of engine pylon as soon as the engine starts running.

To reduce damage due to hydraulic or fuel pipe failure, compartment A outer fairing is fitted with a pressure relief door at lever of RIB1A.

Cooling air is vented through compartment A drain system which also vents overboard fuel, hydraulic fluid or water leakage at level of engine pylon lower fairing (compartment E).

(2) Compartment B

Compartment B is located at the R upper forward part of engine between RIB A9 and RIB 10A.

It is composed of two separated compartments B1 and B2.

- In center compartment B1 are located:
 - . the hot air bleed duct
 - . the bleed air precooler
 - . the primary transmission mechanical section
 - . engine starter pneumatic duct.
 - . the throttle control heating system.
- Compartment B2 located on R side of compartment B (approximately symmetrical to compartment A with respect to pylon centerline) includes wiring routed to center and forward electrical junction boxes.

This compartment is cooled by air bled from fan discharge by a ram air inlet on R side of engine pylon.

Air is discharged overboard through a vent duct located at the R aft section of the area. Vent duct is fitted with an overheat thermistor calibrated at 200°C which controls the temperature of discharged air.

In the event of pipe bursting, two pressure relief doors blow open when pressure is higher than 200 mb.

(3) Compartment C

Compartment C located below compartments A and B includes:

- sections of hydraulic rigid pipes without connections
- cold air inlet duct of the bleed air precooler
- compartment A and F drain lines without connections

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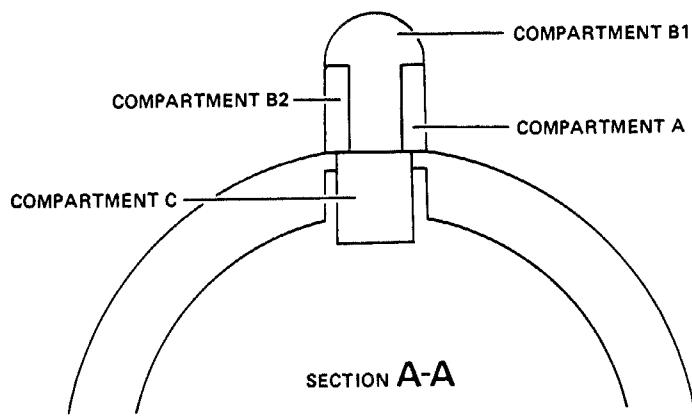
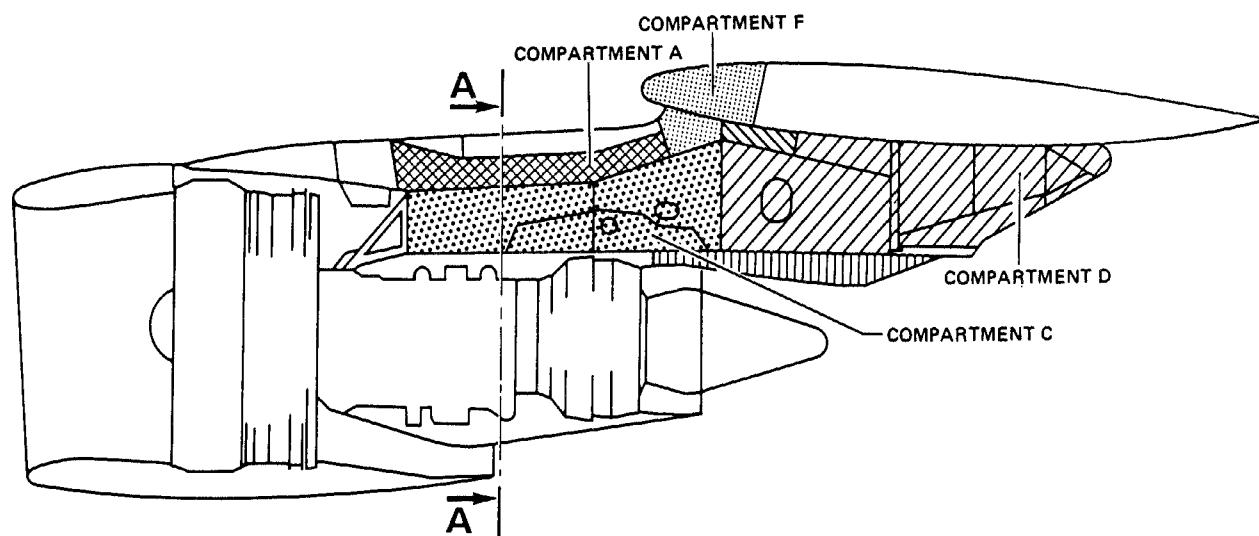
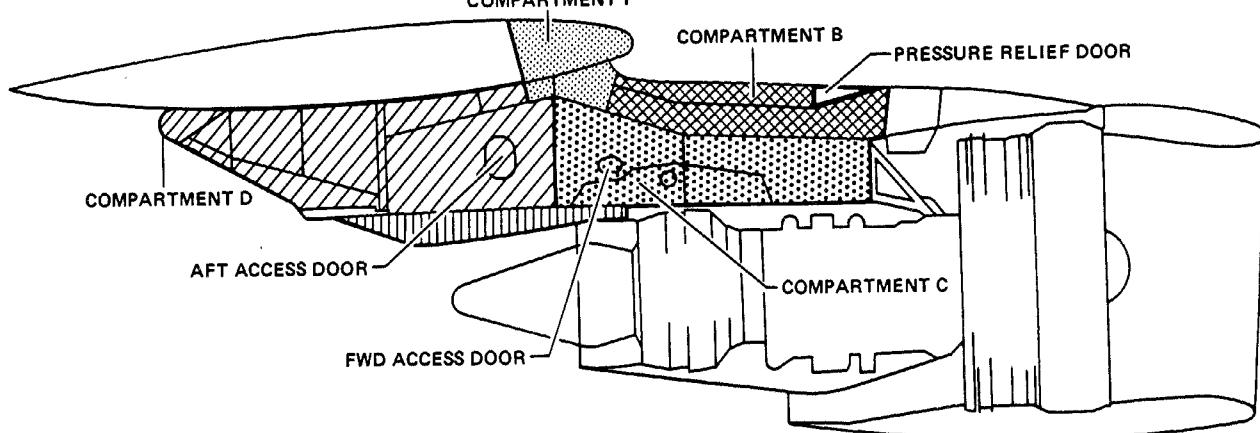
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Engine Pylon - Compartment Description
Figure 004

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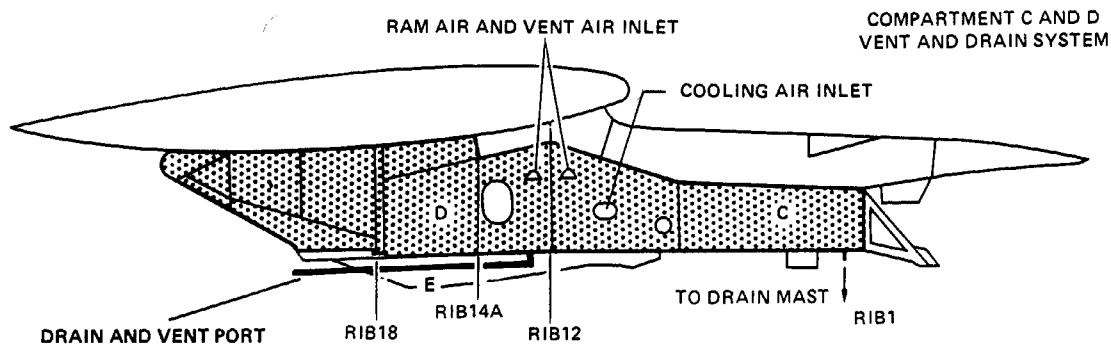
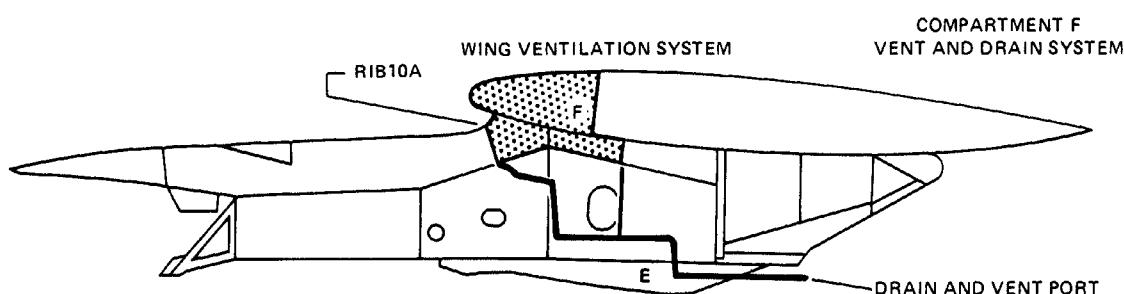
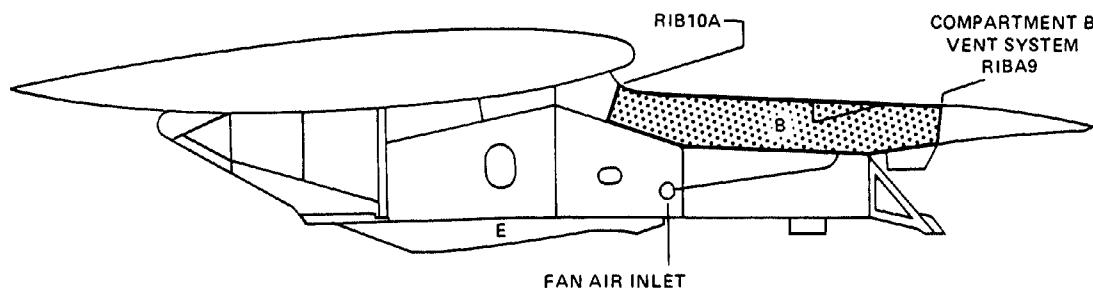
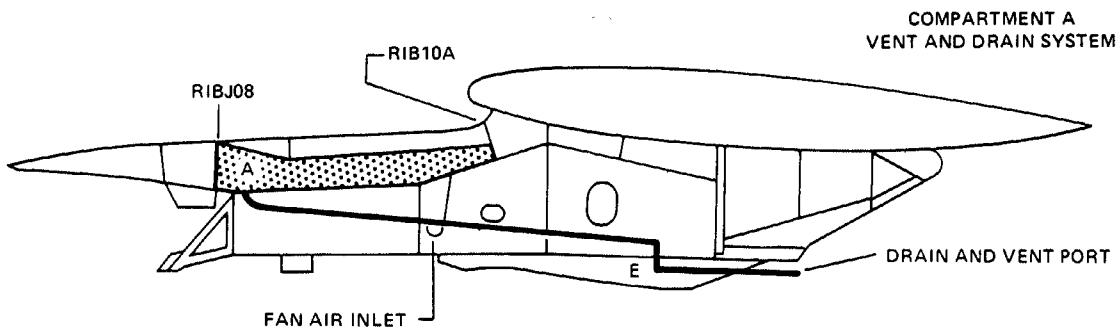
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EM5 54 50 00 0 CFMO - 01

Engine Pylon - Cooling and Drainage
Figure 005

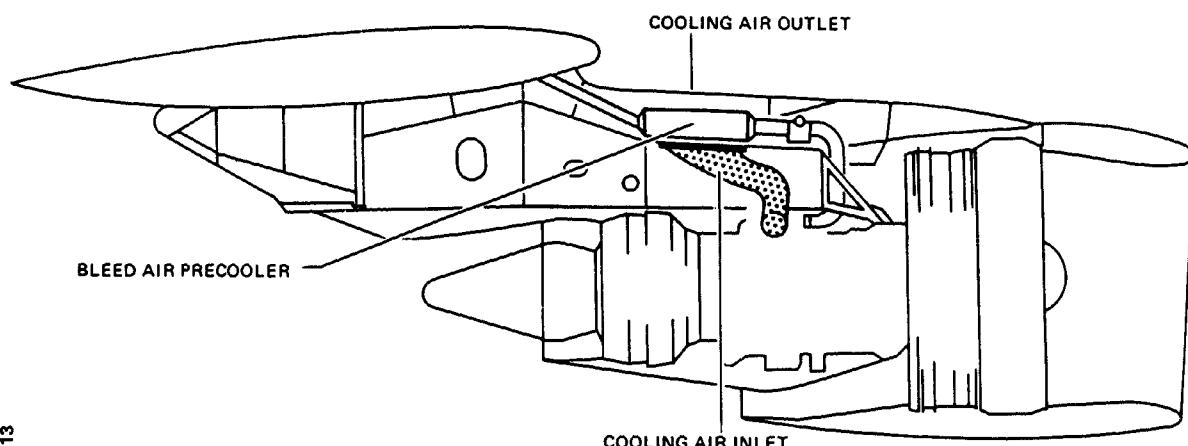
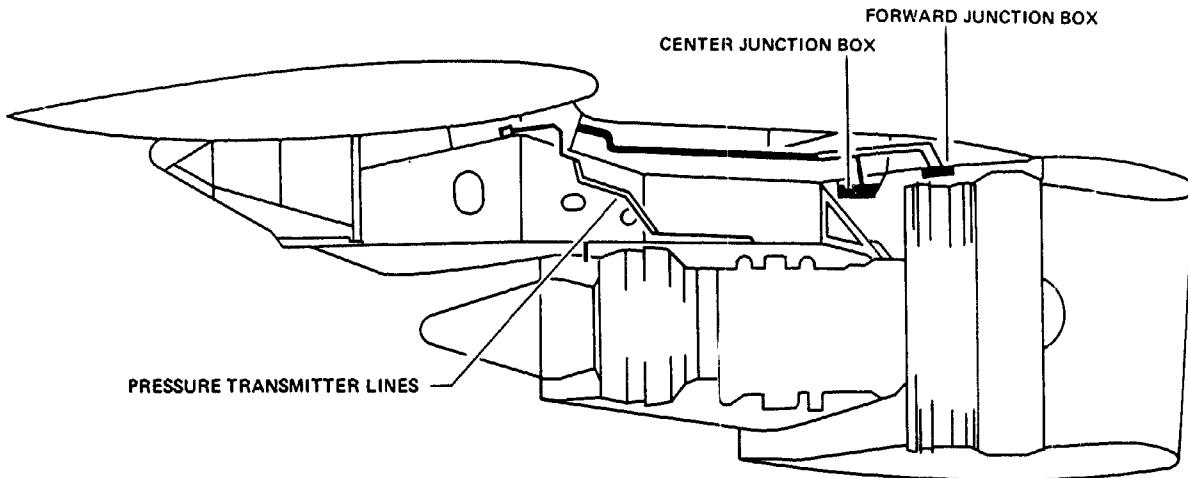
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Engine Pylon - Inner Components
Figure 006

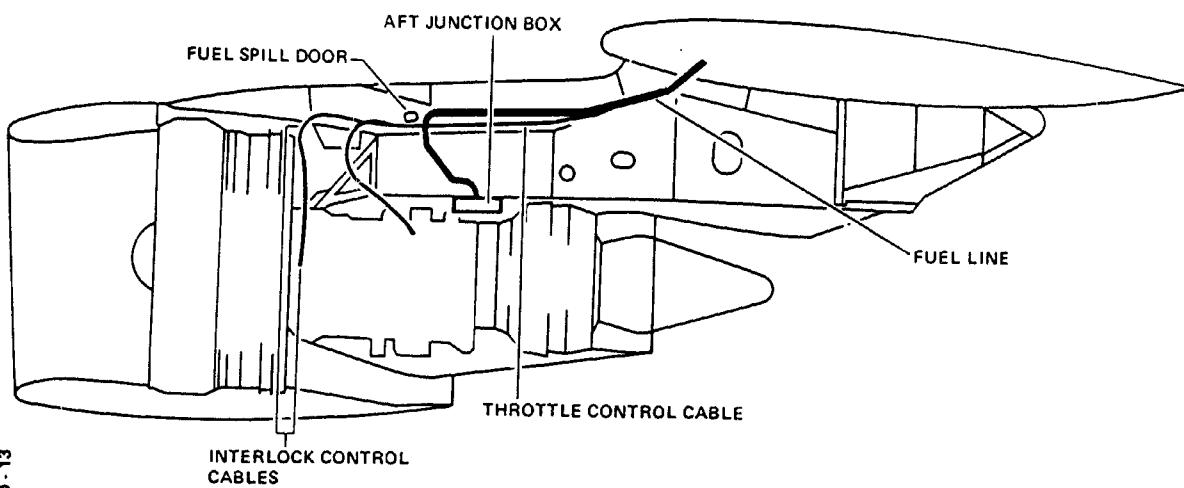
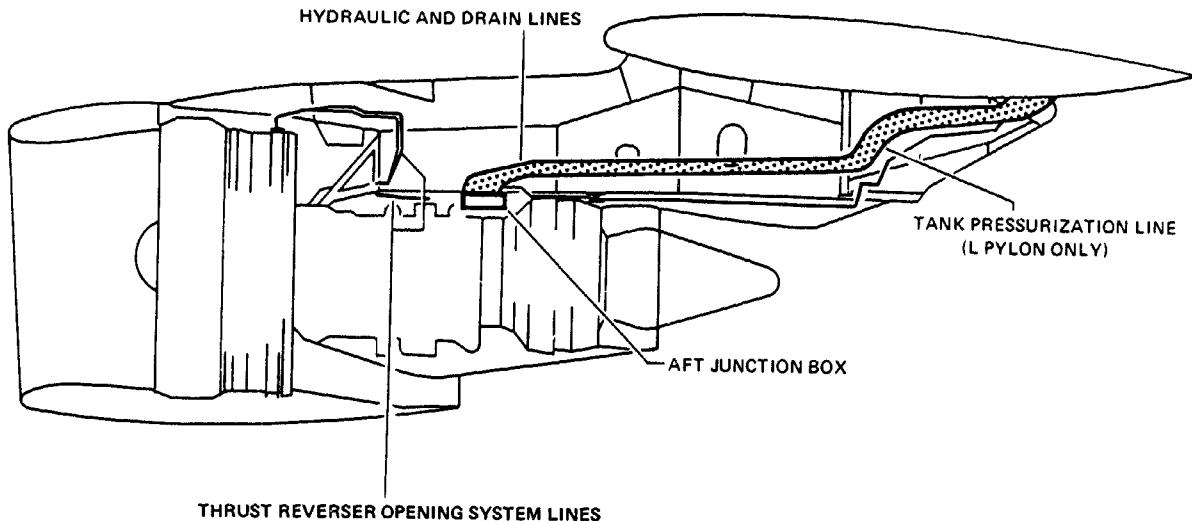
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Engine Pylon - Inner Components
Figure 007

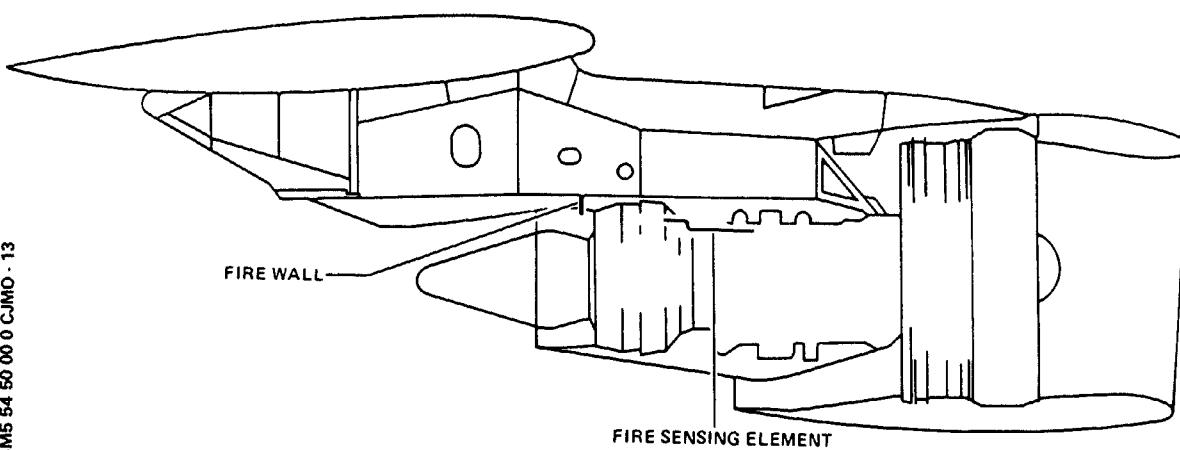
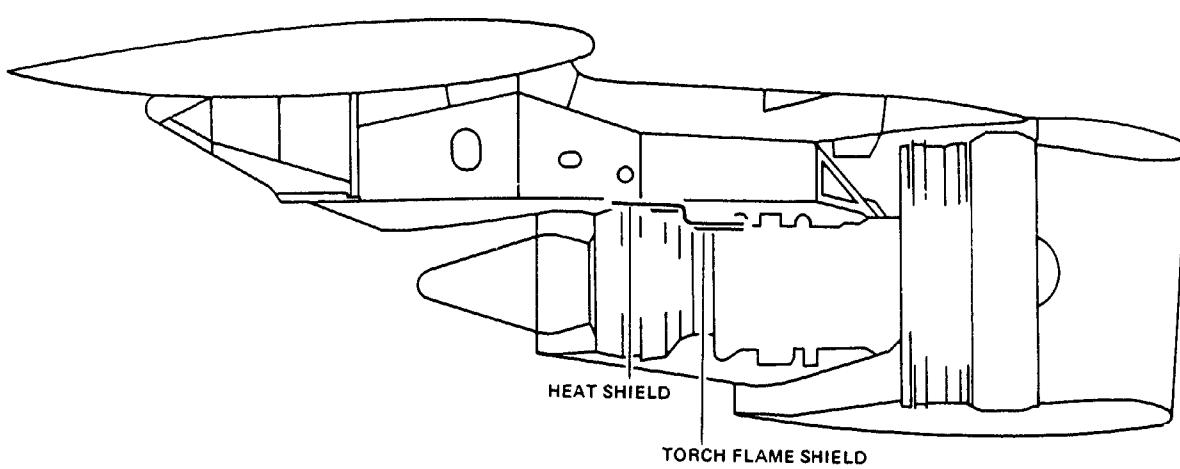
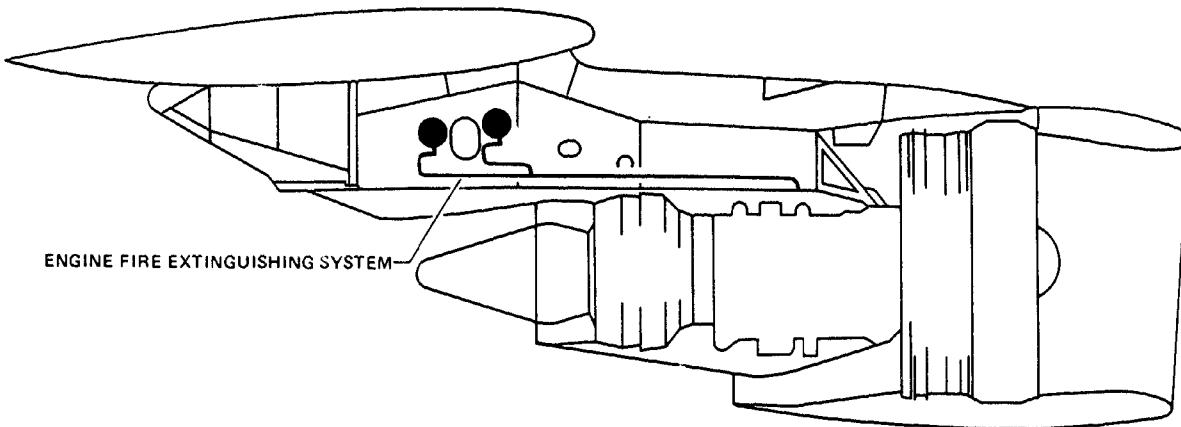
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Engine Pylon - Inner Components
Figure 008

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- compartment A and B vent ducts
- engine fire extinguishing system center section
- pressure transmitter lines of the air bleed system
- downstream section of the fuel line running from wing to engine
- pressure lines for thrust reverser cowl opening system.

This compartment is cooled in flight only by means of an independent ram air inlet located on R side of engine pylon.

The forward access door located on R side of engine pylon is provided with a cooling air inlet to ensure additional ventilation as soon as the engine starts running.

Compartment C is drained via a line routed to the engine drain mast.

(4) Compartment D

Compartment D located aft of compartment C includes:

- the hydraulic line sections with connections and the hydraulic hoses.
- the two engine fire extinguisher bottles and the fire extinguishing system aft section.
- compartment A and F drain lines.

- electrical cables connected with the two fire extinguisher bottles.
- hydraulic tank pressurization line (L side pylon only)

Compartment D is cooled by air bled by a ram air inlet located on R side of engine pylon when the engine is running.

Compartment D is drained by means of a line leading to the trailing edge at level of lower fairing.

(5) Compartment E

Compartment E located between compartment D and engine nozzle includes :

- compartment A, F and D drain lines without connections
- hydraulic tank pressurization line

This compartment is not provided with cooling and drainage.

(6) Compartment F

Compartment F serves as a junction between wing slat and engine pylon.

It is located above compartments C and D and aft of compartments A and B.

It includes:

- bleed air ducts
- throttle mechanical controls
- shrouded fuel lines
- forward pylon-to-wing attach fitting.

Compartment F is cooled by air passing through the wing slat.

Air and any residual fluid (water or fuel) are discharged overboard via the drain line leading to the engine pylon aft junction fairing.

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PYLVONS - REMOVAL/INSTALLATION

WARNING : BEFORE ATTEMPTING MAINTENANCE PROCEDURES ON FUEL SYSTEM, MAKE CERTAIN THAT FIRE EXTINGUISHING EQUIPMENT IS AVAILABLE IN PROXIMITY TO WORKING AREA.

MAKE CERTAIN THAT LANDING GEAR GROUND SAFETIES INCLUDING WHEEL CHOCKS ARE IN POSITION.

BEFORE ATTEMPTING MAINTENANCE PROCEDURES ON ENGINE PYLON, IN FLIGHT COMPARTMENT, ON CENTER PEDESTAL, DISPLAY WARNING NOTICES TO PROHIBIT MANEUVERS OF FLAP AND SLAT CONTROL LEVER.

CAUTION : TO PREVENT DAMAGE, CONTAMINATION AND INGESTION OF FOREIGN MATTER, PIPES, PNEUMATIC DUCTS AND ELECTRICAL CONNECTORS SHALL BE CAPPED.

NOTE : Removal/Installation procedure is identical for both engine pylons.

1. Equipment and Materials

ITEM	DESIGNATION
R A. 98A54003002004	Trolley-Pylon Removal/Installation
B.	Chain Hoist, 4 tons (9000 lbf.)
C. 98A54003003000	Storage Frame
D. 98A54003100000	Gear - Hoisting, Pylon
E.	Torque Wrench, 4 to 6 m.daN (29.5 to 44.2 lbf.ft.)
F. 65303A4351M000	Pin Wrench
G. 65375AB351M000	Lug Wrench
H.	Cotter Pins
J. 98A27901005000	Pin - Rigging, Throttle Control
K. 98A76101003000	Rigging Pin - Autothrottle Coupling Unit
L. 98A54003022000	Extractor
M. 98A54003084000	Tool-Sleeve Inserting
N. 99A76101501000	Pin - Rigging
P. 99A76101500000	Rigging Pin - Primary Transmission Crank Lever Interlock
Q. Material No. 04-004	Common Greases (Ref. 20-31-00)
R. Material No. 04-007	Common Greases (Ref. 20-31-00)
S. Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
T.	Access Platforms 4 m (13 ft. 1 in.)
U.	Containers
V.	Blanking Caps (Electrical Connectors)
W.	Blanking Caps (Hydraulic Couplings)
X.	Circuit Breaker Safety Clips
Y.	Lock Washers - Special
Z.	Turnbuckles Safety Clips
Referenced Procedures	
- 06-41-54, P. Block 1	Nacelles and Pylons
- 12-12-29, P. Block 1	Hydraulics
- 20-23-11, P. Block 1	Installation and Repair of Tubing
- 20-23-12, P. Block 1	Specified Torque Values for Unions

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ITEM	DESIGNATION
- 20-28-11, P. Block 1	Electrical Bonding
- 24-41-00, P. Block 301	AC External Power Control
- 26-21-00, P. Block 501	Engine Fire Extinguishing
- 26-21-15, P. Block 401	Fire Extinguisher Bottle
- 27-80-00, P. Block 301	Lift Augmentation (Slats and Krueger Flaps)
- 28-21-00, P. Block 501	Fuel Pump System
- 29-14-00, P. Block 301	Hydraulic Reservoir Pressurizing System
- 36-11-00, P. Block 401	Engine Bleed Air Supply System
- 36-11-00, P. Block 601	Engine Bleed Air Supply System
- 54-50-00, P. Block 601	Fillets/Fairings
- 54-51-72, P. Block 801	Forward Attach Fitting (RIB12)
- 54-51-85, P. Block 401	Aft Attach Fitting
- 54-54-00, P. Block 401	Aft Fairing
- 54-55-00, P. Block 401	Lower Fairing
- 71-00-00, P. Block 401	Power Plant
- 71-13-00, P. Block 301	Cowl Doors
- 71-13-02, P. Block 401	Fan Cowls
- 71-13-03, P. Block 401	Fan Thrust Reverser Cowls
- 76-11-00, P. Block 1	Throttle Controls
- 76-11-00, P. Block 401	Throttle Controls
- 76-11-00, P. Block 501	Throttle Controls
- 76-11-31, P. Block 401	Secondary Transmission

2. Procedure

- R NOTE : Hang-up the four-arm handling sling from tool 98A54003002004 to a four ton chain hoist so as to facilitate engine pylon removal/installation. The assembly shall be maneuvered by means of a crane or a traveling crane (Ref. Fig. 401).
- NOTE : The equipped pylon weighs 1085 kg (2392 lb) approx. and the unequipped pylon 825 kg (1819 lb) approx.

A. Job Set-Up

- (1) Remove engine cowl doors (Ref. 71-13-02, 71-13-03, P. Block 401).
- (2) Energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).
- (3) Make certain that electronics racks ventilation is correct.
- (4) Place flap and slat control lever in second notch to extend slats. (Ref. 27-80-00, P. Block 301).
 - Place a warning notice prohibiting operation of flap and slat control lever.

NOTE : Slats must be extended to gain access to panel 512AT (612AT).

- (5) Position access platforms at cargo compartment door.

- (6) In forward cargo compartment,

- Remove panel 131SW (132SW) giving access to autothrottle coupling unit and to turnbuckles (Ref. 76-11-00, P. Block 401, 76-11-00, P. Block 501).

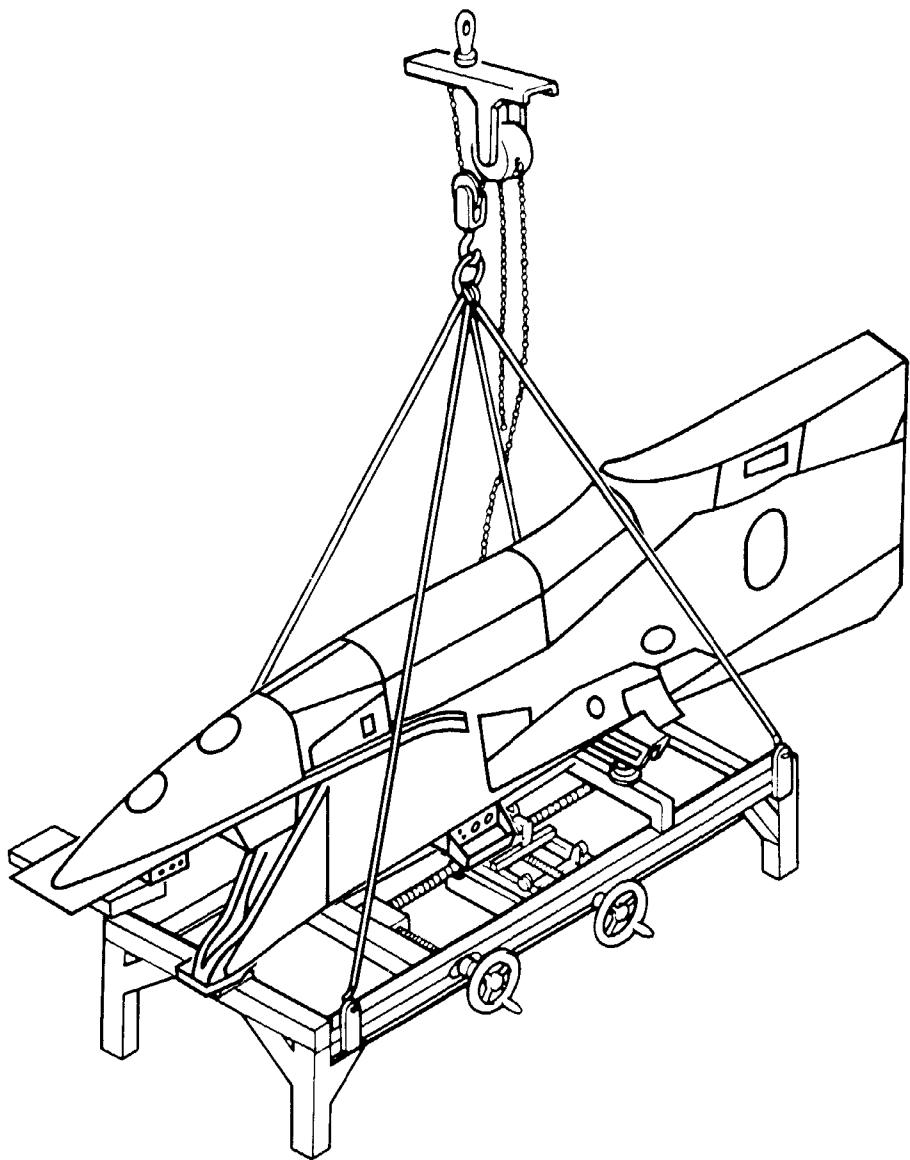
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R
Pylon Removal/Installation Trolley
Figure 401

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- (7) Install the following rigging pins on throttle control cable routing:
 (Ref. 76-11-00, P. Block 401, 76-11-00, P. Block 501).
 - 98A27901005000 in cable tension regulator between FR11 and FR12
 - 98A76101003000 in autothrottle coupling unit.
- (8) Position access platform at engine pylon and remove panel
 - RH engine pylon : 423EL
 - LH engine pylon : 413EL.
- (9) On primary transmission, install rigging pins 99A76101501000 and
 99A76101500000 (Ref. 76-11-00, P. Block 1, 76-11-00, P. Block 401,
 76-11-00, P. Block 501) and remove access platform from engine pylon.
- (10) Remove engine (Ref. 71-00-00, P. Block 401).
- WARNING : ENGINE REMOVAL IS MANDATORY BEFORE PYLON REMOVAL.**
- (11) On engine pylon (Ref. 06-41-54, P. Block 1)
- (a) Open access doors
 474AR (484AR) - 473AL (483AL) - 411BL (421BL)
 416AR (426AR) - 415AL (425AL) - 411CL (421CL)
 - (b) Open pressure relief doors 471BL (482BR) - 413AL (423AL) - 414AR (424AR)
 - (c) Remove the following skin panels from:
 Left engine pylon 413BL, 413DL, 471AL, 472AR, 472BR, 473BL, 474BR,
 473CL, 474CR, 414ER, 413EL, 413CL, 414CR, 474DR, 411AZ, 412AZ.
 Right engine pylon
 423BL, 421CL, 423CL, 424CR, 481AL, 482AR, 483BL, 484BR, 483CL, 484CR,
 424ER, 423EL, 483DL, 423DL, 421AZ, 422AZ.
- (12) Remove skin panel 512AT (612AT)
- (13) Remove lower fairing (Ref. 54-55-00, P. Block 401).
- (14) Remove fire extinguisher bottles and associated hoses (Ref. 26-21-15,
 P. Block 401).

B. Removal

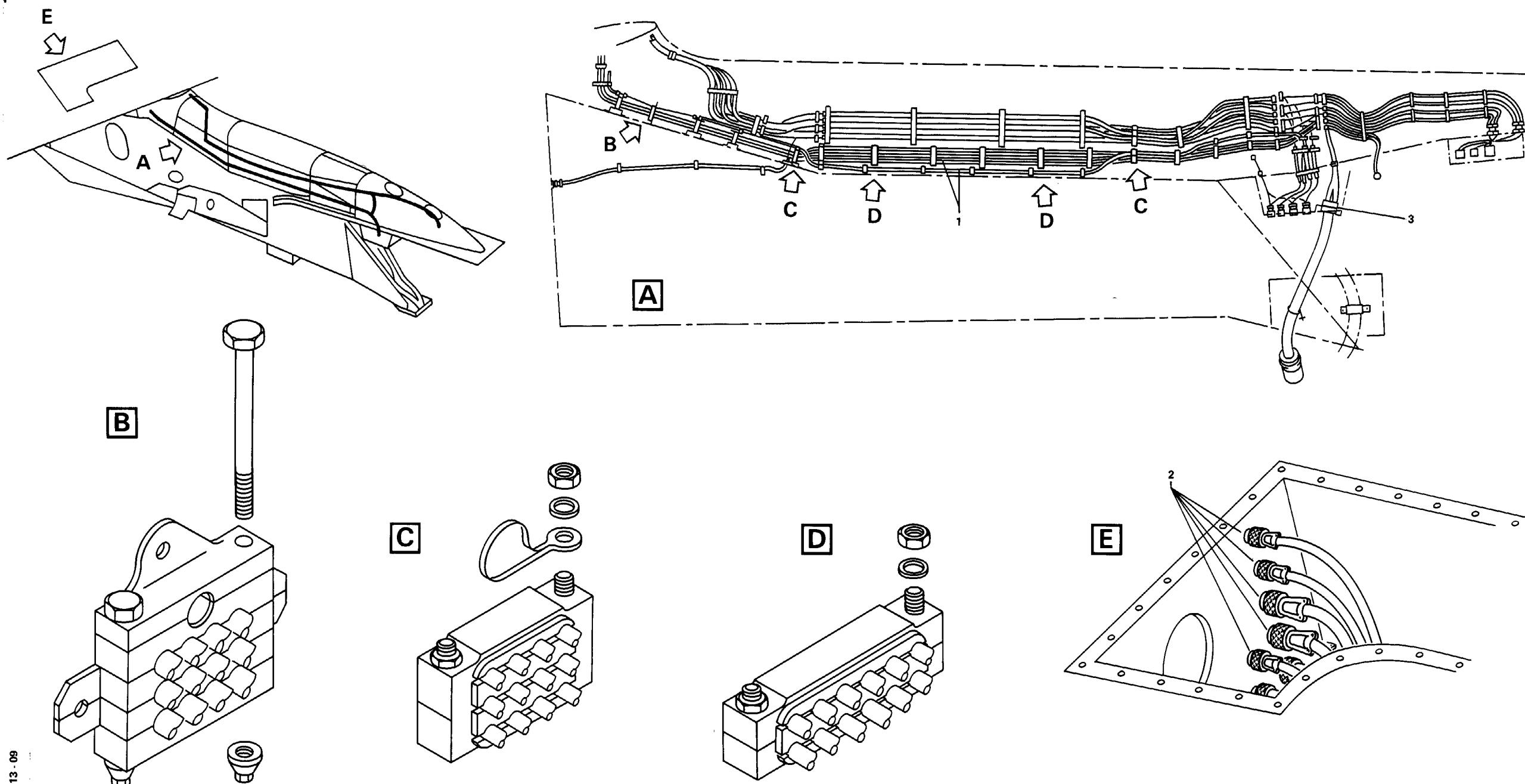
- (Ref. Fig. 402)
- (Ref. Fig. 403)
- (Ref. Fig. 404)
- (Ref. Fig. 405)
- (1) Remove all electrical connectors (2) at wing-to-pylon interface and
 install blanking caps.
- (2) Remove clamps and disconnect electrical connectors (52).
- (3) Remove electrical cable bundle (1):
 - (a) Open all the electrical clamp blocks attaching the bundle between
 wing and RIBJ6.
 - (b) Open electrical junction box (3), mark the wires of bundle (1).
 - (c) Disconnect wires of bundle (1) from junction box (3).
 - (d) Pull cables and coil and attach them to wing during
 removal/installation of engine pylon.
- (4) Remove bleed air duct (Ref. 36-11-00, P. Block 401).
- (5) Remove throttle control cable as follows:
 - (a) Remove and discard turnbuckle pins and loosen cables by means of
 turnbuckles located in zone 145 (146).
 - (b) Remove four nuts (29).
 - (c) Remove flange (30).
 - (d) Remove two bolts (37) and cable guide stop (36).

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Removal of Electrical Wiring
Figure 402

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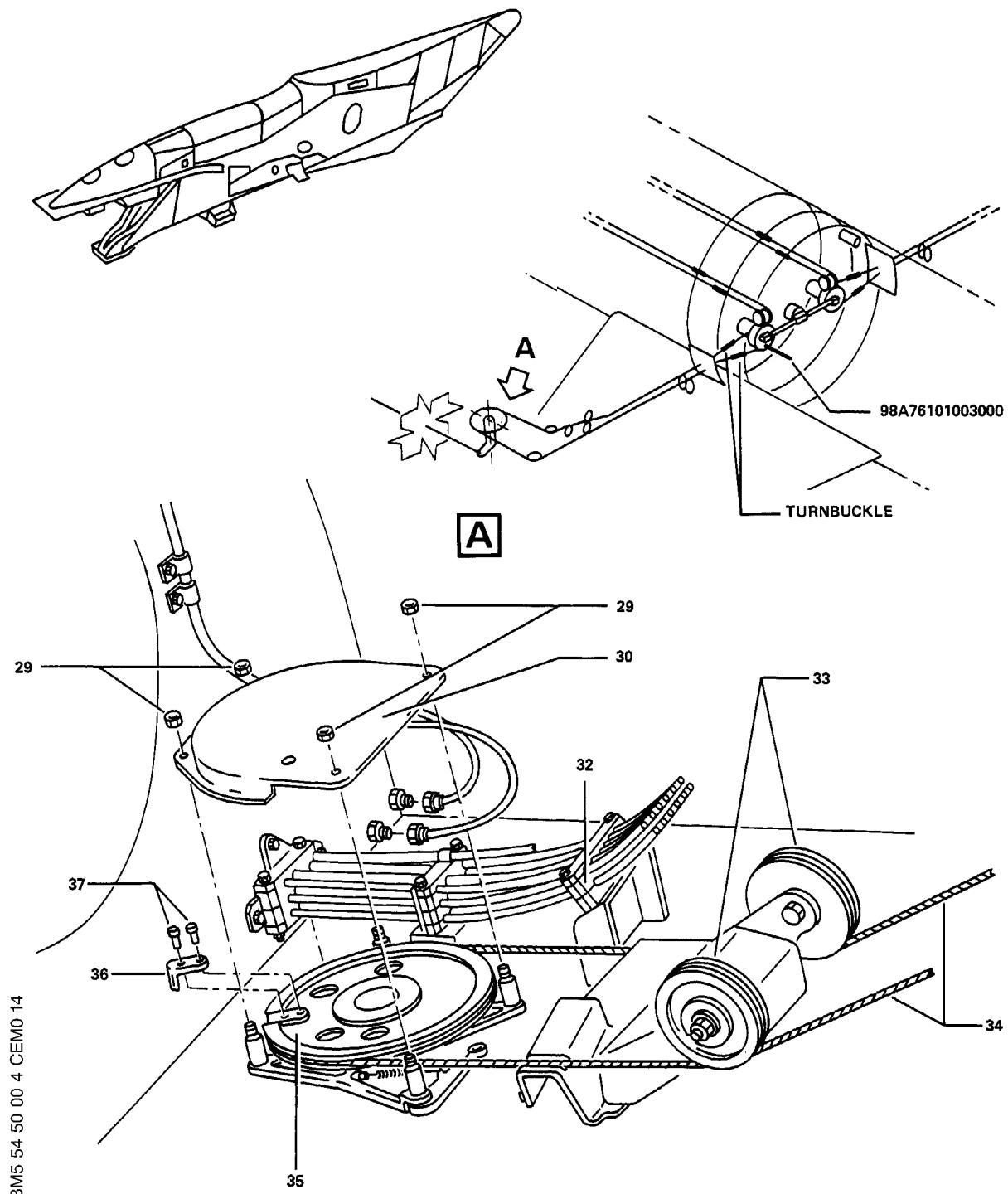
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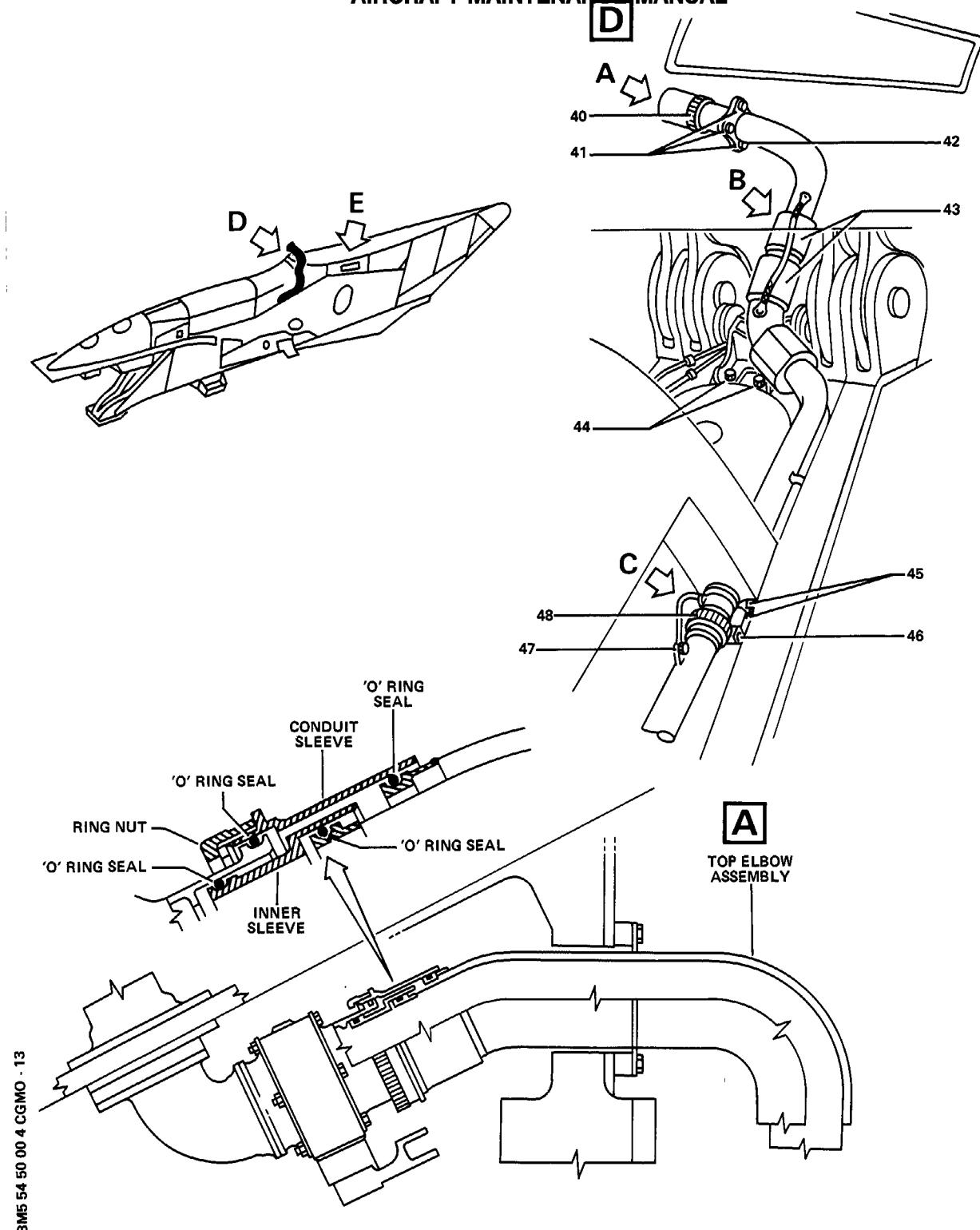
Removal of Throttle Control Cable
Figure 403

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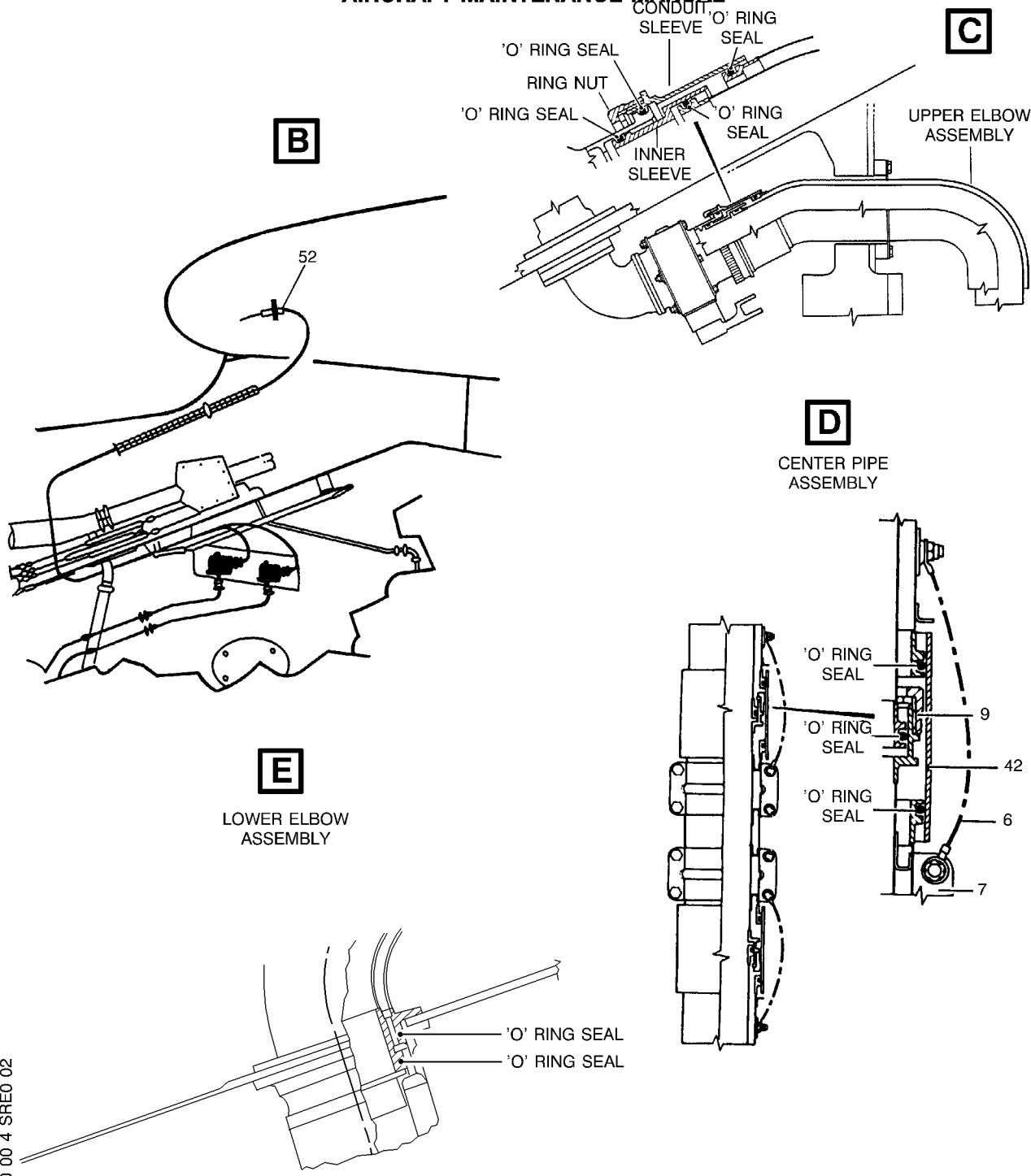
Removal of Fuel Line
Figure 404

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Removal of Fuel Line and Air Pressure Sensor Lines
Figure 405

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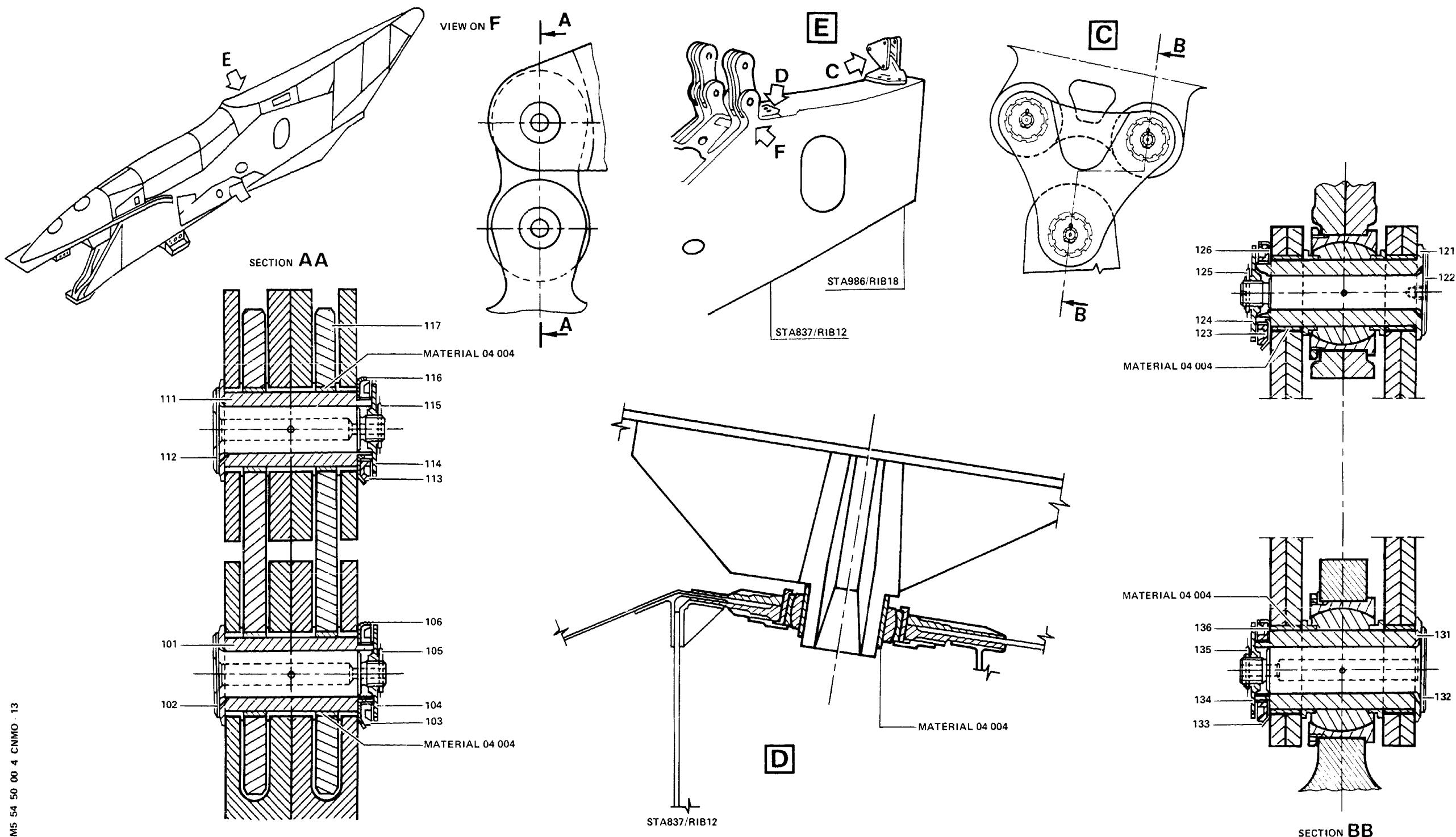
- (e) Disengage cable (34) from pulley (35).
- (f) Remove cable guides from pulley (33) brackets and disengage the cable from the pulleys.
- (6) Remove fuel line as follows:
 - (a) Loosen coupling nut (40).
 - (b) Remove nuts (41) and remove flange (42).
 - (c) Disconnect coupling halves (43):
 - 1 Disconnect bonding lead (6).
 - 2 Disconnect the two half-shells (7).
 - 3 Slide off sleeve (43) until nut (9) is free.
 - 4 Loosen coupling nut (9).
 - (d) Remove screws (45) and pull forwards end-fitting (46) of fuel drain line.
 - (e) Disconnect bonding lead (47).
 - (f) Remove bolts (44).
 - (g) Loosen coupling nut (48) and disengage fuel line.
- (7) Disassemble and remove aft pylon structure from wing lower surface (Ref. 54-54-00, P. Block 401).
- (8) Manually retract the slats (Ref. 27-80-00, P. Block 301).

- R (9) Make certain that trolley-pylon R/I 98A54003002004 is balanced (counterweight placed in empty trolley position). Balance trolley if required.
- (10) Slightly lift trolley from ground and ensure perfect balance.
- (11) Raise trolley by means of a travelling crane or crane and complete positioning manually using a chain hoist.
- (12) Attach trolley to pylon through engine mounts (Ref. 54-51-85, P. Block 401).
- (13) Disconnect grounding leads at wing-to-pylon junction (Ref. 20-28-11, P. Block 1).
- (14) Balance trolley by placing counterweight in loaded position.
NOTE : Make certain that counterweight lateral position is in RH or LH engine pylon configuration according to the pylon to be removed. These positions are those noted on trolley at engine pylon first removal/installation.
- (15) Take up slack in handling slings.
- (16) On each FWD engine pylon attach fitting (Ref. Fig. 406)
- (a) Discard cotter pin (105) and remove nut (104). Using tools 65303A4351M000 and 65375AB351M000.
 - (b) Remove bolt (102).
 - (c) Infold lockwasher tab, remove nut (103) and discard lock washer (106) using a thin spanner and tool 65375AB351M000.
 - (d) Remove bush (101) using extractor 98A54003022000 (sub-assembly 98A54003022004).
- (17) On aft pylon attach fitting:
- (a) Remove the three fail-safe fasteners using the same procedure for each one.
 - 1 Remove and discard cotter pin (135) or (125).
 - 2 Remove nut (134) or (124) using tools 65303A4351M000 and

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Wing-to-Pylon Attach Fitting
Figure 406

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65375AB351M000.

- 3 Remove bolt (132) or (122).
 - 4 Unfold lockwasher tab, remove nut (133) or (123) and discard lock-washer (136) or (126).
 - 5 Remove bush (131) or (121) using extractor 98A54003022000.
- NOTE :** Use extractor 98A54003022003 for lower sleeve and extractor 98A54003022002 for the two lower sleeves.

**CAUTION : BALANCE PYLON USING COUNTER-WEIGHT ON ENGINE PYLON FRAME.
IF NECESSARY CORRECT CENTERING BY MOVING COUNTER-WEIGHT.**

(18) Start lowering pylon using chain hoist. Make certain that during this operation FWD attach fitting shackles and spigot ball joint are not subjected to adverse loads that may result in damage.

(19) Lower pylon by means of the crane or travelling crane and position it on the ground using chain hoist.

R (20) Remove handling slings from trolley 98A54003002004.

(21) After pylon removal, check the correct alignment of RIB12 fitting bushes bores by manually inserting the sleeves into their housings. If there are difficulties of insertion, repair bushes have to be installed (Ref. 54-51-72, P. Block 801).

C. Preparation of Replacement Component

(1) In the case of engine pylon replacement, carry out the following steps:

(a) On removed engine pylon:

NOTE : Tools 98A54003004001, 98A54003017000, 98A54003101000 and 98A54003007000 are sub-assemblies of tool 98A54003100000.

- 1 Attach cross beam 98A54003101000 to engine hoist fitting at RIB7.
- 2 Install hoisting beam 98A54003007000 on FWD pylon-to-wing attach fitting.
- 3 Adjust attach ring of tool 98A54003100000. Balance by means of side counterweights.
- 4 Hook hoist beam 98A54003004001 onto chain hoist and raise it up to FWD pylon-to-wing attach fitting level.
- 5 Attach slings 98A54003017000 of hoist beam to the beams already secured to the pylon.
- 6 Take-up slack in slings.

R 7 Disassemble pylon from frame 98A54003002004 and position it above storage frame 98A54003003000.

- 8 Install engine pylon onto storage frame 98A54003003000 and secure.
- 9 Remove tool 98A54003100000.

(b) On replacement pylon:

- 1 Depreserve replacement pylon
- 2 Attach hoist beam 98A54003100000 and cross beam 98A54003101000 as indicated in para. 2.C.1 (a)

R 3 Remove engine pylon from transportation container with chain hoist.

- 4 Position pylon over trolley 98A54003002004 using either a crane or traveling crane.

R 5 Complete manually pylon positioning over trolley 98A54003002004 using chain hoist.

R 6 Secure engine pylon on trolley 98A54003002004 by means of engine attach fittings.

- 7 Remove tool 98A54003100000.

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8 Make certain that replacement pylon especially at engine-to-pylon and pylon-to-wing junctions is in correct condition.

9 Transfer parts retained from removed pylon to new pylon after cleaning and check for correct condition.

WARNING : AS SOME PYLON COMPONENTS ARE IN TITANIUM, CLEANING WITH TRICHLORETHYLENE MAY RESULT IN SERIOUS DAMAGE TO PYLON.

(2) In the case of repair or check for which pylon replacement is not necessary, carry out visual checks.

(3) Remove fail-safe fasteners on wing side (Ref. para. 2.B.(18)) and remove shackles.

(4) Clean using Material No. 11-003:

- Spigot fitting
- forward and aft shackles
- yokes attached to wing and pylon
- bolts (102) and (112)
- ball joint attach fitting on engine pylon
- sleeves (101) and (111).

(5) Check shackles of forward and aft attach fittings for condition and replace if necessary.

(6) Check dimensions of forward and aft fail safe fasteners.

Change bolts and/or sleeves if necessary.

(7) On wing, check yokes of forward and aft attach fittings secured to wing and spigot fitting for correct condition.

(8) On engine pylon, check pylon-to-wing attach fittings

(a) Check of yokes attached to RIB12

(9) On wing

Coat spigot fitting and bores of shackles attached to wing lower surface with Material No. 04-004.

(10) Install shackles and fail-safe bolts as follows:

(a) Install shackles (117) in yokes attached to wing.

(b) Coat sleeves (111) plain length with Material No. 04-004 and threaded section with Material No. 04-007.

(c) Install sleeve (111) in bore by placing threaded section on throttle control pulley side, using tool 98A54003084000 (sub-assembly of 98A54003084004).

(d) Install a new lock washer (116).

(e) Screw nut (113) until it abuts sleeve (111) without tightening.

(f) While holding sleeve (111) fixed, TORQUE nut (113) to between 4 and 6 m.daN (29.5 and 44.2 lbf.ft.) using tool 65375AB351M000 equipped with a torque wrench. Safety nut (113) by folding lock washer (116) tab.

(g) Coat bolt (112) thread with Material No. 04-007 and insert it into sleeve (111) with the threaded section toward throttle control pulley side.

(h) Hold bolt (112) fixed using pin wrench 65303A4351M000 and tighten nut (114).

R (j) TORQUE nut (114) to between 4 and 6 m.daN (29.5 and 44.2 lbf.ft.) using tool 65375AB351M000 equipped with a torque wrench and install cotter pin (115).

R (k) By means of the shim make certain that the play between the washer (116) and the side of the yoke is at least 0.1 mm (0.0039 in.).

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(11)On replacement pylon:

Coat the ball joint receiving the spigot fitting, forward and aft attach fittings with Material No. 04-004.

(12)Protect engine pylon with rubber mats to avoid damage.

R (13)Make certain that trolley 98A54003002004 is properly balanced (counter-weight in loaded position).

D. Installation

(1)Secure handling sling of trolley to chain hoist and take up slack.

(2)Slightly lift trolley and check the assembly for correct balance.

(3)Lift engine pylon to required height and position it at wing lower surface attach fittings.

(4)Complete pylon positioning manually using chain hoist and check that spigot engages correctly in ball joint and shackles in yokes.

(5)On FWD attach fittings

(a)Install FWD attach fitting fail safe fasteners, starting from inboard attach fitting.

CAUTION : TAKE CARE NOT TO DAMAGE THROTTLE CONTROL PULLEYS LOCATED BETWEEN BOTH ATTACH FITTINGS.

1 Coat the grip length of sleeve (101) with Material No. 04-004 and the threaded section with Material No. 04-007.

2 Install sleeve (101) using tool 98A54003084000. The threaded section of the sleeve must be placed on throttle control pulley side.

3 Install a new lock washer (106).

4 Tighten nut (103) up to stop on sleeve (101).

5 Hold sleeve (101) by means of a wrench and TORQUE (103) nut to between 4 and 6 m.daN (29.5 and 44.2 lbf.ft.) using tool 65375AB351M000 equipped with a torque wrench.

Safety nut (103) by bending the tab of lock washer (106).

6 Coat the threaded portion of bolt (102) with Material No. 04-007 and insert bolt (102) in sleeve (101) so that the threaded section is on throttle control pulley side.

7 Hold bolt (102) by means of wrench 65303A4351M000 and tighten nut (104). TORQUE nut (104) to between 4 and 6 m.daN (29.5 and 44.2 lbf.ft.) using tool 65375AB351M000 equipped with a torque wrench. Install cotter pin (105).

8 By means of a shim make certain that the play between the washer (106) and the side of the yoke is at least 0.1 mm (0.0039 in.).

(6)On aft attach fitting

(a)Position both shackles and hold them in placed with two screw clamps.

(b)Installation procedure for both upper fail-safe fasteners is identical:

1 Coat the grip length of sleeves (121) with Material No. 04-004 and the threaded section with Material No. 04-007.

2 Install sleeve (121) using tool 98A54003084000. The threaded portion must be directed towards the rear of the pylon.

NOTE : Use tool 98A54003084002 for the two upper sleeves and tool 98A54003084003 for the lower sleeve.

3 Install new lock washer (126).

4 Tighten nut (123) up to stop on sleeve (121).

5 Hold sleeve (121) and TORQUE nut (123) to between 4 and 6 m.daN (29.5

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- R and 44.2 lbf.ft.) using tool 65375AB351M000 equipped with a torque wrench. Safety nut (123) by bending the tab of lock washer (126).
- 6 Coat the threaded section of bolt (122) with Material No. 04-007 and insert the screw in sleeve (121). The threaded portion must be directed towards the rear of the pylon.
- 7 Hold bolt (122) by means of wrench 65303A4351M000 and tighten nut (124) using tool 65375AB351M000 equipped with a torque wrench.
- R 8 TORQUE nut (124) to between 4 and 6 m.daN (29.5 and 44.2 lbf.ft.) using tool 65375AB351M000 equipped with a torque wrench. Install cotter pin (125).
- (c) Install the lower fail safe fastener as described in paragraph 2.D (6)(b).
- (7) Remove screw clamps.
- (8) Install grounding leads providing wing-to-pylon electrical bonding (Ref. 20-28-11, P. Block 1).
- (9) Remove tool as follows:
- (a) Change balance of trolley by placing counter weight in empty trolley position.
 - (b) Separate trolley from pylon by removing tool-fitting at bearings (two bearings at RIB9C and one at RIB1).
 - (c) Place trolley on the ground.
 - (d) Remove tool fittings at RIB9C and RIB1 and stow them in transportation container.
- (10) Remove hoist slings from trolley.
- R (11) Connect throttle control cable as follows:
- (a) Install cable (34) in pulley (35) groove.
 - (b) Insert cable in grooves of pulleys (33) and in cable guide slot of pulley support bracket.
 - (c) Secure cable guides to pulley (33) brackets.
 - (d) Install cable guide (36) stop on pulley (35) with two screws (37).
 - (e) Install flange (30) and nuts (29).
 - (f) Connect cable threaded ends to turnbuckles in zone 145 (146). Tighten the cables (Ref. 76-11-31, P. Block 401, 76-11-00, P. Block 501). Safety turnbuckles with safety clips.
- R (12) Connect fuel line as follows (Ref. Fig. 404):
- NOTE : Replace all O-rings at upper, center and lower connections.
(Ref. Fig. 404) (Detail A)
(Ref. Fig. 405) (Details B and C)
- CAUTION : FUEL LINES MUST NOT SHOW EVIDENCE OF SHARP BENDS, PUNCHMARKS OR DEFORMATION.
- (a) Engage upper line with coupling on wing.
 - (b) Engage lower line with coupling on pylon.
 - (c) Tighten coupling nut (9) and wirelock.
 - (d) Slide on sleeve (43) and install the two halfshells (7).
 - (e) Install bonding lead (6) (Ref. 20-28-11, P. Block 1).
 - (f) Install end-fitting (46) on fuel drain line (Ref. 20-23-11, P. Block 1).
 - (g) Tighten coupling nut (48) and wirelock.
 - (h) Install bonding lead (47) (Ref. 20-28-11, P. Block 1).
 - (i) Install flange (42) and tighten nuts (41).
 - (j) Tighten nut (40) and wirelock.

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- R (l)Install and tighten bolts (44) (Ref. 20-23-12, P. Block 1).
R (m)Carry out a leakage test of double-wall fuel line (Ref. 28-21-00,
R P. Block 501).
R (13)Connect electrical wiring as follows:
R (a)Install cable bundle (1) and connect it to junction box (3).
R (b)Install clamp blocks (3).
R (14)Connect electrical connector (52) and install clamps.
R (15)Install air bleed duct (Ref. 36-11-00, P. Block 401).
R (16)Remove plugs and connect electrical connectors (2).
R (17)Secure pylon aft structure fitted with hydraulic and pneumatic lines
R to wing lower surface (Ref. 54-54-00, P. Block 401).
R (18)Install hoses and fire extinguisher bottles (Ref. 26-21-15,
R P. Block 401), install bottle electrical wiring and connect pressure
R switch (2), cartridge (4) and HP fuel shut off valve plugs.
R (19)Manually extend the slats (Ref. 27-80-00, P. Block 301).

(20)Install engine (Ref. 71-00-00, P. Block 401).
(21)Install lower fairing (Ref. 54-55-00, P. Block 401).
(22)Install engine cowls (Ref. 71-13-02, 71-13-03, P. Block 401).

E. Close-Up

- (1)Make certain that working area is clean and clear of tools and
miscellaneous items of equipment.
(3)Remove rigging pins from throttle controls (Ref. 76-11-00, P. Block 1,
76-11-00, P. Block 401, 76-11-00, P. Block 501)
- Item 98A27901005000 from cable tension regulator between FR11 and FR12.
- Item 98A76101003000 from autothrottle coupling unit.
- Item 99A76101501000 and 99A76101500000 from primary transmission.
(4)Install panel 131SW (132SW)
(5)Install panels and access doors removed at para. 2.A.
(6)Check peripheral gap between panels and rubber seal compression
(Ref. 54-50-00, P. Block 601) and adjust if necessary.
(7)Energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).
(8)Make certain that electronics racks ventilation is correct.
(9)Make certain that flap and slat control lever is still in second notch.
(10)Top-up Green hydraulic reservoirs (Ref. 12-12-29, P. Block 1).
(11)Pressurize Green hydraulic reservoirs (Ref. 29-14-00, P. Block 301).
(12)Remove warning notices from flap and slat control lever and place lever
in RET position.
(13)De-energize the aircraft electrical network (Ref. 24-41-00, P. Block
301).
(14)Check for leakage in pneumatic system downstream of pressure regulator
valves (Ref. 36-11-00, P. Block 601).
(15)Carry out engine fire extinguishing system functional test (Ref. 26-21-
00, P. Block 501).
(16)Remove access platforms.
(17)Close engine cowl doors (Ref. 71-13-00, P. Block 301).

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GENERAL - INSPECTION/CHECK

1. Engine Pylon Fairing Panels and Access Doors

NOTE : Those checks shall be carried out after replacement of engine pylon, with engine installed and after removal/installation of any removable fairing panels.

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform - 4 m. (13 ft. 1 in.)
(2)	Warning Notice

B. Procedure

- (1) Job set-up
 - (a) Position access platform at engine pylon
 - (b) In flight compartment,
 - on center pedestal, install a warning notice on flap and slat control lever to prevent it being operated.
- (2) Inspection/check of fairing panels and access doors.

****ON A/C ALL**

(Ref. Fig. 601, 602, 603)

(Ref. Fig. 604, 605, 606)

****ON A/C ALL**

- (a) Check that flush fitting and peripheral gaps of removable fairing panels are within tolerances.
 - (b) Check rubber seals for correct condition and check seal compression.
 - (c) Check main frame access door latching devices for correct condition.
 - (d) Check that no removable fairing panel attach screw is missing.
Check that surface around attach holes is free from cracks.
 - (e) Check that access doors and fairing panels do not show evidence of distortion or scoring out of permissible limits.
- (3) Close-up
 - (a) Remove engine pylon access platform.
 - (b) Remove warning notice from center pedestal in flight compartment.

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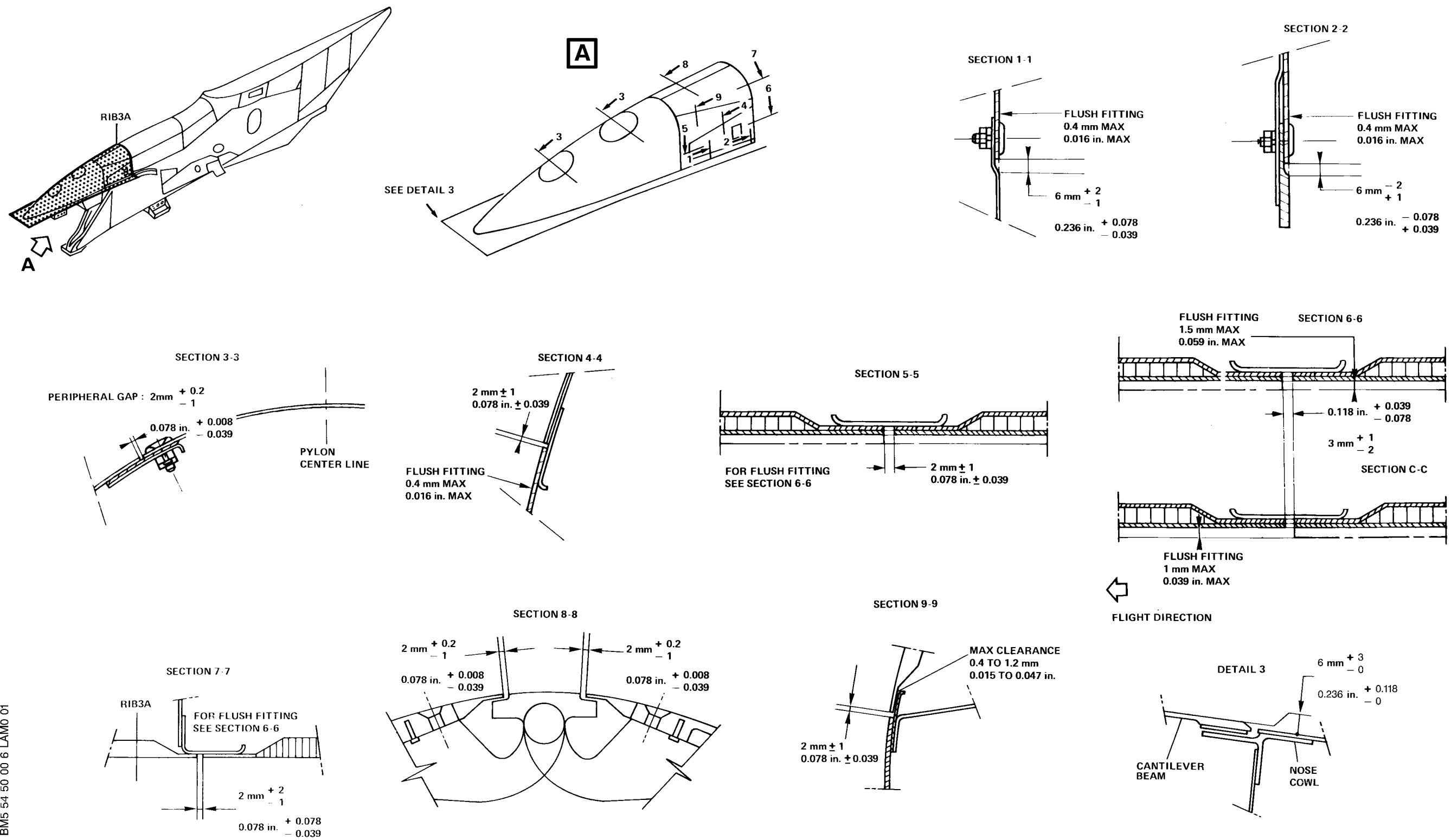
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Peripheral Gaps and Flush Fitting of Forward Fairing - Access
Doors and Fairing Panels
Figure 601

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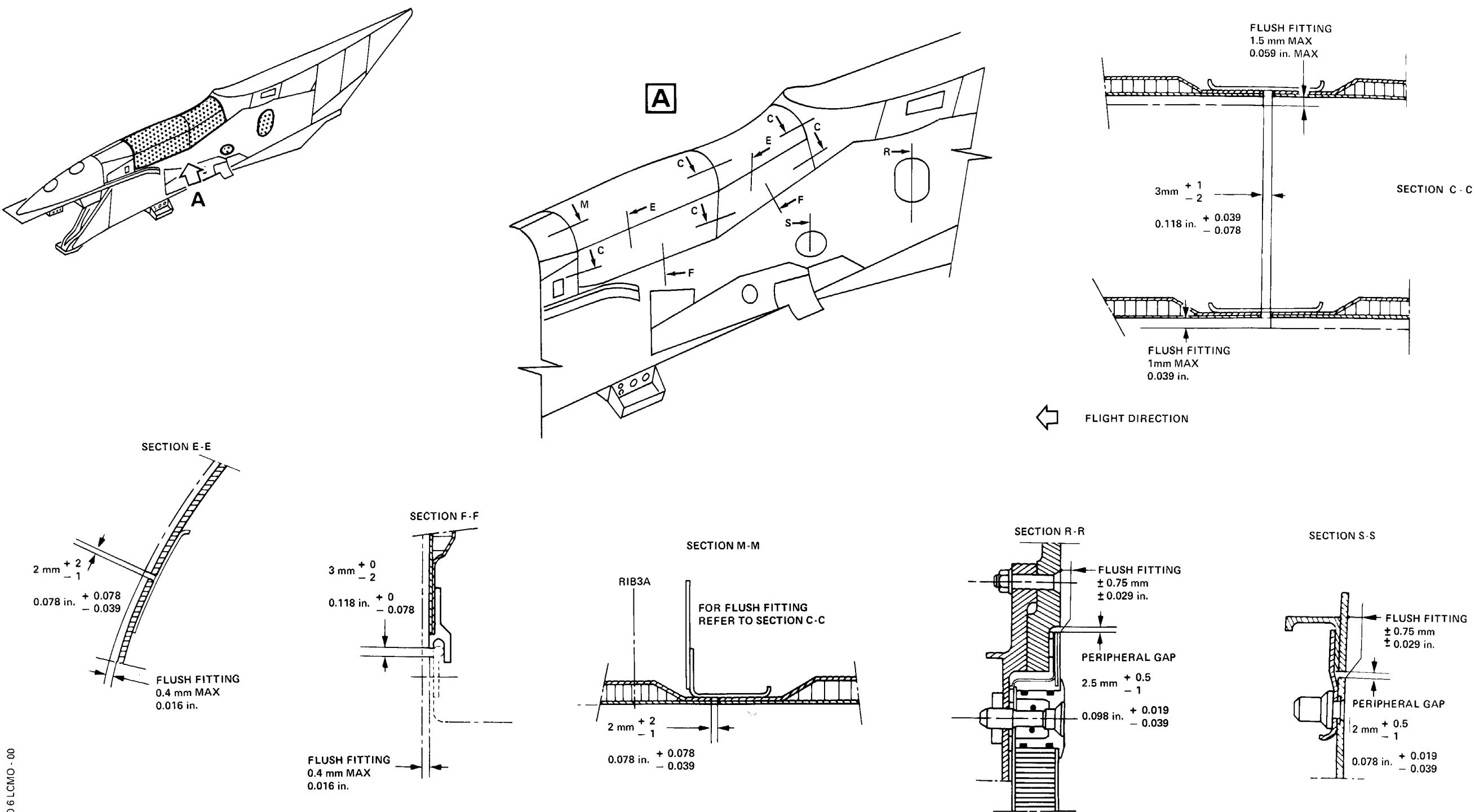
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Peripheral Gaps and Flush Fitting of Forward Fairing - Access
Doors and Fairing Panels
Figure 602

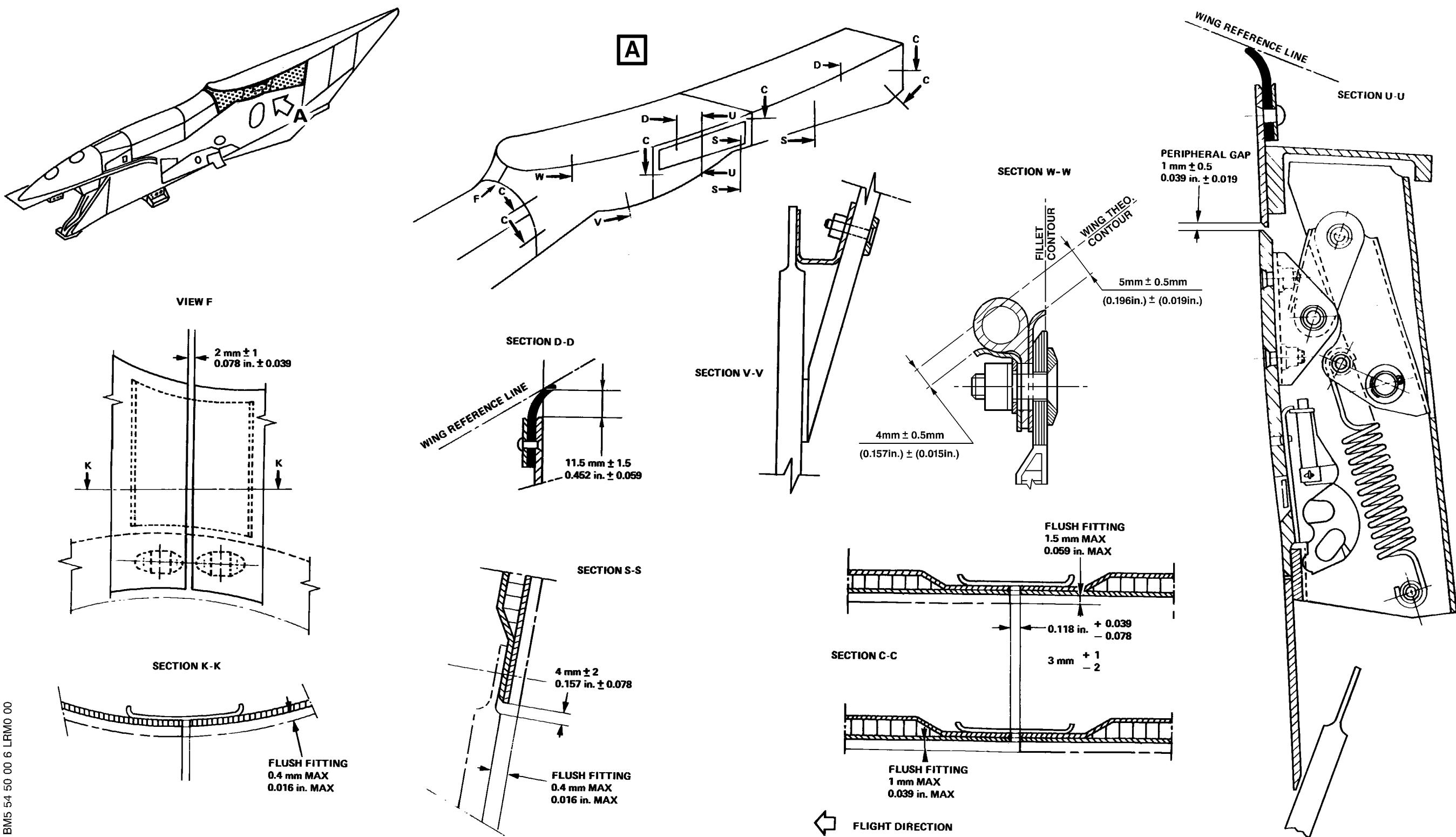
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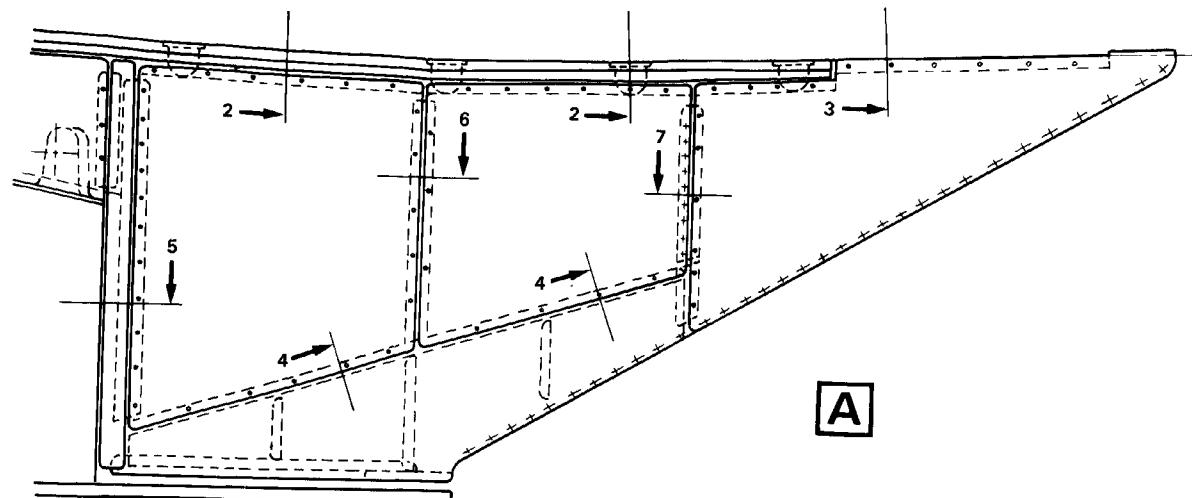
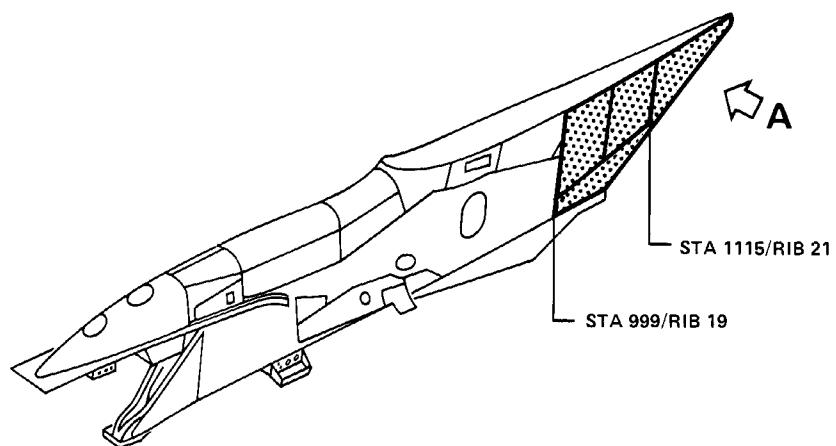
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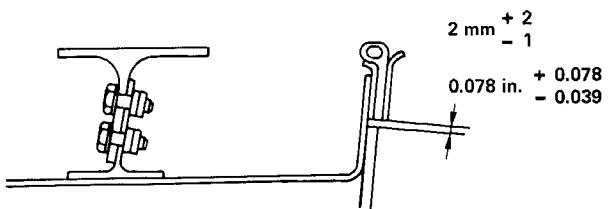


Peripheral Gaps and Flush Fitting of Center Fairing - Access
Doors and Fairing Panels
Figure 603

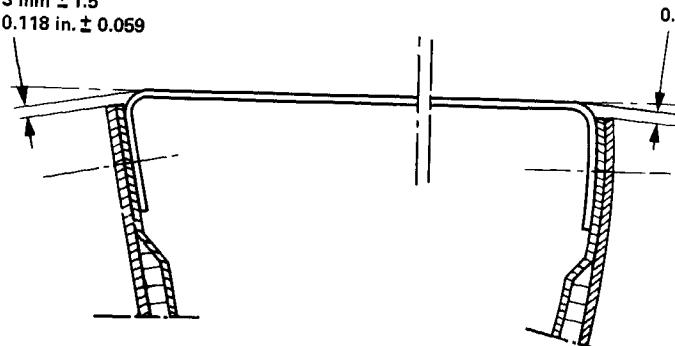
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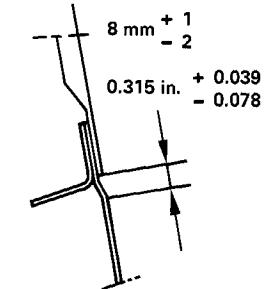
SECTION 2-2

3 mm \pm 1.5
0.118 in. \pm 0.059

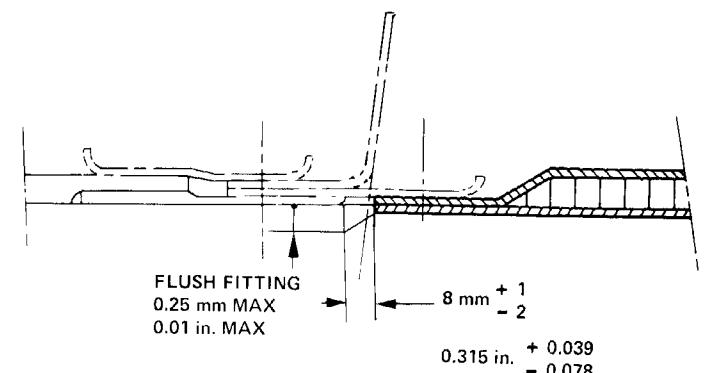
SECTION 3-3



SECTION 4-4

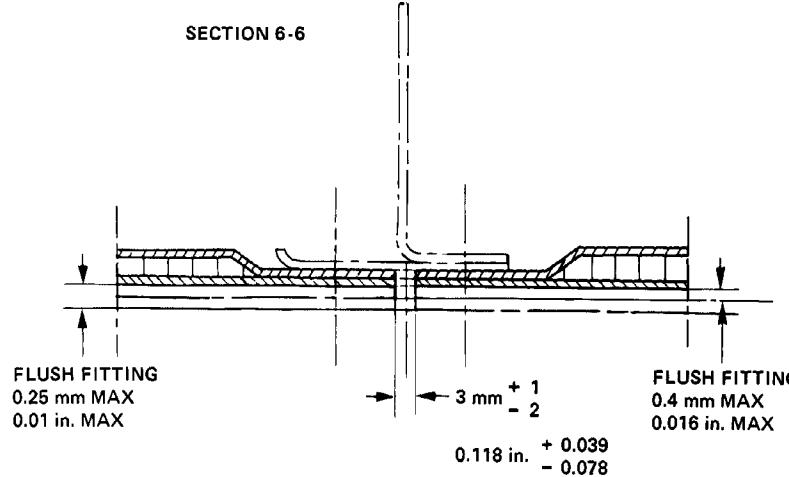
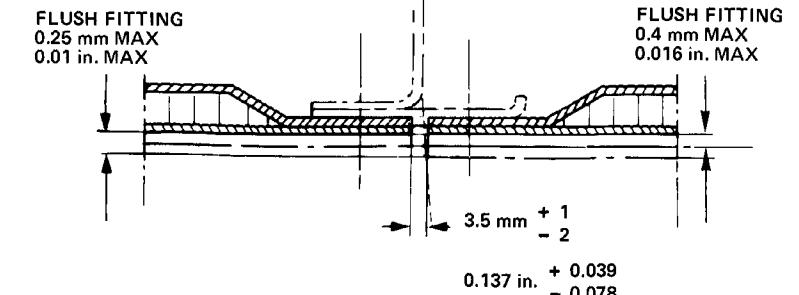


SECTION 5-5



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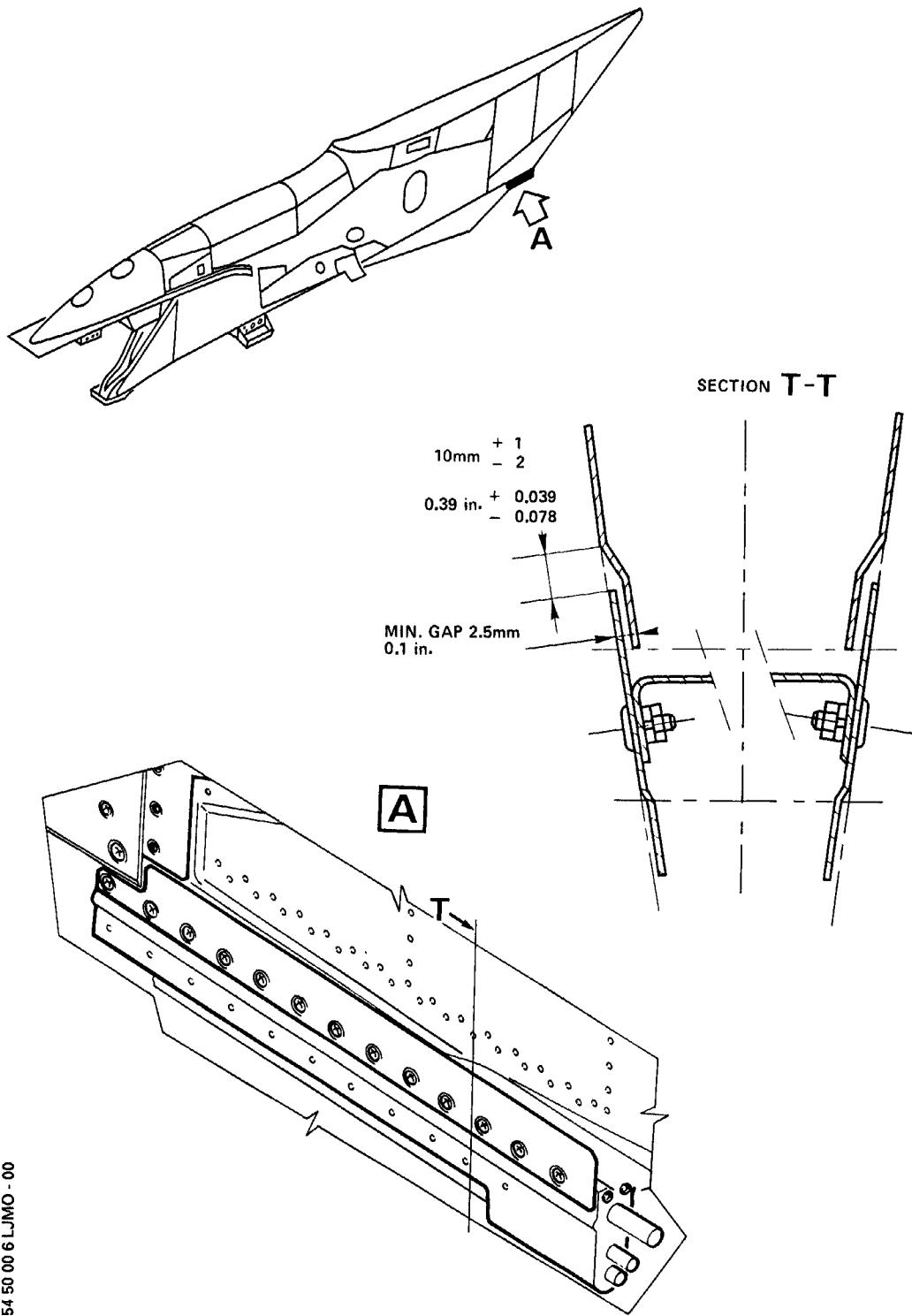
SECTION 6-6

FLUSH FITTING
0.25 mm MAX
0.01 in. MAXFLUSH FITTING
0.4 mm MAX
0.016 in. MAX

Peripheral Gaps and Flush Fitting of Aft Fairing - Access
Doors and Fairing panels
Figure 604

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Peripheral Gaps and Flush Fitting of Aft Fairing Lower Section
Figure 605

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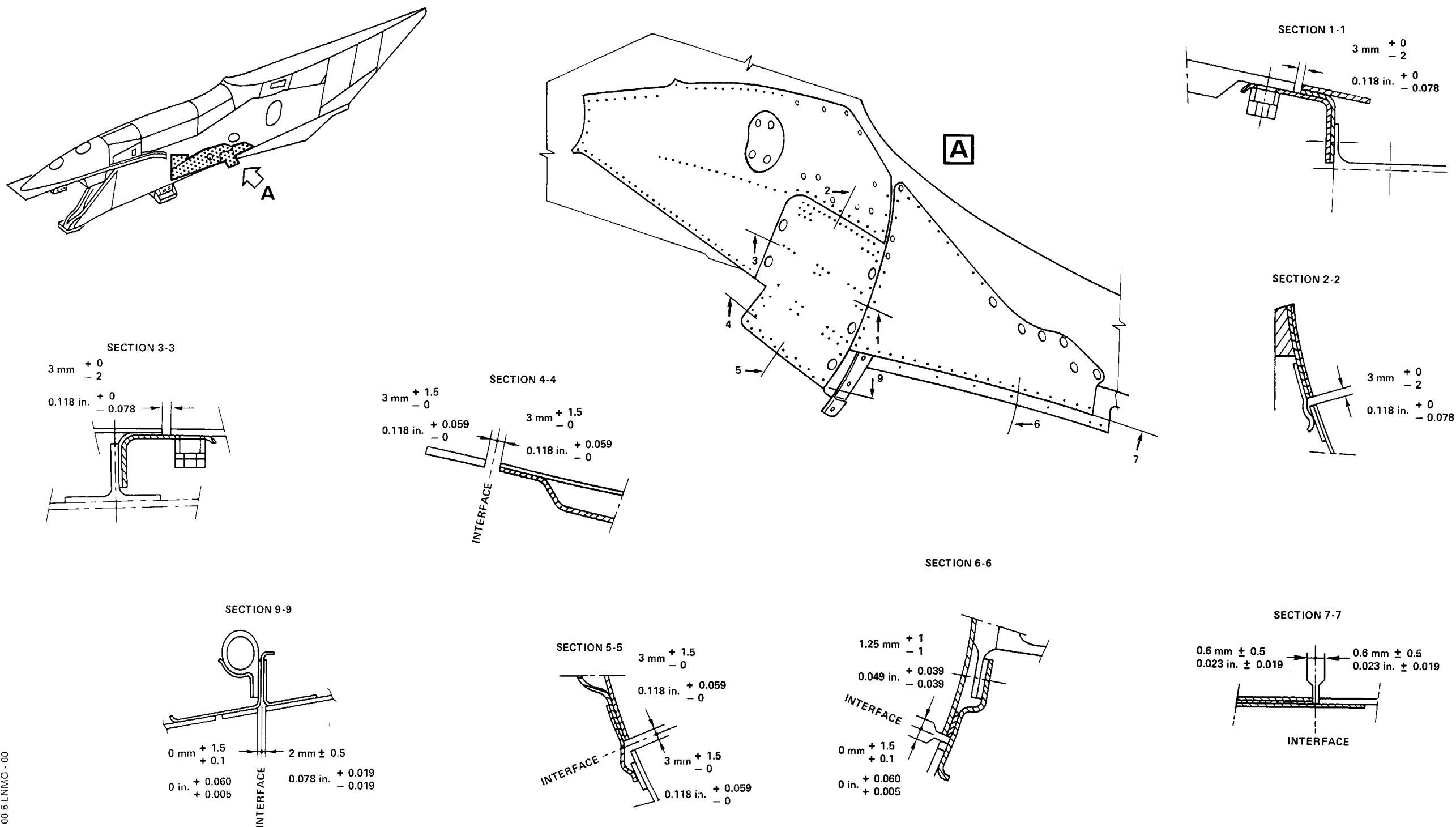
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Peripheral Gaps and Flush Fitting of Fairings Between Pylon Box
and Engine Cowls
Figure 606

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1. General

The pylon box is the resistant structure which integrates the engine with the wing. It is built of high tensile strength material and transmits engine longitudinal and lateral loads to the wing.

2. Description**A. Structure**

The pylon box consists of a fail-safe box type construction; it is composed of main elements supporting loads and secondary elements reinforcing the box.

(1) Main elements

(Ref. Fig. 001)

They form the resistant frame to which are connected pylon-to-wing and pylon-to-engine attach fittings. The frame is made up of high tensile steel and comprises :

- five monobloc main ribs (RIB1, RIB8B, RIB9C, RIB12 and RIB18)
- two upper spars (between RIB1 and RIB12)
- a lower cap
- four upper panels.

The five main ribs are connected in their lower section to a monobloc lower cap and in their upper section to two spars (between RIB1 and RIB12) and four upper panels.

Two panels cover the side faces of the frame and form the pylon box.

(2) Secondary elements

(Ref. Fig. 002, 003, 004)

The secondary elements include the secondary ribs and the access door frame.

(a) Secondary ribs

They are composed of four machined steel or folded sheet metal stiffeners.

Junctions of vertical and horizontal stiffeners of each rib are ensured by angles reinforcing rib.

Fourteen secondary ribs are distributed between the five main ribs in order to reinforce the pylon box.

The secondary ribs are attached to the spars, panels and lower cap in the same way as the main ribs.

(b) Access door frame

Access doors are equipped with a machined steel frame which reinforces the area and allows the doors to be secured by screws.

B. Equipment**(1) Doors**

(Ref. Fig. 005)

The pylon box is fitted with six doors giving access to the various systems.

The three pylon inboard access doors are identical to the three outboard ones.

(a) Forward access doors

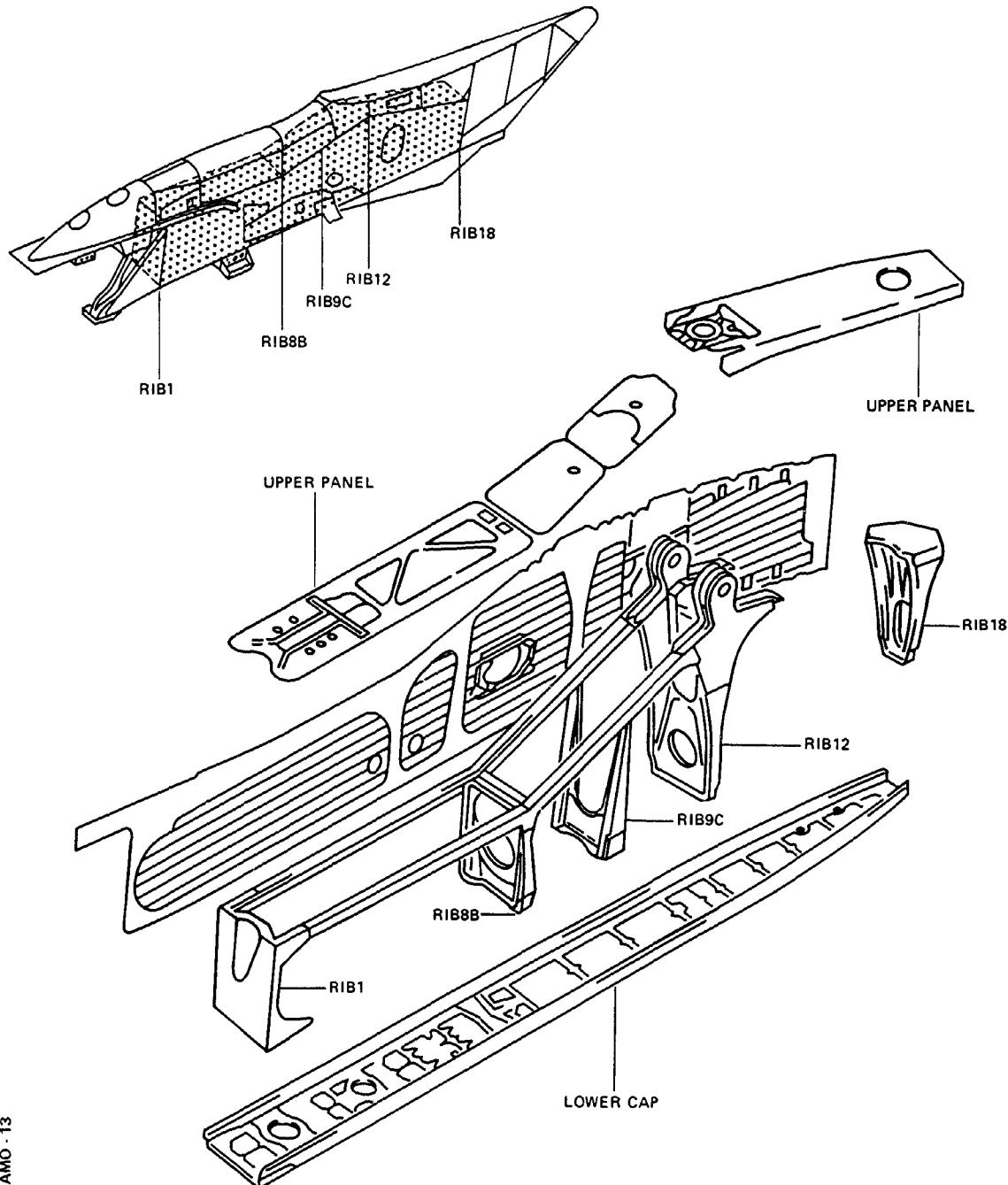
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Main Elements
Figure 001

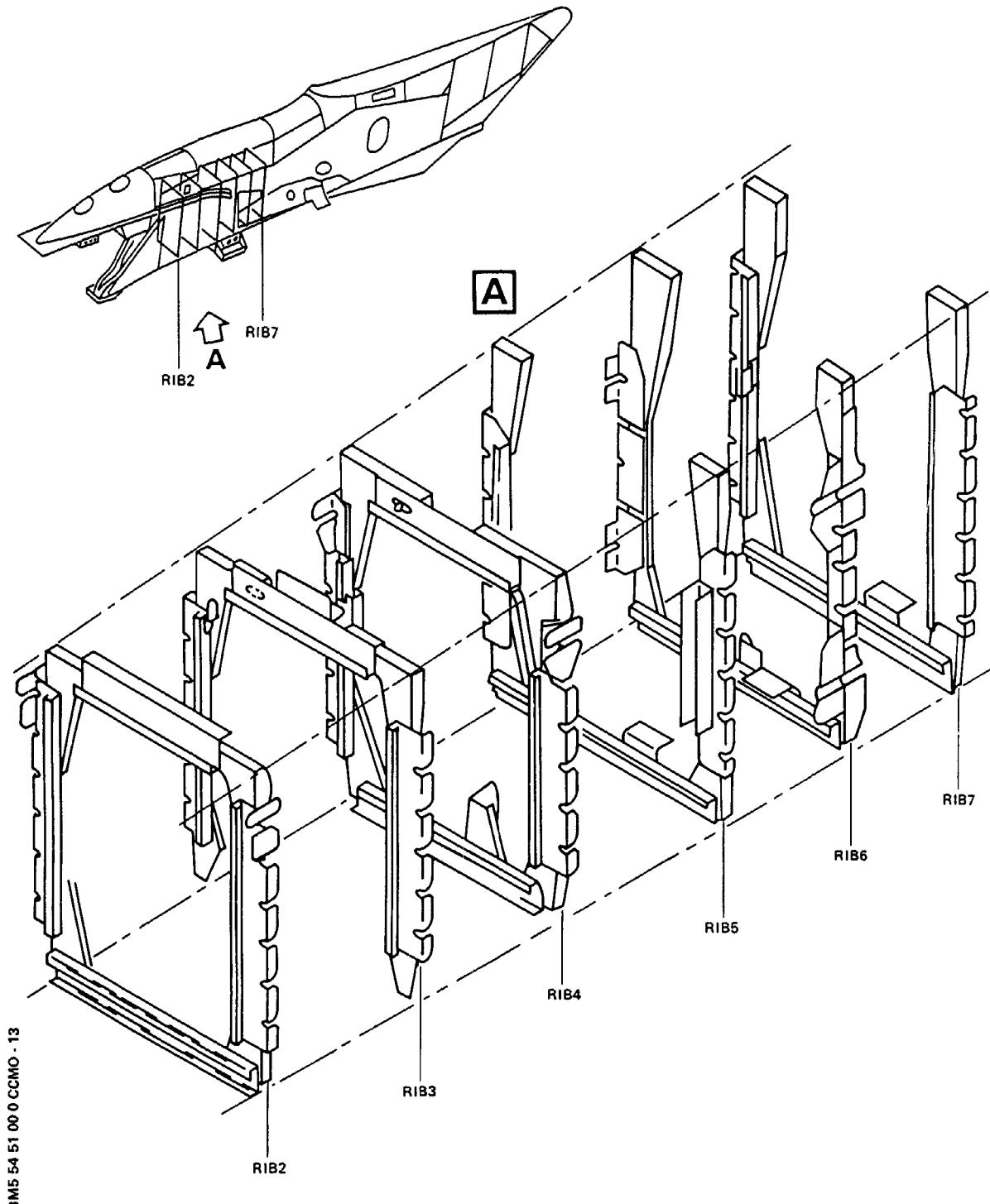
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Secondary Elements - Forward
Figure 002

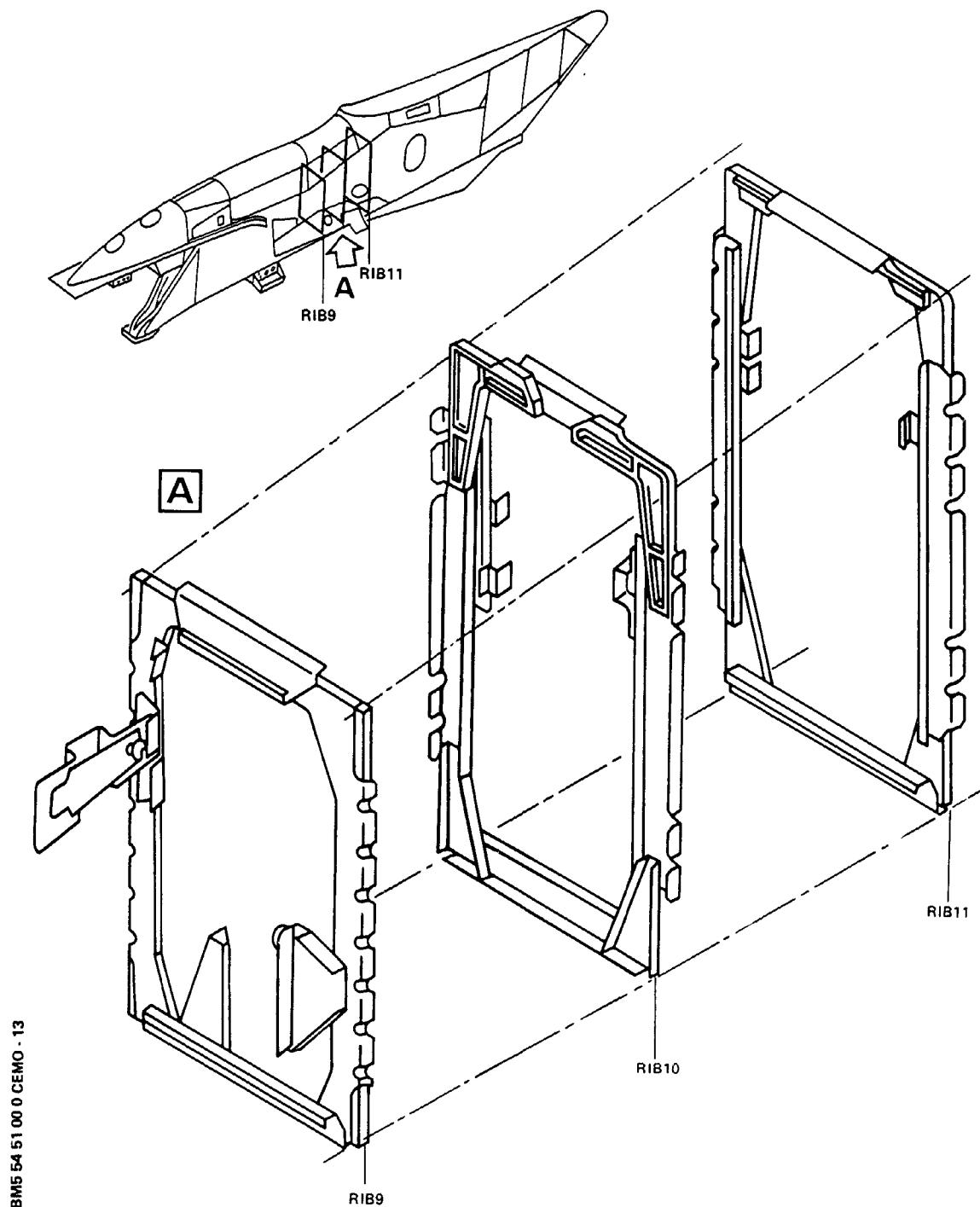
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Secondary Elements - Center
Figure 003

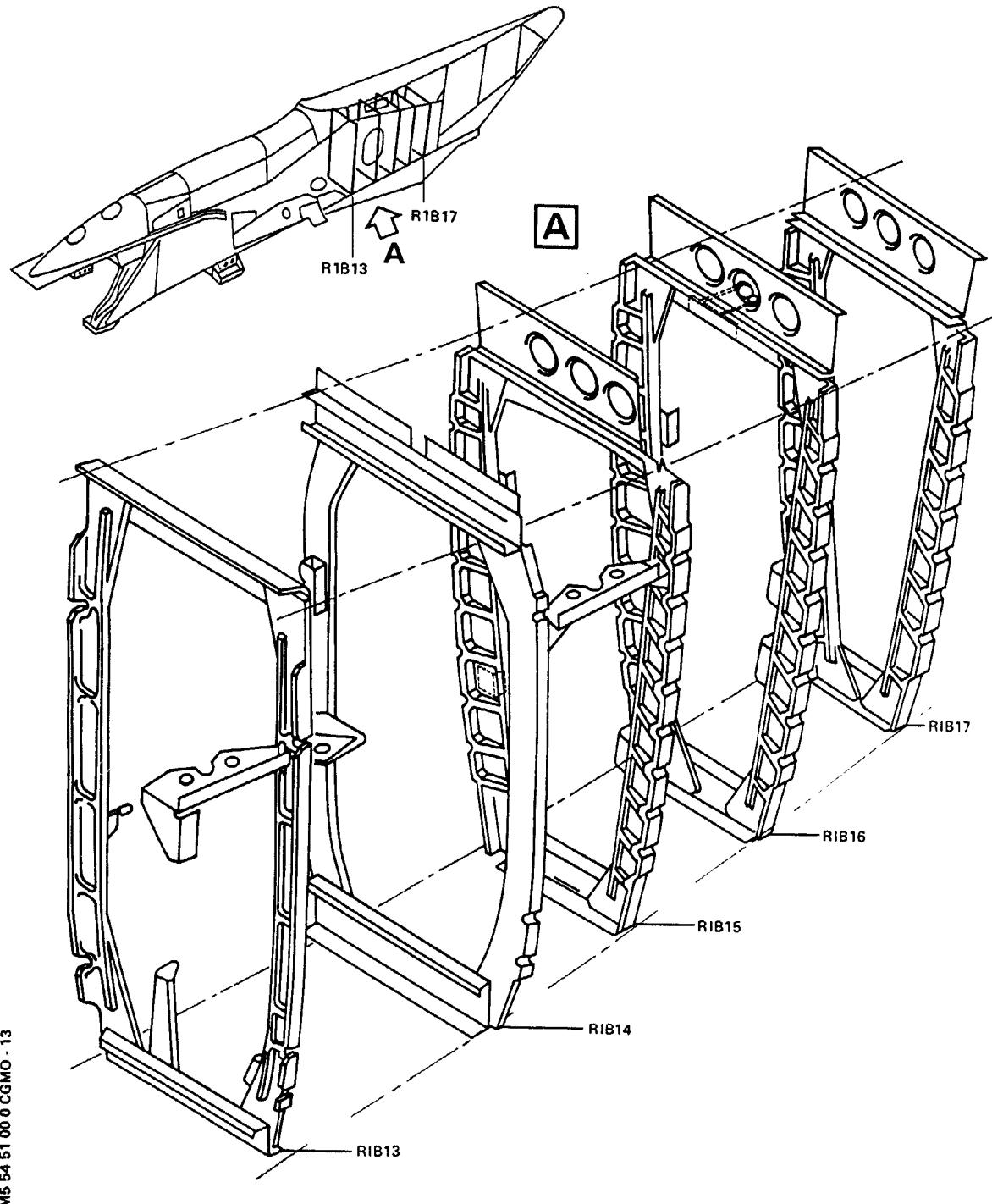
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Secondary Elements - Aft
Figure 004

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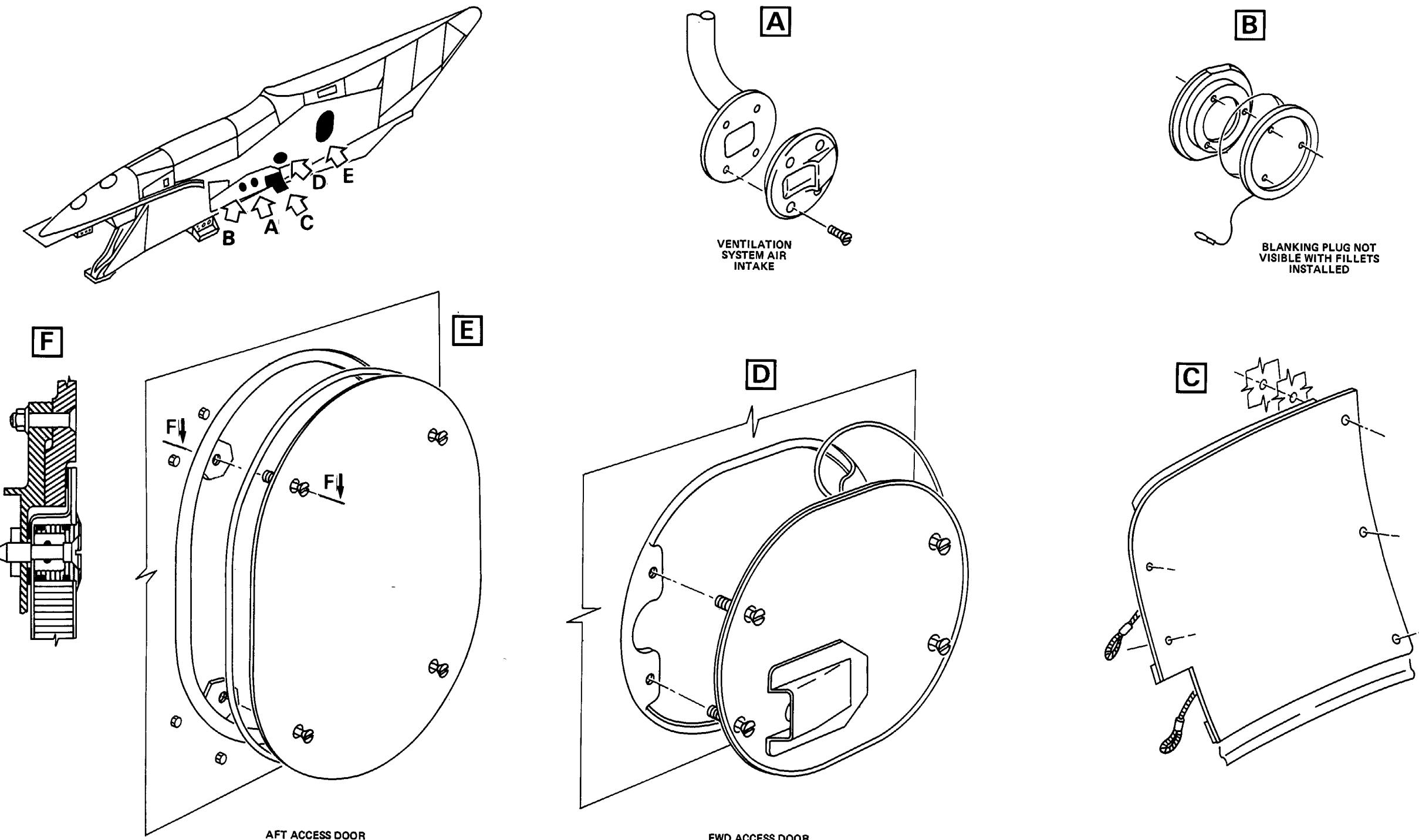
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Outboard Access Doors
Figure 005

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These doors are located on each side of the pylon box between RIB10 and RIB11.

The forward access doors are made of light alloy and are attached to a frame secured on the side panels and RIB10 and RIB11 by means of four screws. The door is linked to the frame by a steel retainer chain in order to prevent the access door from falling onto the engine cowls or to the ground, when opened.

The door located on the R side of the box is equipped with a scoop which bleeds cooling air from compartment C.

These doors give access to the following components :

- pressure transmitters associated lines
- lines in compartment A
- attach bolts of the engine aft mount upper beam
- primary transmission crank lever
- hydraulic pipes
- engine fire extinguishing system line.

(b)Aft access doors

These doors are located on each side of the box between RIB13 and RIB14.

They are made of alloy metal sheets between which there is a honeycomb web.

The aft access doors are attached to the box by means of four screws and linked to the side panel by a steel retainer chain.

The doors provide access to the following components :

- fire extinguisher bottles
- engine fire extinguishing system lines
- hydraulic pipes
- control wiring for fire extinguisher bottle percussion
- bolts attaching pylon-to-wing aft mount to RIB18.

(c)Access doors at pylon-to-core cowl junction

These doors are located between RIBs 9 and 10, at pylon-to-core cowl junction and are made of high alloy. They give access to pylon-to-wing interface and mainly to engine aft mount.

(2)Main attach fittings

(a)Pylon-to-wing attach fittings

(Ref. Fig. 006)

The engine pylon is attached to the wing in three points located at RIB12 and RIB18 of the engine pylon main frame.

A spigot enables transfer of loads from engine pylon to wing.

1 Forward attach fittings

Forward attach fittings enable attachment of the pylon in two points to the front spar of the wing box.

Each pylon-to-wing junction is provided by two shackles which are connected in their upper section to an attach fitting secured on the wing and in their lower section to four yokes attached to the pylon box.

The yokes are grouped in pairs; one pair is attached to L side of the box, the other to R side. The yokes of a single pair are attached to different main elements of the box. The outer yoke is linked to the side panel, upper spar, upper panels and RIB12. The inner yoke is linked to RIB12 and upper panels.

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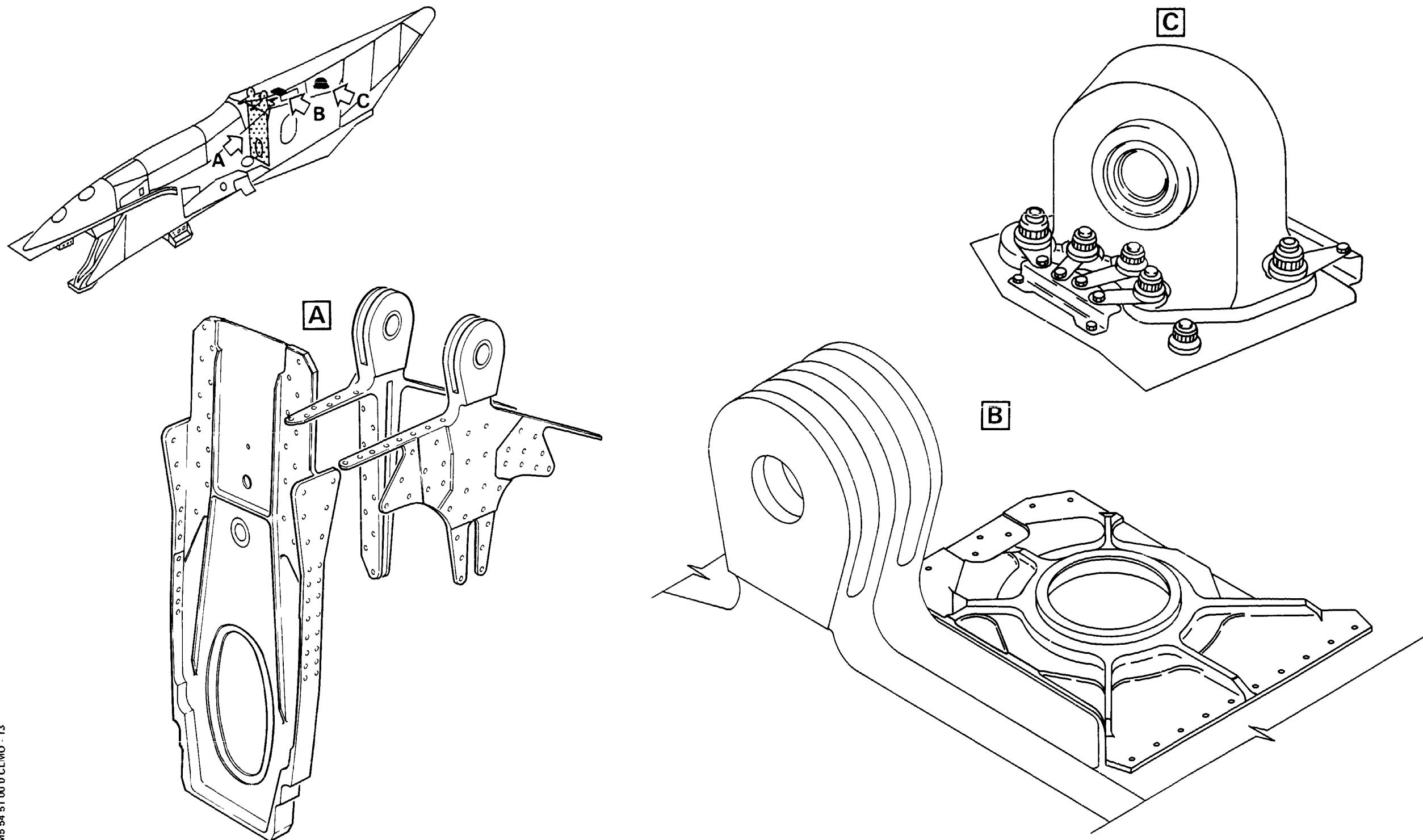
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Pylon-to-Wing Attach Fittings
Figure 006

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The fail-safe type junction between two yokes and two shackles is provided by a set of bolts. This set is composed of a large-diameter hollow bolt housing a smaller diameter bolt.

Each bolt in yoke is locked against rotation by means of a special nut (Ref. Fig. 007)

2 Aft attach fitting

Aft attach fitting enables attachment of the pylon in one point to the rear spar of the wing box.

Pylon-to-wing junction is provided by two shackles which are connected in their upper section to an attach fitting secured on the wing and in their lower section to a plain bearing eye fitting bolted on RIB18.

The eye fitting is removable and according to the assembly, in R or L pylon configuration. Eye-fitting-to shackles fail safe type junction is provided by a set of bolts identical to those used for forward attach fitting

3 Spigot fitting

The upper panel between RIB12 and RIB13 is equipped with a ball-joint attach fitting in which engages the spigot secured to the wing lower surface. This assembly enables lateral load transfer between pylon and wing.

(b) Pylon-to-engine attach fittings

(Ref. Fig. 008)

The engine is attached to the pylon in two points by two attach fittings.

1 Forward attach fitting

Forward attach fitting enables attachment of the engine in one point located at the intermediate case aft flange.

Forward attach fitting is attached to a plate integral with the engine. This plate is provided with a locating pin which engages in forward attach fitting.

Forward attach fitting is composed of two side attach fittings attached to RIB1 and joined together on engine side by a pyramid attach fitting which houses the locating pin.

2 Aft attach fitting

Aft attach fitting enables attachment of the engine in one point by means of a machined steel beam attached under RIB9C of main frame by means of four bolts. Aft beam is fitted with two locating pins which facilitate engine installation under pylon.

The vertical angular position of the aft beam with respect to pylon lower cap is obtained by means of a wedge positioned in between.

(3) Auxiliary fittings and fillets

(a) Pylon box is equipped with various fittings which enable attachment of pylon-to-engine interface equipment :

1 Fan thrust reverser cowl hinge fittings

2 Core cowl hinge fittings

3 Engine hoist fittings

The side panels between RIBS1 and 12 are provided with metallic edges which ensure aerodynamic continuity with engine cowl doors.

Pylon-to-core cowl junction fairing located on either side of RIB9C comprises a door giving access to engine aft mount.

(4) Fire protection

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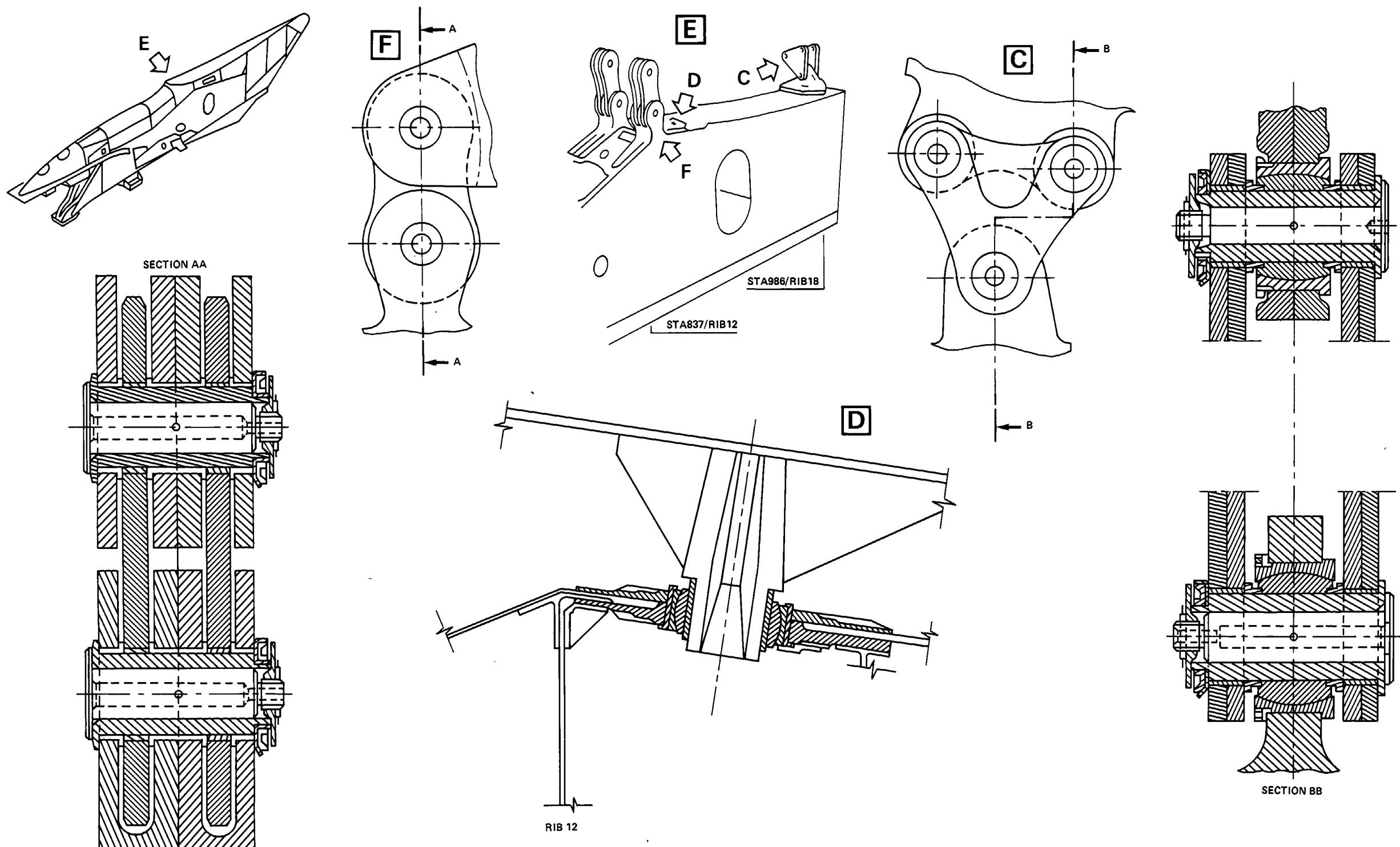
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Pylon-to-Wing Attach Fitting Assembly
Figure 007

EFFECTIVITY: ALL

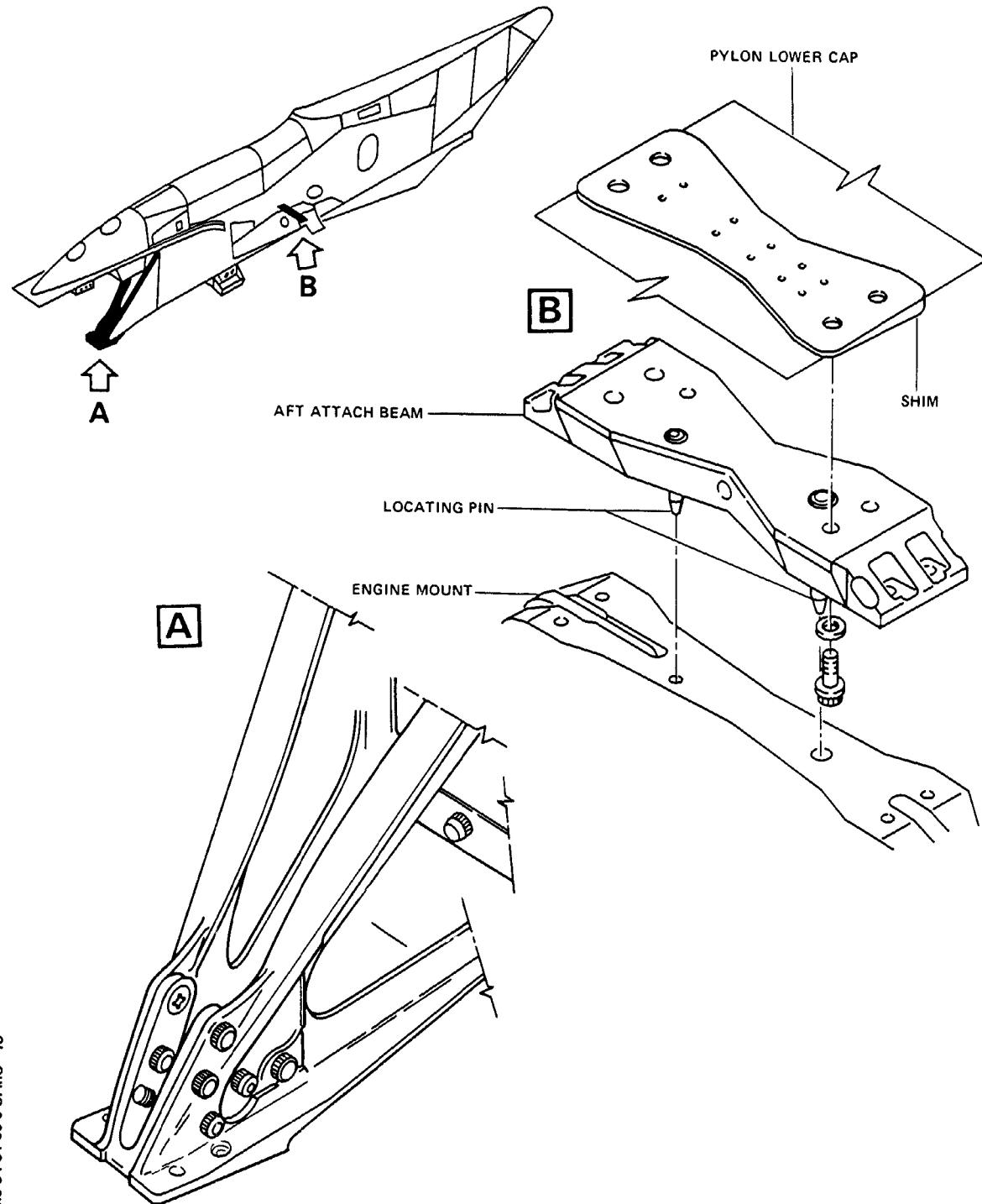
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Pylon-to-Engine Attach Fittings
Figure 008

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(Ref. Fig. 009)

A torch flame shield located between the hydraulic junction box and pylon lower spar between RIBs 7 and 9 protects that area from the flames in case of engine fire.

The torch flame shield is provided with fire sensing elements which transmit a warning signal to the flight compartment in case of overheat or fire in the protected area.

A heat shield is installed under RIB10, on pylon lower cap to complete engine fire seal (Ref. 71-30-00, P. Block 1).

(5) Fire extinguishing system

The pylon box under the lower cap between RIB1 and RIB2 is equipped with an extinguishing agent nozzle connected to the fire extinguisher bottles by a pipe.

This nozzle distributes extinguishing agent into the nacelles when the fire extinguisher bottles are discharged.

(6) Hydraulic junction box

(Ref. Fig. 010)

The hydraulic junction box is attached under the main frame between RIBs 4 and 6. The hydraulic junction box provides pylon-to-engine interface for the hydraulic lines on the L side and the fuel lines on the R side.

The junction box provides also draining of the fluids toward engine drain mast in case of leakage.

(7) Ventilation

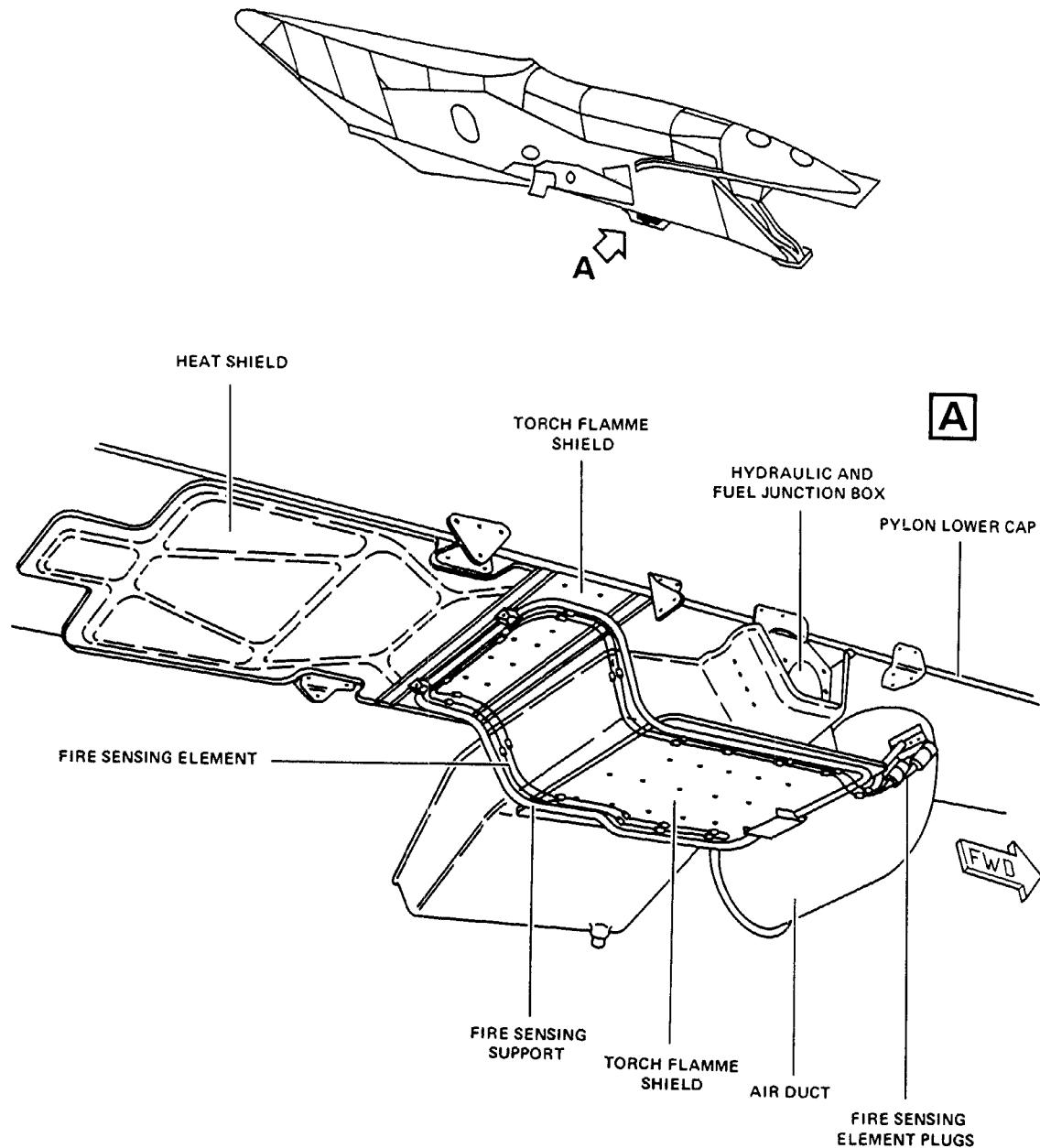
On either side panel of the main frame, between RIBs 8B and 9, there is a scoop designed to bleed air from fan stream so as to ventilate compartments A and B.

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Fire Protection
Figure 009

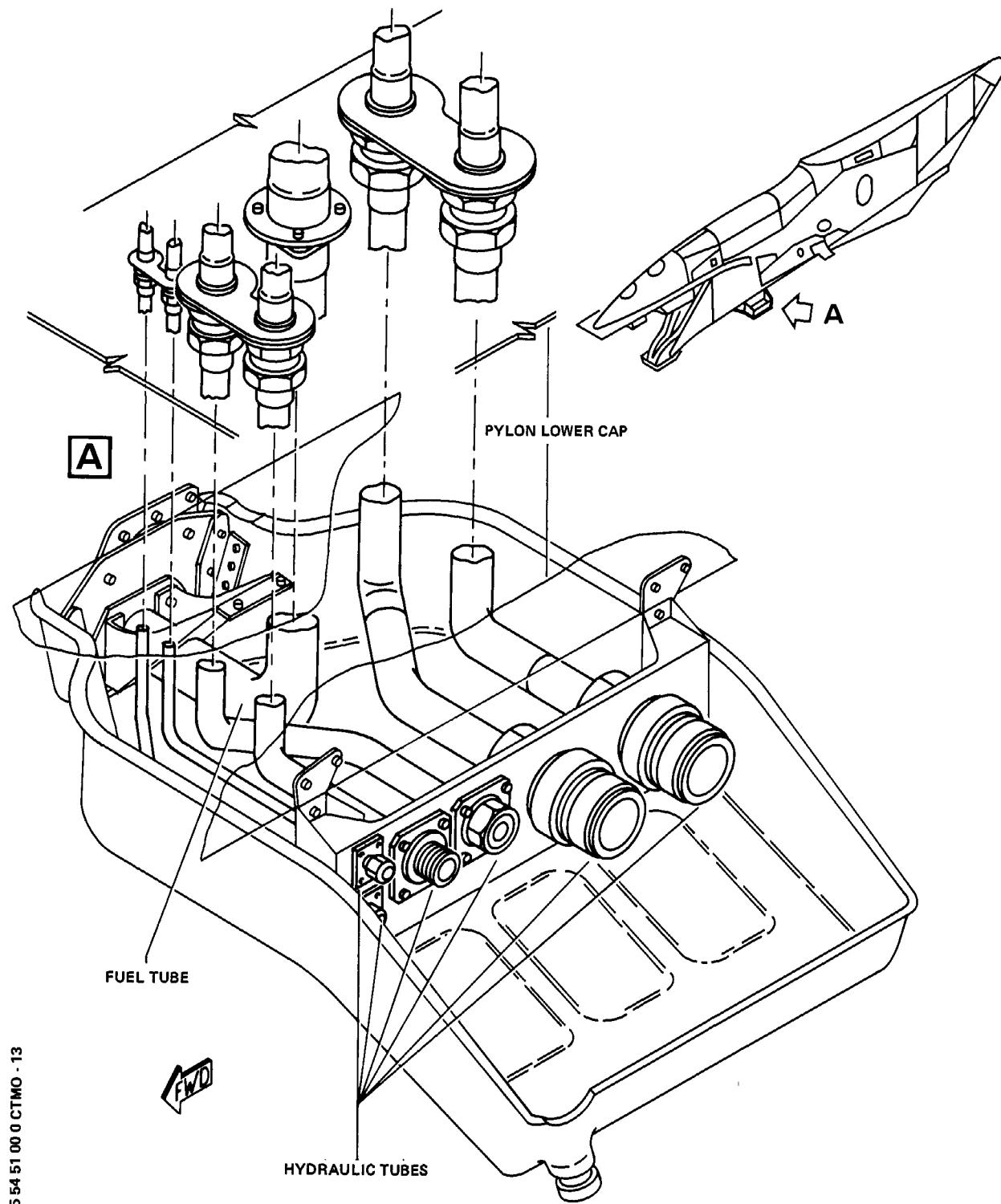
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Hydraulic Junction Box
Figure 010

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PYLON BOX - INSPECTION/CHECK1. Side Panels and Door Frames - Inspection/Check

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platforms
(2)	Warning Notice
Referenced Procedure	
- 71-13-00, P. Block 301	Cowl Doors

B. Procedure

(1) Job set-up

(a) Open engine cowl doors (Ref. 71-13-00, P. Block 301).

(b) Install access platforms

(c) Make certain that slats are retracted and place a warning notice on flap and slat control lever in flight compartment prohibiting its operation.

(2) Damage elimination

(Ref. Fig. 601)

(a) Cracks, nicks and dents

NOTE : All dimensions are given after elimination of damage :

- burnishing for scores

- blending for nicks as per referenced figure (Ref. Fig. 601)

All surfaces must be protected after burnishing, blending or drilling

When a damage is detected check for possible growth

(3) Side panels

(a) Make certain that length and depth of cracks, nicks or scores are within permissible limits (after blending or burnishing)

(Ref. Fig. 602)

Permissible damage for one recess (area between 2 ribs and 2 stiffeners)

zone 1 : permissible damage

zone 2 : permissible damage with inspection every 6000 flights

zone 3 : damage requiring repair before 500 flights

zone 4 : damage requiring repair after return to base by ferry flight

zone 5 : stop drill crack if required and return to base for repair by ferry flight with manufacturer's consent

zone 6 : damage requiring immediate repair as per Structural Repair Manual or per manufacturer's instructions.

(4) Door Frames - Side Panels

(a) Make certain that max depth of damage after blending is within limits (Ref. Fig. 603)

NOTE : Make certain that there are no cracks by high frequency (Eddy current) NDT method

- every 6000 flights for forward door

- every 12,000 flights for aft door

(5) Close-up

NOTE : Make certain that a protective treatment has been applied on any

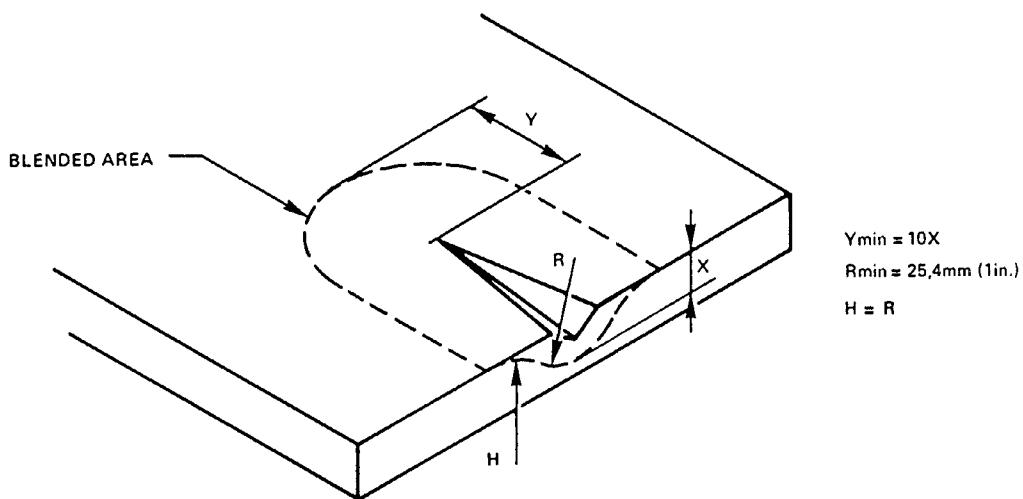
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Blending Limits
Figure 601

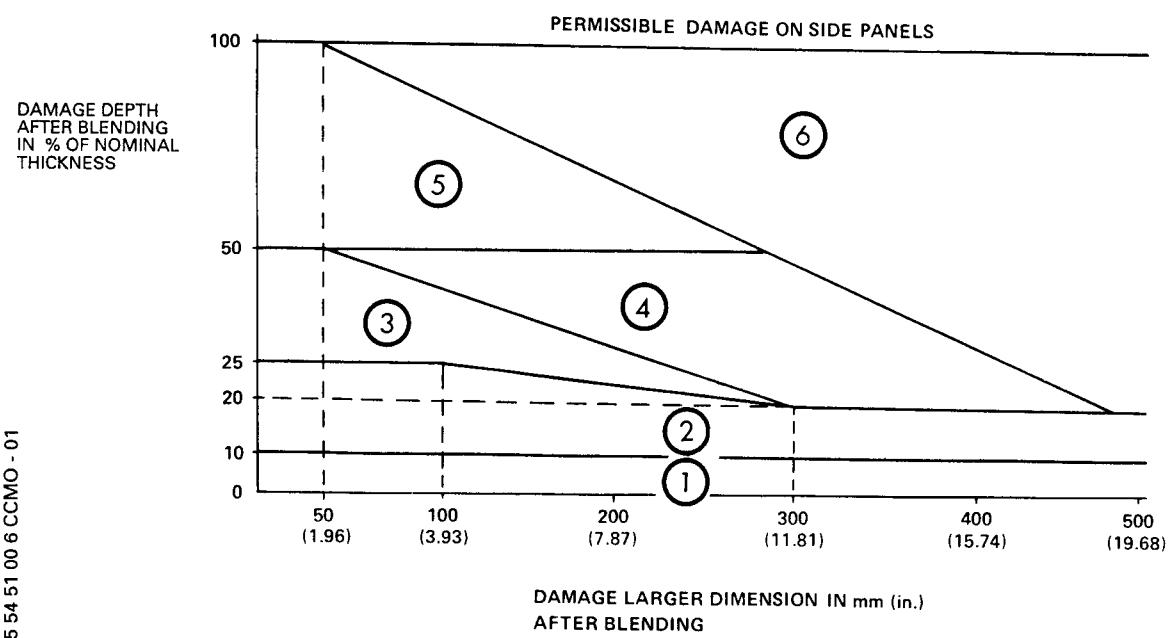
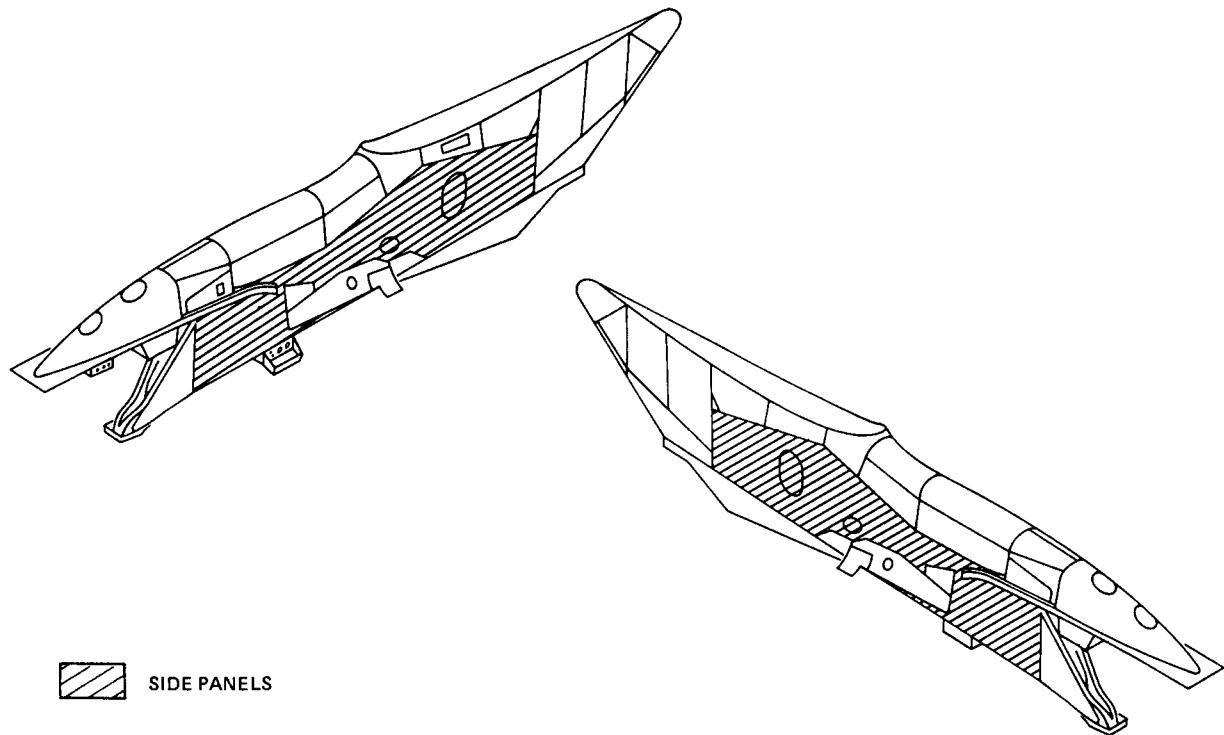
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Side Panels
Figure 602

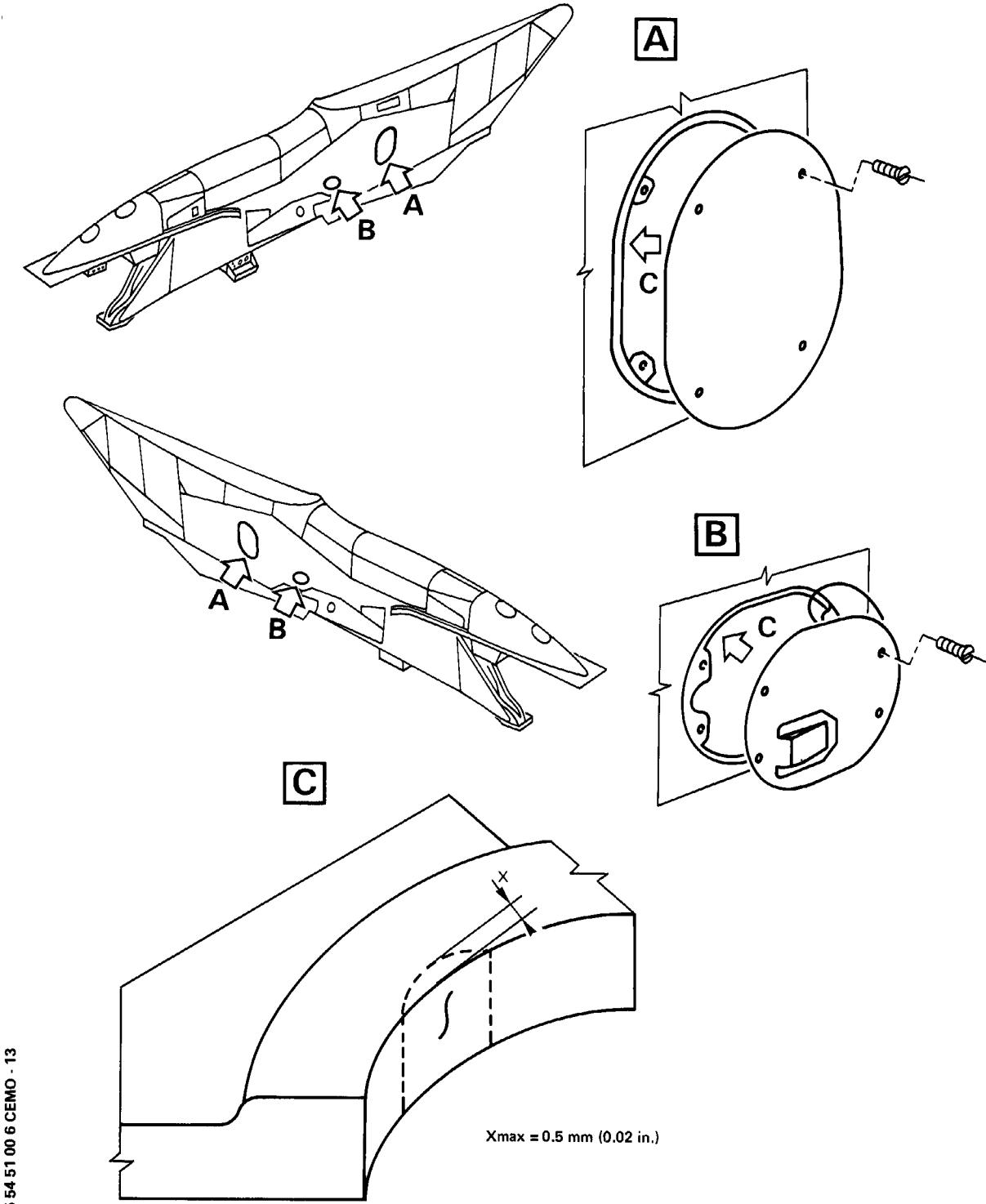
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Door Frame and Side Panels
Figure 603

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- surface in which a damage has been repaired.
- (a)Close cowl doors (Ref. 71-13-00, P. Block 301).
 - (b)Remove access platform
 - (c)In flight compartment remove warning notice on flap and slat control lever.

EFFECTIVITY: ALL

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2. Lower Spar - Inspection/Check

NOTE : Perform the inspection at pylon removal

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Warning Notice
(3)	Mirror
(4)	Borescope
Referenced Procedures	
- 71-13-00, P. Block 301	Cowl Doors
- 36-11-15, P. Block 401	Bleed Air Precooler
- 36-11-00, P. Block 401	Engine Bleed Air Supply System - Ducting
- 26-21-15, P. Block 401	Engine Fire Extinguisher Bottles
- 54-55-00, P. Block 401	Lower Fairing
R - SRM/54-51-71, P. Block 101	

B. Procedure

(1) Job set-up

- (a) Open cowl doors (Ref. 71-13-00, P. Block 301).
- (b) Open access doors 474AR(484AR), 473AL(483AL), 416AR(426AR), 415AL (425AL).

(c) Remove the following components to facilitate access to the various areas.

- 1 Bleed air precooler (Ref. 36-11-15, P. Block 401).
- 2 Bleed air precooler cold air inlet duct (Ref. 36-11-00, P. Block 401).
- 3 Remove engine fire extinguisher bottles (Ref. 26-21-15, P. Block 401).
- 4 Remove pylon lower fairing (Ref. 54-55-00, P. Block 401).

(2) Damage elimination (Ref. Fig. 601)

(a) Cracks nicks and dents

NOTE : All dimensions are given after elimination of damage :

- burnishing for scores
- blending for nicks as per referenced figure (Ref. Fig. 601)

All surfaces must be protected after burnishing, blending or drilling

When a damage is detected check for a possible growth

(3) Inspection

(a) Using a mirror and a borescope check conditions of lower spar

(b) Blend damage

(Ref. Fig. 604)

(c) Make certain that length and depth of damage (after blending) are within limits (Ref. SRM 54-51-71, P. Block 101) (Ref. Fig. 605)

Zone 1 : Permissible damage

Zone 2 : Damage requiring immediate repair as per manufacturer's instructions.

WARNING : IF DURING INSPECTION, CORROSION IS EVIDENCED NEAR THE LOWER CAP-TO-FORWARD PYRAMID JUNCTION (Ref. Fig. 606), THE DEFECT WILL BE CONSIDERED AS PERTAINING TO ZONE 2. (Ref. Fig. 605)

(4) Close-up

NOTE : Make certain that a protective treatment has been applied on any

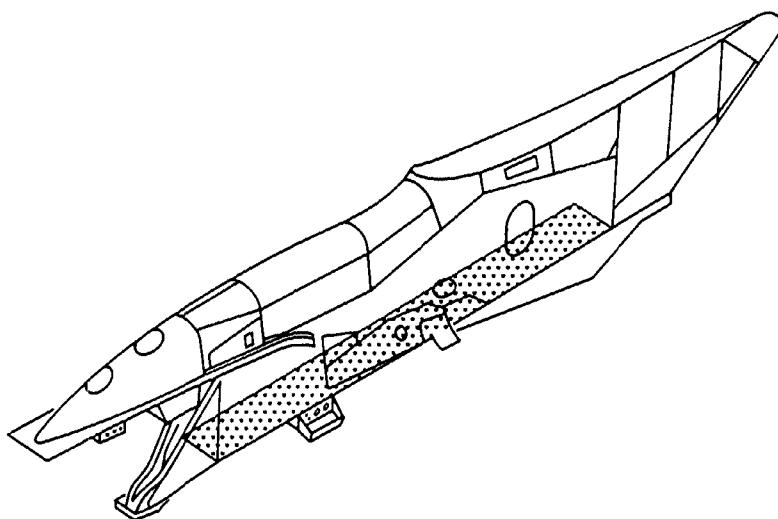
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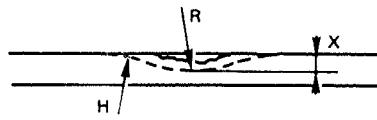
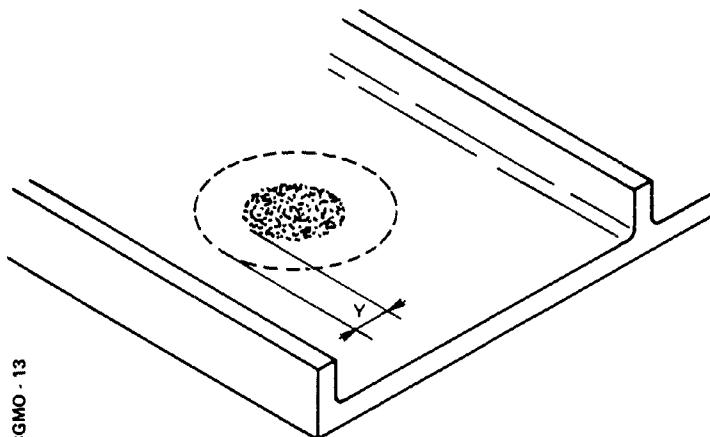
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NOTE = X_{max} = 30% OF THICKNESS
WITH $X \leq 1,5$ mm (0.059 in.)
AND $R = H$

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Lower Spar - Blending Limits
Figure 604

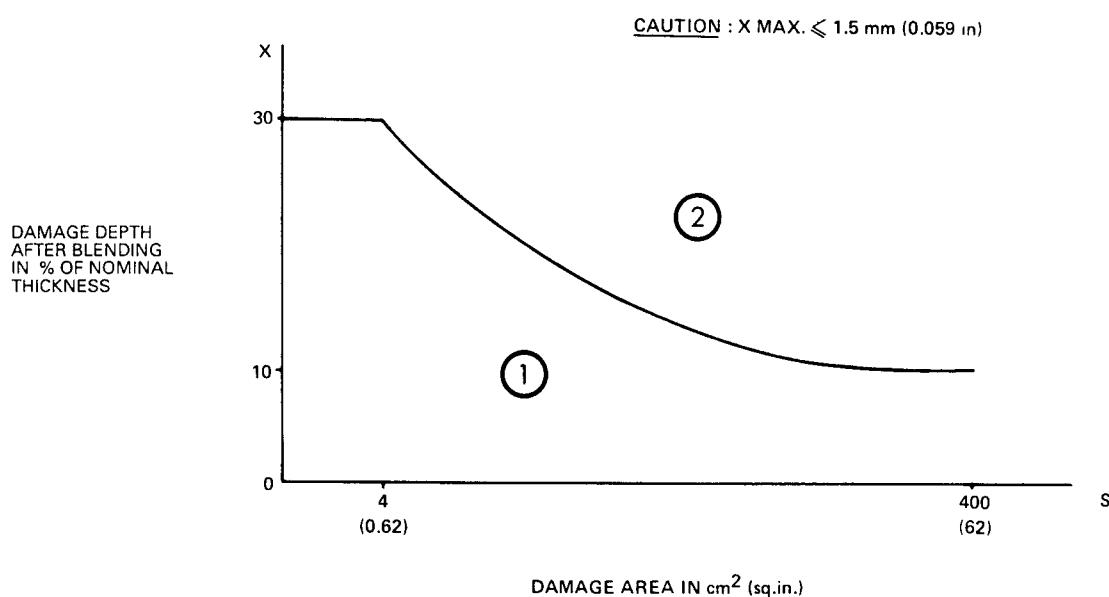
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Lower Spar - Permissible Damage
Figure 605

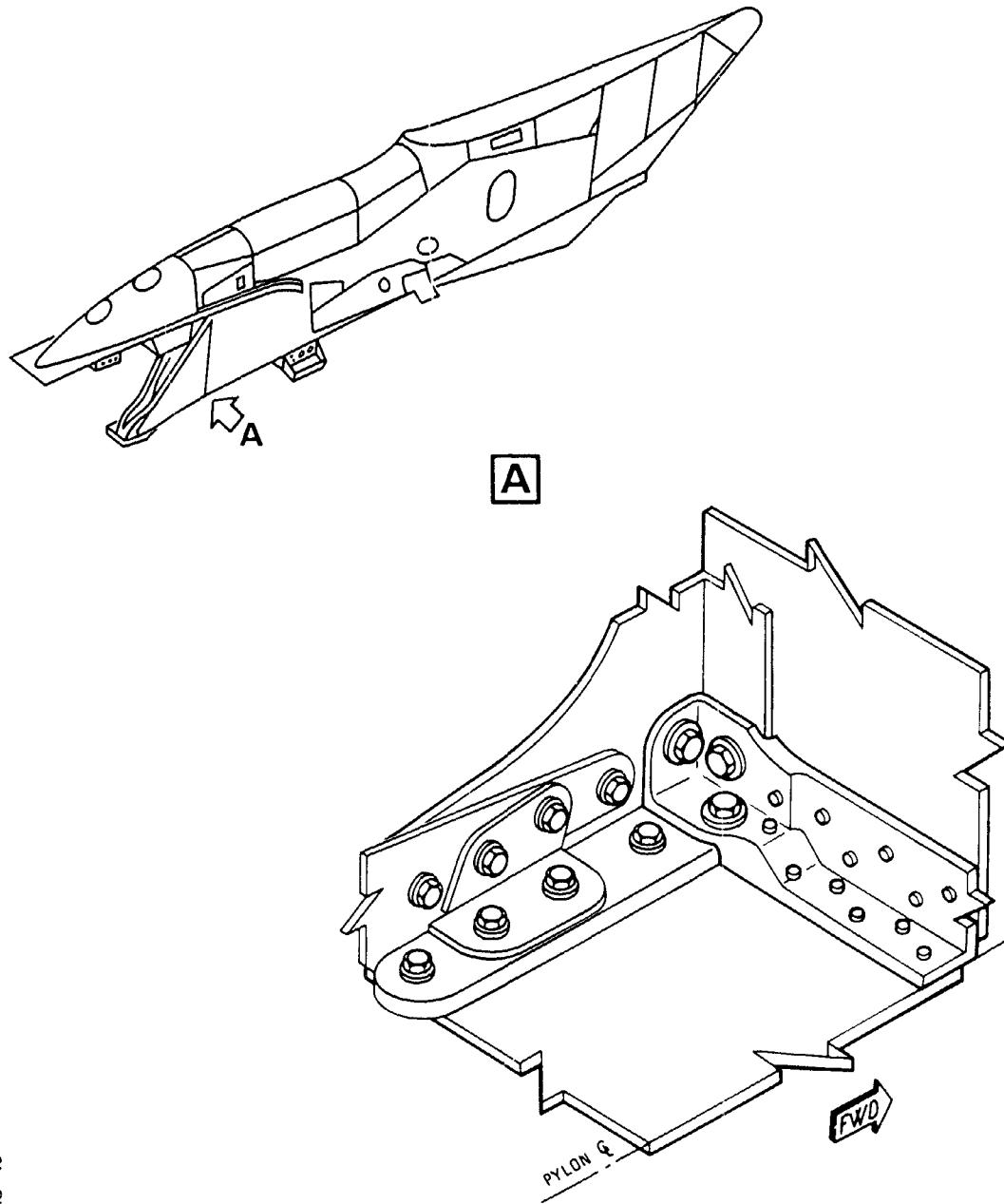
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Lower Cap-to-Forward Pyramid Junction
Figure 606

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surface in which a damage has been repaired.

- (a) Install engine fire extinguisher bottles (Ref. 26-21-15, P. Block 401).
- (b) Install pylon lower fairing (Ref. 54-55-00, P. Block 401).
- (c) Install bleed air precooler cold air inlet duct (Ref. 36-11-00, P. Block 401).
- (d) Install bleed air precooler (Ref. 36-11-15, P. Block 401).
- (e) Close access doors 474AR (484AR), 473AL (483AL), 416AR (426AR), 415AL (425AL).
NOTE : The correct installation position of the access doors 416AR (426AR), 415AL (425AL) is with the open end of the air scoop facing forward.
- (f) In flight compartment, remove warning notice from flap and slat control lever.
- (g) Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
- (h) Remove access platforms
- (i) Close engine cowl doors (Ref. 71-13-00, P. Block 301).

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3. Inspection/Check of Shackles at RIB12

NOTE : Perform the inspection at pylon removal and with shackles removed.

A. Procedure

(1) Check for corrosion, make certain that traces of corrosion are within permissible damage limits

(Ref. Fig. 607)

(a) Damage surface on only one side face less than 4 cm² (0.62 sq.in.).

- maximum depth of defect 1.5 mm (0.059 in.)

(b) Damaged surfaces on both side faces less than 4cm²

- sum of both maximum depths of defects on either face : 1.5 mm
(0.059 in.)

(c) Damaged surface on only one side face more than 4cm² (0.62 sq.in.).

- maximum depth of defect 1 mm (0.039 in.)

(d) Damaged faces on both side faces more than 4 cm² (0.62 sq.in.).

- sum of maximum depths of defects on either face : 1 mm (0.039 in.)

(e) Damaged surface around bore, on only one side face

- maximum dimension of defect measured along radius less than 25 mm
(1 in.).

- maximum depth of defect : 0.6 mm (0.023 in.).

(f) Damaged surface around bore, on both side faces

- maximum dimension of defect measured along radius less than 25 mm
(1 in.).

- sum of maximum depth of defects on either face : 0.6 mm (0.023 in.).

(2) Remove corrosion and protect damaged surface

(3) Check if sleeves are in correct position

4. Check for Presence of Upper Panel Rods Between RIB1 and RIB8

A. Equipment and Materials

ITEM	DESIGNATION
Referenced Procedure	
- 54-51-43, P. Block 601	Upper Panel Rods Between RIBS 1 and 8

B. Procedure

(1) Check for presence of upper panel rods (Ref. 54-51-43, P. Block 601).

4. Beams at Engine Attach Fitting - Inspection

NOTE : Carry out the inspection at engine removal.

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
Referenced Procedure	
- 54-51-85, P. Block 601	Aft Attach Fitting

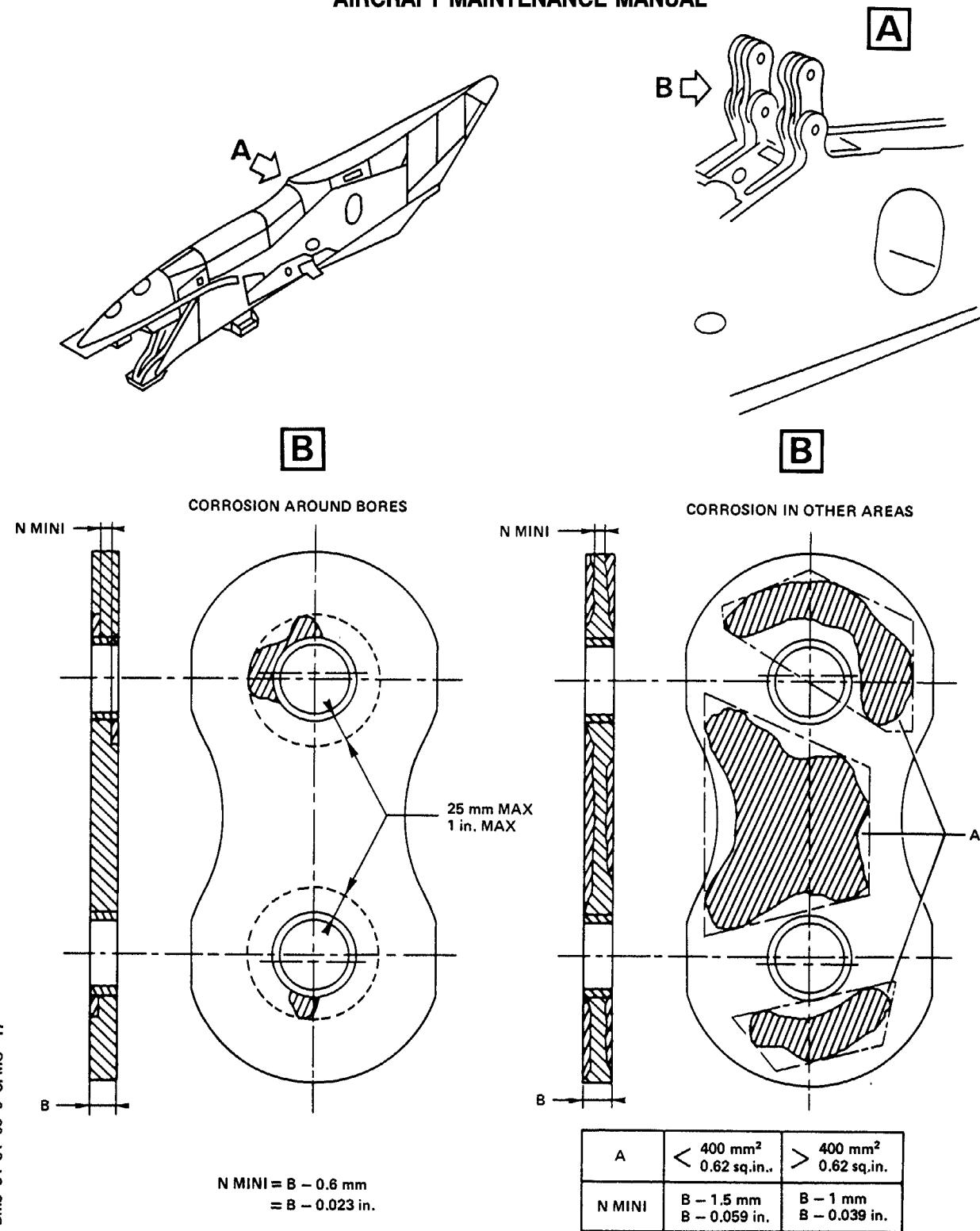
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Permissible Corrosion on Shackles
Figure 607

EFFECTIVITY: ALL

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B. Procedure

- (1) Inspect the pylon-to-engine aft attach beam (Ref. 54-51-85, P. Block 601).
(Ref. Fig. 608)

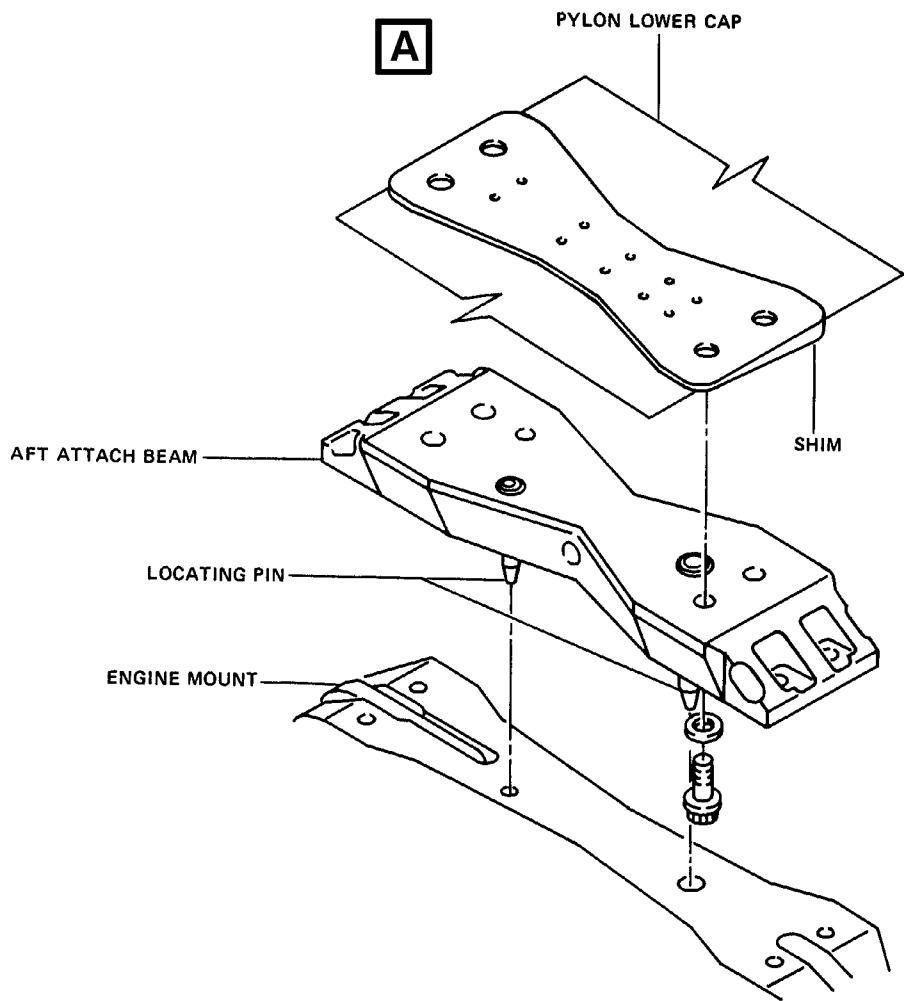
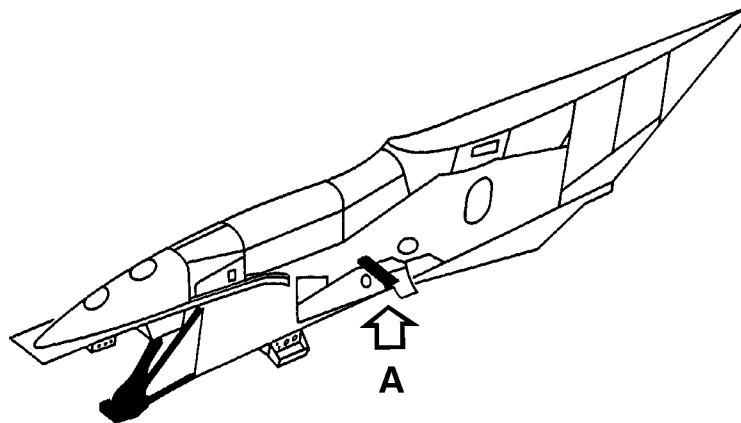
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Pylon-to-Engine Aft Attach Beam
Figure 608

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UPPER PANEL BETWEEN RIBS 1 AND 8 - APPROVED REPAIRS

1. Approved Repairs of Rod Attachments on Upper Panel
 (Ref. Fig. 801)

A. General

Repair of rods (1) attachments on upper panel is performed by reborning rod attachment holes on upper panel and by installing a bush. Attachment hardware is identical to the original one. The structural rods have to be replaced.

B. Permissible Oversize Reaming Value of Bore A in Upper Panel

	NOMINAL DIA. mm (in.)	TOLERANCE mm (in.)
ORIGINAL VALUE	Between 12.684 and 12.714 mm (0.4993 and 0.5005 in.)	
REPAIR	15 (0.5905)	H7 : +0 (+0) +0.018 (+0.0007)

C. Bush Outside Diameter Values

	NOMINAL DIA. mm (in.)	TOLERANCE mm (in.)
ORIGINAL VALUE	No bush originally installed	
REPAIR	15 (0.5905)	P6 : +0.029 (0.0011) +0.018 (0.0007)

D. Bush Inside Diameter Values (B)

After press fitting of bush, bush internal bore must be reamed to between 12.7 and 12.715 mm (0.5000 in. and 0.5006 in.).

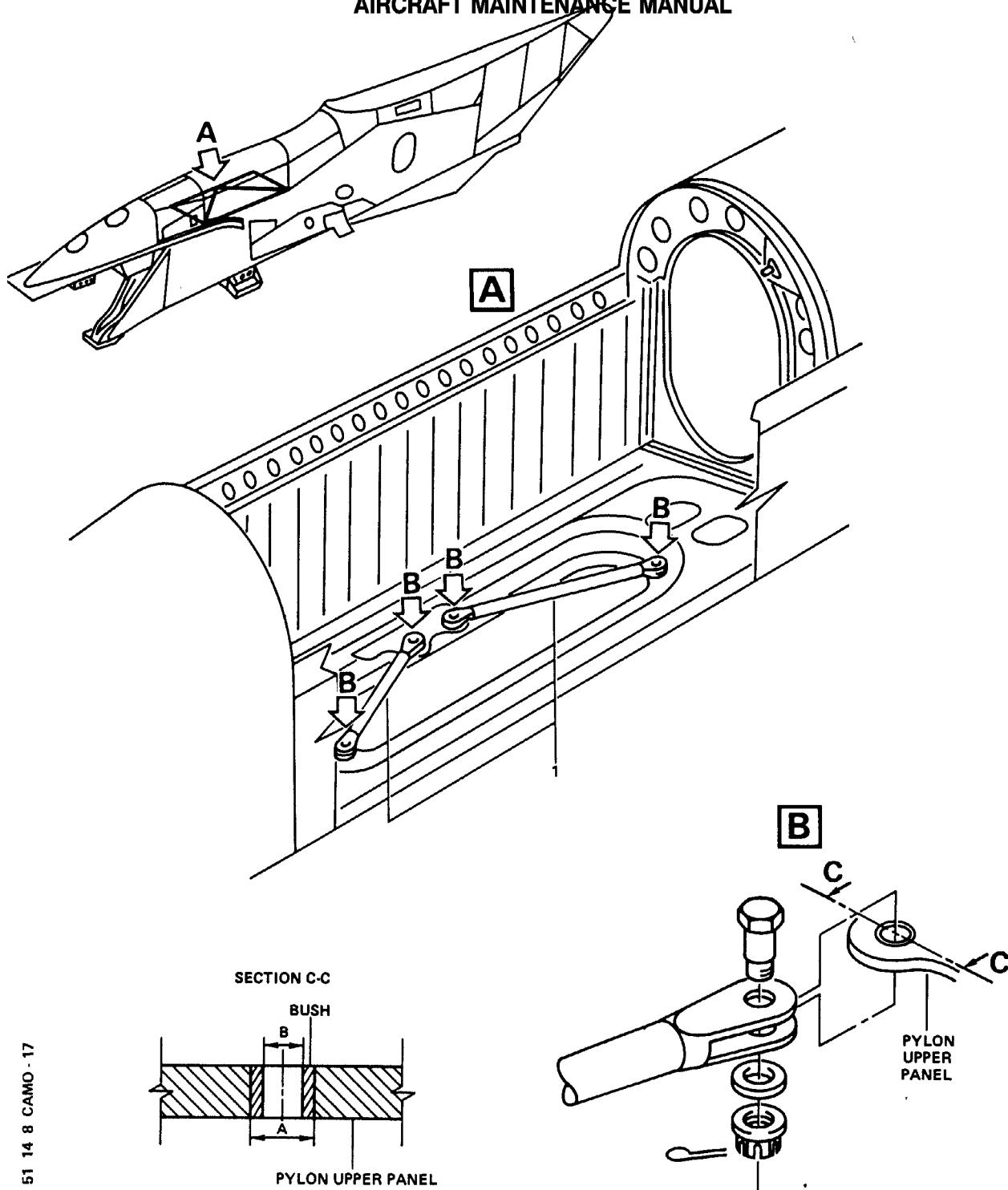
R (The material of the bush is stainless steel EZ6 CNU 15-05 or
 R Z8 CND 17-04).

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Rod Attachments on Upper Panel After Repair
Figure 801

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SIDE PANELS - APPROVED REPAIRS

1. General

The following procedure deals with touching up of finishes on engine pylon main frame with polyurethane paints, Material Nos. 16-001 and 16-018.

2. Equipment and Materials

ITEM	DESIGNATION
A.	Access Platform
B.	Abrasive Pad, Scotch Brite Type
C. Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
D. Material No. 16-001	Structure Paints (Ref. 20-31-00)
E. Material No. 16-018	Structure Paints (Ref. 20-31-00)
F.	Warning Notices
Referenced Procedures	
- 51-23-10, P. Block 1	Paint Coatings
- 71-13-00, P. Block 301	Cowl Doors

3. Paint Coating Repair of Side Panels
(Ref. Fig. 801)

A. Job Set-Up

- (1) In flight compartment on center pedestal, install a warning notice on flap and slat control lever to prevent inadvertent operation.
- (2) If necessary, open cowl doors (Ref. 71-13-00, P. Block 301).
- (3) Install access platforms.
- (4) Protect the area surrounding the surface to be repaired.

B. Paint Coating with Polyurethane Paints Material Nos. 16-001 and 16-018

- (1) Bare metal using a dry abrasive pad.
- (2) Degrease using solvent Material No. 11-003.
- (3) Carry out a water break test after stripping operation. The film of water covering the surface must be of an even thickness and without breaks.
- (4) Dry the panel.
- (5) Apply a coat of polyurethane primer No. 16-001 (Ref. 51-23-10, P. Block 1).
- (6) Apply a coat of polyurethane top coat No. 16-018 (Ref. 51-23-10, P. Block 1).

C. Close-Up

- (1) Remove protective devices placed over areas adjacent to repaired surface.
- (2) Remove pylon access platform.
- (3) Close cowl doors.
- (4) In flight compartment remove warning notice from flap and slat control/lever.

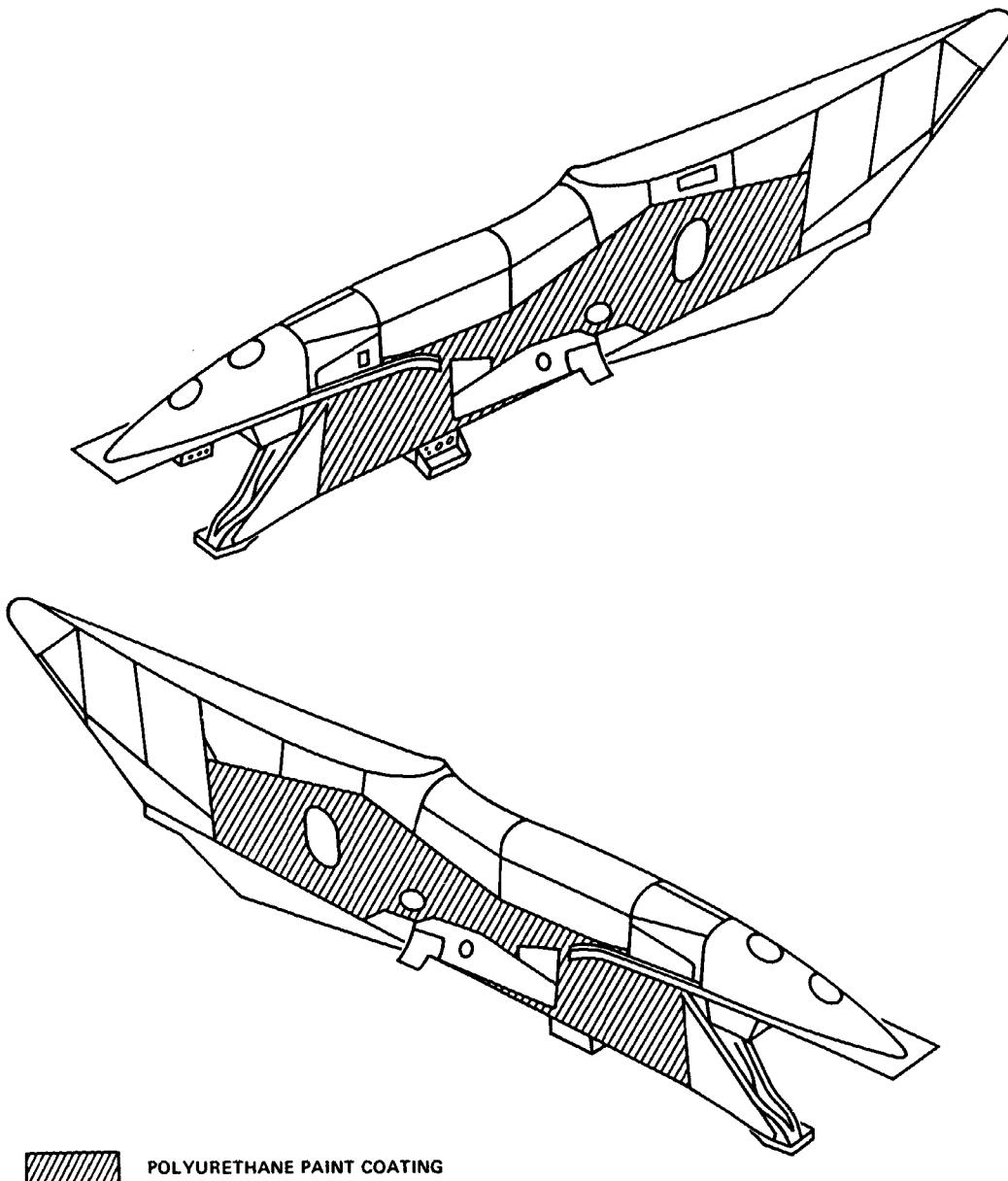
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R

Paint Coating Repair Areas
Figure 801

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UPPER PANEL RODS BETWEEN RIBS 1 AND 8 - REMOVAL/INSTALLATION1. Equipment and Materials

ITEM	DESIGNATION
A.	Cotter Pins
Referenced Procedures	
- 36-11-15, P. Block 401	Bleed Air Precooler
- 54-51-14, P. Block 801	Upper Panel Between RIBS 1 and 8

2. Procedure

NOTE : Procedure is identical for each engine pylon.

A. Job Set-Up

(1) Remove bleed air precooler (Ref. 36-11-15, P. Block 401).

B. Removal

(Ref. Fig. 401)

CAUTION : BLANK OFF BLEED AIR PRECOOLER DUCT ASSEMBLY UNDER RODS (1)
TO PREVENT PARTS FROM FALLING INTO DUCTS.

NOTE : Procedure is identical for each rod (1).

(1) Install blanking caps on bleed air precooler duct assembly and on
precooler outlet duct.

(2) Remove cotter pin (5) and discard.

(3) While holding rod (1), remove nuts (4), washers (3) and bolts (2).

(4) Remove rod.

C. Visual Inspection

(1) Clean parts to be inspected.

(2) Visually inspect rods (1).

- R (3) Check condition of pylon upper panel bores and measure the diameter of
R the bore in the rod attachment and in the upper panel.
R - If the diameter is less than 12.8 mm (0.504 in.) the damage (wear) is
R allowable.
R - If the diameter of the rod attachment bore is greater than 12.8 mm
R (0.504 in.), replace the rod.
R - If the diameter of the upper panel bore is greater than 12.8 mm
R (0.504 in.), apply the repair procedure (Ref. 54-51-14, P. Block 801).
(4) Check condition of attach hardware.

D. Installation

(1) Position rods (1).

(2) Install bolts (2), washers (3) and nuts (4).

(3) Tighten nuts (4) and safety with new cotter pins (5).

(4) Remove blanking caps from bleed air precooler duct assembly and from
precooler outlet duct.

E. Close-Up

CAUTION : MAKE CERTAIN THAT DUCTS ARE NOT BLANKED OFF.

(1) Install bleed air precooler (Ref. 36-11-15, P. Block 401).

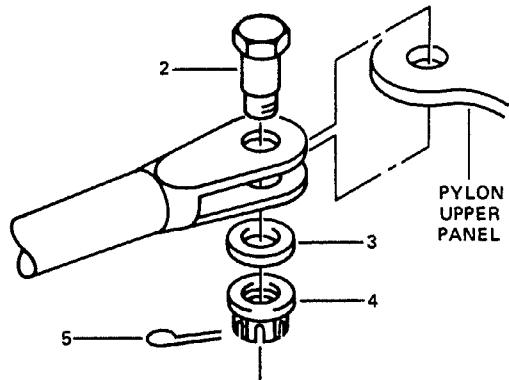
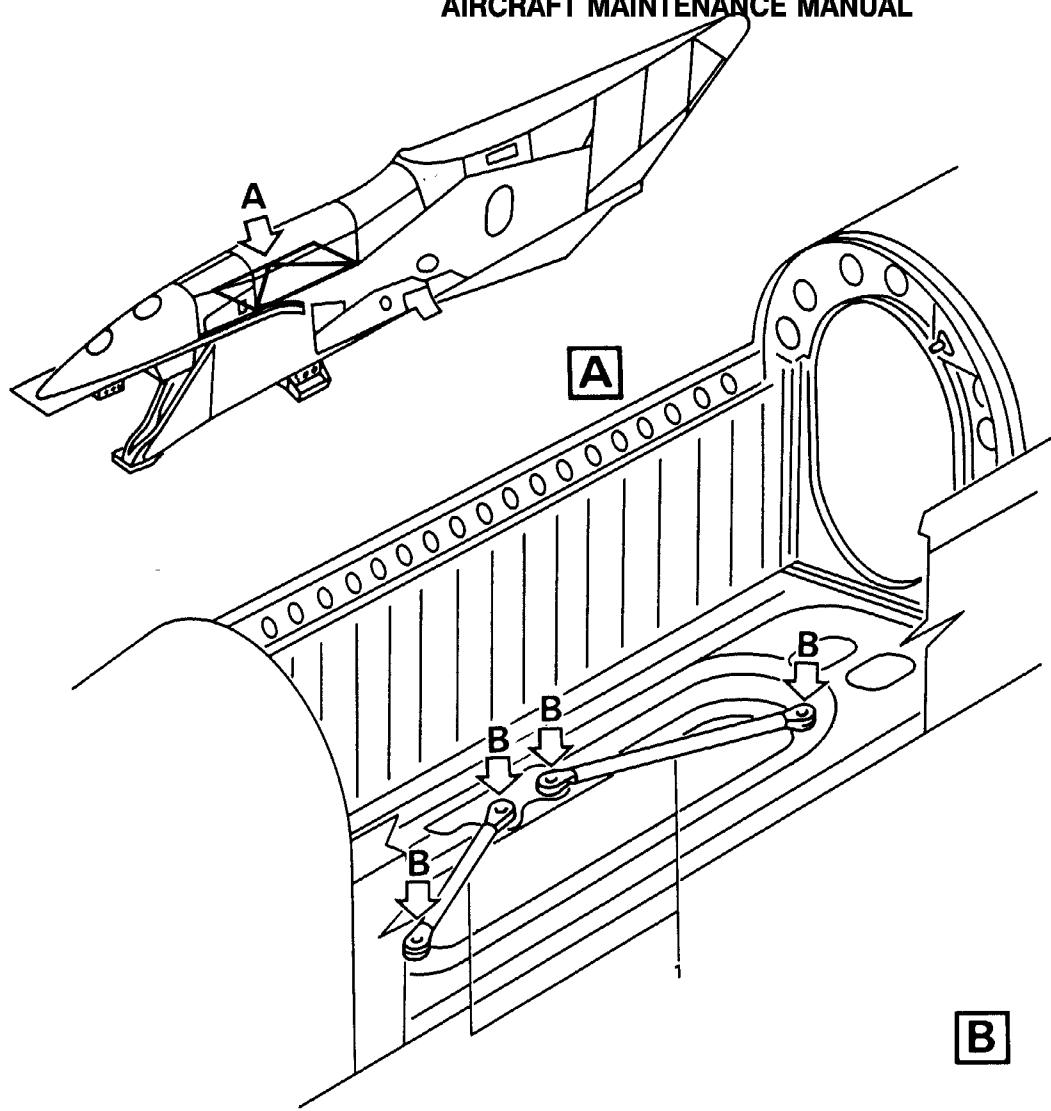
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Upper Panel Rods Between RIGS 1 and 8
Figure 401

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UPPER PANEL RODS BETWEEN RIBS 1 AND 8 - INSPECTION/CHECK

1. Reason for the Job

- A. Check for presence of rods located under precooler, following maintenance jobs in this area.

2. Equipment and Materials

ITEM	DESIGNATION
A.	Access Platform
B.	Pin dia. 2.5 to 3 mm (0.098 to 0.118 in.) approx. length 126 mm (4.96 in.)
C.	Warning Notice

3. Procedure

(Ref. Fig. 601)

NOTE : Procedure is identical for each engine pylon.

A. Job Set-Up

- (1)Position access platform at engine pylon (pylon right side).
(2)Make certain that slats are retracted and place a warning notice on flap and slat control lever in flight compartment prohibiting its operation.

B. Check

- (1)On each engine pylon right side check for presence of each rod (1) by inserting pin (2) into the orifice provided for this purpose. The presence of each rod (1) must be detected when a length of 106 mm (1.173 in.) of the pin (2) has been inserted.
(2)Remove pin (2).

C. Close-Up

- (1)Remove engine pylon access platform.
(2)Remove warning notice.

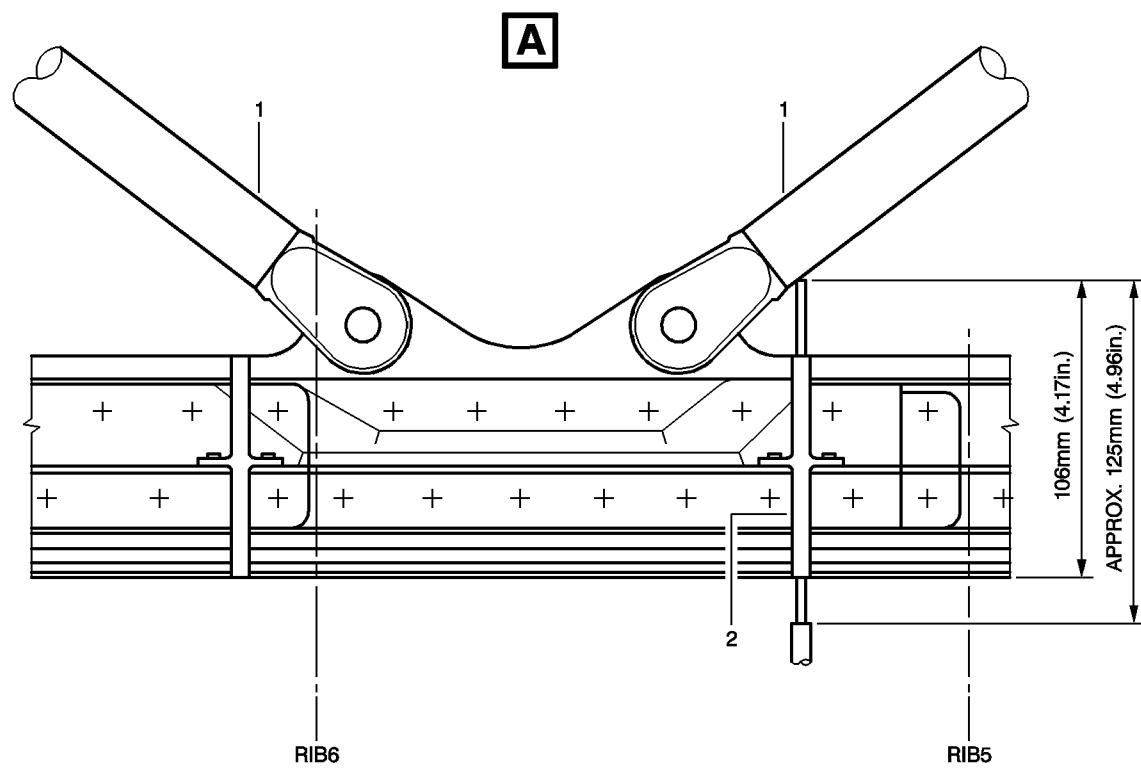
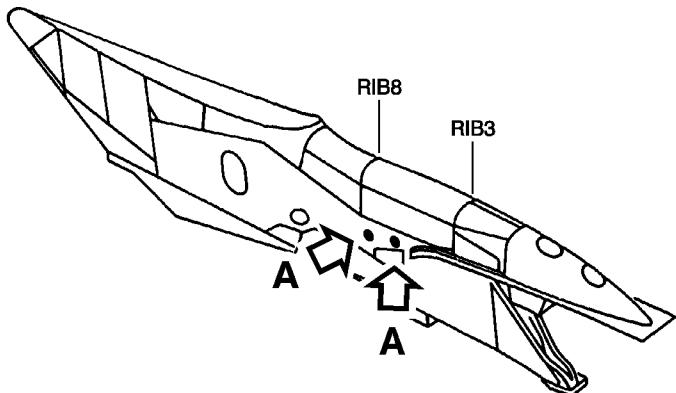
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Rods - Check
Figure 601

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FORWARD ATTACH FITTING (RIB12) - REMOVAL/INSTALLATION

1. Removal/Installation of Fail-Safe Bolts and Sleeves and Shackles

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform 4 m (13 ft. 4 in.)
(2)	Circuit Breaker Safety Clips
(3)	Jack - 10 Tonnes (23000 lbf.), with Extension
(4)	Key Washer
(5)	Torque Wrench, up to 6 m.daN (44.2 lbf.ft.)
(6)98A54403005000	Dummy Shackles
(7)98A54403006000	Dummy Sleeve
R (8)98A54403024002	Adaptor - Dynamometric at RIB1
(9)65303A4351M000	Pin Wrench
10)98A54003022000	Extractors - Sleeve, RIB12/RIB18
11)98A54003084000	Inserting Tool - Sleeve, RIB12/RIB18
12)65375AB351M000	Special Wrench
13)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
14)Material No. 04-004A	Common Greases (Ref. 20-31-00)
15)Material No. 04-007	Common Greases (Ref. 20-31-00)
Referenced Procedures	
- 07-11-00, P. Block 1	Jacking for Aircraft Maintenance
- 24-41-00, P. Block 301	AC External Power Control
- 27-80-00, P. Block 301	Lift Augmenting (Slats and Krueger Flaps)
- 29-10-00, P. Block 301	Main
- 29-21-00, P. Block 301	Green Auxiliary Power
- 36-11-00, P. Block 401	Engine Bleed Air Supply System
- 36-11-21, P. Block 401	Temperature Control Sensor 53HA (54HA)
- 36-11-23, P. Block 401	High Stage Pressure Sensor 47HA (48HA)
- 36-21-13, P. Block 401	Precooler Outlet Temperature Sensor
- 54-51-72, P. Block 601	Forward Attach Fitting (RIB12)
- 54-51-72, P. Block 801	Forward Attach Fitting (RIB12)
- 71-00-00, P. Block 401	Power Plant
- 71-13-00, P. Block 301	Engine Cowl Doors

B. Procedure

(1) Job set-up

(a) Open engine cowl doors (Ref. 71-13-00, P. Block 301).

(b) Open, safety and tag the following circuit breakers :

PANEL	SERVICE	IDENT.	LOCATION
21VU	AFS/TCC/SYS 1/28VDC	306/CJ1	102/H 8
21VU	AFS/TCC/SYS 1/115VAC	308/CJ1	102/H 9
21VU	AFS/TCC/SENSOR	305/CJ1	102/H10
21VU	AFS/TCC/SYS 2/115VAC	308/CJ2	102/H11
21VU	AFS/TCC/SYS 2/28VDC	306/CJ2	102/H12

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(c) Remove engine (Ref. 71-00-00, P. Block 401).

(d) Install pylon access platforms.

(e) Jack-up the aircraft (Ref. 07-11-00, P. Block 1).

NOTE : It is not necessary to lift the aircraft wheels clear of ground.

Jacking of the aircraft serves only to prevent reaction of the shock absorbers and maintain the pylons at a constant height from the ground.

Make certain that tail jack is still operational after aircraft jacking. If not rectify jack height.

(f) Energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).

(g) Make certain that electronics racks ventilation is correct.

(h) Pressurize Green hydraulic system (Ref. 29-21-00, P. Block 301).

(j) Place flap and slat control lever in fifth notch to extend slats (Ref. 27-80-00, P. Block 301).

NOTE : Slats must be extended to gain access to panel 512AT (612AT).

(k) Depressurize Green hydraulic system (Ref. 29-21-00, P. Block 301 or 29-10-00, P. Block 301) and de-energize the aircraft electrical network (Ref. 24-41-00, P. Block 301).

(l) Remove the following fillets and skin panels :

On LH engine pylon : 471AL (472AR)

On RH engine pylon : 481AL (482AR)

On LH wing : 512AT

On RH wing : 612AT.

(m) Not applicable.

(n) Disconnect electrical connectors (13) from high stage pressure sensor 47HA (48HA) and install blanking caps.

(Ref. Fig. 401)

(p) Remove sensors 53HA (54HA) and 5HX (4HX) (Ref. 36-11-21, P. Block 401 and 36-21-13, P. Block 401).

(q) Remove air bleed duct located between wing RIB6 and RIB8 and remove air bleed duct elbow (Ref. 36-11-00, P. Block 401). (Ref. Fig. 402)

(r) Remove electrical cable clamp blocks located near bleed ducts and stow cables to facilitate access to attach fitting.

(s) Remove air bleed duct shield (Ref. Fig. 403).

(t) Install tool PN 98A54403024002 on pylon forward pyramid and on jack. (Ref. Fig. 404)

(u) Position jack under pyramid and apply a vertical load as follows :

- if the engine cowl doors are installed, apply a vertical load of between 1400 and 2000 kg (3086 and 4409 lbf),

- if the engine cowl doors are removed, apply a vertical load of between 500 and 700 kg (1124 and 1573 lbf).

(2) Removal

(Ref. Fig. 405)

WARNING : - CHECK THAT REQUIRED LOAD IS APPLIED BY JACK ON PYLON.

- IF TIME REQUIRED FOR ACCOMPLISHMENT OF THE TASK EXCEEDS ONE HOUR, IT IS NECESSARY TO INSTALL DUMMY SHACKLES 98A54403005000 AND DUMMY SLEEVES 98A54403006000

(Ref. Fig. 406)

NOTE : Procedure is identical for each bolt and sleeve.

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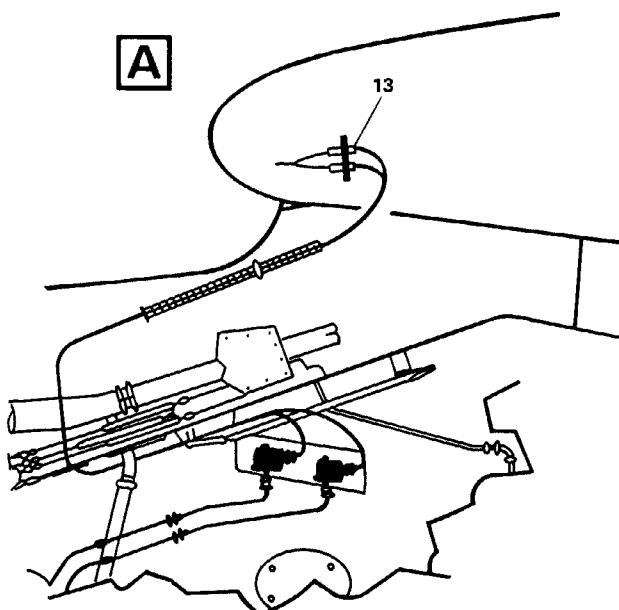
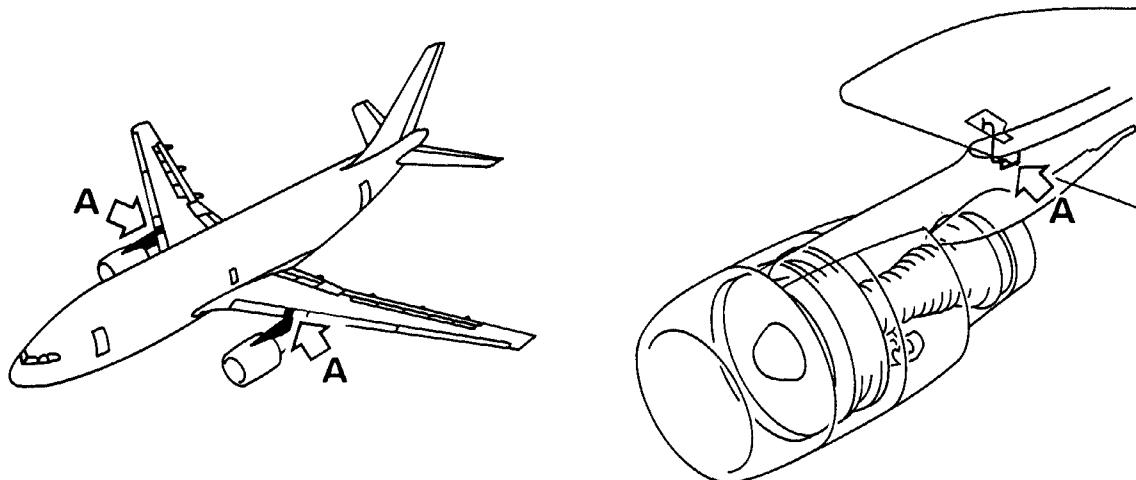
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Removal of Pneumatic Lines and Sensors
Figure 401

EFFECTIVITY: ALL

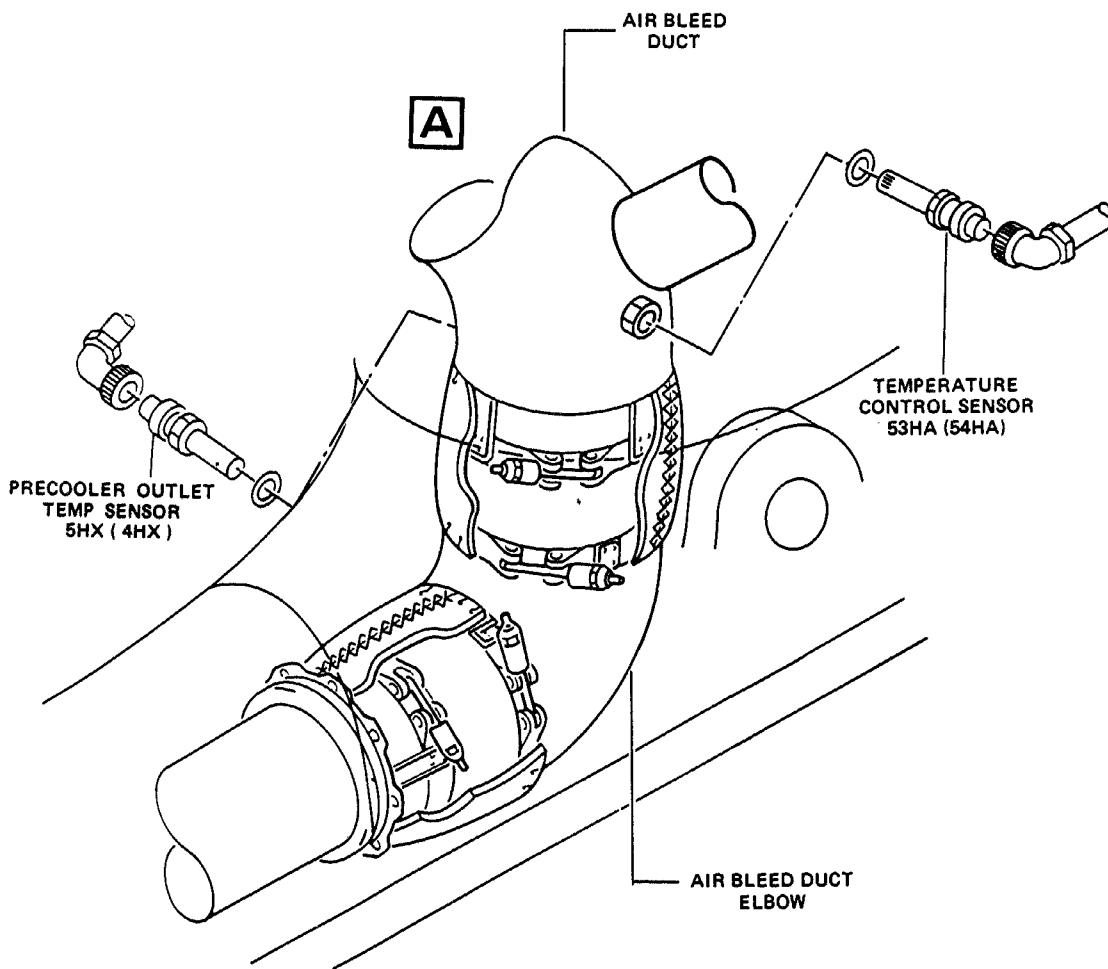
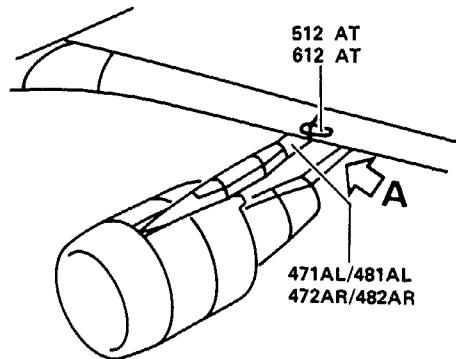
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Removal of Air Bleed Duct and Sensors
Figure 402

EFFECTIVITY: ALL

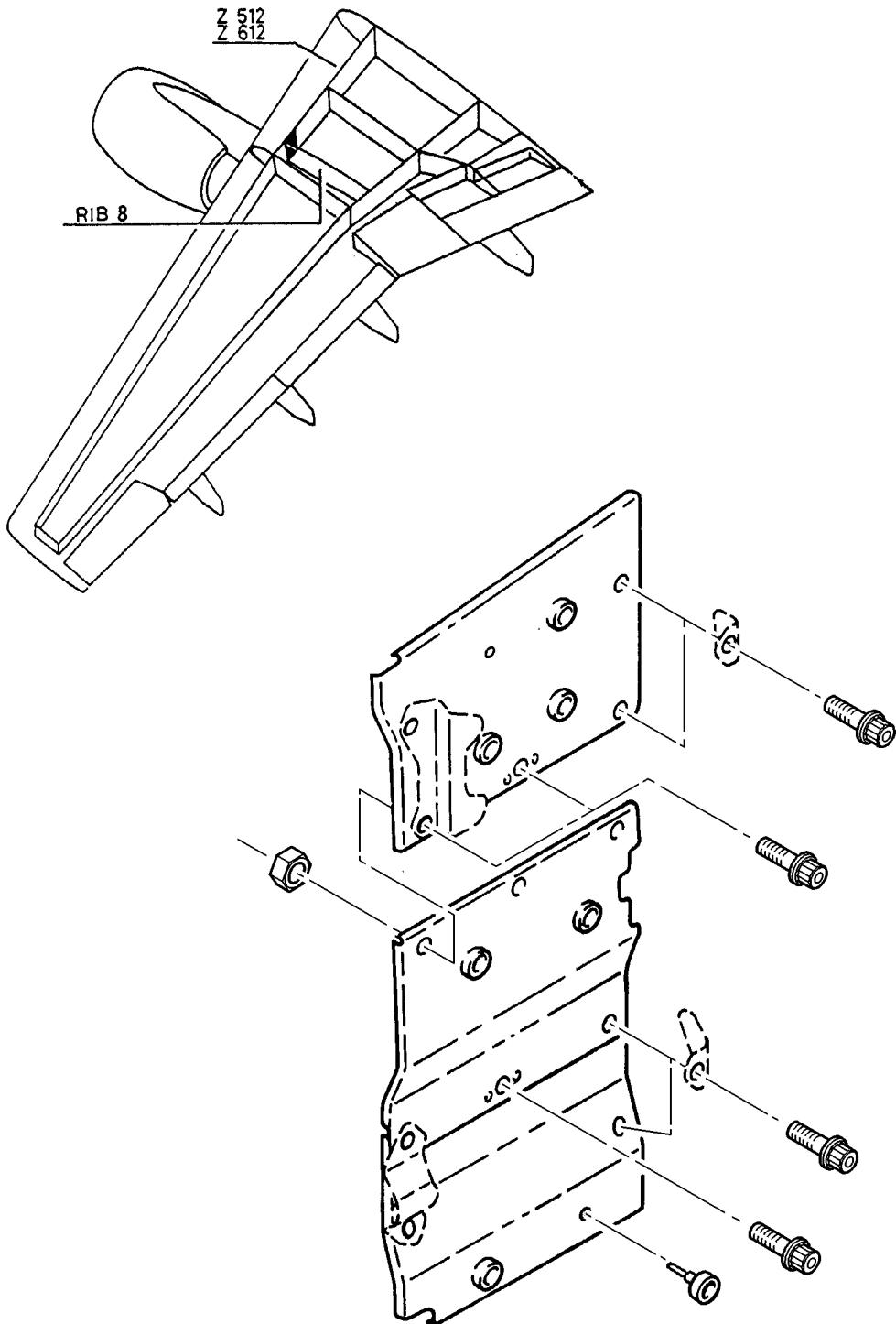
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Removal of Air Bleed Duct Shield
Figure 403

EFFECTIVITY: ALL

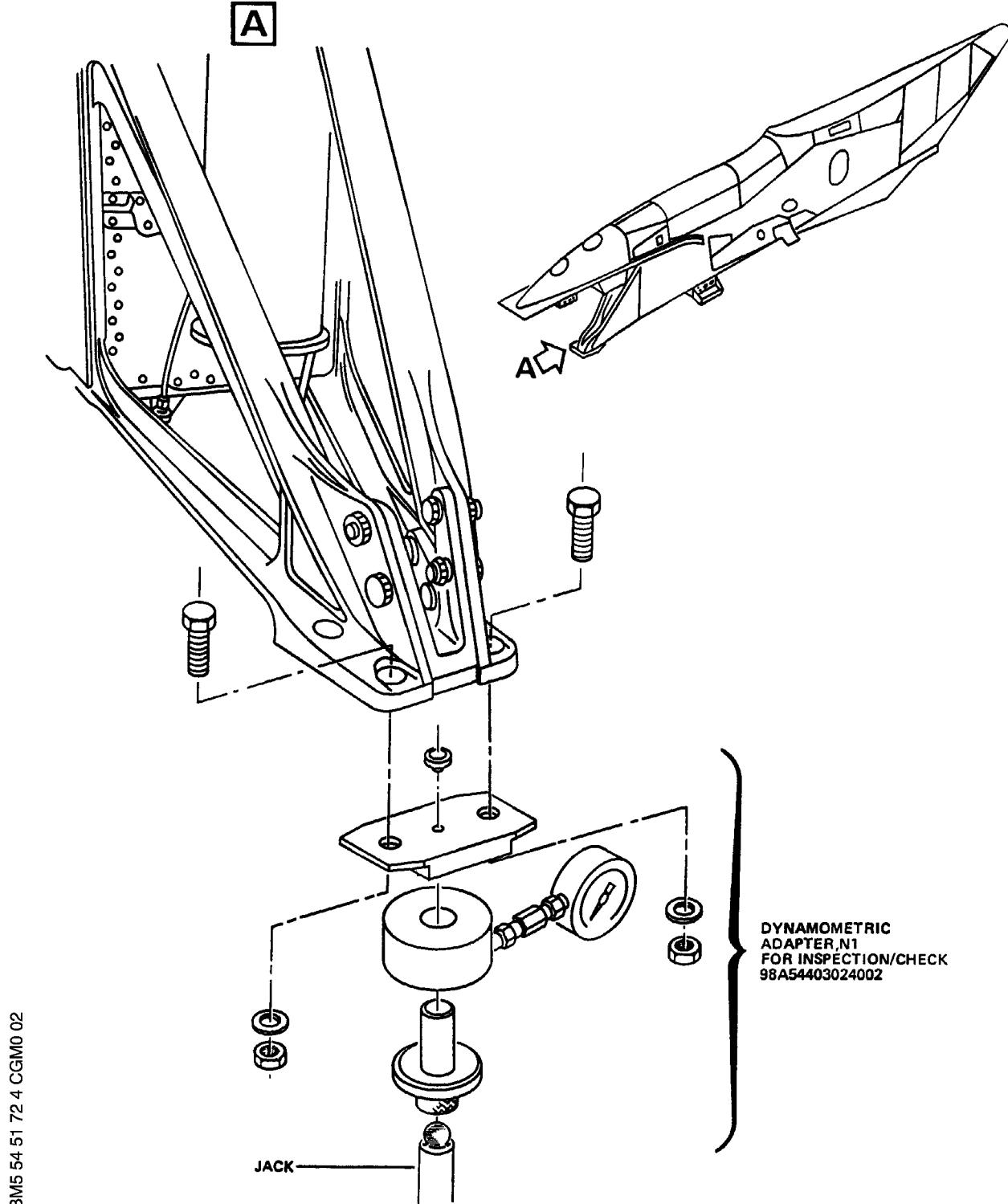
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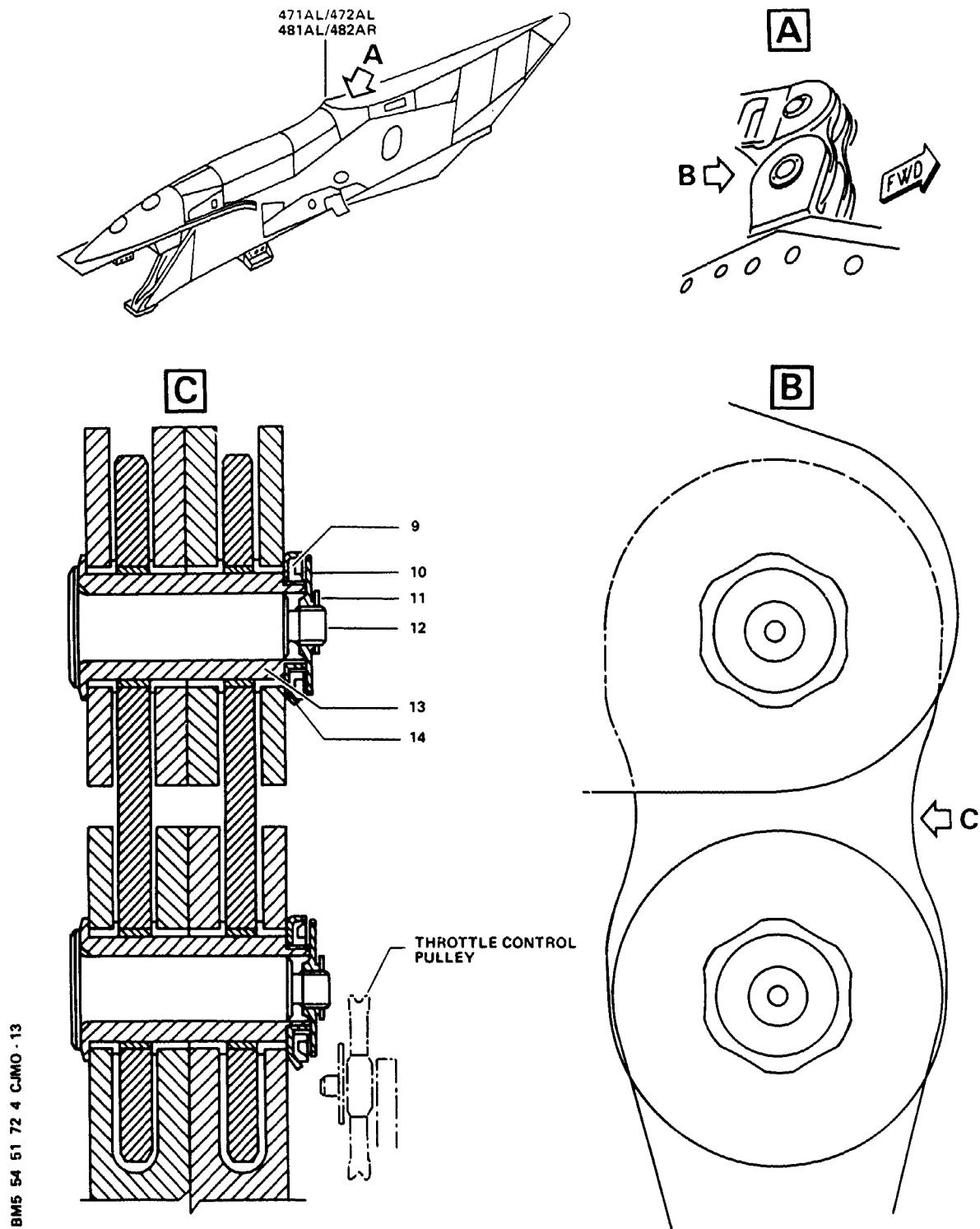
Installation of Dynamometric Adapter under Pyramid
Figure 404

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Removal of Fail Safe Bolts and Sleeves and Shackles
Figure 405

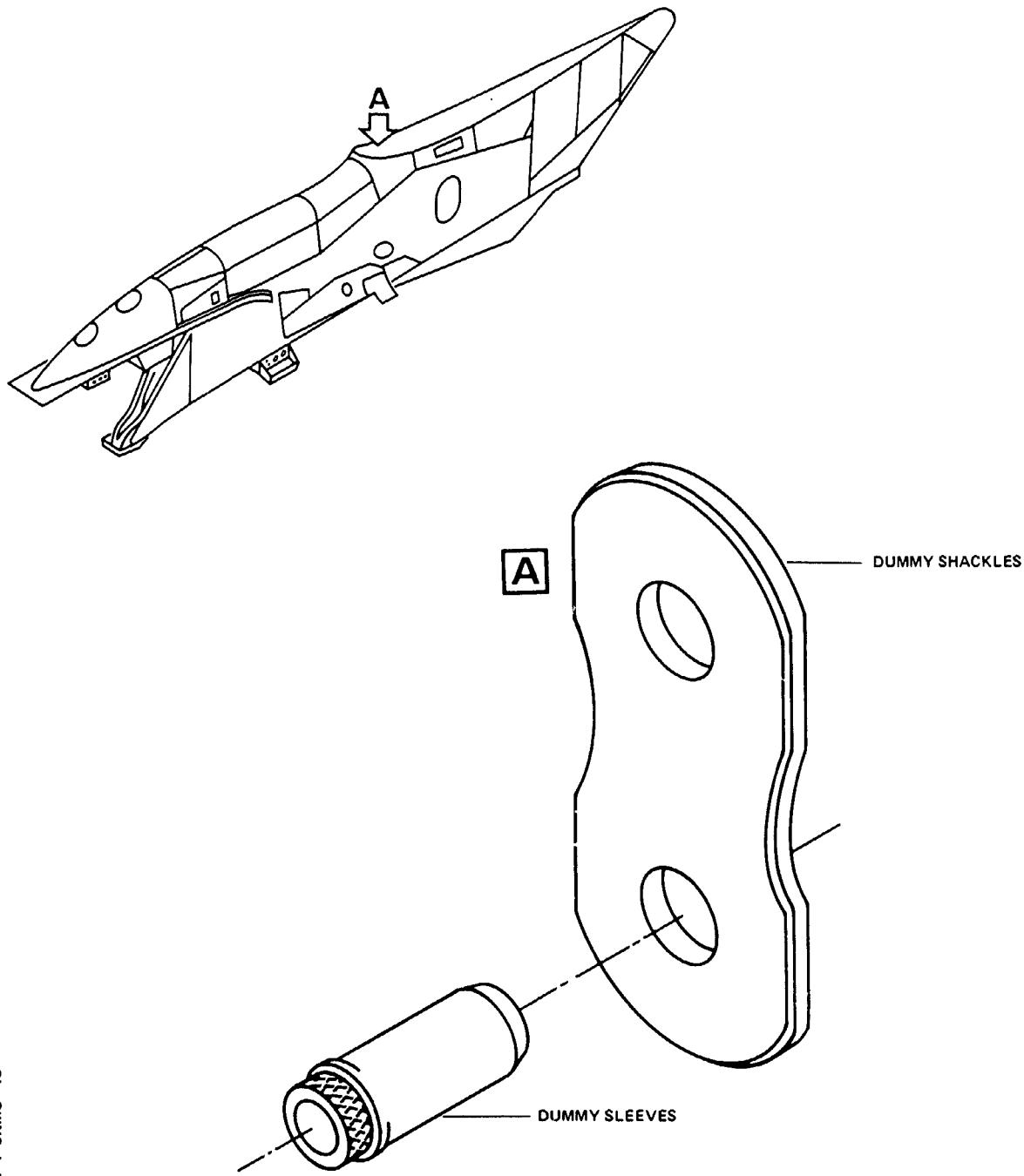
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Pylon-to-Wing Attachment by Dummy Shackles and Sleeves
Figure 406

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- (a) Remove and discard cotter pin (11).
- (b) Use pin wrench 65303A4351M000 to immobilize bolt (12) and slightly unscrew nut (10) using special wrench 65375AB351M000.
- (c) Extract bolt (12) and retain nut (10).
- (d) Unsafety nut (9), immobilize sleeve (13) using a thin spanner and remove nut (9) using special wrench 65375AB351M000. Discard key washer (14).
- (e) Remove sleeve (13) starting from the lower sleeve using tool 98A54003022000.
- NOTE :** A slight variation of the force applied by the jack under forward pyramid facilitates sleeve extraction.
- (f) After shackles removal, check on pylon the correct alignment of RIB12 fitting bushes bores by manually inserting the sleeves into their housings.
If there are difficulties of insertion, repair bushes have to be installed (Ref. 54-51-72, P. Block 801).

(3) Checks

- (a) Clean bolts, sleeves, shackles, yokes and washers with Material No. 11-003.
- (b) Perform visual check (Ref. 54-51-72, P. Block 601).

(4) Installation

NOTE : The installation procedure is identical for each fail safe bolt and sleeve.

- (a) Coat holes of fixed yokes on wing lower surface with Material No. 04-004A.

- (b) Install shackles, bolts and sleeves as follows:

NOTE : Install upper fail safe fastener before the lower one.

- 1 Install shackles into fixed yokes on wing.
- 2 Coat plain section of sleeves (13) with Material No. 04-004A and threaded surface with Material No. 04-007.
- 3 Insert sleeve into hole using tool 98A54003084000 and with threaded section towards throttle control pulley.
NOTE : A slight variation of the force applied under forward pyramid facilitates lower sleeve installation.
- 4 Install a new key washer (14).
- 5 Screw nut (9) without tightening until against sleeve (13).
- 6 Immobilize sleeve (13) and TORQUE nut (9) to between 4 and 6 m.daN (29.5 and 44.2 lbf.ft.) using tool 65375AB351M000 equipped with a dynamometric wrench.
- 7 Safety nut (9) by bending one tab of the key washer (14).
- 8 Coat threading of bolt (12) with Material No. 04-007 and insert bolt (12) into sleeve (13) with threaded section towards throttle control pulley.
- 9 Immobilize bolt (12) using pin wrench 65303A4351M000 and tighten nut (10).
- 10 TORQUE nut (10) to between 4 and 6 m.daN (29.5 and 44.2 lbf.ft.) using tool 65375AB351M000 equipped with a dynamometric wrench and install cotter pin (11).

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(5) Close-up

- (a) Install air bleed duct shield (Ref. Fig. 403).

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- (b) Install air bleed duct elbow and air bleed duct located between wing RIB6 and RIB8 (Ref. 36-11-00, P. Block 401). (Ref. Fig. 402)
- (c) Install sensors 53HA (54HA) and 5HX (4HX) (Ref. 36-11-21, P. Block 401 and 36-21-13, P. Block 401). (Ref. Fig. 402)
- (d) Remove plugs and connect electrical connectors (13) from high stage pressure sensors 47HA (48HA).
- (e) Not applicable.
- (f) Install electrical cables and clamps located near air bleed ducts.
- (g) Remove tool PN 98A54403024002 from jack and pylon.
- (h) Install engine (Ref. 71-00-00, P. Block 401).
- (j) Remove jacks supporting the aircraft (Ref. 07-11-00, P. Block 1).
- (k) Close engine cowls (Ref. 71-13-00, P. Block 301).
- (l) Install the following fillets and skin panels
 - LH engine pylon 471AL (472AR)
 - RH engine pylon 481AL (482AR)
 - LH wing 512AT
 - RH wing 612AT.
- (m) Energize the aircraft electrical network
(Ref. 24-41-00, P. Block 301).
- (n) Make certain that electronics racks ventilation is correct.
- (p) Pressurize Green hydraulic system (Ref. 29-21-00, P. Block 301).
- (q) Bring flap and slat control lever in position 1 (FLAPS 0°, SLATS 0°)
(Ref. 27-80-00, P. Block 301).
- (r) Depressurize Green hydraulic system
(Ref. 29-21-00 or 29-10-00, P. Block 301).
- (s) De-energize the aircraft electrical network
(Ref. 24-41-00, P. Block 301).
- (t) Remove safety clips and tags and close circuit breakers.
- (u) Remove access platforms.

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AIRCRAFT MAINTENANCE MANUAL

FORWARD ATTACH FITTING (RIB12) - INSPECTION/CHECK

1. Inspection of Fail-Safe Bolts, Sleeves, Yokes and Shackles

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform 4 m (13 ft. 4 in.)
Referenced Procedures	
- 54-51-00, P. Block 601	Pylon Box
- 54-51-72, P. Block 401	Forward Attach Fitting (RIB12)
- 54-51-75, P. Block 601	AFT Attach Fitting (RIB18)
- SRM 54-51-71, P. Block 101	
- NTM 51-90-00, P. Block 901	

B. Procedure

- (1) Job set-up
 - (a) Position access platform.
 - (b) Remove forward attach fitting (Ref. 54-51-72, P. Block 401).
- (2) Inspection
 - (a) Visually inspect the following items (Ref. Table 601),
(Refer to SRM 54-51-71, P. Block 101):
 - 1 yokes attached to main frame and wing.
 - 2 shackles.

R (Ref. Fig. 601)

	Yoke pylon side	Shackles
	wing side	
Superficial wear	Repair as per manufacturer's instructions	Ref. 54-51-00, P. Block 601
Deformation	Repair as per manufacturer's instructions	Replace
Corrosion	Repair as per manufacturer's instructions	Ref. 54-51-00, P. Block 601
Structural defects	Repair as per manufacturer's instructions	Replace
Bore deformation	Replace bushes	Replace bushes
Wear on bores	Replace bushes	Replace

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	Yoke pylon side wing side	Shackles	
	bushes		

Inspection of Pylon-to-Wing Forward Attach Fitting
Table 601

NOTE : If wear is found on the sleeves and/or shackles, it is mandatory to check the condition of the AFT attach fittings (Ref. 54-51-75, P. Block 601).

- R (b) Do a visual inspection of fail-safe bolts, sleeves and washer:
 (Ref. Fig. 601)
 - R 1 for any sign of rotation:
 If the rotation of bolts (2) and washers (4) is found, check the condition of the fittings to verify if:
 - R a the cotter pin (1) of the nut is broken,
 - remove and replace with new one.
 - R b the washer (4) is damaged and sleeve (3) displacement is occurred.
 - R 2 for sleeve displacement:
 If the sleeve (3) is out of position:
 - R - Remove and discard washer (4) (Ref. 54-51-72, P. Block 401).
 - R - Set the sleeve (3) in position.
 - R - Install a new washer (4) (Ref. 54-51-72, P. Block 401).
- R (c) Inspection of the fail-safe bolts and sleeves:
 - R 1 Clean the parts (Refer to NTM 51-90-00, P. Block 901).
 - R **NOTE :** Ensure the anti-seize has been removed from the parts.
 - R **NOTE :** Alternate cleaning methods can be validated by a Level III NDT Administrator.
 - R 2 Perform an NDT Fluorescent Penetrant Inspection Type 1, Method D, Sensitivity level 4 (Refer to NTM 51-90-00, P. Block 901).
- R (d) Acceptance criteria:
 - R 1 All discontinuity indications must be recorded.
 - R 2 Scratch, mark or nick damage is allowed on the fail-safe bolt cotter-pin hole as long as no cracks are detected.
- R (3) Close-up
 - R (a) Install the forward attach fitting (Ref. 54-51-72, P. Block 401).
 - R (b) Remove the access platform.

2. Dimensional Checks of Forward Attach Fittings

A. Reason for the Job

- (1) Check of fits and clearances after removal of one pylon.

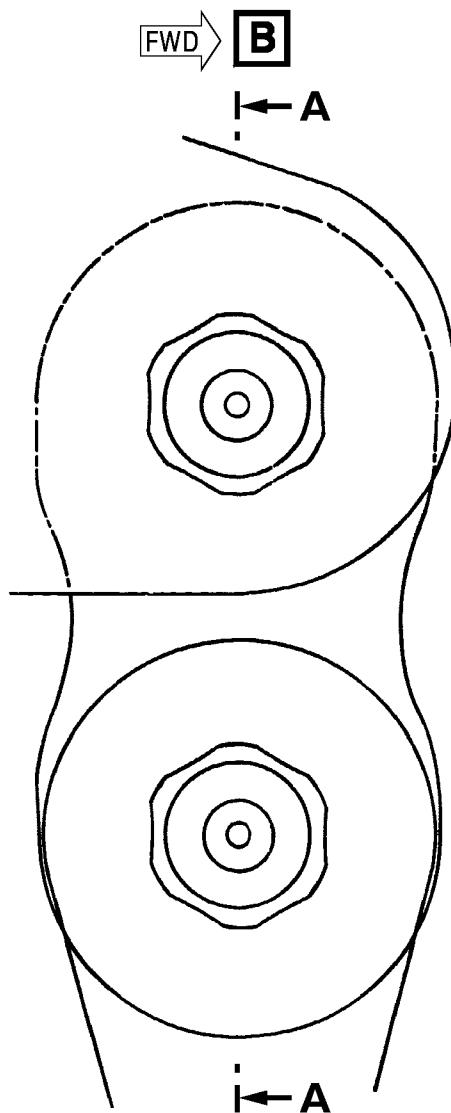
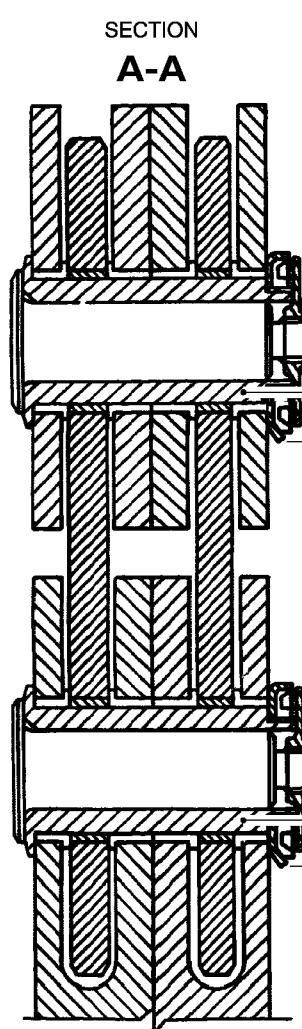
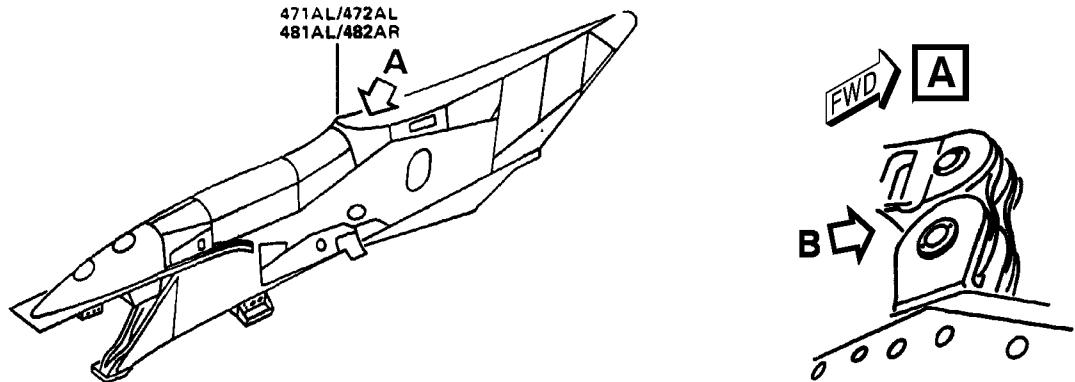
B. Equipment and Materials

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Forward Attach Fitting
Figure 601

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ITEM	DESIGNATION
Referenced Procedures	
R - 54-51-72, P. Block 401	Forward Attach Fitting (RIB 12)
R - 54-51-72, P. Block 801	Forward Attach Fitting (RIB 12)

C. Procedure

(1) Job set-up

(a) Remove forward attach fitting (Ref. 54-51-72, P. Block 401).

(2) Inspection

(a) Check the following dimensions:
(Ref. Fig. 602)**CAUTION : NO WEAR, DISTORTION OR STRUCTURAL DEFECT OF BOLT AND BUSH STEEL OR PLATING IS ALLOWED. DISCARD BOLT OR BUSH AS NECESSARY.****NOTE : When wear limits are exceeded, replace bushes
(Ref. 54-51-72, P. Block 801).**

Detail and Item No.	Original Mfg Limits				In-Service Wear Limits		
	Dimension Inches (Millimeters)		Assy. Clearance Inches (Milli- meters)		Dimension Limits Inches (Milli- meters)		Max. Allow.
	Min.	Max.	Min.	Max.	Min.	Max.	Clear in. (mm)
B							
OD1	2.2036 (55.971)	2.2043 (55.990)			2.2027 (55.950)		
			0.0004 (0.01)	0.0023 (0.059)			0.0047 (0.12)
ID2	2.2047 (56.000)	2.2059 (56.030)				2.2074 (56.070)	
OD1	2.2036 (55.971)	2.2043 (55.990)			2.2027 (55.950)		
			0.0004 (0.01)	0.0023 (0.059)			0.0047 (0.12)
ID4	2.2047 (56.000)	2.2059 (56.030)				2.2074 (56.070)	
OD1	2.2036 (55.971)	2.2043 (55.990)			2.2027 (55.950)		
			0.0004 (0.01)	0.0023 (0.059)			0.0047 (0.12)
ID3	2.2047 (56.000)	2.2059 (56.030)				2.2074 (56.070)	
OD2	2.4430 (62.053)	2.4438 (62.072)	-0.0028	-0.0009	2.4427 (62.046)		0.00
ID7	2.4409	2.4421	(-0.072)	(-0.023)		2.4427	

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Detail and Item No.	Original Mfg Limits				In-Service Wear Limits		
	Dimension Inches (Millimeters)		Assy. Clearance Inches (Milli- meters)		Dimension Limits Inches (Milli- meters)		Max. Allow.
	Min.	Max.	Min.	Max.	Min.	Max.	Clear in. (mm)
	(62.000)	(62.030)				(62.046)	
OD4	2.4430	2.4438			2.4427		
	(62.053)	(62.072)	-0.0028	-0.0009	(62.046)		0.00
ID5	2.4409	2.4421	(-0.072)	(-0.023)		2.4427	
	(62.000)	(62.030)				(62.046)	
OD4	2.4430	2.4438			2.4427		
	(62.053)	(62.072)	-0.0028	-0.0009	(62.046)		0.00
ID6	2.4409	2.4421	(-0.072)	(-0.023)		2.4427	
	(62.000)	(62.030)				(62.046)	
OD3	2.4430	2.4438			2.4427		
	(62.053)	(62.072)	-0.0028	-0.0009	(62.046)		0.00
ID5	2.4409	2.4421	(-0.072)	(-0.023)		2.4427	
	(62.000)	(62.030)				(62.046)	
OD3	2.4430	2.4438			2.4427		
	(62.053)	(62.072)	-0.0028	-0.0009	(62.046)		0.00
ID6	2.4409	2.4421	(-0.072)	(-0.023)		2.4427	
	(62.000)	(62.030)				(62.046)	

(3) Close-up

(a) Install forward attach fitting (Ref. 54-51-72, P. Block 401).

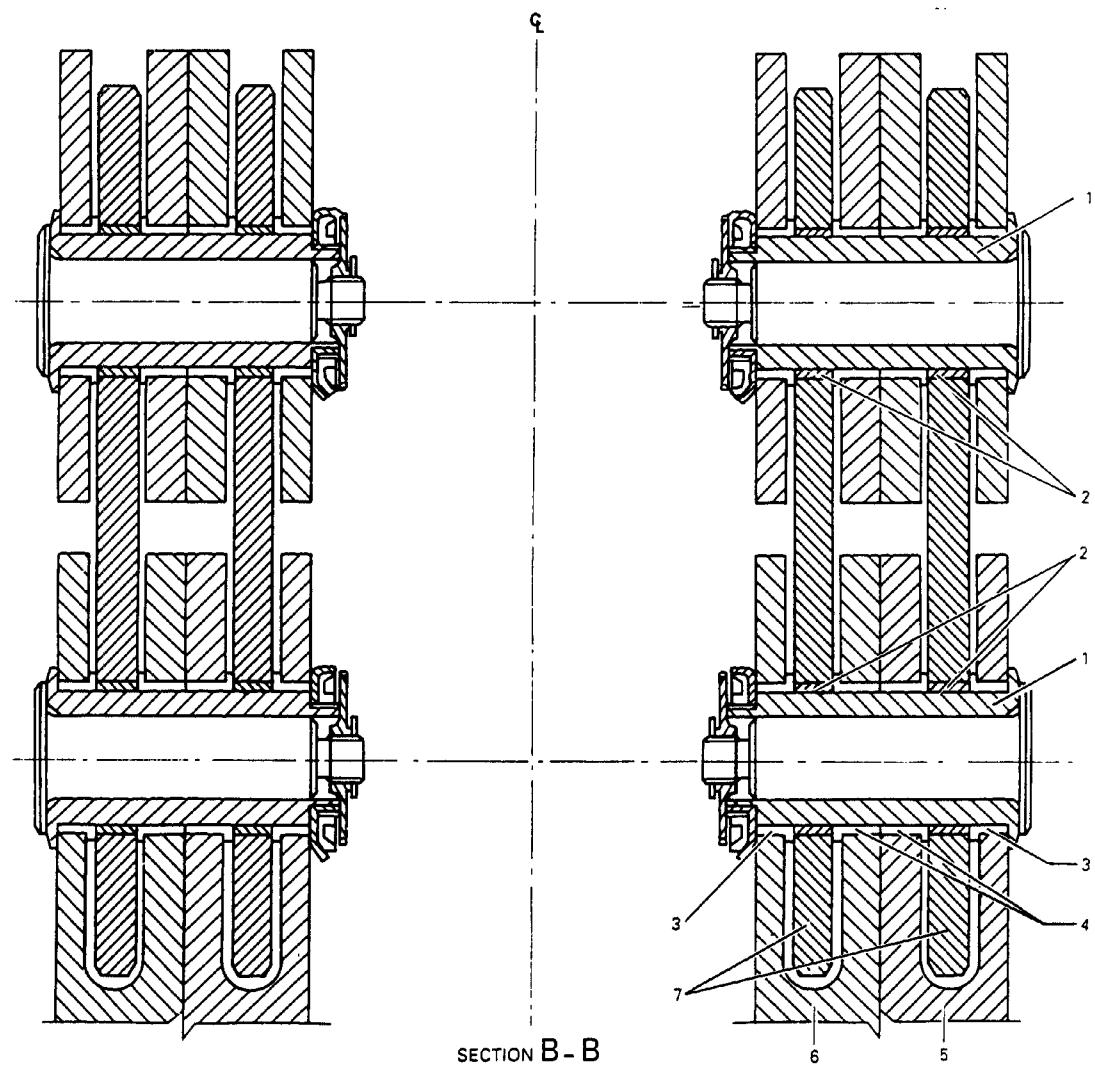
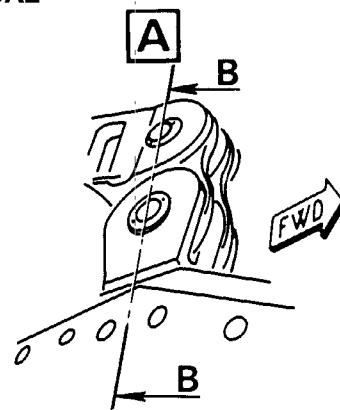
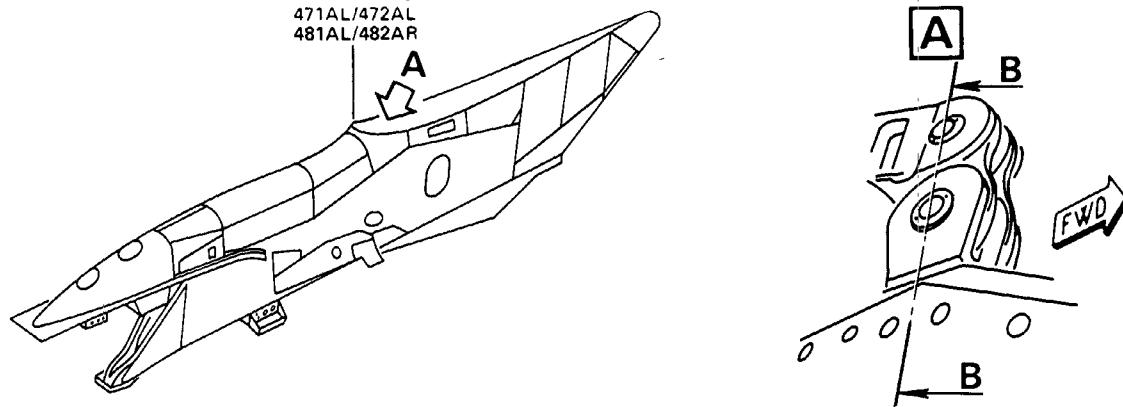
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Forward Attach Fitting
Figure 602

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AIRCRAFT MAINTENANCE MANUAL

FORWARD ATTACH FITTING (RIB12)
APPROVED REPAIRS

1. Replacement of the Bushes of the Forward Attach Fitting at RIB12

R **WARNING : SPECIFIC ENVIRONMENTAL CONTROL AND EQUIPMENT IS REQUIRED WHEN**
 R **PERFORMING GRINDING/SANDING/HONING OPERATIONS ON THESE BUSHES,**
 R **AS THEY CONTAIN COPPER BERYLLIUM, AND MAY GENERATE TOXIC**
 R **BERYLLIUM DUST.**

NOTE : This procedure is identical for left and right pylons.

NOTE : On the pylon attach fitting opposite to the attach fitting to be re-bored, leave bushes in place. If necessary, repeat the procedure for the opposite side attach fitting.

A. Repair sizes of attach fittings at RIB12

Original diameter = 62 mm (2.4409 in.)

Tolerance H7 : +0, +0.030 mm (+0, +0.00118 in.)

REPAIR SIZE	NOMINAL VALUE OF THE BORE IN MM (IN.)	TOLERANCE IN MM (IN.)
R1	62.2 (2.4488)	H7 : + 0.030 (+0.00118) + 0 (+0)
R2	62.4 (2.4566)	H7 : + 0.030 (+0.00118) + 0 (+0)
R3	62.6 (2.4645)	H7 : + 0.030 (+0.00118) + 0 (+0)
R4	62.8 (2.4724)	H7 : + 0.030 (+0.00118) + 0 (+0)
R5	63 (2.4803)	H7 : + 0.030 (+0.00118) + 0 (+0)
R6	63.4 (2.4960)	H7 : + 0.030 (+0.00118) + 0 (+0)
R7	63.9 (2.5157)	H7 : + 0.030 (+0.00118) + 0 (+0)
R8	64.4 (2.5354)	H7 : + 0.030 (+0.00118) + 0 (+0)

Table 801
Repair Sizes of Attach Fittings at RIB12

B. Equipment and Materials

ITEM	DESIGNATION
(1)98A54003029000 or	Bush Extractor Set

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ITEM	DESIGNATION
98A54003029001	Bush Extractor Set
(2)98A54003083000	Reboring Tool
(3)98A54003094000	Chamfering Tool
(4)98A54003063000	Installation Tool
(5)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
(6)	Access Platform
(7)	Circuit Breaker Safety Clips
Referenced Procedures	
- 07-11-00, P. Block 1	Jacking for Aircraft Maintenance Operations
- 20-23-12, P. Block 1	Specified Torque Values for Unions
- 20-28-11, P. Block 1	Electrical Bonding
- 27-80-00, P. Block 301	Lift Augmentating (Slats and Krueger Flaps)
- 28-20-00, P. Block 401	Distribution
- 28-21-00, P. Block 501	Fuel Pump System
- 36-11-00, P. Block 401	Engine Bleed Air Supply System
- 36-11-21, P. Block 401	Temperature Control Sensor
- 36-21-13, P. Block 401	Precooler Outlet Temperature Sensor (4HX, 5HX)
- 36-11-23, P. Block 401	High Stage Pressure Sensor
- 54-51-72, P. Block 401	Forward Attach Fitting (RIB12)
- 71-00-00, P. Block 401	Power Plant
- 71-13-00, P. Block 301	Cowl Doors
- 76-11-31, P. Block 401	Secondary Transmission

C. Procedure

(1) Job set-up

- (a) Open engine cowl doors (Ref. 71-13-00, P. Block 301).
 (b) Open, safety and tag the following circuit breakers :

PANEL	SERVICE	IDENT.	LOCATION
21VU	AFS/TCC SYS 1/28VDC	306/CJ1	102/H 8
21VU	AFS/TCC/SYS 1/115VAC	308/CJ1	102/H 9
21VU	AFS/TCC/SENSOR	305/CJ1	102/H10
21VU	AFS/TCC SYS 2/115VAC	308/CJ2	102/H11
21VU	AFS/TCC/SYS 2/28VDC	306/CJ2	102/H12

(c) Remove engine (Ref. 71-00-00, P. Block 401).

(d) Install pylon access platforms.

(e) Jack-up the aircraft (Ref. 07-11-00, P. Block 1).

NOTE : It is not necessary to lift the aircraft wheels clear of ground.

Jacking of the aircraft serves only to prevent reaction of the shock absorbers and maintain the pylons at a constant height from the ground.

Make certain that tail jack is still operational after aircraft jacking. If not rectify jack height.

(f) Place flap and slat control lever in fifth notch to extend flaps and slats (Ref. 27-80-00, P. Block 301).

NOTE : Slats must be extended to gain access to panel 512AT (612AT).

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- (j) Remove the following fillets and skin panels :
 - On LH engine pylon : 471AL (472AR)
 - On RH engine pylon : 481AL (482AR)
 - On LH wing : 512AT. 512KB. 523AB
 - On RH wing : 612AT. 612KB. 623AB
- (k) Remove sensors 53HA (54HA), 5HX (4HX) (Ref. 36-11-00, P. Block 401).
(Ref. Fig. 801)
- (l) Remove air bleed duct located between wing RIB6 and RIB8, remove air bleed duct elbow. Cap open end of ducts on aircraft (Ref. 36-11-00, P. Block 401).
(Ref. Fig. 801)
- (m) Disconnect electrical connectors (13) from high stage pressure sensor 47HA (48HA) and install blanking caps. (Ref. Fig. 802)
- (p) Remove the section of fuel line located between inboard and outboard attach fittings of engine pylon (Ref. 28-20-00, P. Block 401).
- (q) Remove electrical cable clamp blocks located near air bleed ducts and stow cables to facilitate access to attach fitting.
- (r) Remove air bleed duct shield (Ref. Fig. 803).
- (s) Remove throttle control cable from secondary transmission pulley and stow. Remove pulley (Ref. 76-11-31, P. Block 401).
- (t) Remove the two throttle control cable guide pulleys and the support angle. Stow cable to clear working area.
- (u) Remove fail safe fasteners (bolts and sleeves) from attach fitting (Ref. 54-51-72, P. Block 401).

NOTE : You must remove of the bushes, rebore the fitting (when necessary), install the new bushes and rebore the new bushes on one side at a time. The bushes on the other side stay in position so as to install and center the expandable bush for the boring unit installation. The procedure below is given for one side and is identical for the other side. Use also the new bushes for the installation and centering of the expandable bush for the boring unit installation.

(2) Replacement of bushes.

- (a) Removal of bushes at RIB12.
 - (Ref. Fig. 802)
 - (Ref. Fig. 804)
 - (Ref. Fig. 805)
 - (Ref. Fig. 806)

NOTE : Tools 98A54003029101 and 98A54003029102 are sub-assemblies of tool 98A54003029000.

Tools 98A54003029103 and 98A54003029102 are sub-assemblies of tool 98A54003029001.

1 Remove bush shoulders by machining with tool 98A54003029101 or 98A54003029103.

- adjust tool bit (4) on tool holder (3)
- install tool holder (3) into attach fitting and install attach spider (1)

NOTE : Adjust setting, screw (2) so that tool bit does not knock on attach fitting at installation.

- secure attach spider (1) on fitting with clamps
- install drive unit on tool holder
- remove shoulder by adjusting tool progression with screw (2)

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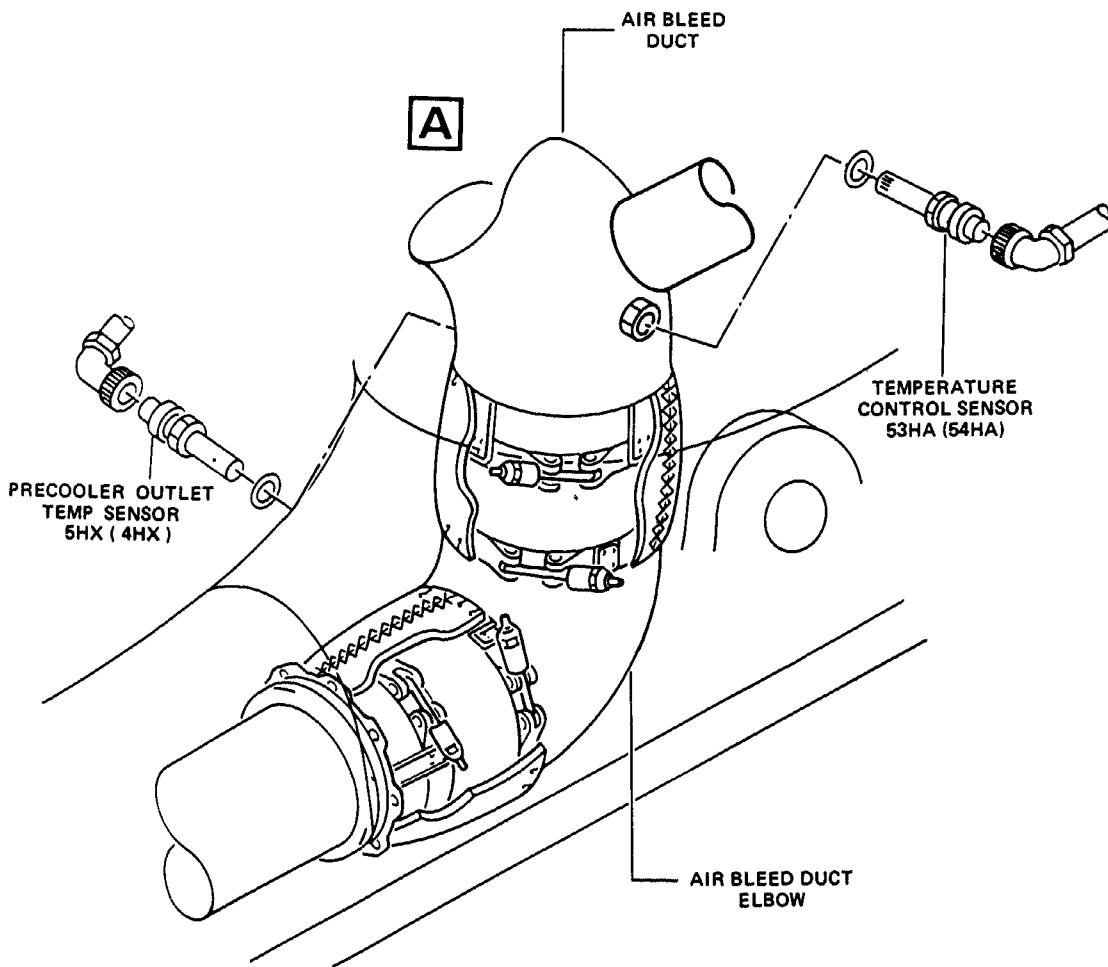
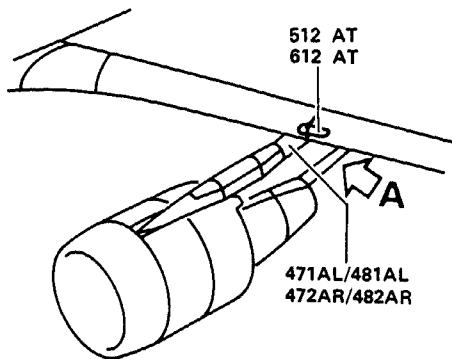
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BM5 54 51 72 8 SBMO - 25

Removal of Air Bleed Ducts and Sensors
Figure 801

EFFECTIVITY: ALL

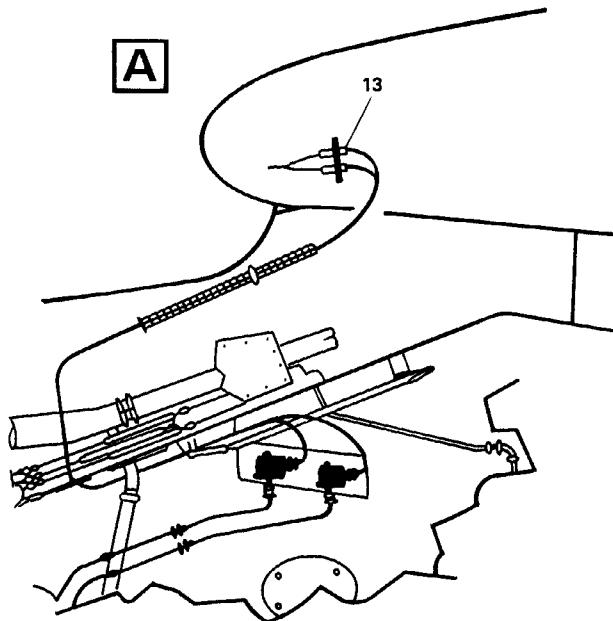
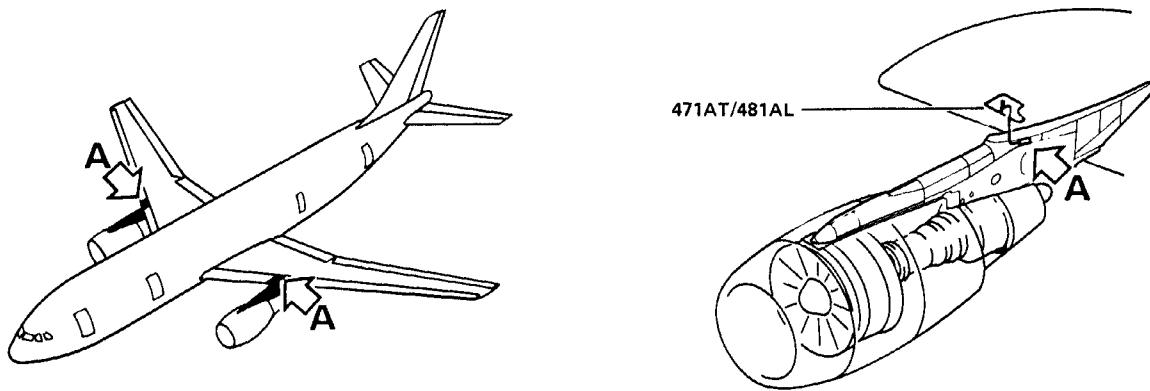
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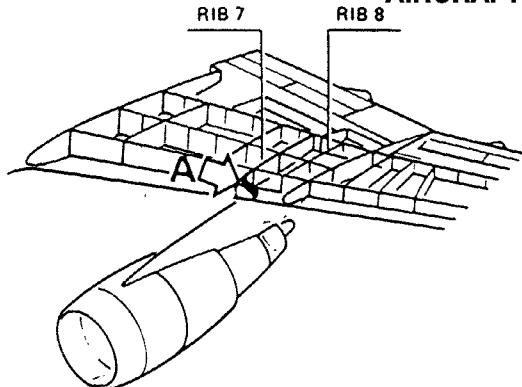
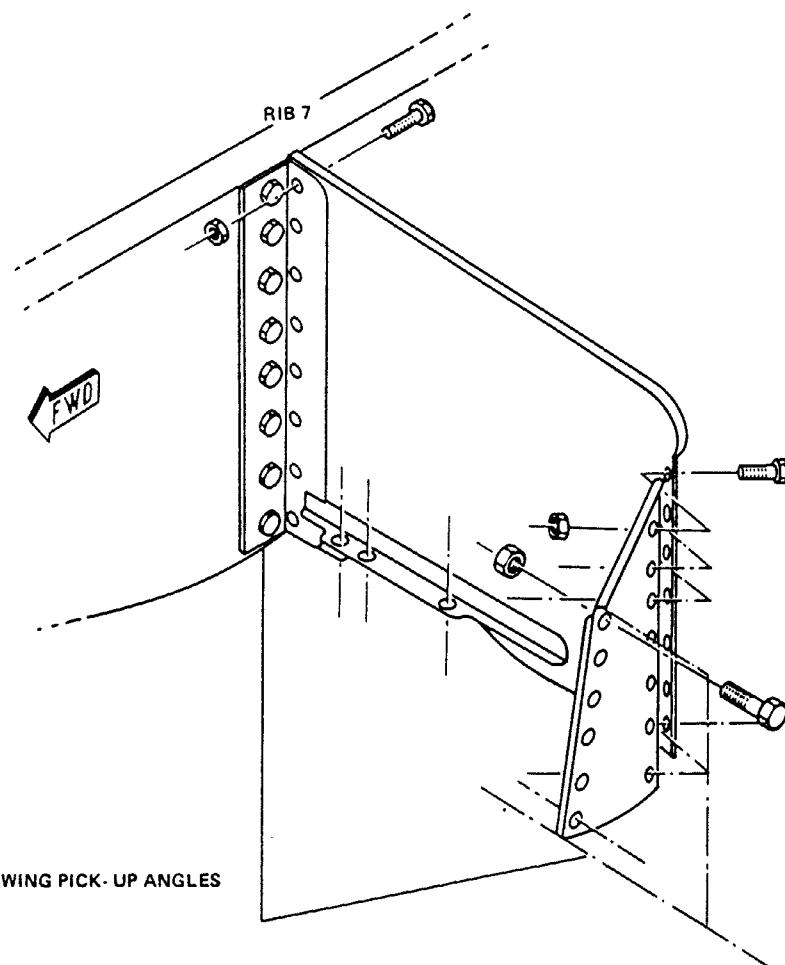
Removal of Pneumatic Lines and Sensors
Figure 802

EFFECTIVITY: ALL

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**A**

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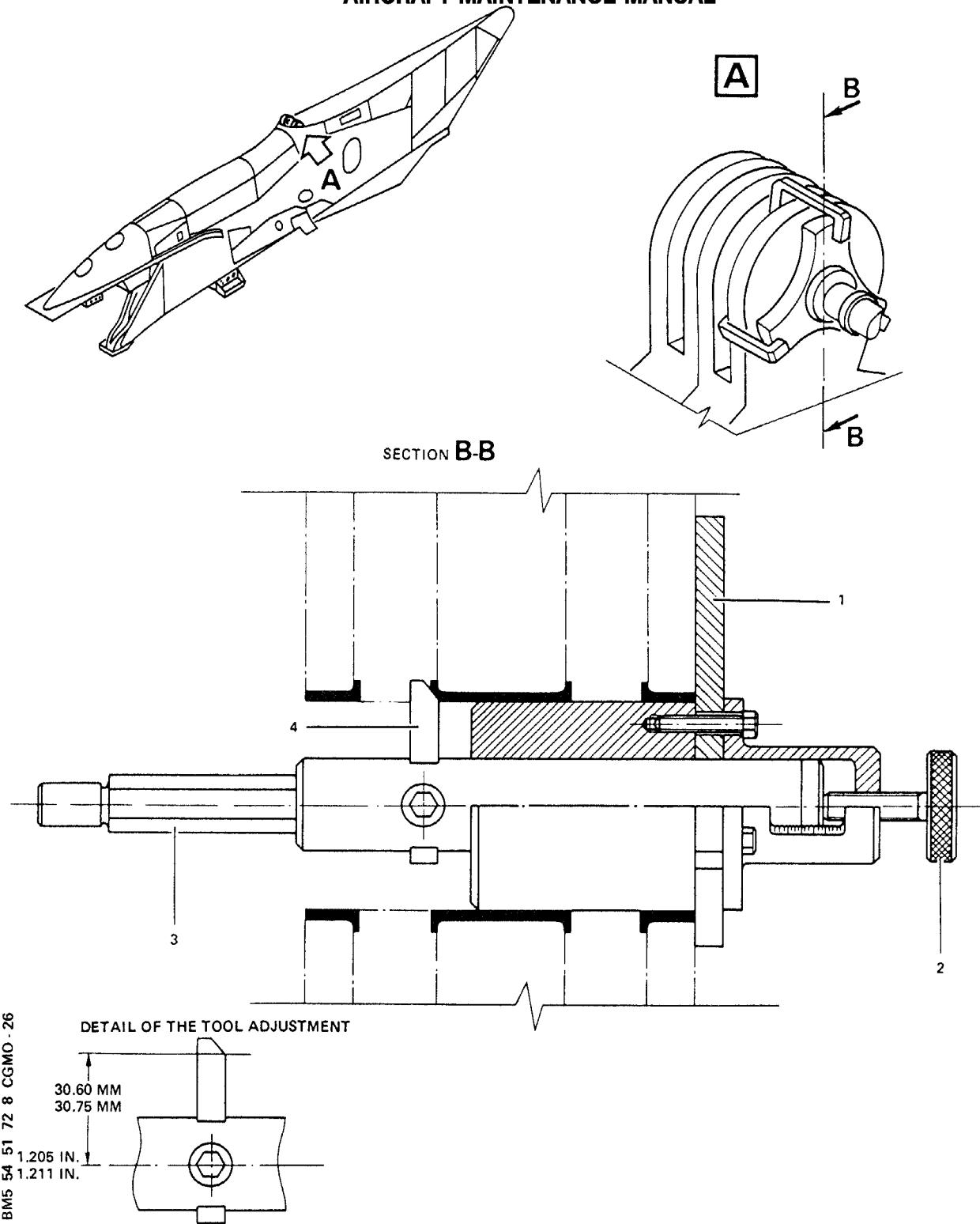
Removal of Air Bleed Duct Shield
Figure 803

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Removal of Bush Shoulders
Figure 804

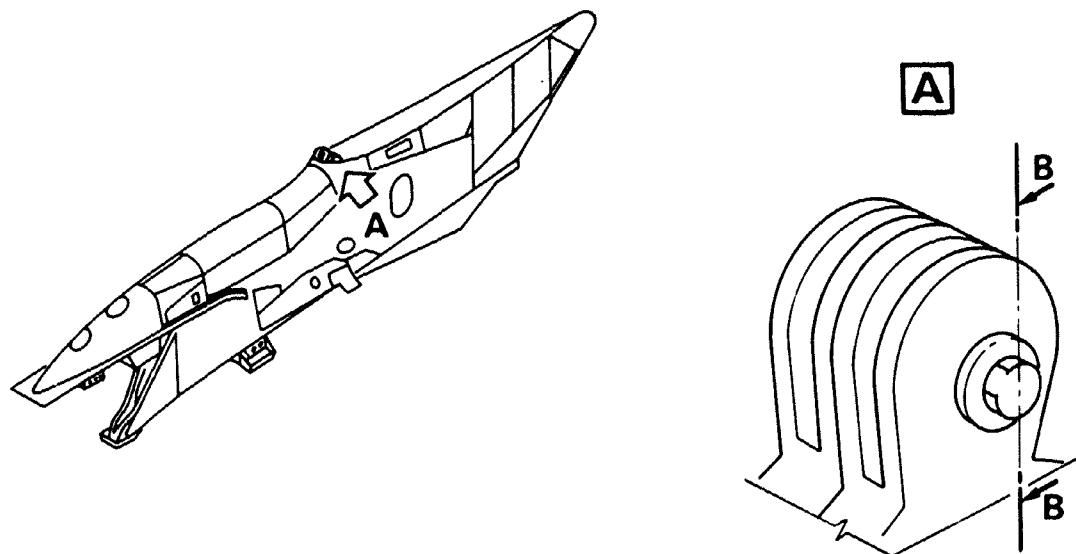
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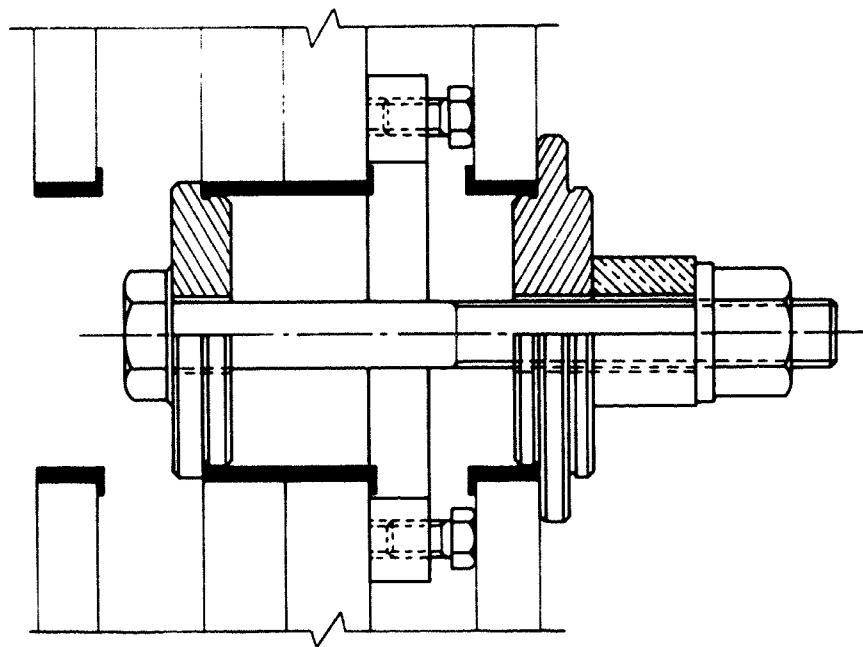
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SECTION B-B



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Extraction of Center Bushes
Figure 805

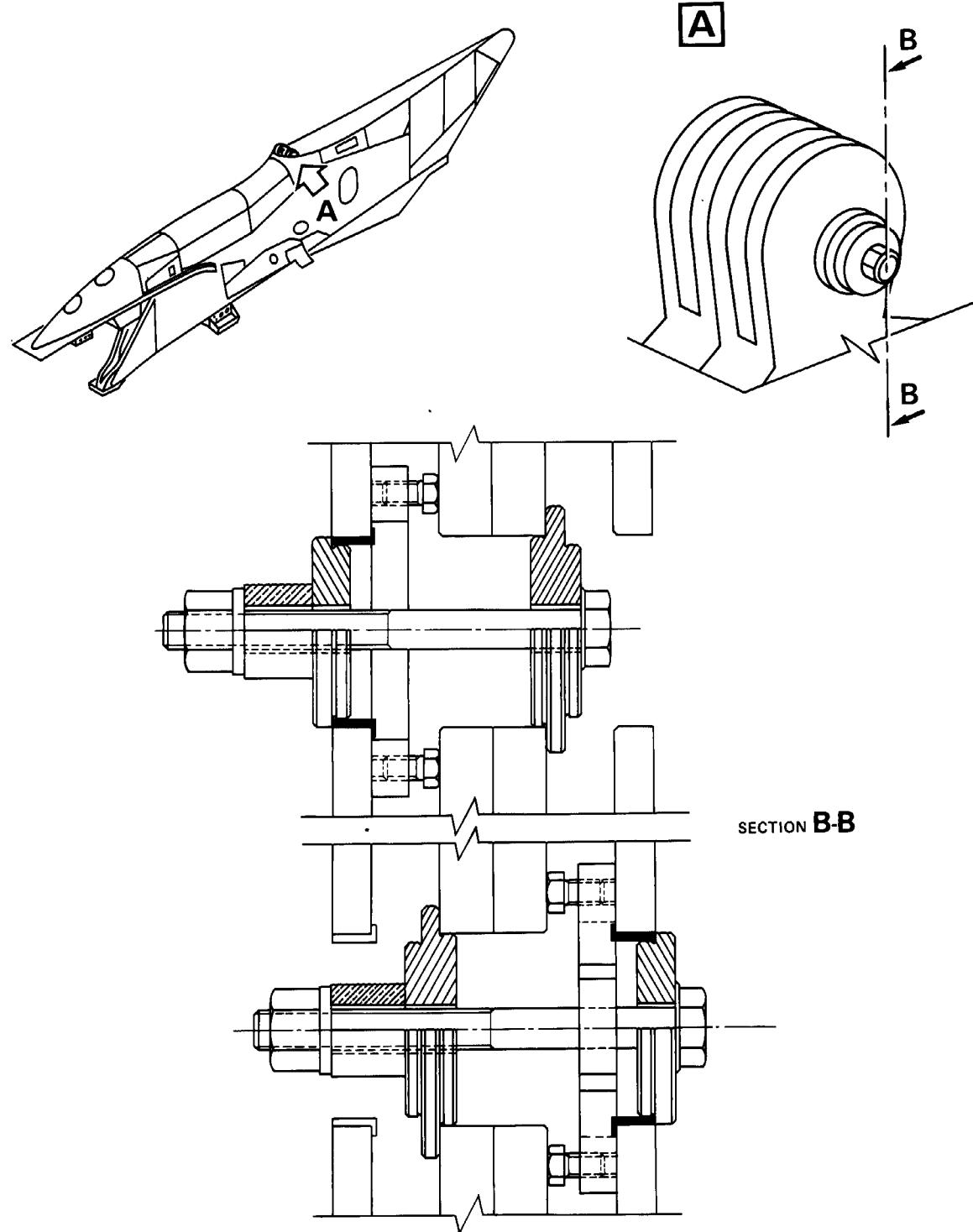
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Extraction of Outer Bushes
Figure 806

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place cutter in contact with bush shoulder and machine over 2 mm (0.078 in.)

- move tool away and stop drive unit
- remove drive unit
- remove tool holder (3) and attach spider (1).

2 Remove inner bushes using bush extractor set 98A54003029102.

3 Remove outer bushes using bush extractor set 98A54003029102.

4 Inspect bores for wear, perform a dimensional check.

If diameter is out of original limits, para 1.C.(2)(b) has to be accomplished.

(b) Reboring of RIB12 attach fittings with tool 98A54003083000.

1 Installation of boring bar bearings (4) and clamps on attach fitting to be rebored.

(Ref. Fig. 807)

(Ref. Fig. 808)

- install centering/expandible bush assembly into hole of attach fitting
- tighten the centering adapter (3) to bring the expandible bush (2) into contact with the fitting hole
- check that centering adapter (3) is correctly installed
- install bearings (4) on ring of centering adapter (3) and on ring (5)
- install clamps in three points on bearings (4) on inner and outer lugs of RIB12 attach fitting
- untighten centering adapter and check that rings (3 and 5) turn freely in bearings (4). If not, align correctly centering adapter by means of the three tightening screws (1)
- clamp securely
- remove centering adapter (3).

2 Installation of the expandible bush for attachment of reboring unit.

(Ref. Fig. 809)

- on pylon attach fitting opposite to attach fitting to be re-bored, leave bushes in place and install expandible bush for attachment of the reboring unit
- lock with nut.

3 Zeroing of boring bar calibration tool.

(Ref. Fig. 810)

NOTE : Prior to calibration, check that the master bar and Vee fitting supports are clean.

- install master bar on surface plate
- zero the calibration tool on the required diameter repair dimension
- after zeroing, remove master bar.

4 Calibration of the boring bar

- install tools with throwaway inserts E5 SU46 for titanium machining
- install boring bar on surface plate
- calibrate the three tools one after the other, using the micrometer screw located aft. The tools must be calibrated according to the minimum repair dimension
- turn slightly the boring bar so as to displace and position the end of the tool against the feeler plunger to obtain the most accurate calibration

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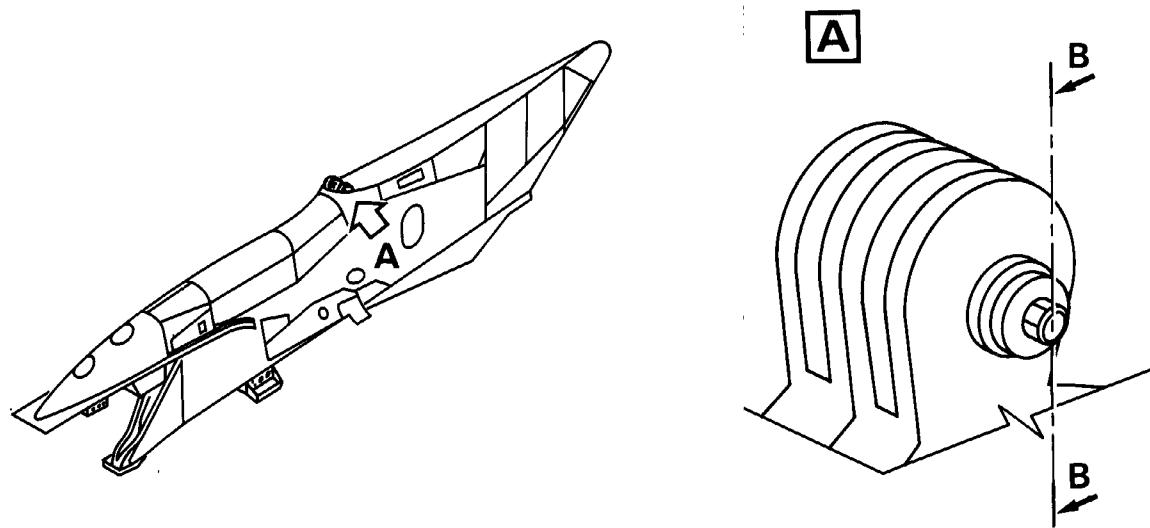
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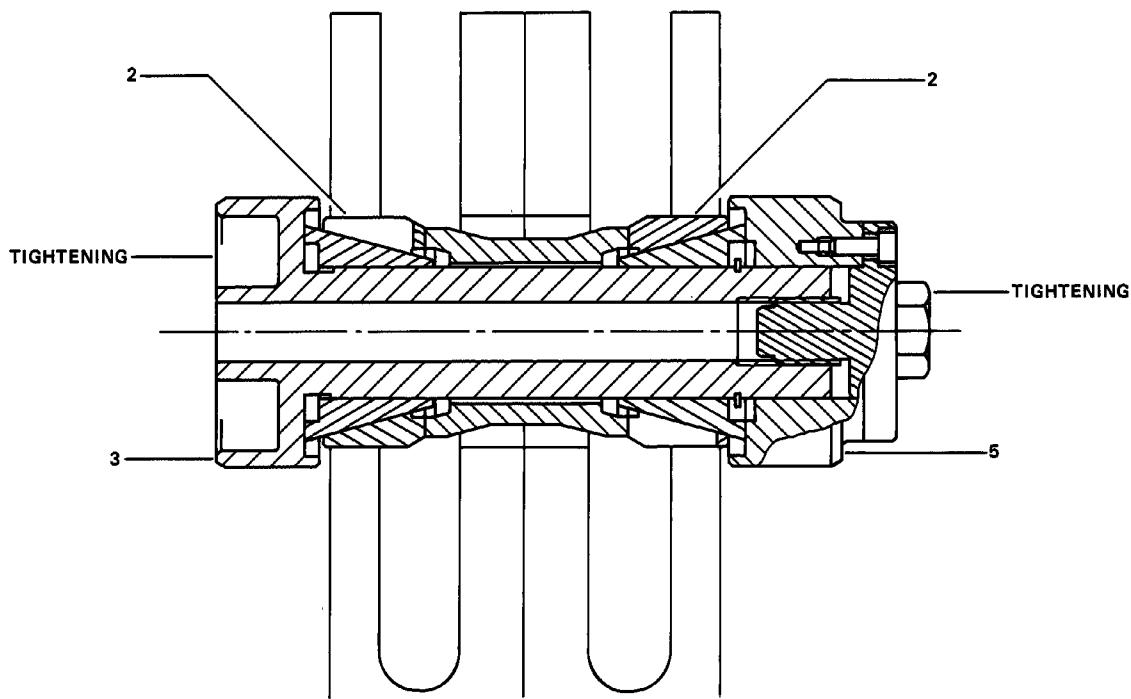
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SECTION B-B



8M5 54 51 72 8 CNMO - 14

Installation of Expandible Bush Assembly for Centering of Bearings
Figure 807

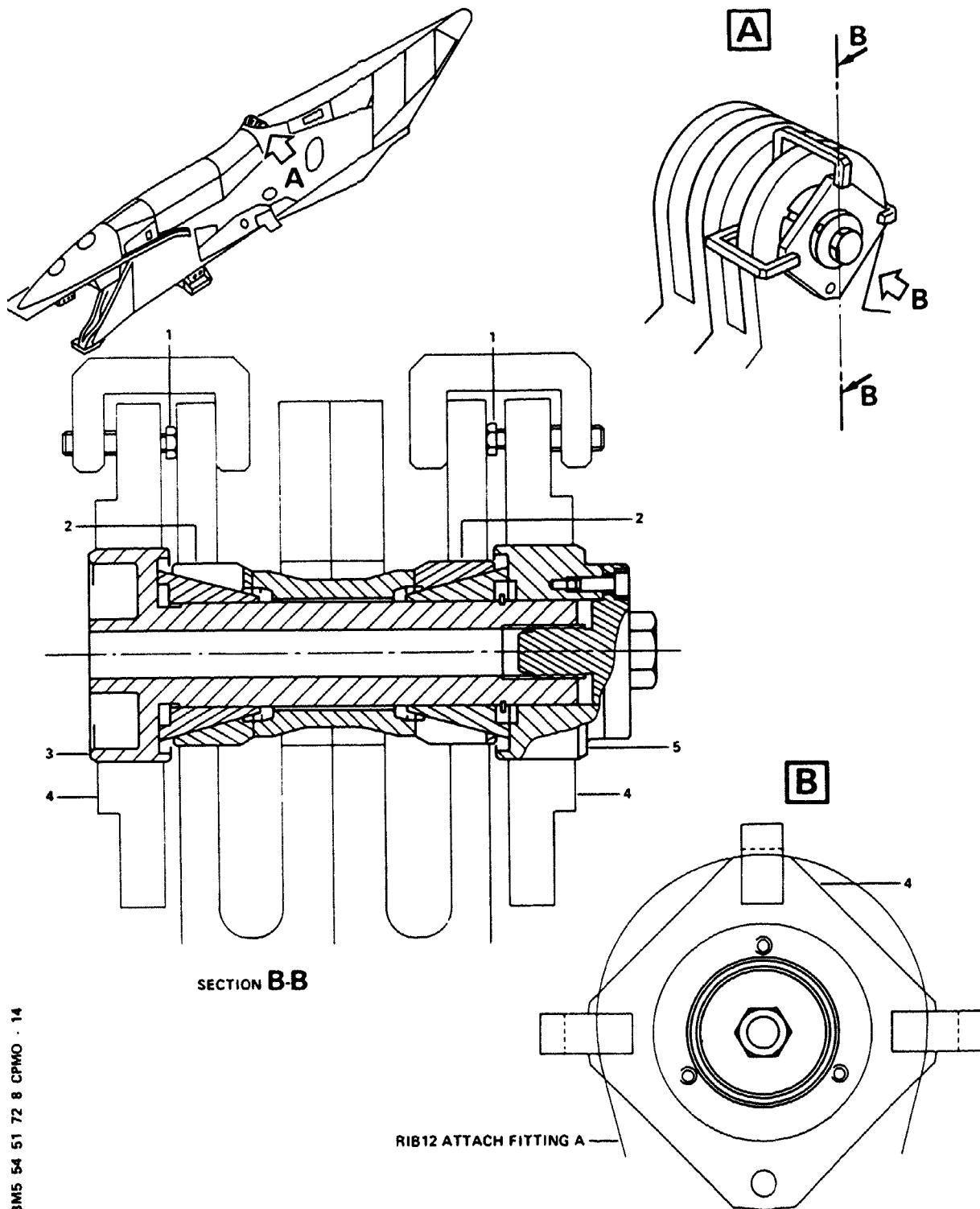
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Installation of Boring Bar Bearings
Figure 808

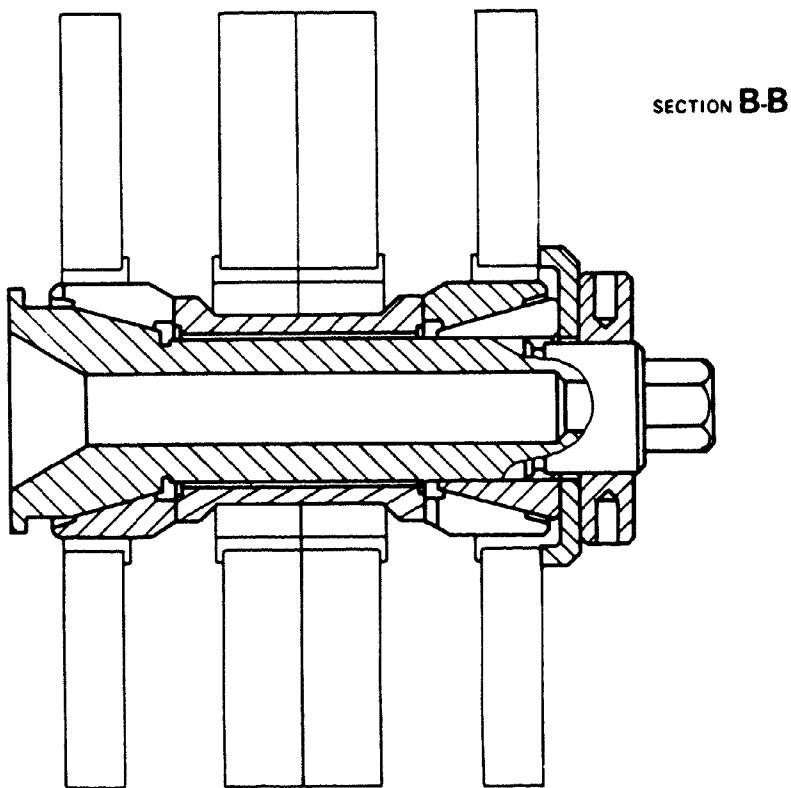
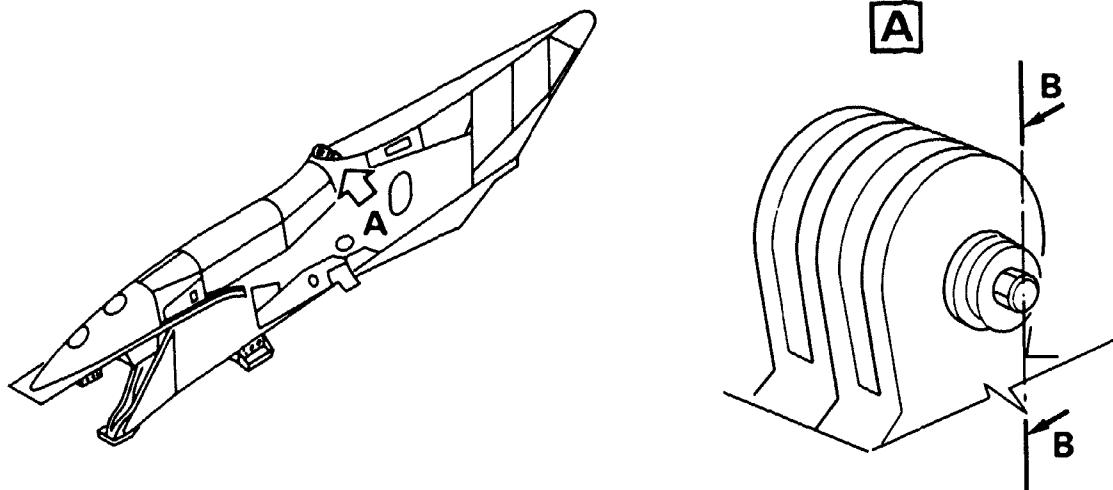
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Installation of Expandible Bush for Attachment of Reboring Unit
Figure 809

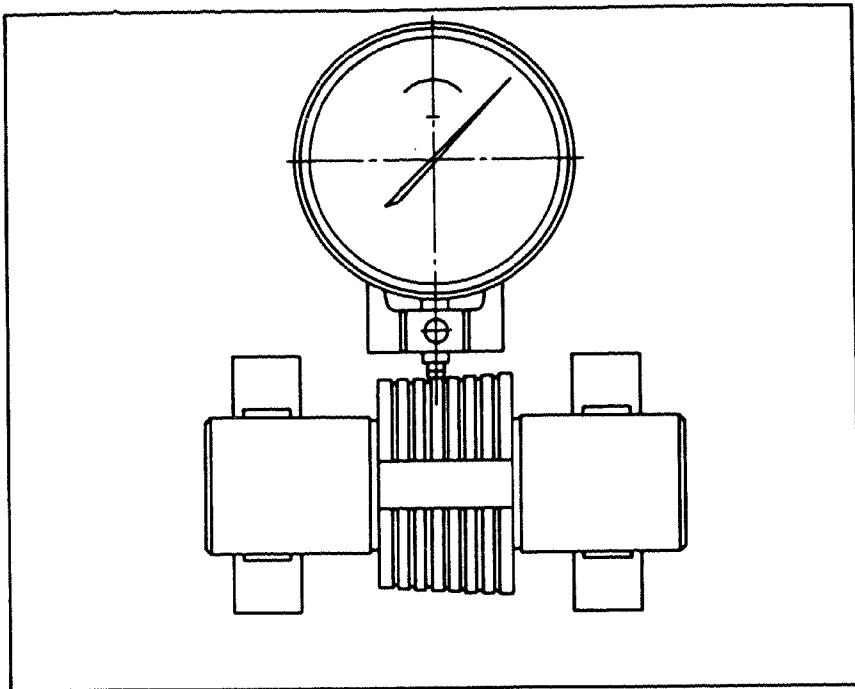
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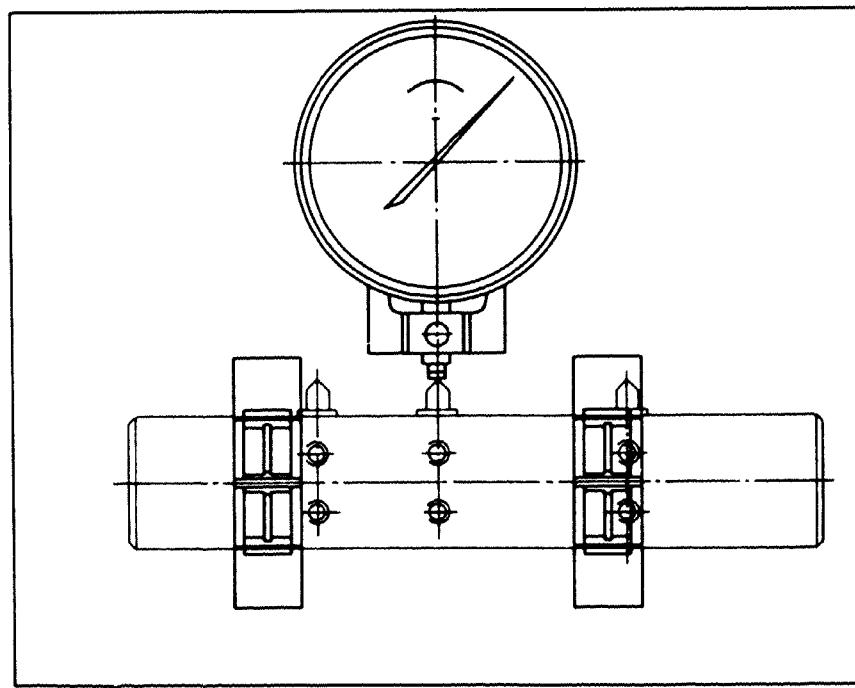
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CALIBRATION



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Zeroing of the Calibration Tool (for Reboring the Fitting)
Figure 810

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- securely tighten tool body with micrometer screw. Check repair dimension after tightening.

NOTE : Calibrate tools with extreme care.

The quality of the reborning depends on the accuracy of this adjustment.

5 Installation of the boring bar.

(Ref. Fig. 811)

- insert boring bar in hole of pylon attach fittings ; this must be done carefully not to damage tool ends
- position bar on hole bottom, tools up
- install rings (1)
- lock rings on bearings (2)
- check that boring bar turns freely.

6 Installation of boring unit.

(Ref. Fig. 812)

- position boring unit on centering adapter and connect air pressure source
- place spindle screw into the nose
- using a 5mm (0.20 in.) dia. rod, align holes in spindle screw, nose and safety nut
- install connecting pin
- tighten safety nut.

7 Reborning of pylon attach fittings at RIB12.

(Ref. Fig. 813)

- start-up boring unit with the air valve in open position
- monitor the operation and lubricate. When the end of the boring bar is at 27mm (1.06 in.) of the outer ring face, stop the operation.

8 Removal after boring.

- the boring bar is at the end of travel position
- remove pin connecting the bar to the spindle screw

- start-up the unit with the air valve in rapid-retraction position
CAUTION : ON THE RETURN MOTION, BE CAREFUL NOT TO SEND BACK THE SPINDLE SCREW TOO FAR SO AS TO AVOID JAMMING OF THE BORING UNIT GEARS.

THE RETRACTION MUST BE STOPPED WHEN THE CONNECTION HOLE IS HIDDEN BY THE BEARING INSTALLED ON THE NOSE OF THE BORING UNIT.

- remove the unit
- remove inner and outer centering rings
- remove boring bar
- the centering bearings remain in place
- check boring.

9 Chamfering of bores in attach fitting with tool 98A54003094000.

(Ref. Fig. 814)

(Ref. Fig. 815)

NOTE : The procedure is identical for the four chamfers. Only the chamfering tool differs. Sub-assembly tool 98A54003094113 is used for outer attach fitting machining and sub-assembly tool 98A54003094114 for inner attach fitting.

- install expandable bush (2). Slightly tighten nut (3) so that the expandable bush (2) can still slide inside the hole

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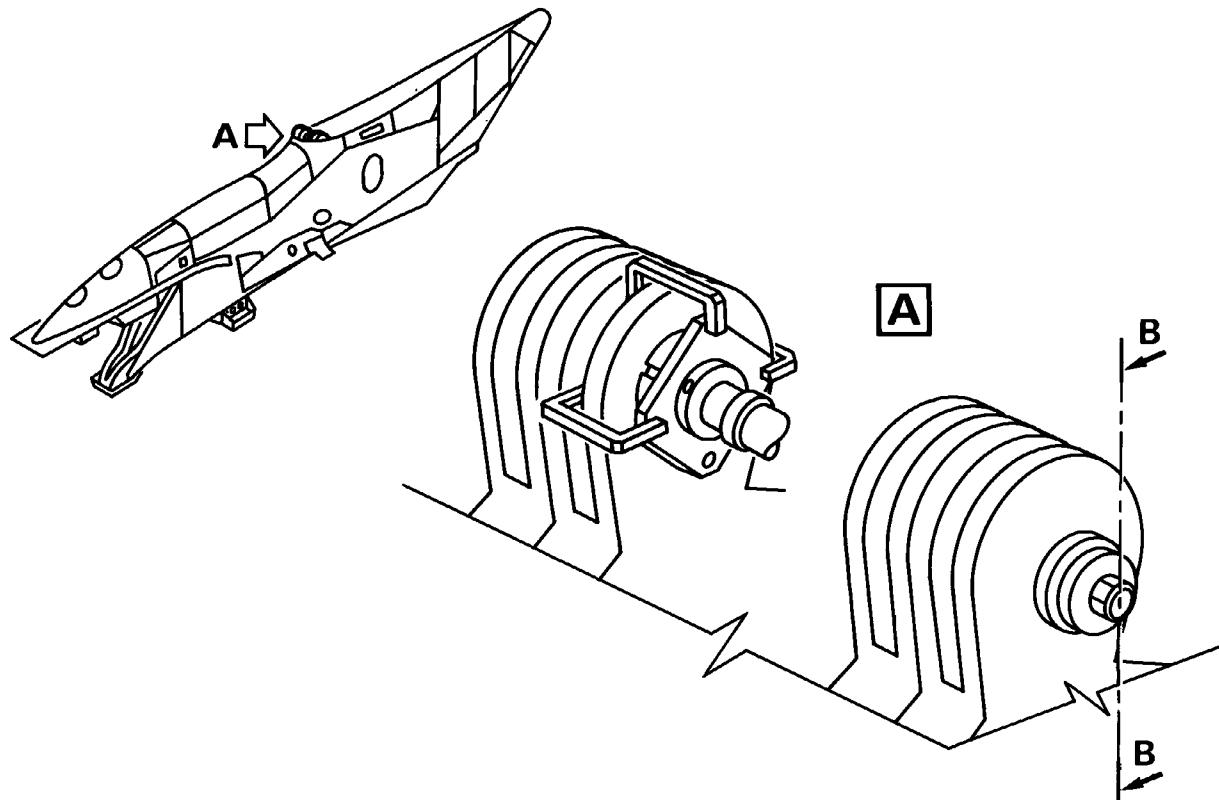
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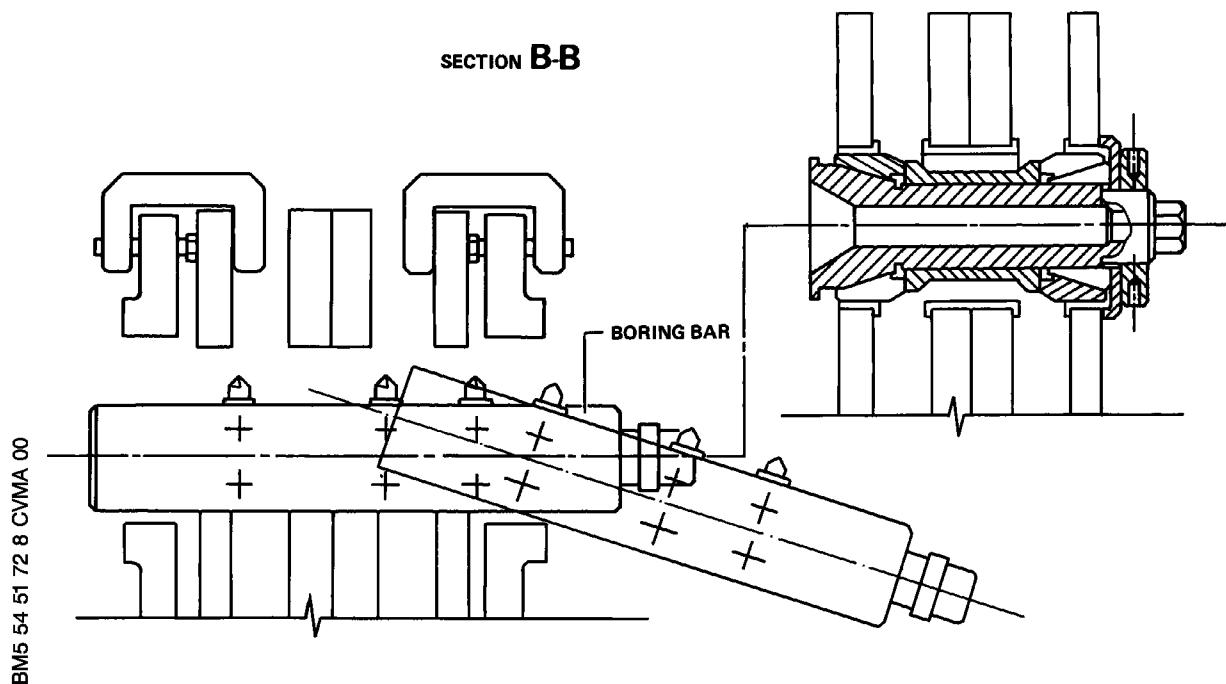
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SECTION B-B



Installation of Boring Bar (Sheet 1/2)
Figure 811

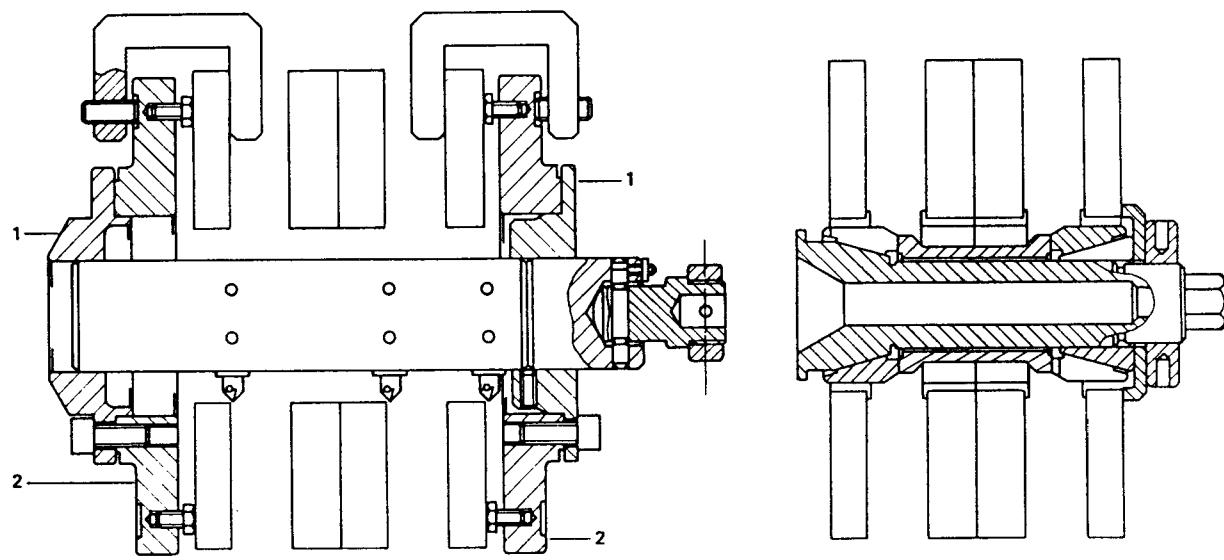
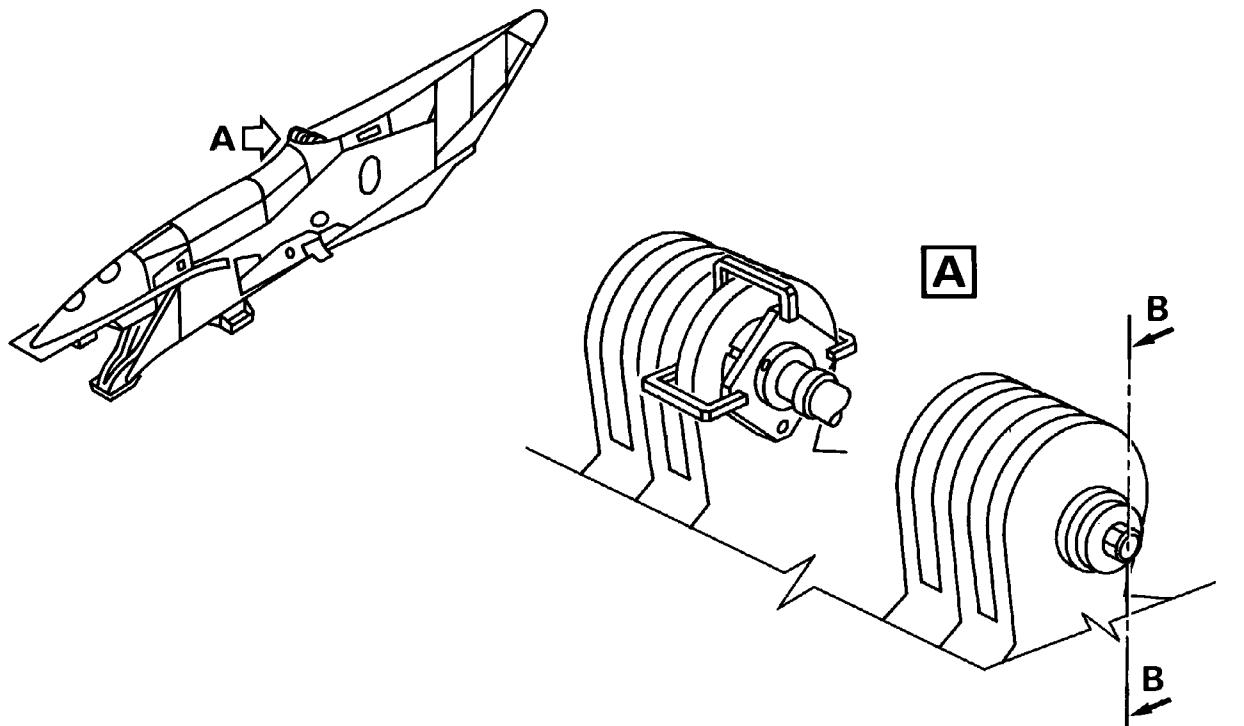
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SECTION B-B

Installation of Boring Bar (Sheet 2/2)
Figure 811

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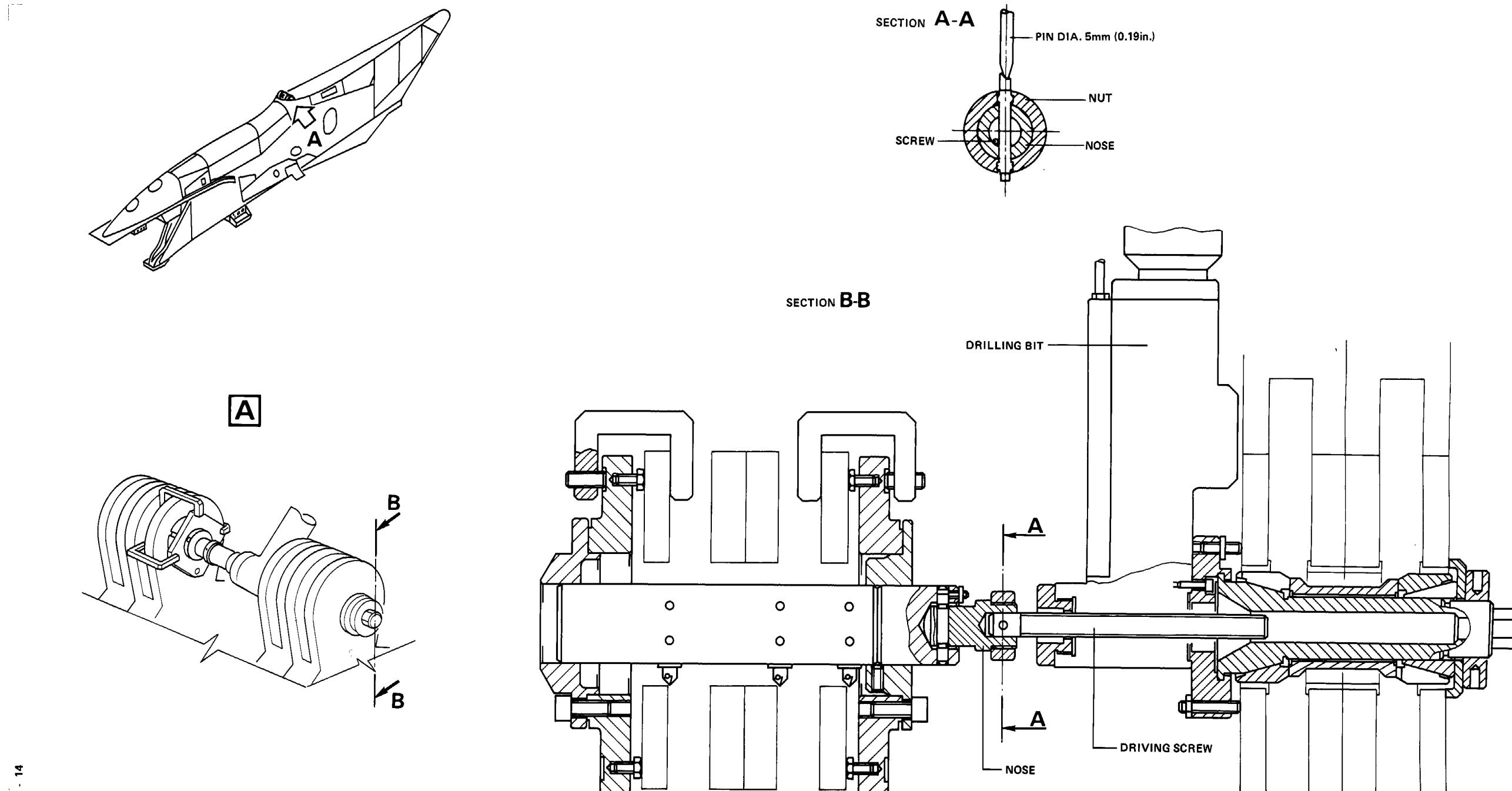
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Installation of Boring Unit (for Reboring the Fitting)
Figure 812

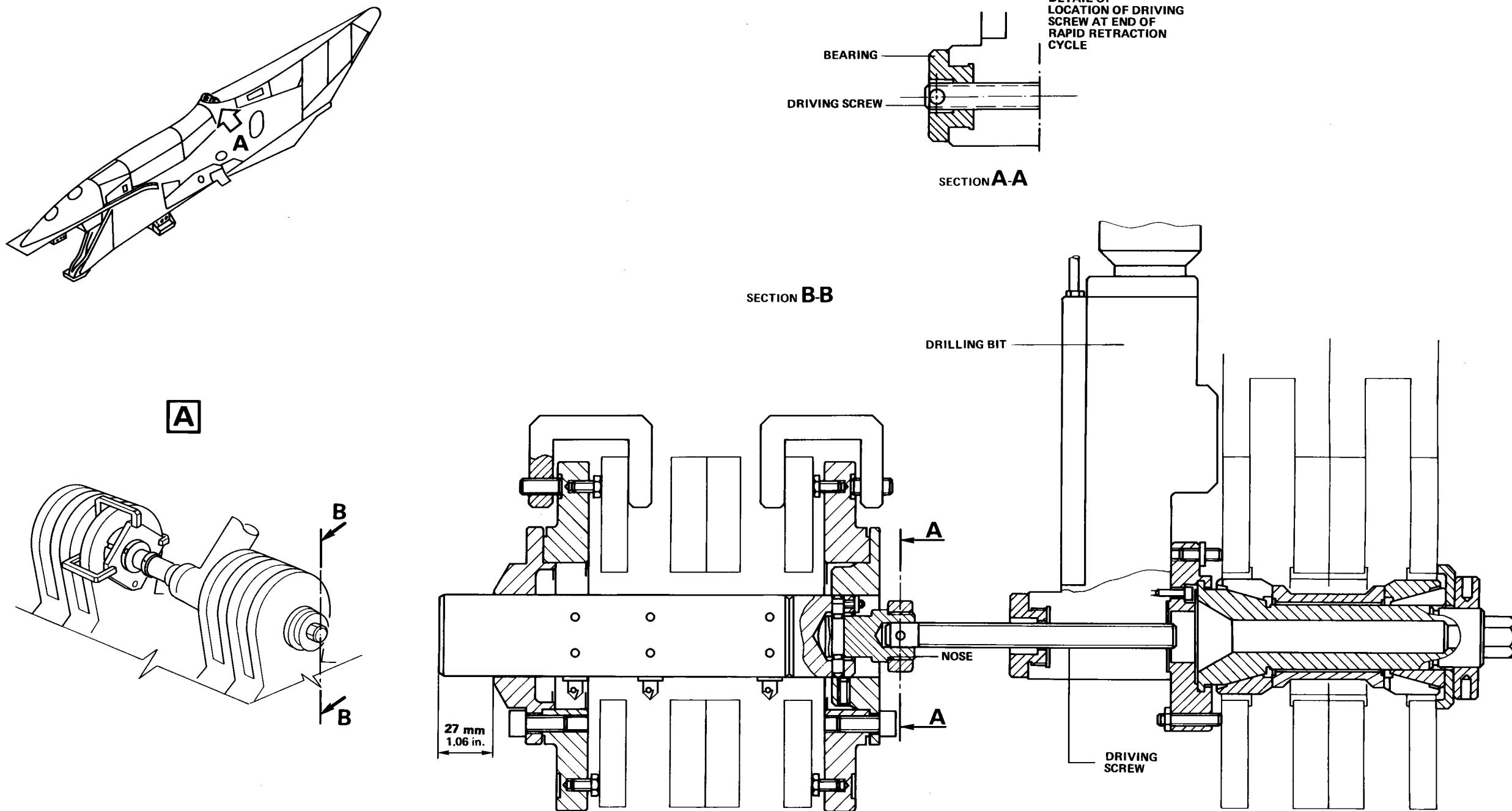
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Position of the Tools at the End of Travel Position
(for Rebororing the Fitting)
Figure 813

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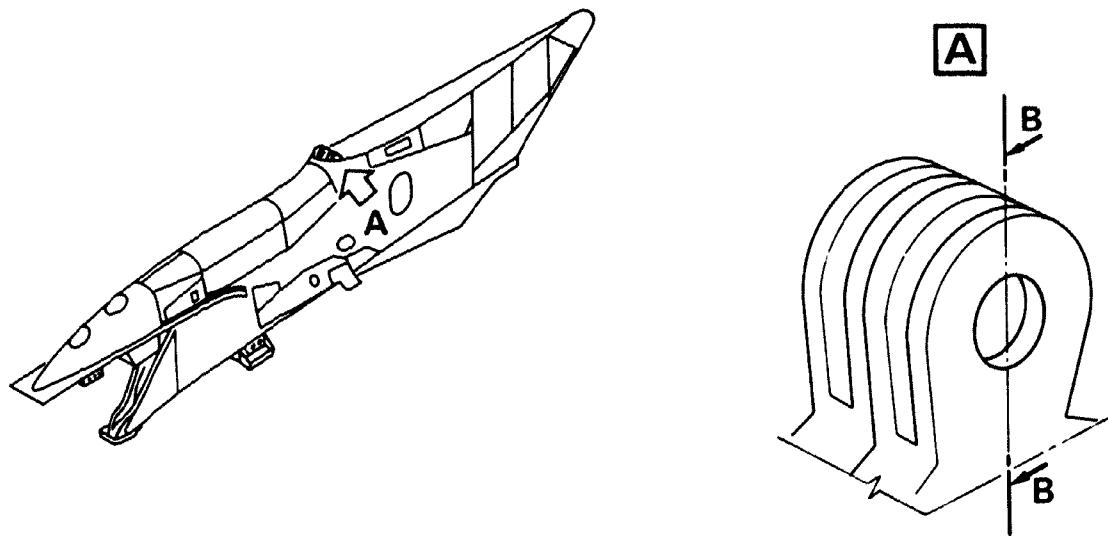
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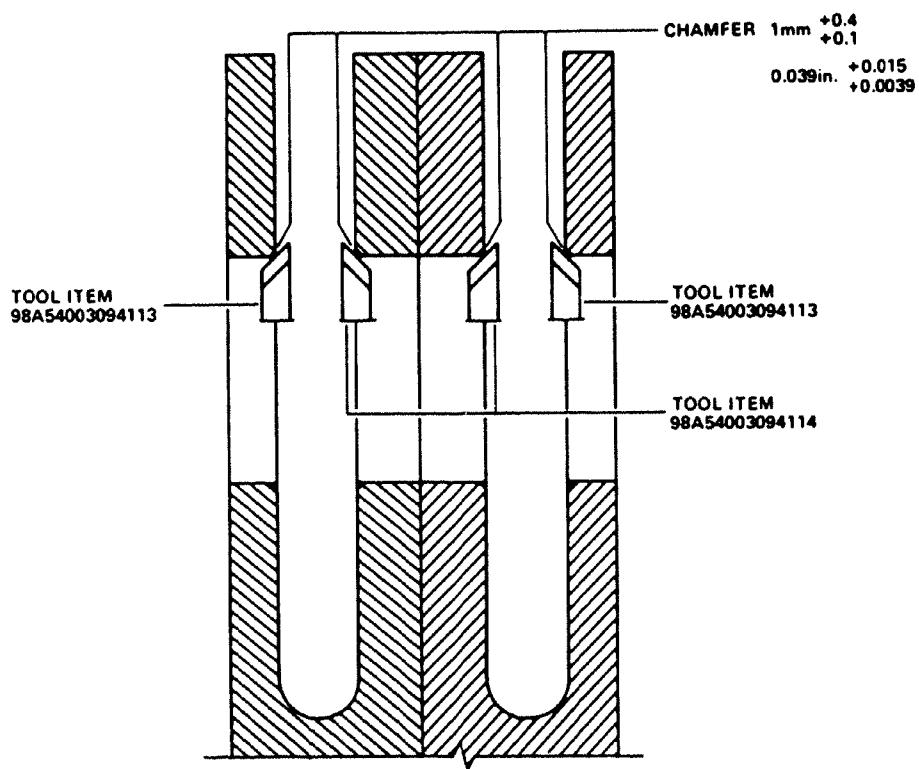
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SECTION B-B



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Chamfering of Attach Fitting
Figure 814

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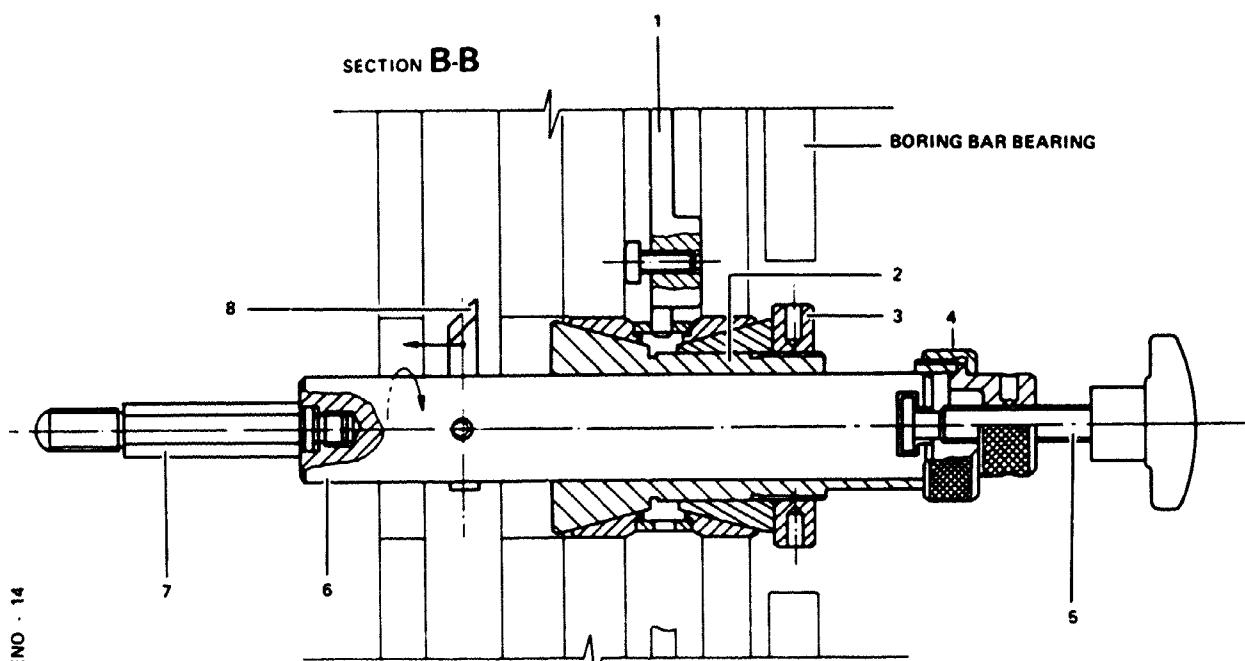
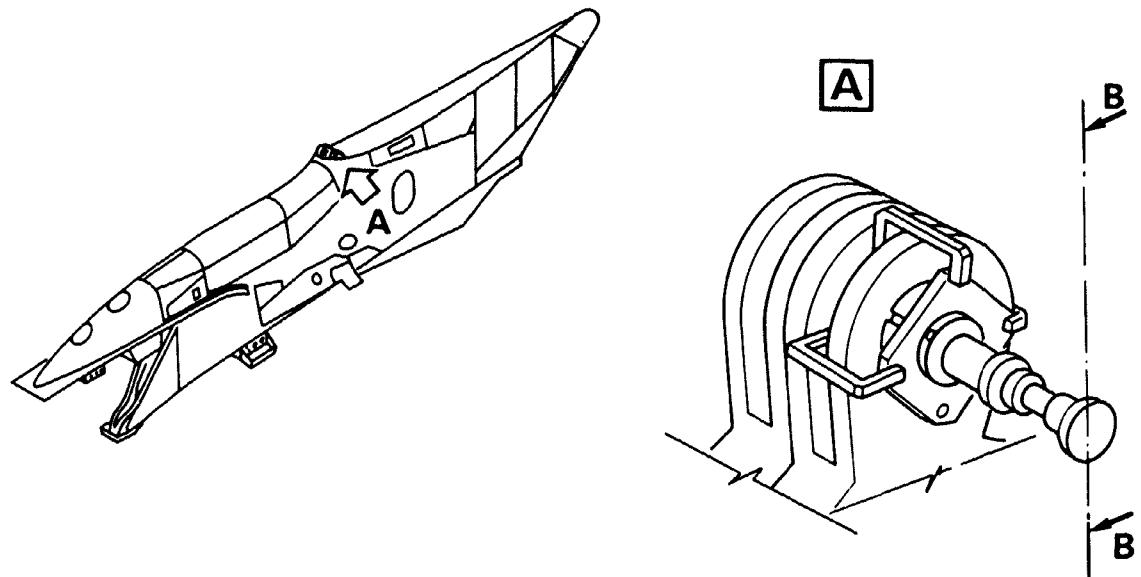
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Chamfering Tool
Figure 815

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- remove expandible bush (2) from attach fitting
 - out of the attach fitting, adjust cutter (8) in working position.
A correct adjustment is obtained when the body of cutter (8) is flush with the chamfering bar (6)
 - lock cutter (8)
 - insert chamfering bar (6) on one side of the attach fitting to be chamfered and expandible bush (2) on the opposite side
 - install control screw (5), screw threaded ring (4) on expandible bush (2) body
 - use control screw (5) to align reference mark on bar (6) with a graduation on expandible bush (2)
 - displace tool assembly inside attach fitting so that cutting side of cutter is in contact with the edge of attach fitting to be chamfered
- NOTE : Actions described in 7 and 8 are recommended for an easier evaluation of the value of the chamfer when chamfering.
- turn control screw (5) to move back cutter from attach fitting
 - lock expandible bush (2) by tightening nut (3)
 - place cutter in contact with edge to be chamfered, turn the cutter by hand and check that it contacts all the hole periphery
 - install stops (1)
 - install drive unit on spindle (7)
 - start-up unit and machine chamfer while controlling cutter progression with control screw (5)
 - move back cutter and stop drive unit
 - remove drive unit
 - untighten cutter on bar (6) and position it in such a way that the bar can be removed
 - untighten threaded ring (4) and remove control screw (5)
 - remove bar (6)
 - remove stops (1)
 - remove expandible bush (2)
 - clean carefully the machining area with Material No. 11-003 and deburr if necessary.

(c) Installation of attach fitting bushes.

(Ref. Fig. 816)

CAUTION : INSTALL INNER BUSHES BEFORE OUTER ONES.

- 1 Install repair size bushes with liquid nitrogen and using tool 98A54003063000.

(d) Reboring of bushes with tool 98A54003083000.

NOTE : As bushes are shouldered, they cannot be rebored simultaneously.

Reboring will be performed in two steps :

- simultaneous reboring of inner and outer bushes
- reboring of center bushes.

- 1 If the boring bar bearing (4) and clamps are not installed on the attach fitting, install them. Refer to paragraph 1.C.(2)(b).

(Ref. Fig. 807, 808)

- 2 Zero reboring bar calibration tool with master bar 98A54003083204 (nominal diameter : 56mm (2.20472 in.). Tolerance H7 : +0, +0.030mm (+0, +0.00118in.))

Refer to paragraph 1.C.(2)(b)3.

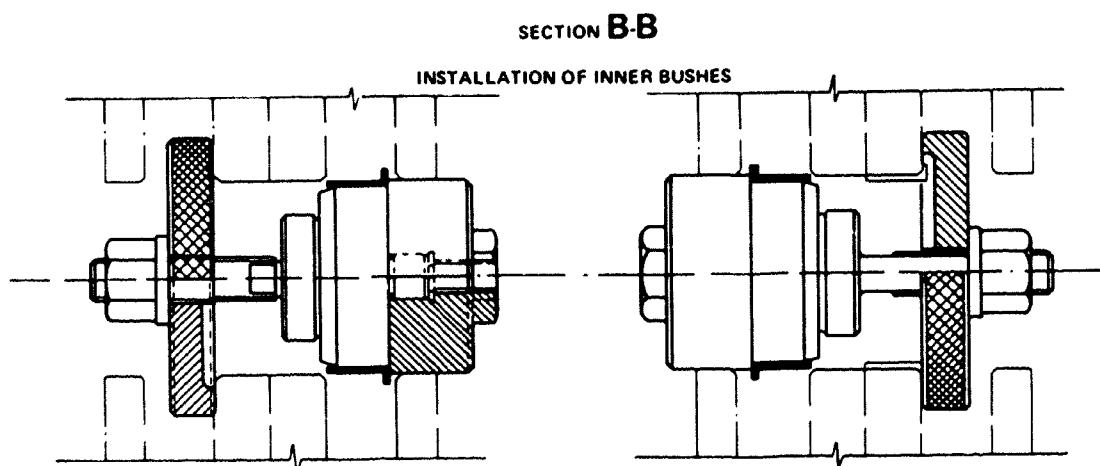
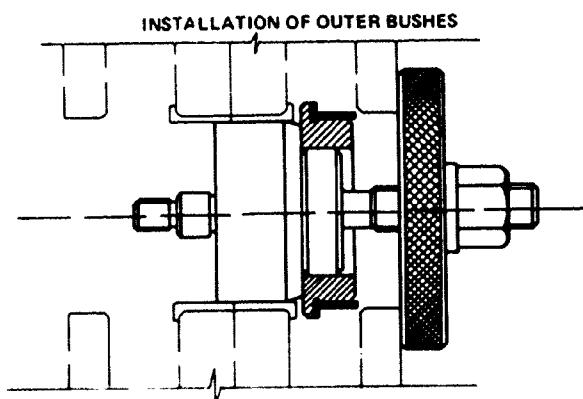
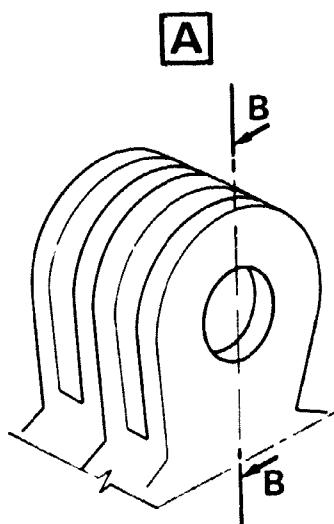
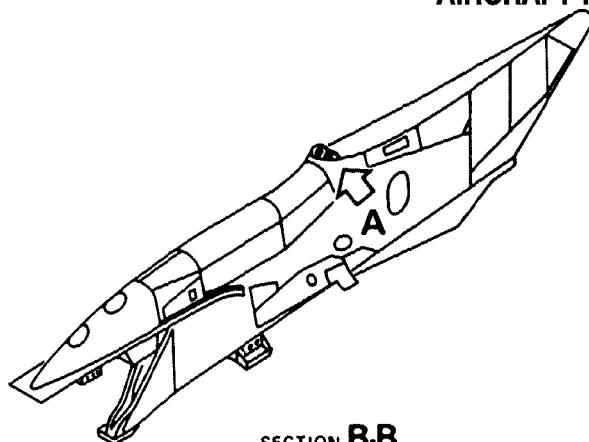
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Bush Installation Tool
Figure 816

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- NOTE : Item 98A54003083204 is a sub-assembly of 98A54003083000.
- 3 Install on reborning bar the two outer cutters fitted with inserts for beryllium bronze machining. Adjust according to paragraph 1.C.(2)(b)4.
(Ref. Fig. 817)
- NOTE : Cutters must be adjusted at between 0.01 and 0.015mm (0.00039 and 0.00059 in.) above the minimum reborning diameter.
- 4 Install boring bar referring to paragraph 1.C.(2)(b)5.
- 5 Install boring unit referring to paragraph 1.C.(2)(b)6.
- 6 Rebore outer bushes referring to paragraph 1.C.(2)(b)7. Boring is completed when boring bar is 10 mm (0.39 in.) out of the center bush.
(Ref. Fig. 818)
- 7 Remove boring bar referring to paragraph 1.C.(2)(b)8.
- 8 Bring in outer cutters and install center cutter for machining of attach fitting center bushes
- 9 Adjust center tool, referring to 1.C.(2)(b)4.
NOTE : Cutter must be adjusted at between 0.01 and 0.015 mm (0.00039 and 0.00059 in.) above the minimum reborning diameter.
- 10 Install boring bar and boring unit referring to paragraphs 3.B.(2)(d) and 1.C.(2)(b)6.
- 11 Rebore center bushes. Boring is completed when boring bar is 28 mm (1.1 in.) out of the center bush.
(Ref. Fig. 819)
- 12 Remove boring tool assembly :
 - remove boring unit
 - remove centering rings
 - remove boring bar
 - remove centering bearings
 - remove expandible bush for attachment of boring unit
 - check cutters
 - clean components
 - stow away tools in storage container.
- 13 Check bore.
 - clean thoroughly with Material No. 11-003
 - carefully deburr edges of bushes (0.1 to 0.3 mm max. (0.0039 to 0.0118 in. max.)) using tool 98A54003029101 or 98A54003029103 which serves also for removal of shoulder on bush.
- (3) Close-up**
- (a) Install fail-safe fasteners into attach fittings of RIB12
(Ref. 54-51-72, P. Block 401).
- (b) Install the two throttle control cable guide pulleys and the support angle.
- (c) Install secondary transmission pulley and throttle control cable
(Ref. 76-11-31, P. Block 401).
- (d) Install air bleed duct shield (Ref. Fig. 803).
- (e) Install clamps and electrical cable.
- (f) Install the section of fuel line located between inboard and outboard attach fittings of engine pylon (Ref. 28-20-00, P. Block 401).
- (g) Install air bleed duct elbow and air bleed duct located between wing RIB6 and RIB8 (Ref. 36-11-00, P. Block 401) (Ref. Fig. 801).
- (h) Install sensors 53HA (54HA) and 5HX (4HX) (Ref. 36-11-21 and 36-21-13,

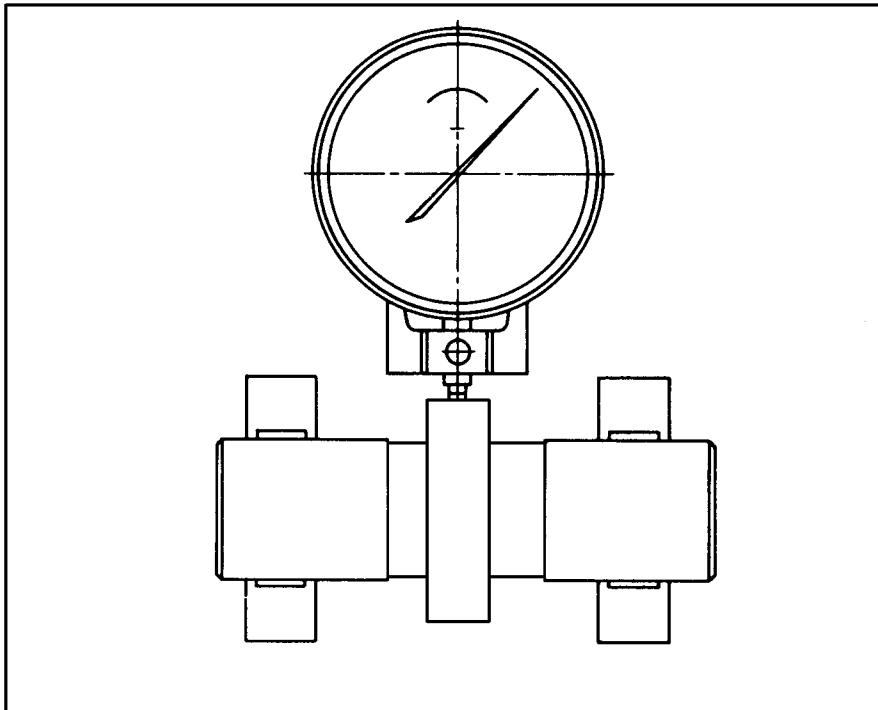
EFFECTIVITY: ALL

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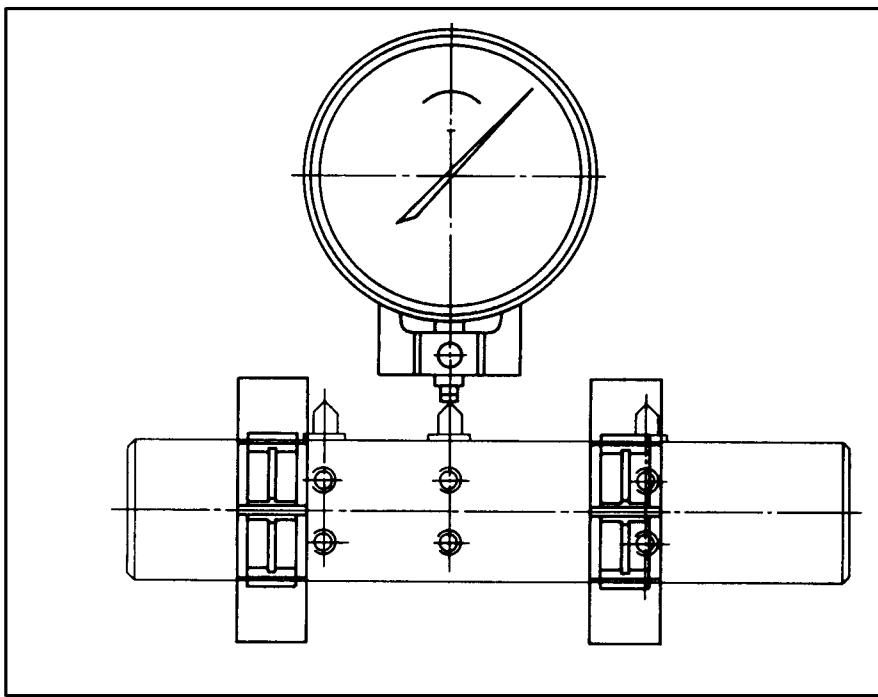
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CALIBRATION



BM5 54 51 72 8 SMA0 00

Zeroing of the Calibration Tool (for Reboring the Bushes)
Figure 817

EFFECTIVITY: ALL

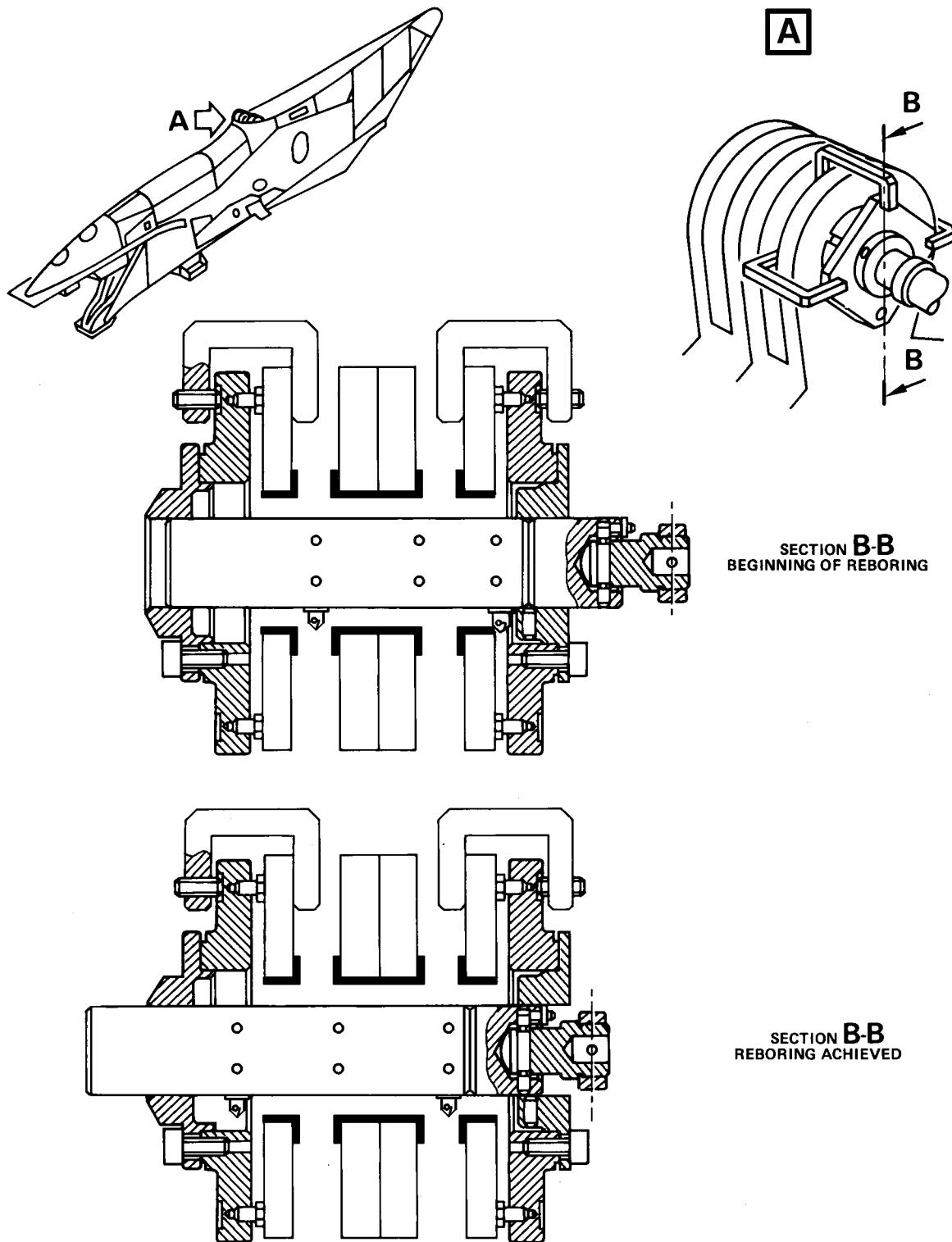
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BM5 54 51 72 8 CJN0 01

R

Reboring of Outer Bushes.
Figure 818

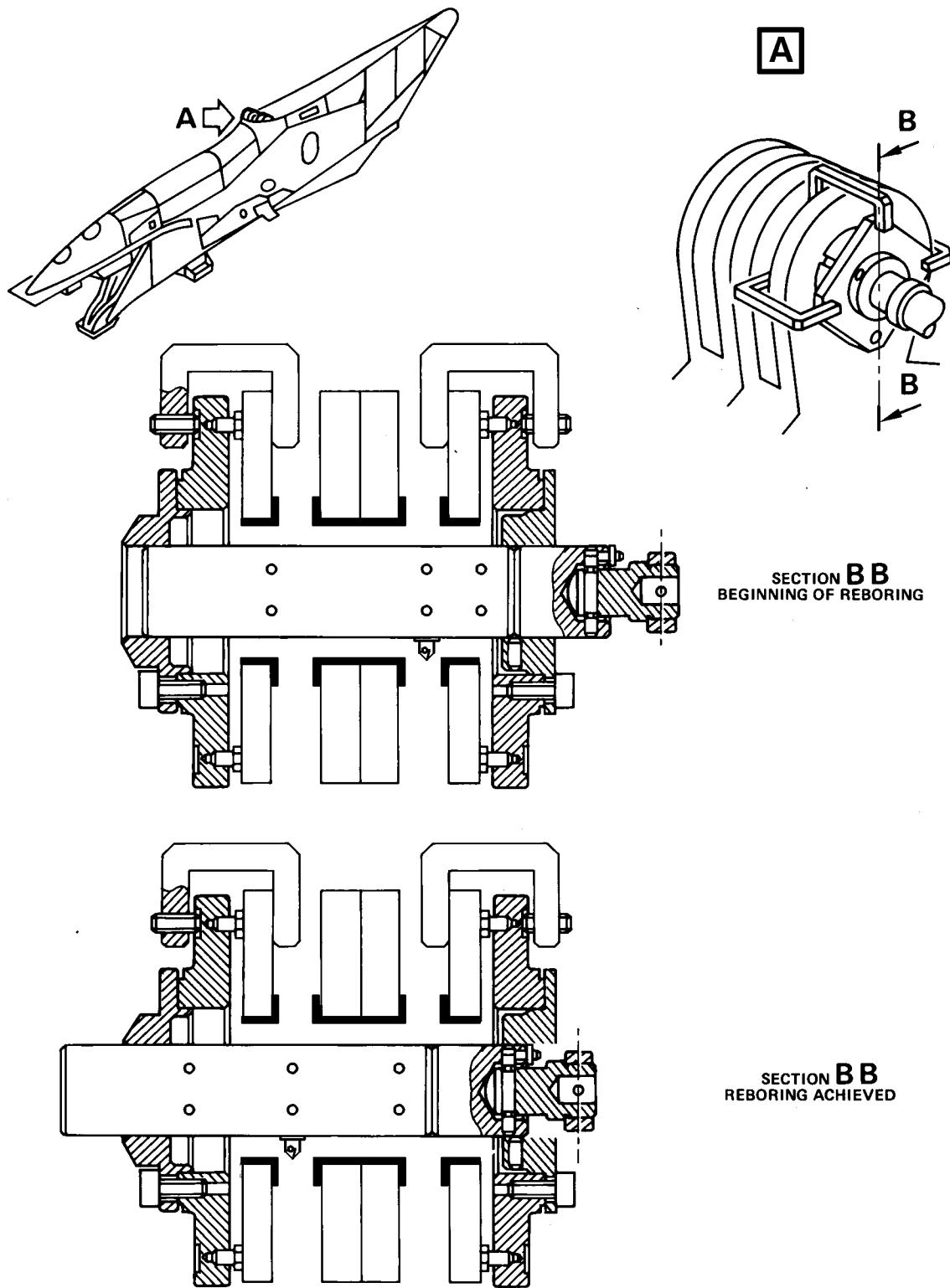
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BM5 54 51 72 8 CLN0 01

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Reboring of Center Bushes
Figure 819

EFFECTIVITY: ALL

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P. Block 401). (Ref. Fig. 801)

- (i) Remove plug and connect electrical connectors (13) from high stage pressure sensors 47HA (48HA). (Ref. Fig. 802)
- (j) Make certain that working area is clean and clear of tools and miscellaneous items of equipment. Install panels removed in paragraph 1.C.(1).
- (k) Retract flap and slats (Ref. 27-80-00, P. Block 301).
- (l) Install engine (Ref. 71-00-00, P. Block 401).
- (m) Remove jacks supporting the aircraft (Ref. 07-11-00, P. Block 1).
- (n) Close engine cowl doors (Ref. 71-13-00, P. Block 301).
- (o) Remove access platform.

2. Replacement of the Bushes of the Shackles at RIB12

NOTE : This procedure is identical for left and right pylons.

A. Equipment and Materials

ITEM	DESIGNATION
(1) Material No. 08-029	Bonding and Adhesive Compounds (Ref. 20-31-00)
(2) Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
Referenced Procedure - 54-51-72, P. Block 401	Forward Attach Fitting (RIB12)

B. Job Set-Up

- (1) Remove the shackles at RIB12 (Ref. 54-51-72, P. Block 401).

C. Procedure

(Ref. Fig. 820)

- (1) Remove the bushes (2) from the shackle (1).
- (2) Clean the shackle (1) with Material No. 11-003.
- (3) Visually inspect the shackle bores and make sure that there is no damage.
- (4) Measure the diameters D1 of the shackles bore and make sure that the diameter D1 is (nominal diameter : 62 mm (2.4409 in.).
Tolerance H7 : + 0, + 0.030 mm (+ 0, + 0.00118 in.).
- (a) If the diameter D1 is not in the tolerance, bore the shackle (1) to the repair size diameter given in table 802 :

EFFECTIVITY: ALL

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REPAIR SIZE	NOMINAL VALUE OF THE BORE D1 IN MM (IN.)	TOLERANCE IN MM (IN.)
R1	62.2 (2.4488)	H7 : + 0.030 (+0.00118) + 0 (-0)
R2	62.4 (2.4566)	H7 : + 0.030 (+0.00118) + 0 (-0)
R3	62.6 (2.4645)	H7 : + 0.030 (+0.00118) + 0 (-0)
R4	62.8 (2.4724)	H7 : + 0.030 (+0.00118) + 0 (-0)
R5	63 (2.4803)	H7 : + 0.030 (+0.00118) + 0 (-0)
R6	63.4 (2.4960)	H7 : + 0.030 (+0.00118) + 0 (-0)
R7	63.9 (2.5157)	H7 : + 0.030 (+0.00118) + 0 (-0)
R8	64.4 (2.5354)	H7 : + 0.030 (+0.00118) + 0 (-0)

Table 802
Repair Sizes of the Shackles at RIB12

(5)Quench the new bushes (2) in the liquid nitrogen.
 (6)Install bushes (2) in the shackle (1) with Material No. 08-029.
 (7)Rebore the bushes (2) to the diameter D2 (nominal diameter : 56 mm
 (2.20472 in.). Tolerance H7 : + 0, + 0.030 mm (+ 0, + 0.00118 in.).
 (8)Respect the center-to-center distance X of 182.88 mm (7.2 in.)
 (+ 0.01, - 0.01 mm) (+ 0.00039, - 0.00039 in.).
 (9)Clean the shackle (1) with Material No. 11-003.

D. Close-Up

(1)Install the shackles at RIB12 (Ref. 54-51-72, P. Block 401).

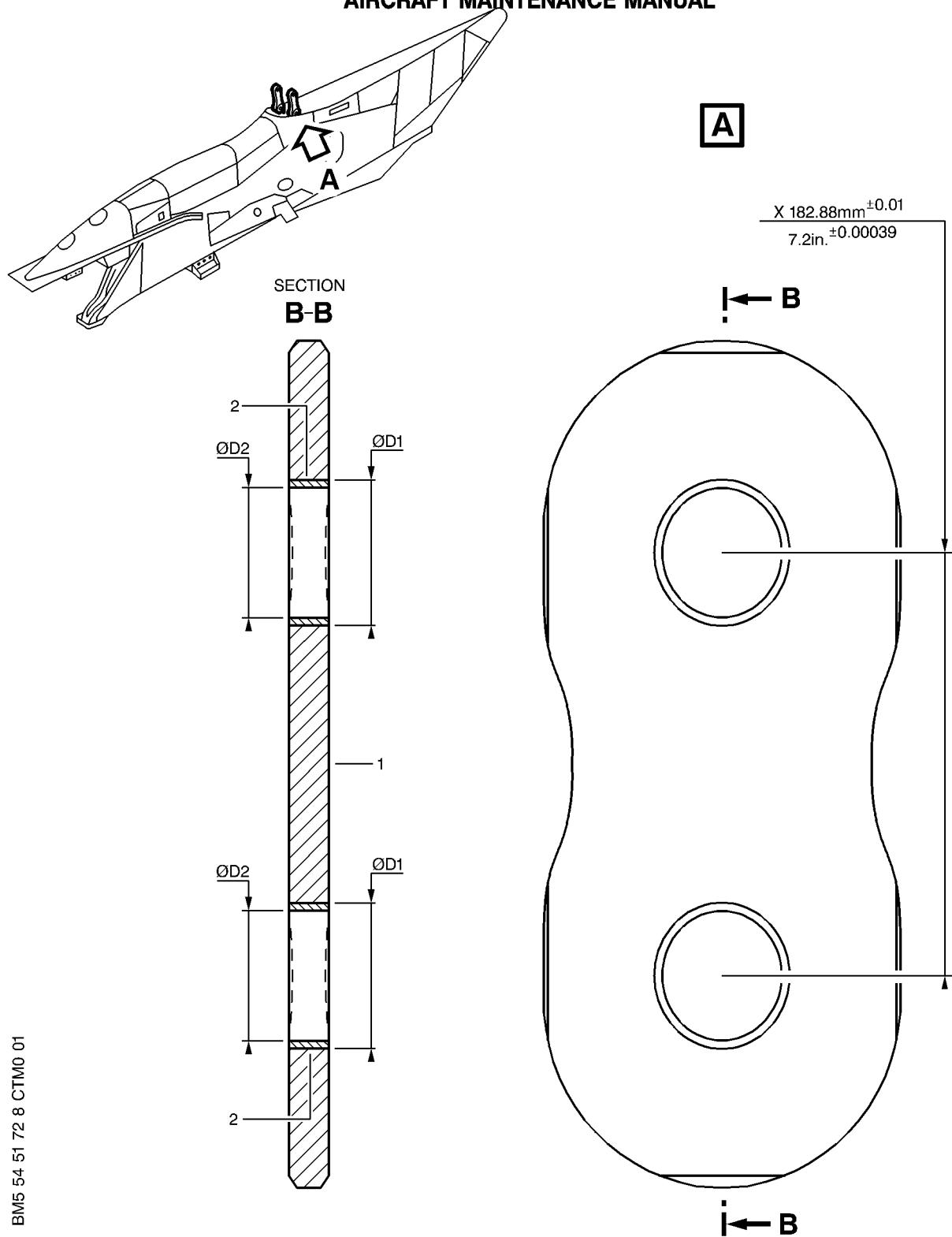
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BM5 54 51 72 8 CTM0 01

R

Bushes of the Shackles at RIB12
Figure 820

EFFECTIVITY: ALL

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AFT ATTACH FITTING (RIB18) - REMOVAL/INSTALLATION1. Removal/Installation of the Shackles and the Ball Joint Assembly at RIB18A. Equipment and Materials

ITEM	DESIGNATION
(1)98A54003022000	Extractor - Aft Attach Fitting Sleeve
(2)98A54003084000	Inserting Tool - Aft Attach Fitting Sleeve
(3)	Access Platform
(4)65303A4351M000	Pin Wrench
(5)	Torque Wrench up to 55 m.daN (405.6 lbf.ft.)
(6)	Jack 10 Tonnes (23 000 lb.) with Extension 2800 mm (110.2 in.)
(7)98A54403024000	Adapter - Dynamometric, N1 for Inspection/Check
(8)98A54603005000	Torquage Tool
(9)98A54403021000	Tool-Clamping, Shackle Removal RIB18
10)65375AB351M000	Special Wrench
11)	Circuit Breaker Safety Clips
12)Material No. 04-004	Common Greases (Ref. 20-31-00)
13)Material No. 04-007	Common Greases (Ref. 20-31-00)
14)Material No. 05-002	Special Materials (Ref. 20-31-00)
15)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
16)	Key Washer
Referenced Procedures	
- 07-11-00, P. Block 1	Jacking for Aircraft Maintenance
- 54-51-75, P. Block 601	Aft Attach Fitting (RIB18)
- 54-54-00, P. Block 401	Aft Fairing
- 71-00-00, P. Block 401	Power Plant

B. Job Set-Up

(1) Remove engine (Ref. 71-00-00, P. Block 401).

(2) Install pylon access platform.

(3) Remove aft fairing (Ref. 54-54-00, P. Block 401).

(4) Jack-up the aircraft (Ref. 07-11-00, P. Block 1).

NOTE : It is not necessary to lift the aircraft wheels clear of ground, jacking of the aircraft serves only to prevent reaction of the shock absorbers and maintain the pylons at a constant height from the ground.

Make certain that tail jack is still operational after aircraft jacking. If not rectify jack height.

(5) Remove the following fillets and skin panels :

on LH engine pylon 473BL (474BR)

on RH engine Pylon 483BL (484BR).

(6) Secure tool 98A54403024000 under pylon forward pyramid and on jack.

(Ref. Fig. 401)

(7) Position jack under pyramid and apply a vertical load of between 220 and 420 kg (485 and 925 lbf).

(8) Install inboard and outboard tool - clamping, shackle, removal RIB18
98A54403021000

EFFECTIVITY: ALL

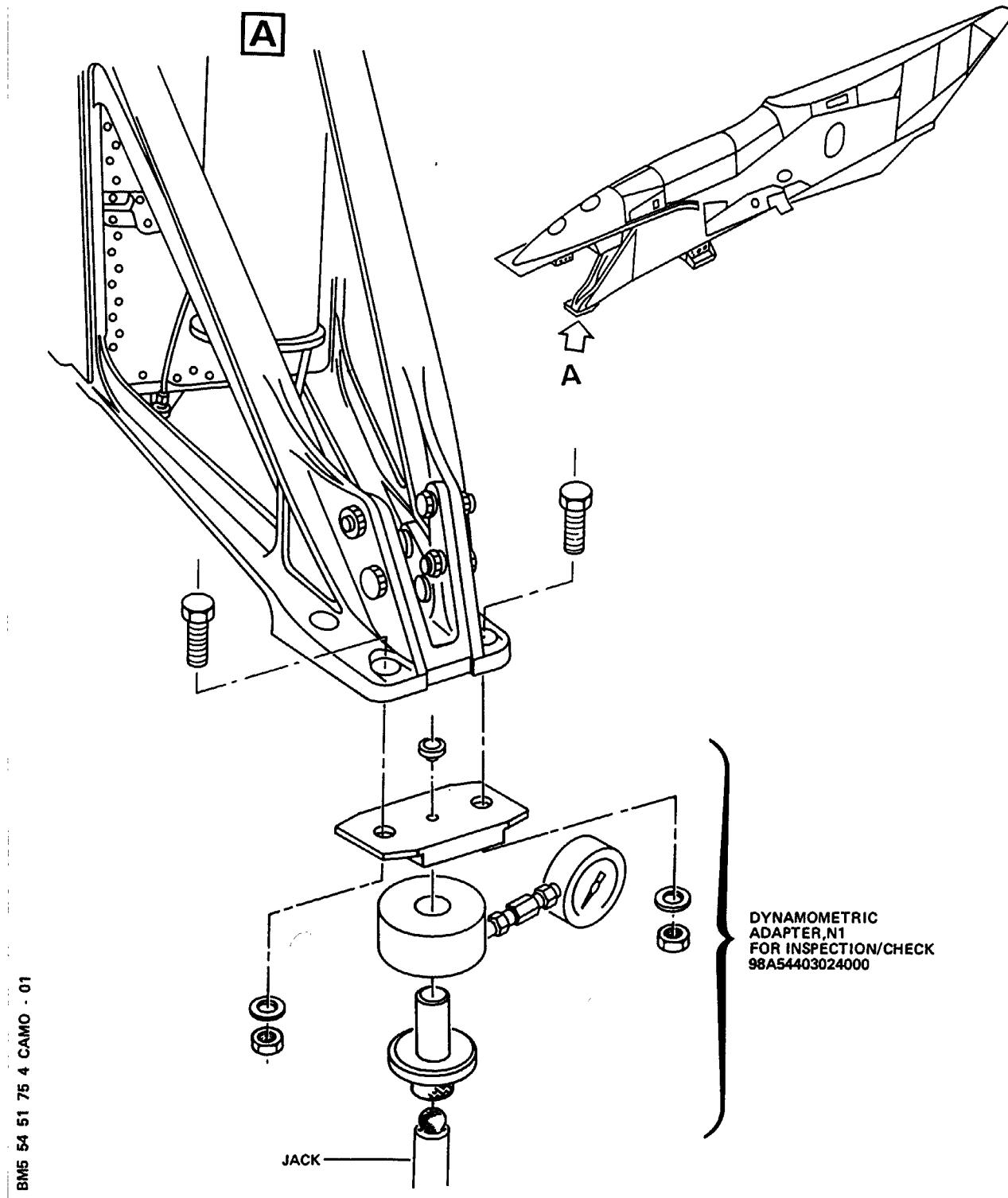
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Installation of Dynamometric Adapter under
Pylon Forward Pyramid
Figure 401

EFFECTIVITY: ALL

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(Ref. Fig. 402)

C. Procedure

(1) Removal of shackles and sleeves (Ref. Fig. 403, 404, 405)

WARNING : CHECK THAT REQUIRED LOAD IS APPLIED BY JACK ON PYLON.**NOTE : Procedure is identical for each bolt and sleeve.****NOTE : Remove the lower sleeve first.**

(a) Remove and discard cotter pin (2).

(b) Use pin wrench 65303A4351M000 to immobilize bolt (3) and slightly unscrew nut (4) using special wrench 65375AB351M000.

(c) Extract bolt (3) and retain nut (4).

(d) Remove and discard key washer (1); immobilize sleeve (6) using a thin spanner and remove nut (5) using special wrench 65375AB351M000.

(e) Remove sleeves (6) using extractors 98A54003022000.

NOTE : To facilitate removal of sleeves, apply a slight load on forward pyramid or act on both knurled nuts of tool 98A54403021000.

(2) Removal of ball joint assembly (Ref. Fig. 406)

(a) Install support included in tool 98A54603005000 on ball joint at RIB18.

(b) Unfold tabs of keywasher to free nut.

(c) Untighten nut using wrench included in tool 98A54603005000.

(d) Remove support, ball joint, nut and keywasher.

(3) Preparation of replacement components

CAUTION : AS SOME PYLON COMPONENTS ARE IN TITANIUM, CLEANING WITH CHLORINATED SOLVENTS MAY RESULT IN SERIOUS DAMAGE.

(a) Clean bolts, sleeves, shackles and washers with Material No. 11-003.

(b) Perform visual check (Ref. 54-51-75, P. Block 601).

(c) Clean outer ring and bore of ball joint. Do not apply cleaning Material in ball joint hinging area not to damage AIRFLOW film enabling rotation of the inner ring into the outer ring.

(d) Visually inspect for corrosion, wear and structural defects.

(4) Installation of ball joint assembly

(a) Slightly smear outer ring of ball joint with Material No. 05-002 and install ball joint in fitting at RIB18.

(b) Immobilize ball joint in fitting using support included in tool 98A54603005000.

(c) Install a new keywasher and nut. TORQUE nut to between 45 and 55 m.daN (331.8 and 405.6 lbf. ft.).

(d) Secure nut using new keywasher.

(e) Remove support.

(5) Installation of shackles and sleeves (Ref. Fig. 403, 404, 405)

NOTE : The installation procedure is identical for each bolt and sleeve.**NOTE : Install upper sleeves first.**

(a) Coat holes of attach fittings on wing and pylon with Material No. 04-004.

(b) Position shackles and hold them in place.

(c) Coat plain section of sleeves with Material No. 04-004 and thread with Material No. 04-007.

(d) Install upper sleeves (50 mm dia.) and lower sleeves (60 mm dia.) using tool 98A54003084000.

NOTE : To facilitate installation of sleeves, apply a slight load on forward pyramid or screw both knurled nuts of tool 98A54403021000.

EFFECTIVITY: ALL

R

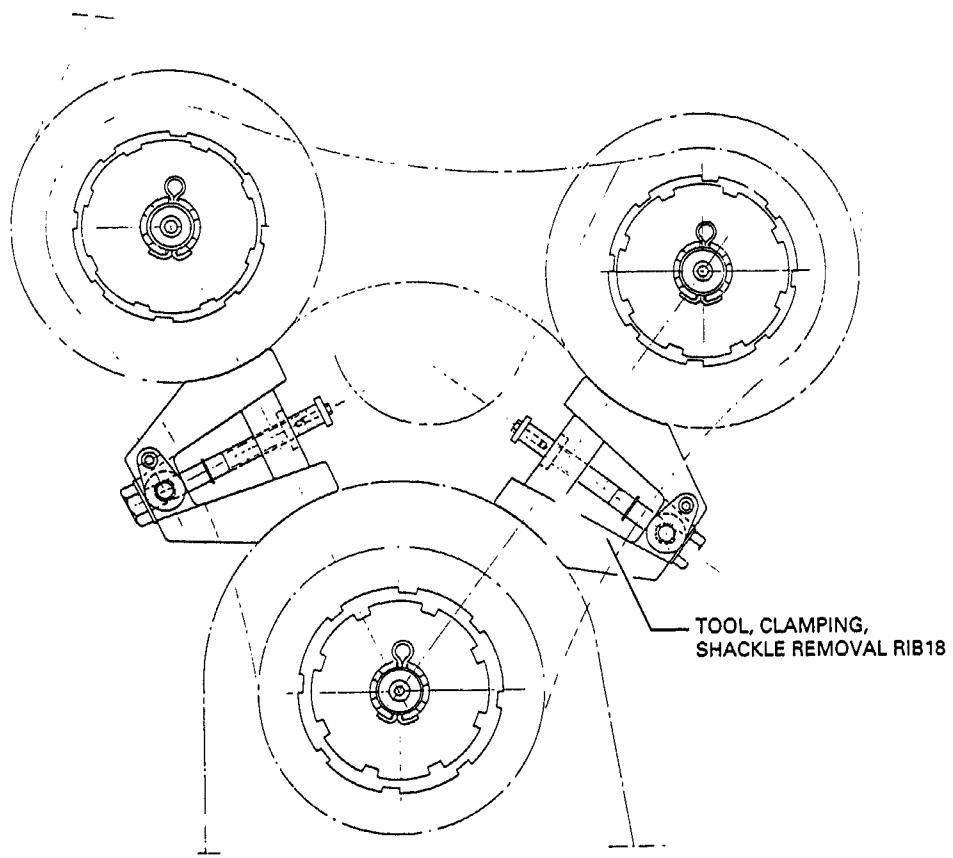
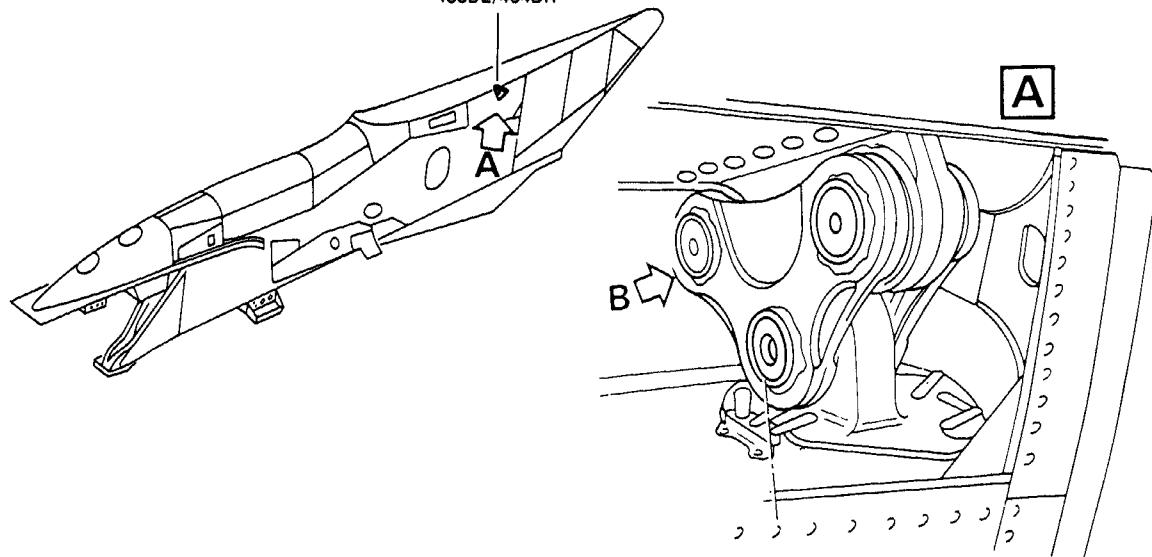
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473BL/474BR
483BL/484BR



BMS 54 5175 4 CBMO - 01

Installation of Tool - Clamping, Shackle Removal RIB18
Figure 402

EFFECTIVITY: ALL

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- (e) Before removing tool 98A54003084000, check that shackles and sleeves are in correct position.
- (f) Install a new key washer (1).
- (g) Screw nut (5) without tightening until against sleeve (6).
- R (h) Immobilize sleeve (6) and TORQUE nut (5) to between 4 and 6 m.daN (29.5 and 44.2 lbf.ft.) using tool 65375AB351M000 equipped with a dynamometric wrench.
- R (j) Safety nut (5) by bending one tab of the key washer (1).
- (k) Coat thread of bolt (3) with Material No. 04-007 and insert bolt (3) into sleeve (6).
- (l) Immobilize bolt (3) using pin wrench 65303A4351M000 and tighten nut (4).
- R (m) TORQUE nut (4) to between 4 and 6 m.daN (29.5 and 44.2 lbf.ft.) using tool 65375AB351M000 equipped with a dynamometric wrench and install cotter pin (2).
- (6) Close-up
- (a) Remove outboard and inboard tool-clamping, shackle, removal RIB18 98A54403021000.
- (b) Remove tool 98A54403024000 from jack and pylon.
- (c) Install engine (Ref. 71-00-00, P. Block 401).
- (d) Install the following fillets and skin panels :
- LH engine pylon : 473BL (474BR)
 - RH engine pylon : 483BL (484BR).
- (e) Remove jacks supporting the aircraft (Ref. 07-11-00, P. Block 1).
- (f) Install aft fairing (Ref. 54-54-00, P. Block 401).
- (g) Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
- (h) Remove access platform.

2. Removal/Installation of Fitting at RIB18

A. Reason for the Job

This procedure describes the Removal/Installation of aft attach fitting at RIB18.

B. Equipment and Materials

ITEM	DESIGNATION
(1)	Lockwire
(2) Material No. 11-003	Cleaning Agents (Ref. 20-31-00)

C. Job Set-Up

(Ref. Fig. 407)

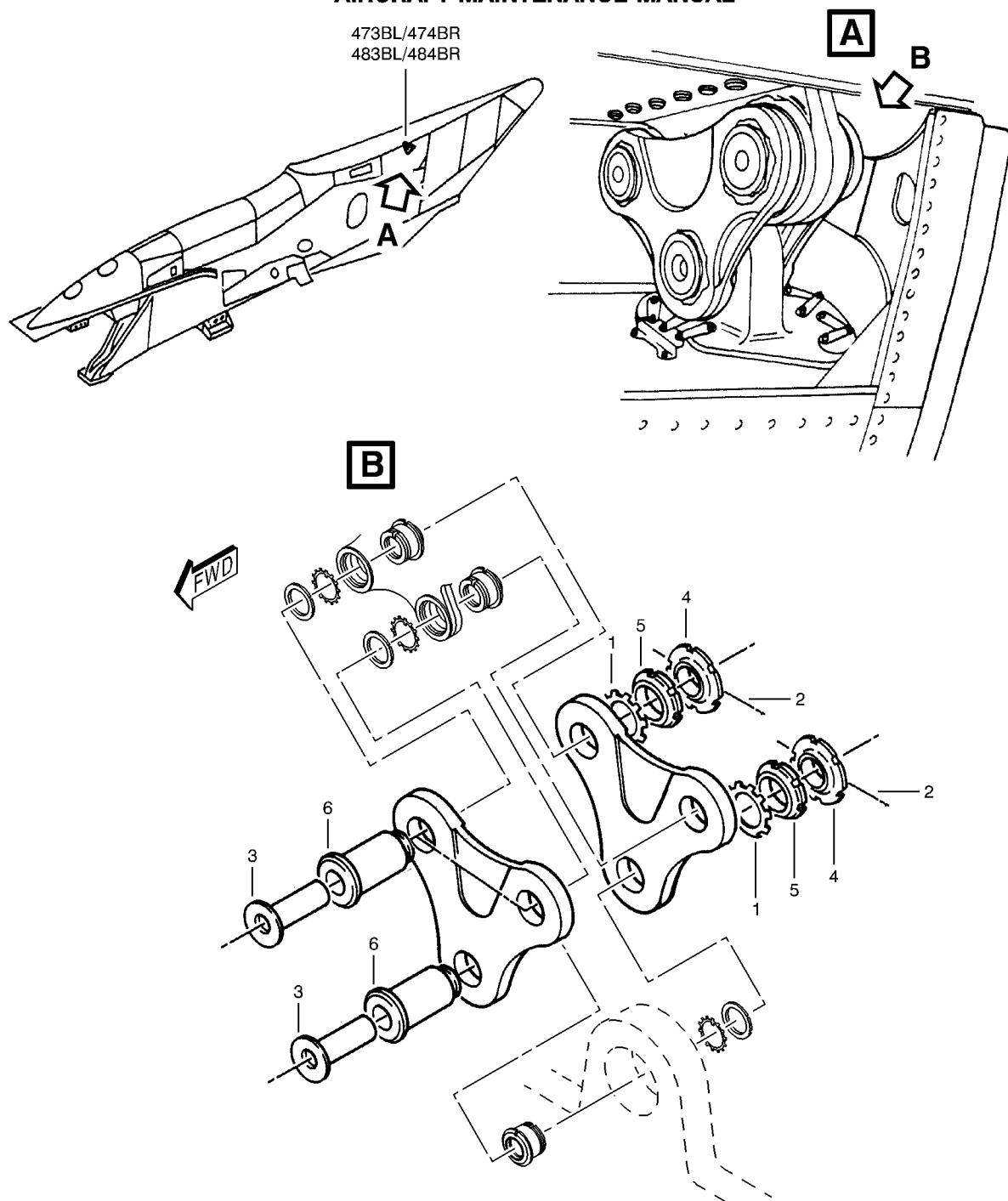
- (1) Remove the shackles at RIB18. Refer to paragraph 1.
- (2) Remove the old attach fitting (9) at RIB18 as follows :
- (a) Remove nuts (1), washers (2), bolts (5), (13), (14) and lockplates (6), (12) and (15).
 - (b) Cut and remove lockwire, remove nuts (16), and (11).
 - (c) Remove washers (17), (10), bolts (4), (7) and washers (3) and (8).
 - (d) Remove bracket (20) and fitting (9).

EFFECTIVITY: ALL

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BM5 54 51 75 4 CCM0 16

R

Aft Attach Fitting - Removal/Installation
Figure 403

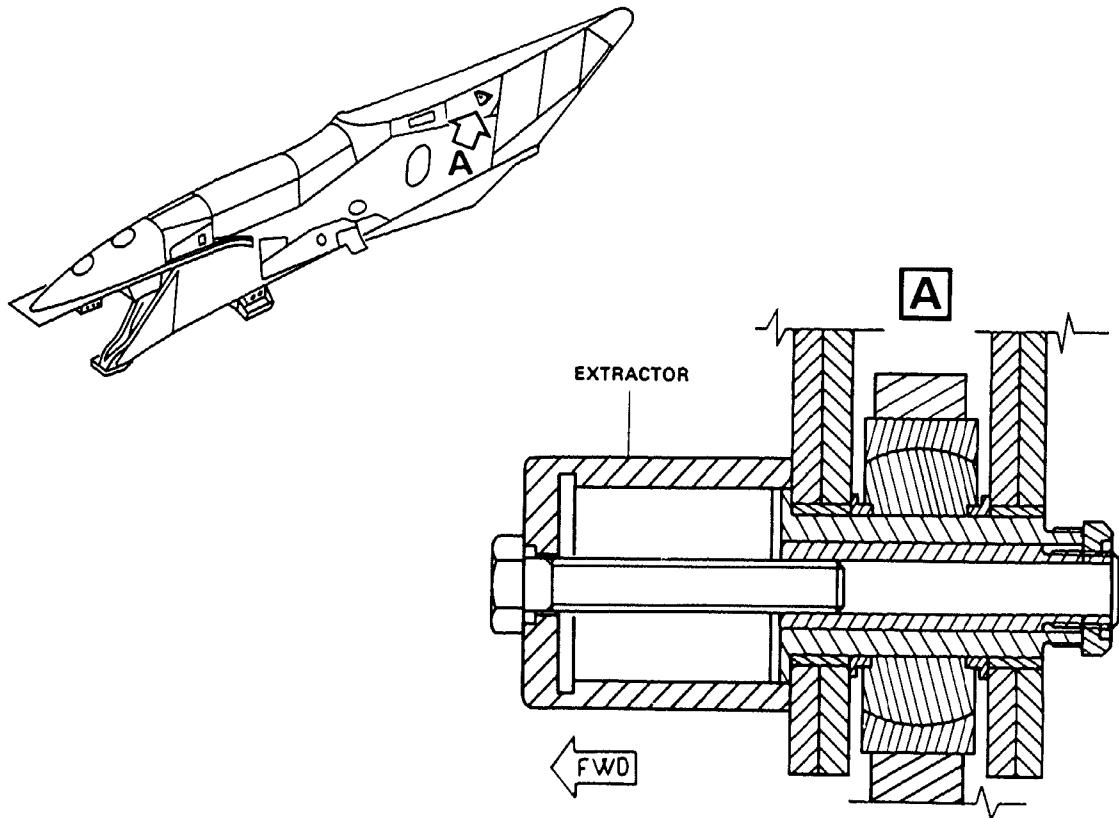
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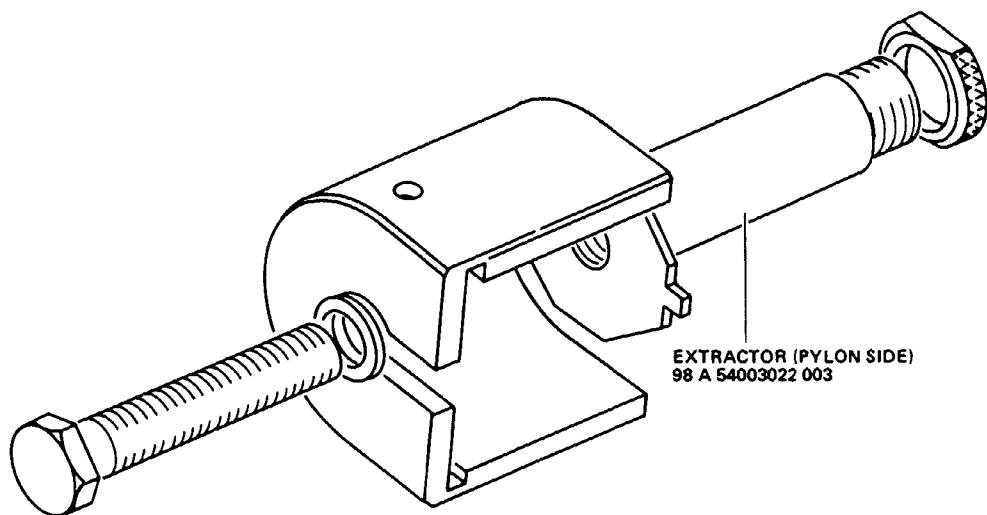
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BM5 54 51 75 4 CEMO - 13



Removal of Sleeves
Figure 404

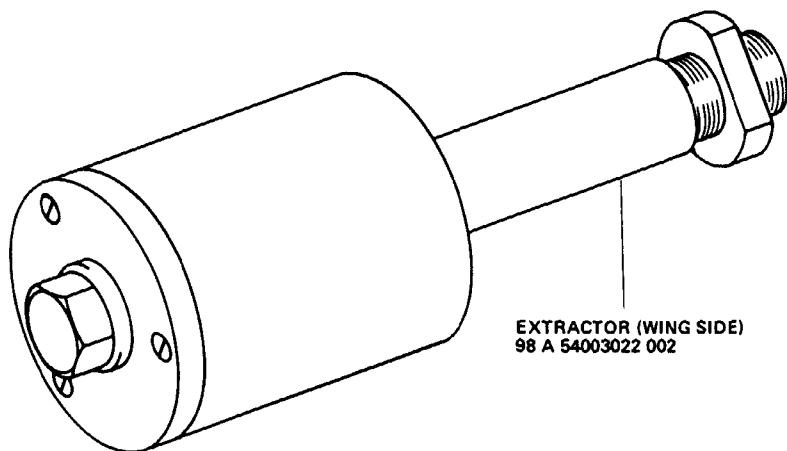
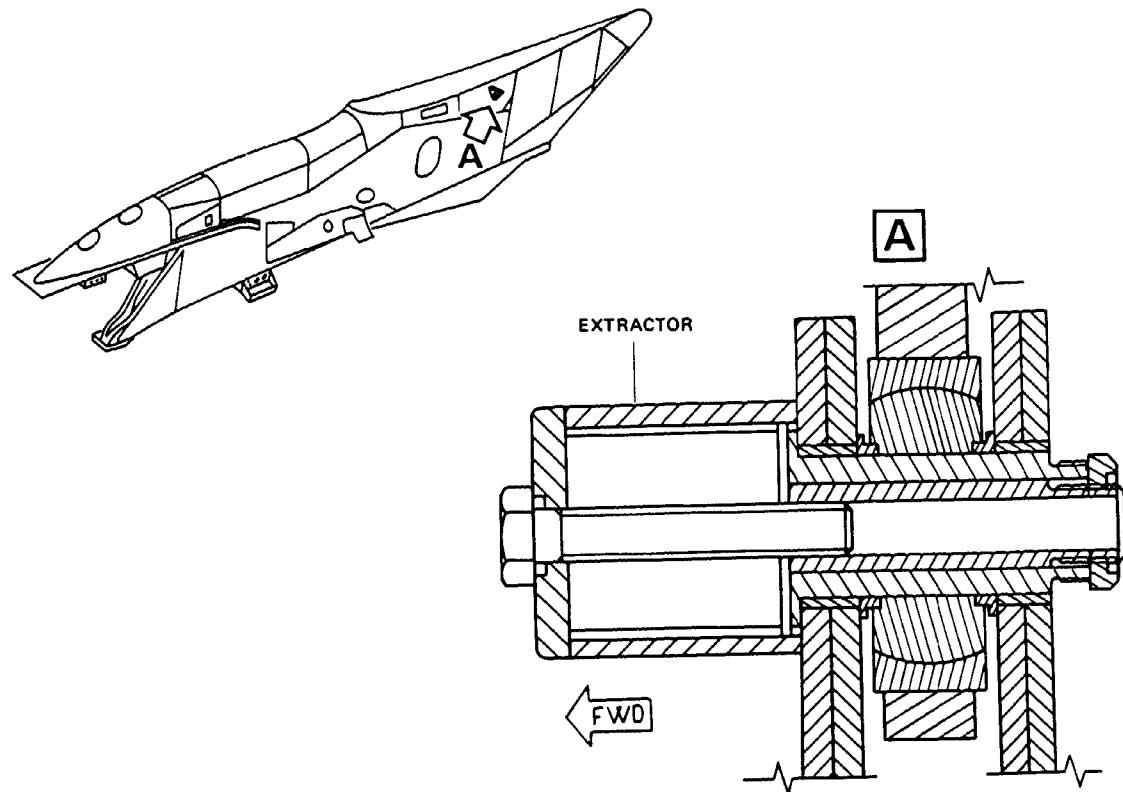
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Removal of Sleeves
Figure 405

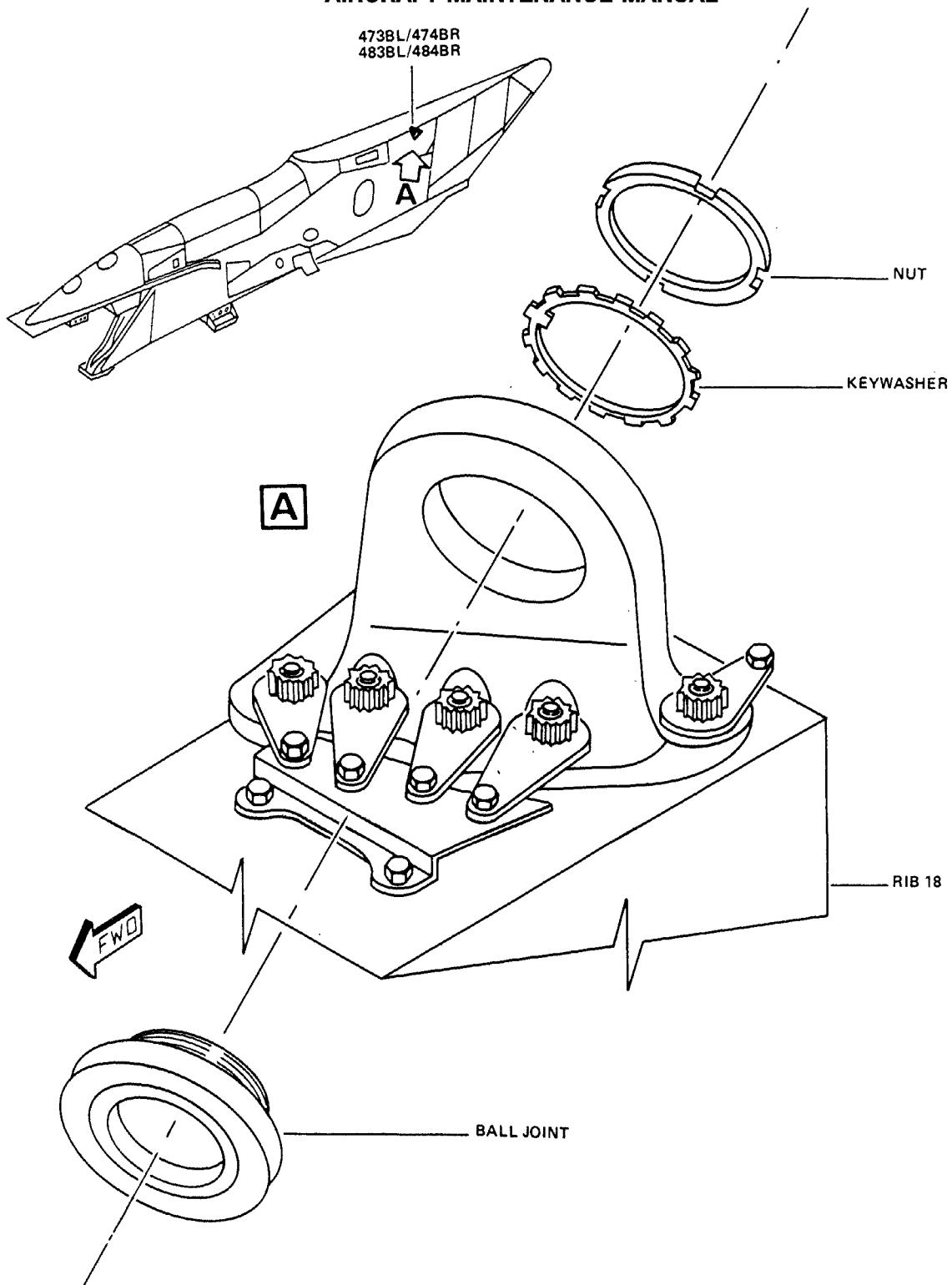
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Ball Joint Assembly
Figure 406

BM5 54 51 75 4 CJM0 - 24

EFFECTIVITY: ALL

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- R (3)Clean the new fitting with Material No. 11-003.
R (4)Install the new fitting (9) at RIB18 as follows :
 (a)Install fitting (9) and bracket (20).
 (b)Install bolts (4), (7), washers (3), (8), (10) and (17). Tighten nuts
 (16), (11) and wirelock.
 (c)Install lockplates (6), (12) and (15).
 (d)Install bolts (14), (5), (13), washers (2) and nuts (1). Tighten nuts
 (1).

R **E. Close-Up**

- R (1)Install the shackles at RIB18. Refer to paragraph 1.

R **3. Replacement of Aft Attach Fitting at RIB18 (Pylon Installed on Wing)**

R **A. Reason for the Job**

R This procedure describes the replacement of aft attach fitting
R at RIB18 without pylon removal procedure by drilling bores
R into the new aft attach fitting to match hole of the old aft attach
R fitting.

R **B. Job Set-Up**

- R (1)Remove the old fitting at RIB18. Refer to Para. 2..

R **C. Procedure**

 (Ref. Fig. 408)

- (1)Install the old fitting and the new fitting on a duplicating milling
 machine.

NOTE : The bores D1 located on the front part of the fitting are already
 with the manufacturing dimensions, only the bores D2 and D3
 located on the rear part of the fitting must be transferred and
 reamed.

- (2)Use the old fitting accurately located on the new fitting, to position
 the bores D2 and D3 which have to be reamed.

- (3)On the new fitting ream the bores D2 and D3 to the final diameters as
 follows :

R (a)D2 must be between 22.199 and 22.222 mm (0.8740 and 0.8748 in.).

R (b)D3 must be between 19.025 and 19.045 mm (0.7490 and 0.7498 in.).

D. Close-Up

- (1)Install the new fitting at RIB18. Refer to Para. 2..

R **4. Replacement of Aft Attach Fitting at RIB18 (Pylon Removed)**

R **A. Reason for the Job**

R This procedure describes the replacement of the aft attach fitting at RIB18
with the pylon removed by using a reaming tool.

B. Equipment and Materials

EFFECTIVITY: ALL

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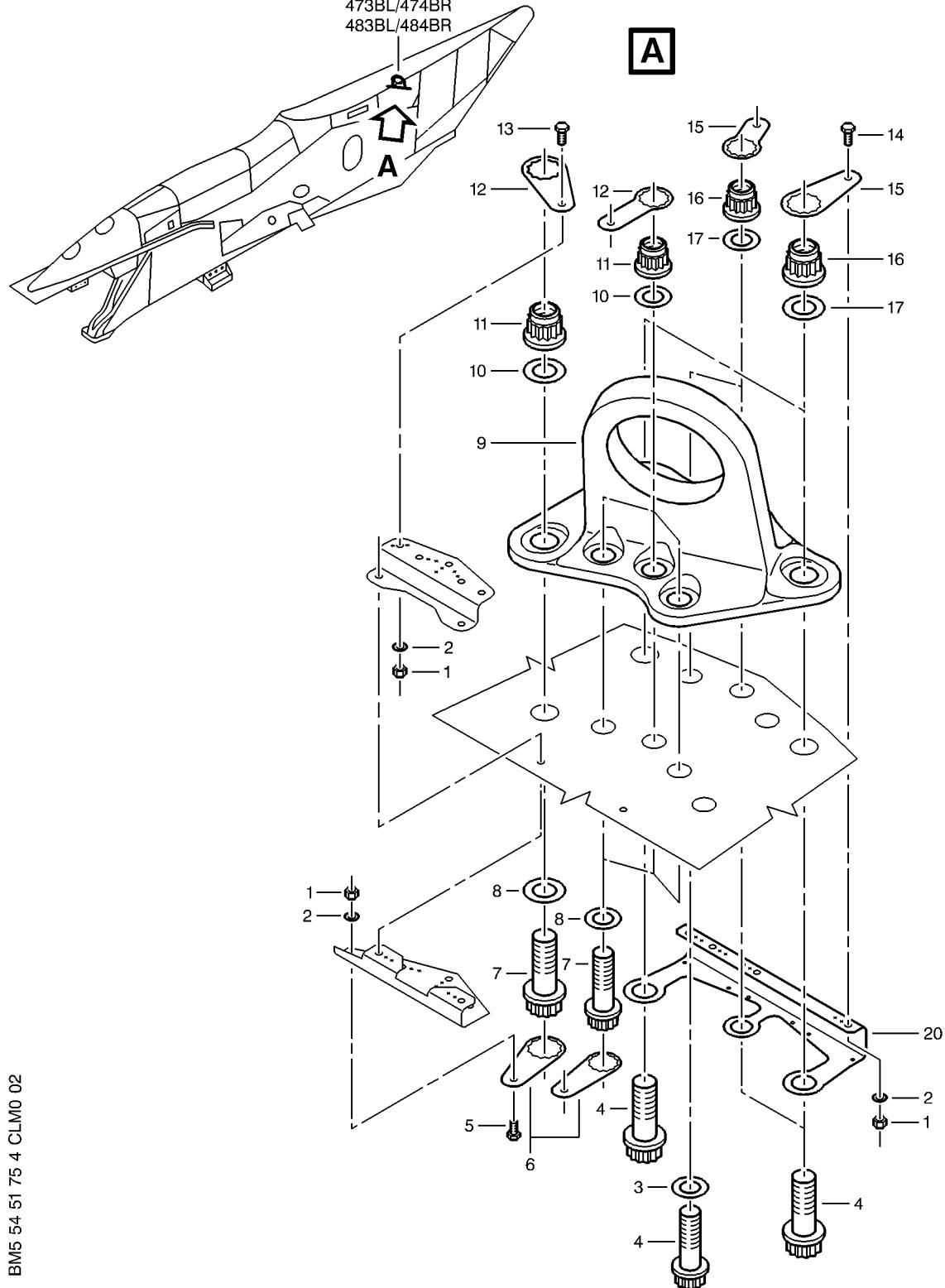
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473BL/474BR

483BL/484BR



BM5 54 51 75 4 CLM0 02

Aft Attach Fittings Assembly (RIB18)

Figure 407

R

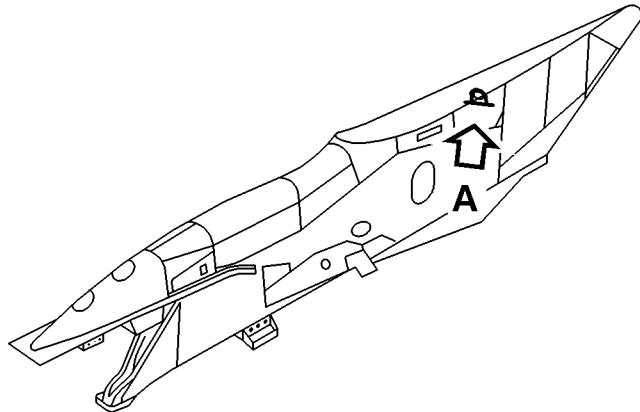
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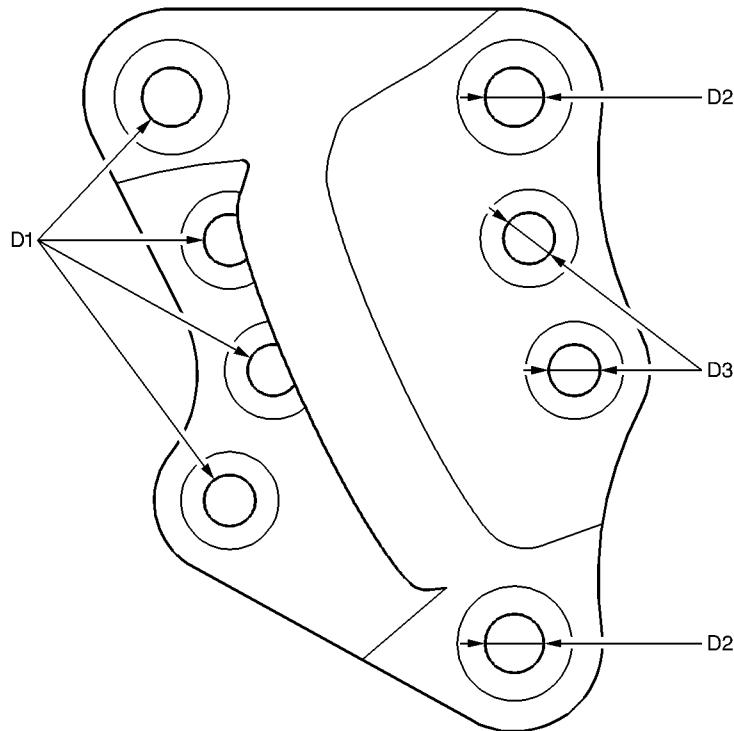
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[A]

FWD



BM5 54 51 75 4 CNM0 01

R

Aft Attach Fitting at RIB18 - Bore Diameters
Figure 408

EFFECTIVITY: ALL

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ITEM	DESIGNATION
(1) 98A54003118000	Reaming Tool-Aft Attach Fitting Bores at Pylon RIB18
Referenced Procedures - 54-50-00, P. Block 401	Pylon Removal/Installation

C. Job Set-Up

(1) Remove the pylon (Ref. 54-50-00, P. Block 401).

D. Procedure

(Ref. Fig. 408)

(1) Remove the old aft attach fitting at RIB18. Refer to Para. 2..

(2) Installation of the new fitting at RIB18.

(a) Position the fitting.

(b) Install the fasteners related to the bores D1 located on the front part of the fitting.

(3) Reaming operation.

(a) Diameter of fitting bores.

BORE	NOMINAL DIAMETER	OVERSIZE DIAMETER
D2	22.199 mm (0.8740 in.) to 22.222 mm (0.8748 in.)	22.595 mm (0.8895 in.) to 22.618 mm (0.8904 in.)
D3	19.025 mm (0.7490 in.) to 19.045 mm (0.7948 in.)	19.421 mm (0.7646 in.) to 19.441 mm (0.7653 in.)

NOTE : The bores D1 located on the front part of the fitting are already with the manufacturing dimensions, only the bores D2 and D3 located on the rear part of the fitting must be reamed.

(b) Ream the bores D2 and D3 to the nominal diameter value with the pull reamers of the reaming tool 98A54003118000 corresponding to the bores D2 and D3 to be reamed.

(c) Visually inspect the bores D2 and D3. Make sure that they are not elongated and they are in good condition.

(d) If the bores D2 and D3 are damaged, ream to the oversize diameter value.

(e) Remove the fasteners from the bores D1 and remove the fitting.

(f) Deburr the bores D2 and D3 of the fitting.

(4) Installation of the new aft attach fitting at RIB18.

(a) Install the new aft attach fitting at RIB18. Refer to Para. 2..

NOTE : If the bores D2 and D3 have to be reamed to the oversize diameter, oversize fasteners must be installed, refer to Para. (5).

(5) Installation of the new aft attach fitting at RIB18 with oversize fasteners.

EFFECTIVITY: ALL

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(a) Use the oversize fasteners given in the table.

	BORES	Oversize Fasteners	ITEM
R	D2	BOLT (NSA5398-14H16)	4
		WASHER (ASNA2304E14)	17 - 10
R	D3	BOLT (NSA5398-12H16)	4
		WASHER (ASNA2394E12)	17 - 10

(b) Reaming of the bracket (20) as follows :

- 1 For the bore D2, ream the bracket (20) to a diameter between 23 mm (0.9055 in.) and 23.1 mm (0.9094 in.).
- 2 For the bore D3, ream the bracket (20) to a diameter between 19.8 mm (0.7595 in.) and 19.9 mm (0.7834 in.).
- 3 Chamfer the hole of the bracket (20) to 1.7 mm (0.0669 in.) at 45° so that it matches with the bolt head radius.

(c) Install the new aft attach fitting at RIB18. (Refer to Para. 2.).

E. Close-Up

(1) Install the pylon (Ref. 54-50-00, P. Block 401).

EFFECTIVITY: ALL

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AFT ATTACH FITTING (RIB18) - INSPECTION/CHECK

1. Inspection of Fail-Safe Bolts, Sleeves, Yokes and Shackles

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform 4 m (13 ft. 4 in.)
R	Referenced Procedures
	- 54-51-72, P. Block 601 Forward Attach Fitting (RIB12)
	- 54-51-75, P. Block 401 AFT Attach Fitting (RIB 18)
	- SRM 54-51-71, P. Block 101
R	- NTM 51-70-00, P. Block 701
	- NTM 51-90-00, P. Block 901
B.	Procedure
(1)	Job set-up
	(a) Position access platform.
	(b) Remove the following access panel:
	- on LH engine pylon 473BL (474BR) and 473CL (474CR)
	- on RH engine pylon 483BL (484BR) and 483CL (484CR).
(2)	Inspection
	(a) Visually inspect the following items (Ref. table 601), (Refer to SRM 54-51-71, P. Block 101):
	1 yokes attached to main frame and wing.
	2 shackles.
	(Ref. Fig. 601)
R	(Ref. Fig. 602)

	Yoke	Shackles
	Pylon side	
	Wing side	
Superficial wear	Repair as per manufacturer's instructions	Refer to manufacturer's instructions
Deformation	Repair as per manufacturer's instructions	Replace
Corrosion	Repair as per manufacturer's instructions	
Structural	Repair as per	Replace

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	Yoke Pylon side Wing side	Shackles
defects	manufacturer's instructions	
Bore deformation	Replace bushes	Replace bushes
Wear on bore	Replace bushes	Replace bushes

Inspection of Pylon-to-Wing AFT Attach Fitting
Table 601

NOTE : If wear is found on the sleeves and/or shackles,
it is mandatory to check the condition of the forward attach
fittings (Ref. 54-51-72, P. Block 601).

- R (b) Do a visual inspection of fail-safe bolt (9), sleeve (8) and
R washer (3):
R 1 For any sign of rotation of fail-safe bolt (9) and washer (3),
R check the condition of the fittings to verify if:
R a the cotter pin (6) of the special nut (5) is broken. If the
R cotter pin (6) is broken:
R - remove and replace with new cotter pin.
R b the washer (3) is damaged. If the washer (3) is damaged:
R - remove and discard the cotter pin (6)
R - remove the special nut (5)
R - remove the nut (4)
R - remove and discard the washer (3)
R - install a new washer (3) with nut (4), special nut (5) and new
R cotter pin (6).
R 2 For sleeve (8) displacement:
R If the sleeve (8) is out of position:
R - Remove and discard washer (3)
R - Set the sleeve (8) in position
R - Install a new washer (3).
R 3 For rotation of external bearing bush (7):
R If rotation of external bearing bush (7) is found:
R a Remove castellated nut (2), lockwasher (1) and external bearing
R bush (7) to ensure good condition of these parts.
R b Do the DET inspections (Refer NTM 51-70-00, P. Block 701) to
R ensure no chafing damages on fitting and on bore hole.
R c Make sure that the hole diameter of external bearing bush (7) is
R between 102 mm to 102.035 mm (4.015 in. to 4.017 in.).
R d In case of findings please contact Airbus.
R e In case of no findings replace the external bearing bush (7) by
R new one and reinstall lockwasher (1) and nut (2)

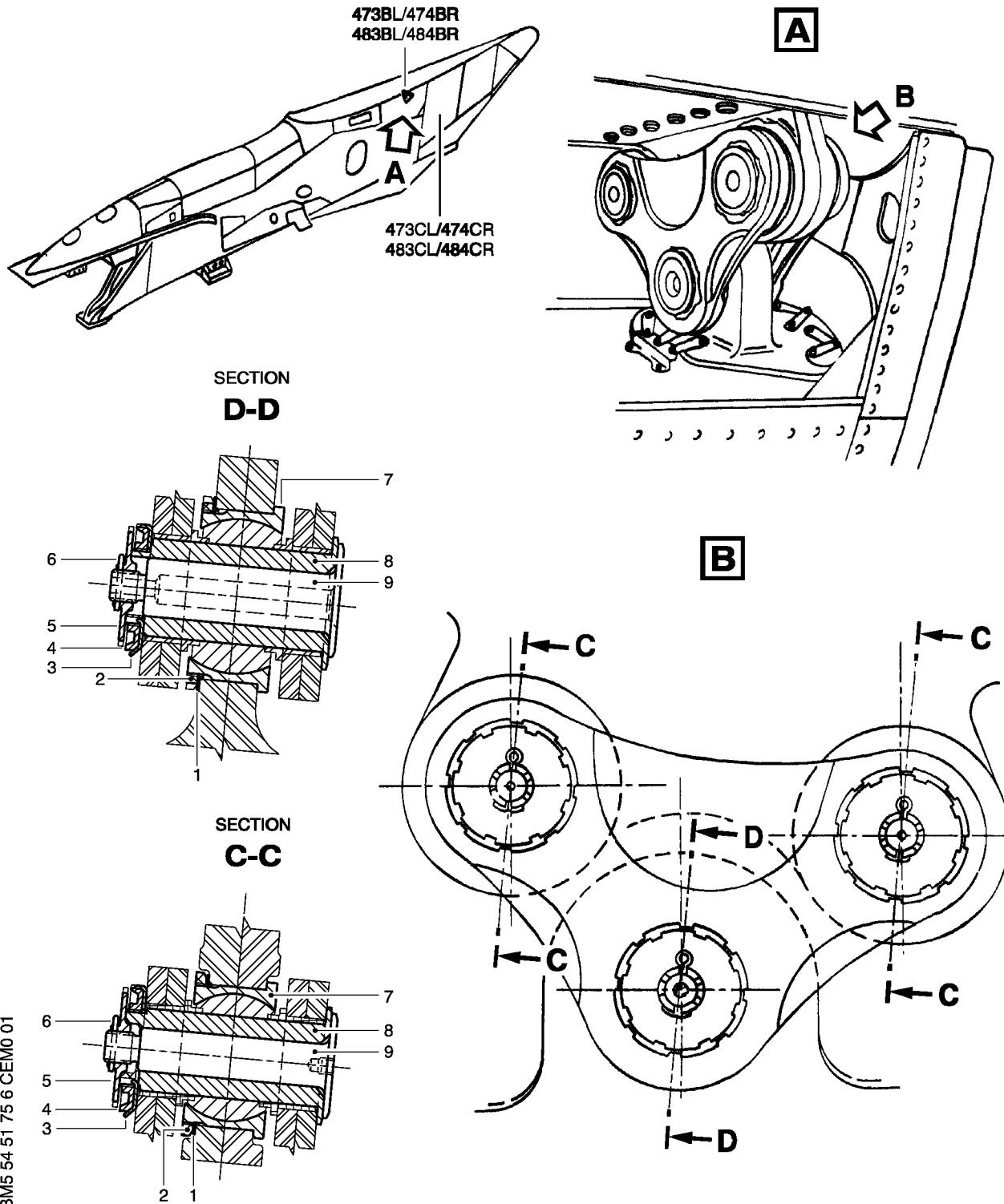
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Aft Attachment Fitting
Figure 601

R

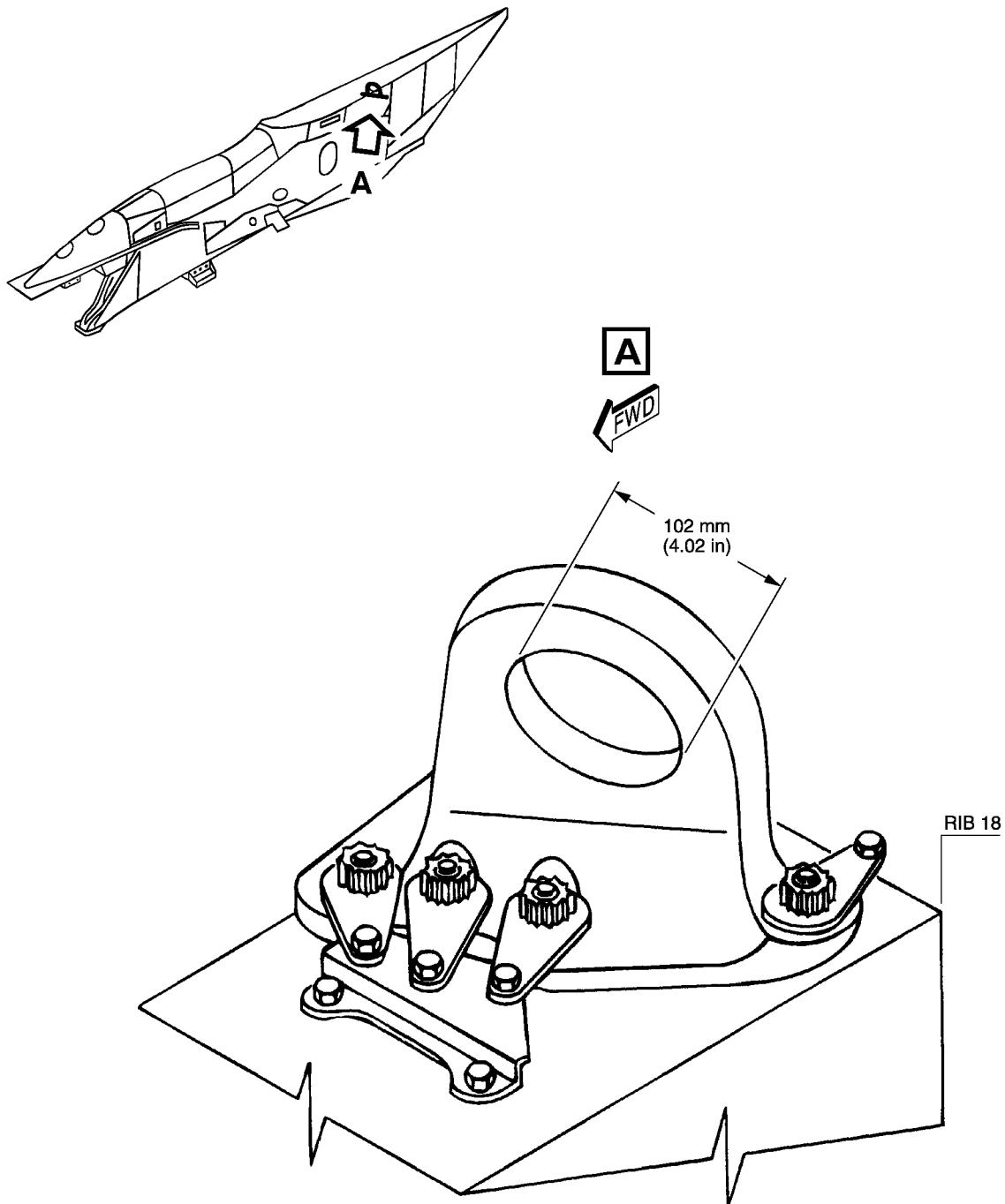
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Aft Attach Fitting at RIB18 Diameter
Figure 602

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- R (Ref. 54-51-75, P. Block 401).
 R f Use paint to mark on the nut and the spherical housing. This is
 R done to examine the rotation of bearing at next periodic inspection.
 (c) Inspection of the fail-safe bolts and sleeves:
 1 Clean the parts (Refer to NTM 51-90-00, P. Block 901).
 NOTE : Ensure the anti-seize has been removed from the parts.
 NOTE : Alternate cleaning methods can be validated by a level III NDT
 Administrator.
 2 Perform an NDT Fluorescent Penetrant Inspection Type 1, Method D,
 Sensitivity level 4 (Refer to NTM 51-90-00, P. Block 901).
 (d) Acceptance criteria:
 1 All discontinuity indications must be recorded.
 2 Scratch, mark or nick damage is allowed on the fail-safe bolt
 cotter-pin hole as long as no cracks are detected.
 (3) Close-up
 (a) Install the following access panel:
 - on LH engine pylon 473BL (474BR) and 473CL (474CR)
 - on RH engine pylon 483BL (484BR) and 483CL (484CR).
 (b) Remove the access platform.

2. Dimensional Checks of Aft Attach Fitting**A. Reason for the Job**

(1) Check of fits and clearances after removal of pylon.

B. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform 4 m (13 ft. 4 in.)
Referenced Procedures	

- 54-51-75, P. Block 801 Aft Attach Fitting (RIB 18)

C. Procedure

(1) Job set-up

(a) Position access platform.

(b) Remove the following access panel:

- on LH engine pylon 473BL (474BR) and 473CL (474CR).
- on RH engine pylon 483BL (484BR) and 483CL (484CR).

(2) Inspection

(a) Check the following conditions:

(Ref. Fig. 603)

**CAUTION : NO WEAR, DISTORTION OR STRUCTURAL DEFECT OF BOLT AND BUSH
 STEEL OR PLATING IS ALLOWED. DISCARD BOLT OR BUSH AS
 NECESSARY.**

**NOTE : When wear limits are exceeded, replace bushes (Ref. 54-51-75,
 P. Block 801).**

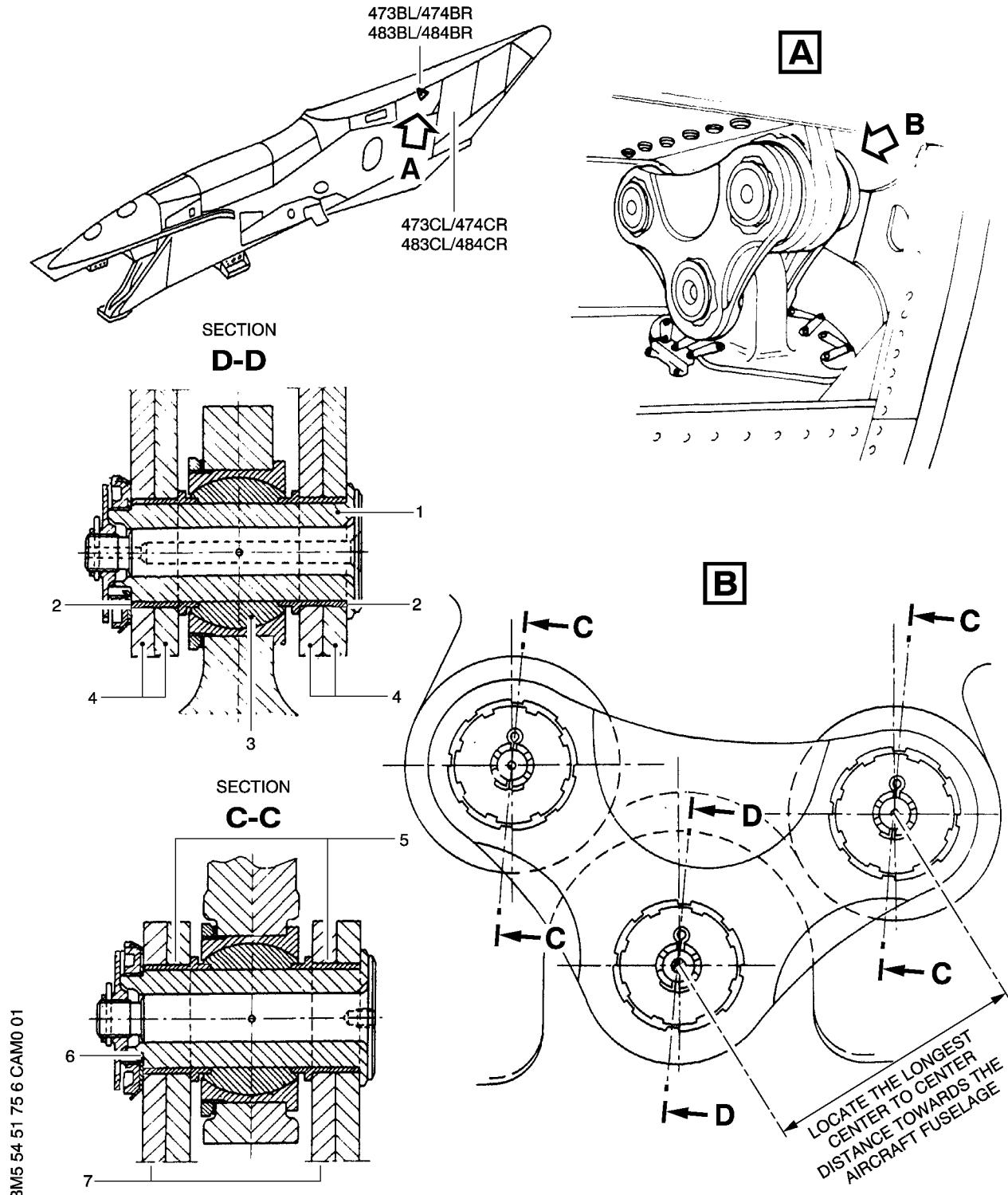
1 For aft attach fitting - lower bushes

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Aft Attach Fitting
Figure 603

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Detail and Item No.	Original Mfg Limits				In-Service Wear Limits		
	Dimension Inches (Millimeters)		Assy. Clearance Inches (Milli- meters)		Dimension Limits Inches (Milli- meters)		Max. Allow.
	Min.	Max.	Min.	Max.	Min.	Max.	Clear in. (mm)
D							
OD1	2.3611 (59.971)	2.3618 (59.990)			2.3602 (59.951)		0.0047 (0.12)
ID2	2.3622 (60.000)	2.3634 (60.030)				2.3649 (60.070)	
OD1	2.3611 (59.971)	2.3618 (59.990)					0.0047 (0.12)
ID3	2.3622 (60.000)	2.3634 (60.030)					
OD2	2.6008 (66.059)	2.6015 (66.078)	-0.0030	-0.0011	2.6003 (66.049)		0.00
ID4	2.5984 (66.000)	2.5996 (66.030)	(-0.078)	(-0.029)		2.6003 (66.050)	

2 For aft attach fitting - upper bushes

Detail and Item No.	Original Mfg Limits				In-Service Wear Limits		
	Dimension Inches (Millimeters)		Assy. Clearance Inches (Milli- meters)		Dimension Limits Inches (Milli- meters)		Max. Allow.
	Min.	Max.	Min.	Max.	Min.	Max.	Clear in. (mm)
C							
OD6	1.9674 (49.971)	1.9681 (49.990)			1.9665 (49.951)		0.0047 (0.12)
ID5	1.9685 (50.000)	1.9697 (50.030)				1.9712 (50.070)	
OD5	2.2068 (56.053)	2.2076 (56.072)	-0.0028	-0.0009	2.2064 (56.045)		0.00
ID7	2.2047 (56.000)	2.2059 (56.030)	(-0.072)	(-0.023)		2.2065 (56.046)	

EFFECTIVITY: ALL

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Detail and Item No.	Original Mfg Limits				In-Service Wear Limits			
	Dimension Inches (Millimeters)		Assy. Clearance Inches (Milli- meters)		Dimension Limits Inches (Milli- meters)		Max. Allow. Clear in. (mm)	
	Min.	Max.	Min.	Max.	Min.	Max.		

(3) Close-up

(a) Install the following access panel:

- on LH engine pylon 473BL (474BR) and 473CL (474CR).
- on RH engine pylon 483BL (484BR) and 483CL (484CR).

(b) Remove access platform.

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AFT ATTACH FITTING (RIB18) - APPROVED REPAIRS1. Replacement of the Bushes of the Shackles at RIB18

R WARNING : SPECIFIC ENVIRONMENTAL CONTROL AND EQUIPMENT IS REQUIRED WHEN
 R PERFORMING GRINDING/SANDING/HONING OPERATIONS ON THESE BUSHES,
 R AS THEY CONTAIN COPPER BERYLLIUM, AND MAY GENERATE TOXIC
 R BERYLLIUM DUST.

A. Equipment and Materials

ITEM	DESIGNATION
(1)Material No. 08-029	Bonding and Adhesive Compounds (Ref. 20-31-00)
(2)Material No. 11-003	Common Greases (Ref. 20-31-00)
Referenced Procedure - 54-51-75, P. Block 401	Aft Attach Fitting (RIB18)

B. Job Set-Up

(1) Remove the shackle at RIB18 (Ref. 54-51-75, P. Block 401).

C. Procedure

(Ref. Fig. 801)

(1) Remove the bushes (2) and (3) from the shackles (1).

(2) Clean the shackle (1) with Material No. 11-003.

(3) Visually inspect the shackle bores. Make sure that there is no damage.

(4) Measure the diameters D1 and D2 of the shackle bores and make sure that the diameters D1 and D2 are in Table 801 :

DIAMETER	NOMINAL VALUE OF THE BORE IN MM (IN.)	TOLERANCE IN MM (IN.)
D1	56 (2.2047)	H7 : + 0.030 (+ 0.00118) + 0 (+ 0)
D2	66 (2.5984)	H7 : + 0.030 (+ 0.00118) + 0 (+ 0)

Table 801
Correct Diameters D1 and D2 of Bushes at RIB18

(a) If the diameter D1 and/or D2 are not in the tolerance, bore shackle (1) to repair size diameters given in table 802 :

REPAIR SIZE	NOMINAL VALUE OF THE BORE IN MM (IN.)	TOLERANCE IN MM (IN.)
	Diameter D1 Diameter D2	
R1	56.2 (2.2125) 66.2 (2.6062)	H7 : + 0.030 (+0.00118) + 0 (+0)

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REPAIR SIZE	NOMINAL VALUE OF THE BORE IN MM (IN.)		TOLERANCE IN MM (IN.)
	Diameter D1	Diameter D2	
R2	56.4 (2.2204)	66.4 (2.6141)	H7 : + 0.030 (+0.00118) + 0 (+0)
R3	56.6 (2.2283)	66.6 (2.6220)	H7 : + 0.030 (+0.00118) + 0 (+0)
R4	56.8 (2.2362)	66.8 (2.6299)	H7 : + 0.030 (+0.00118) + 0 (+0)
R5	57 (2.2440)	67 (2.6377)	H7 : + 0.030 (+0.00118) + 0 (+0)
R6	57.4 (2.2598)	67.4 (2.6535)	H7 : + 0.030 (+0.00118) + 0 (+0)
R7	57.9 (2.2795)	67.9 (2.6732)	H7 : + 0.030 (+0.00118) + 0 (+0)
R8	58.4 (2.2992)	68.4 (2.6929)	H7 : + 0.030 (+0.00118) + 0 (+0)

Table 802
Repair Sizes of Attach Fittings at RIB18

- (5)Quench the new bushes (2) and (3) in the liquid nitrogen and install bushes (2) and (3) in the shackle (1) with Material No. 08-029.
 (6)Rebore the bushes (2) and (3) to the diameter D3 and D4 given in the Table 803 observing the center-to-center distances X1 to X5 given on the Table 804.

DIAMETER	NOMINAL VALUE OF THE BORE IN MM (IN.)	TOLERANCE IN MM (IN.)
D3	50 mm (1.9685)	H7 : + 0.025 (+ 0.00098) + 0 (+ 0)
D4	60 mm (2.3622)	H7 : + 0.03 (+ 0.00118) + 0 (+ 0)

Table 803
Boring the New Bushes to Diameters D3 and D4 of the Shackles at RIB18

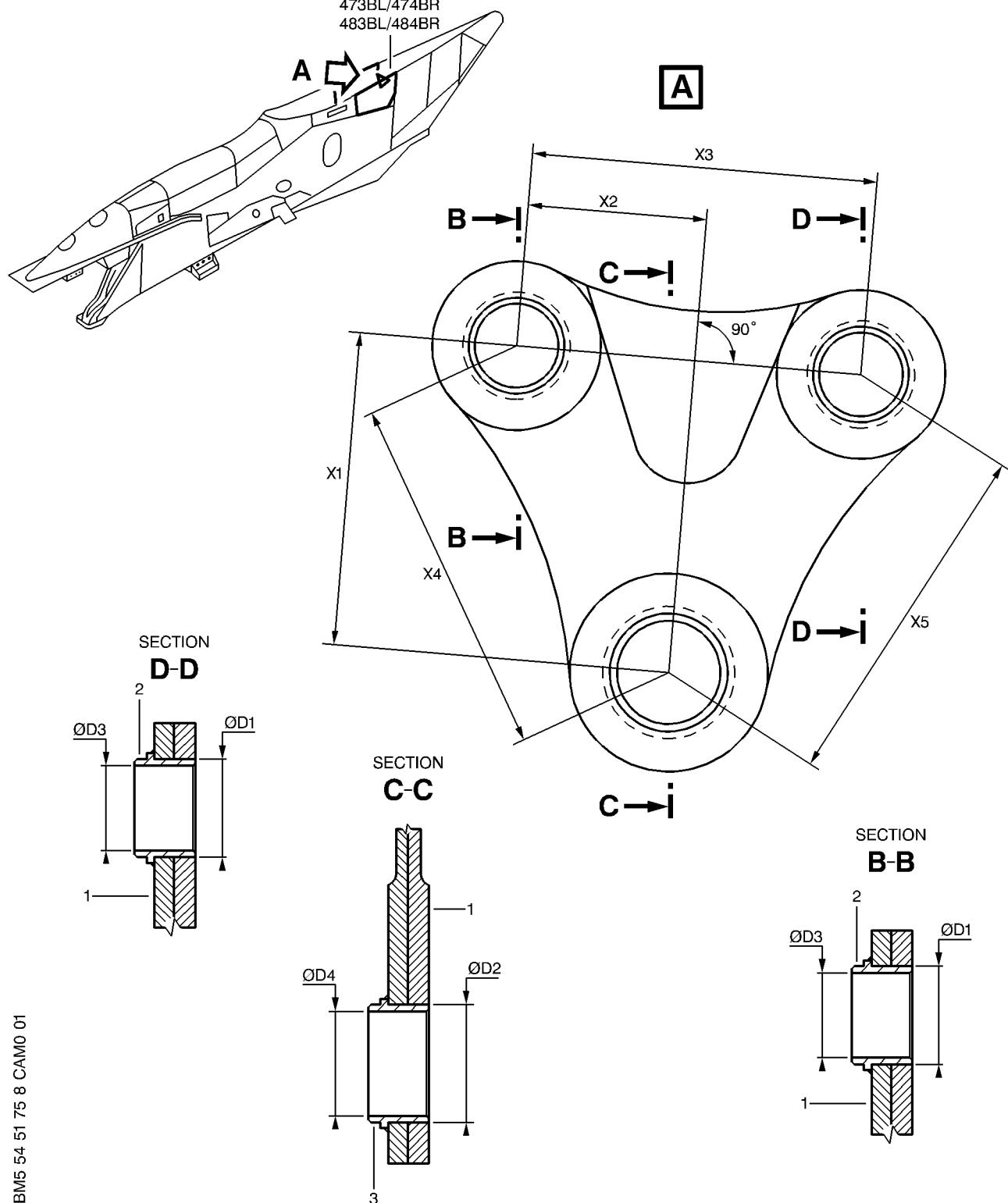
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Reboring of Bushes at RIB18
Figure 801

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Center-to-center distance	NOMINAL VALUE IN MM (IN.)	TOLERANCE IN MM (IN.)
X1	179.63 (7.0720)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)
X2	108.41 (4.2681)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)
X3	216.82 (8.5362)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)
X4	209.81 (8.2602)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)
X5	209.81 (8.2602)	+ 0.01 (+ 0.00039) - 0.01 (- 0.00039)

Table 804
Center-to-Center Distance of Shackles at RIB18

(8) Clean the shackle (1) with Material No. 11-003.

D. Close-Up

(1) Install shackles at RIB18 (Ref. 54-51-75, P. Block 401).

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SPIGOT BALL JOINT - REMOVAL/INSTALLATION1. Removal/Installation of the Spigot Ball Joint (Pylon on Aircraft)**A. Equipment and Materials**

ITEM	DESIGNATION
R (1)98A27503003000	Tool - Guard, Safety - Flap/Slat Control Lever
(2)98A54403011000	Removal/Installation Tool - Spigot Ball Joint
(3)98A54403011001	Spigot Ball Joint Removal Assy (Sub Assy of 98A54403011000)
(4)98A54403011002	Spigot Ball Joint Installation Assy (Sub Assy of 98A54403011000)
(5)Material No. 04-004	Common Greases (Ref. 20-31-00)
R (6)Material No. 08-034	Bonding and Adhesive Compounds (Ref. 20-31-00)
(7)Material No. 08-004	Bonding and Adhesive Compounds (Ref. 20-31-00)
(8)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
Referenced Procedures	
- 26-21-15, P. Block 401	Fire Extinguisher Bottle
- 57-41-28, P. Block 401	Pylon Spigot Sleeve
- 71-00-00, P. Block 401	Power Plant-General

B. Procedure

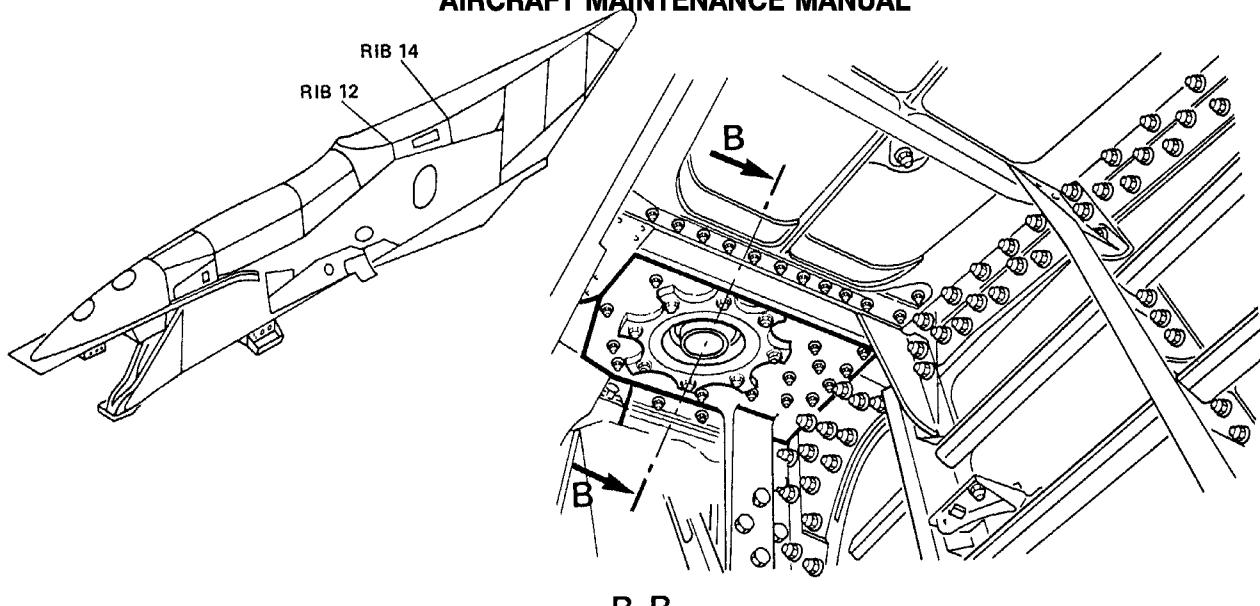
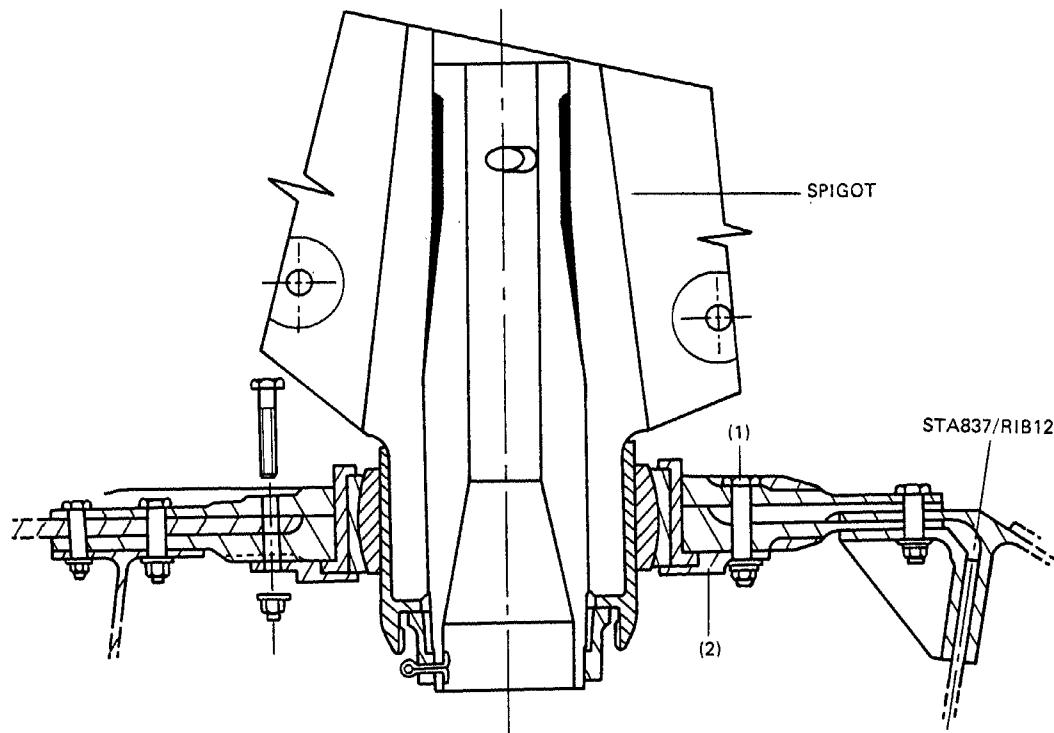
- (1) Job Set-Up
- (a) In flight compartment, on center pedestal, install tool 98A27503003000 on flap and slat control lever
 - (b) Position access platforms
 - (c) Remove the following fillets:
 - 1 RH pylon : 481AL, 482AR, 481BL, 482BR
 - 2 LH pylon : 471AL, 472AR, 471BL, 472BR
 - (d) Open access doors
 - 1 RH pylon : 484AR, 483AL
 - 2 LH pylon : 474AR, 473AL
 - (e) Remove fire extinguisher bottles (Ref. 26-21-15 P. Block 401)
- (2) Removal of ball-joint with spigot sleeve installed.
(Ref. Fig. 401)
- (a) On the upper panel between RIB12 and RIB14, remove Material No.08-004 protecting upper ball joint fitting.
 - (b) Remove and retain eight bolts (1) attaching flange (2) to lower ball joint fitting.
Two of the eight bolts (1) attaching spigot ball joint retaining flange (2) cannot be removed via top of rear spar as they touch spigot fitting edge on wing side.
Therefore, saw off these two bolt heads to remove them and install new bolts with heads downward.
 - (c) Secure tool 98A54403011001 (sub assy of 98A54403011000) under upper panel using two studs and nuts (3).
 - (d) Between wing and upper panel, install two half shells (4) and (5) onto spigot and tighten bolts (6) and (7).

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**SECTION B-B**

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**Spigot/Ball Joint Assembly
Figure 401****EFFECTIVITY: ALL**

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- (e) Install six threaded rods (8) in half shells and tighten nuts (9).
- (f) Make certain that nut (10) is fully tightened and that jaws (11) are in open position.
(Ref. Fig. 402)
- (Ref. Fig. 403)
- (g) Pressurize the actuating cylinder and start extracting spigot ball joint until half shells (4) and (5) come into contact with upper panel.
- (h) Untighten and remove threaded rods (8).
- NOTE :** If ball-joint extraction is difficult and leads to significant loads, remove spigot sleeve (Ref. 57-41-28, P. Block 401), then carry out the actions described in paragraph 1.B.(3).
- (i) Remove half shells (4) and (5).
- (j) Untighten nut (10) so that jaws (11) are in contact with ball joint.
- (k) Pressurize the actuating cylinder and extract spigot ball joint until it is possible to install half segments (12) and (13).
- R (l) Install two locating segments (12) and (13) between wing and pylon on the spigot, in the ball joint bore
- R **CAUTION : INSTALLATION OF THE LOCATING SEGMENTS IS MANDATORY OR SERIOUS DAMAGE TO THE PYLON COULD RESULT.**
- (m) Depressurize the actuating cylinder and pull in the cylinder piston by approximately 40 mm (1.6 in.).
- (n) Install shim (15) between cylinder piston end and plate (14).
- (p) Pressurize the actuating cylinder and remove completely the ball joint from its housing.
- (q) Depressurize the actuating cylinder and remove shim (15).
- (r) Remove tool 98A54403011001 (sub assy of 98A54403011000).
- (s) Tighten nut (10) and free removed ball joint.
- (3) Removal of ball-joint with spigot sleeve removed.
 - (a) Remove engine (Ref. 71-00-00, P. Block 401).
 - (b) Remove positioning/centering half blocks installed over the ball-joint during spigot sleeve removal (Ref. 57-41-28, P. Block 401).
 - WARNING : FOR REMOVAL OF SPIGOT BALL-JOINT WITHOUT POSITIONING/ CENTERING HALF BLOCKS INSTALLED OVER THE BALL-JOINT, ENGINE MUST BE REMOVED IN ORDER TO AVOID UNDESIRABLE HORIZONTAL LOADS ON SPIGOT.**
 - (c) Apply paragraph 1.B.(2).
- (4) Preparation of replacement component
 - (a) Visually inspect spigot ball joint and receptacle fitting.
 - (b) Check spigot
 - (c) Apply Material No. 04-004 on the spigot surface in contact with the spigot ball joint.
 - (d) Coat ball joint housing and spigot with Material No. 08-034.
 - (e) Coat ball joint with Material No. 08-034.
- (5) Installation
 - (a) Install ball joint with tool 98A54403011002 (sub assy of 98A54403011000).
 - NOTE : If spigot sleeve has been removed, install it, first (Ref. 57-41-28, P. Block 401). Then carry out the actions below :**
 - 1** Install threaded rods (16) with nuts (17) under upper panel.
Tighten nuts (18) to hold in place threaded rods.

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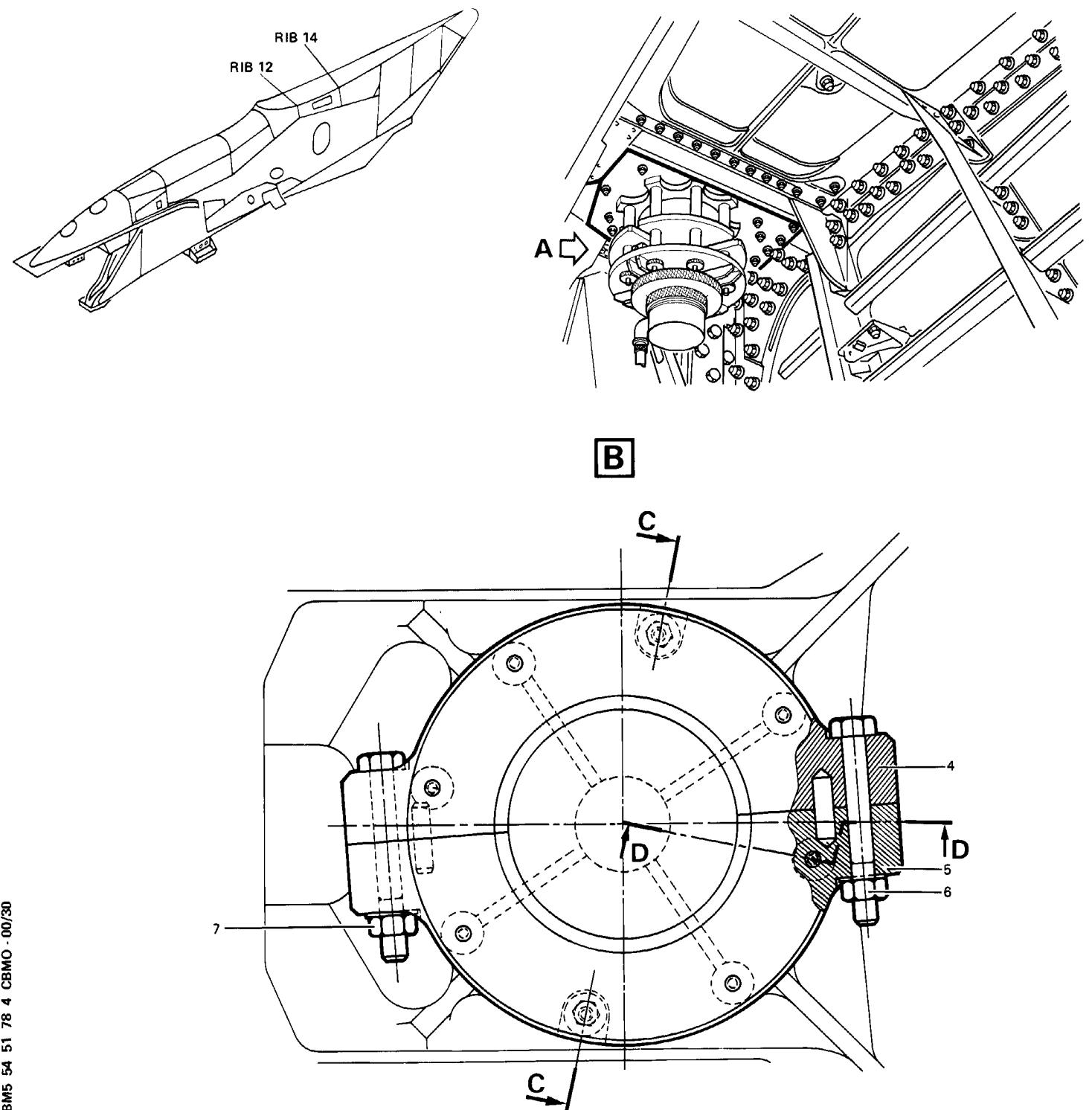
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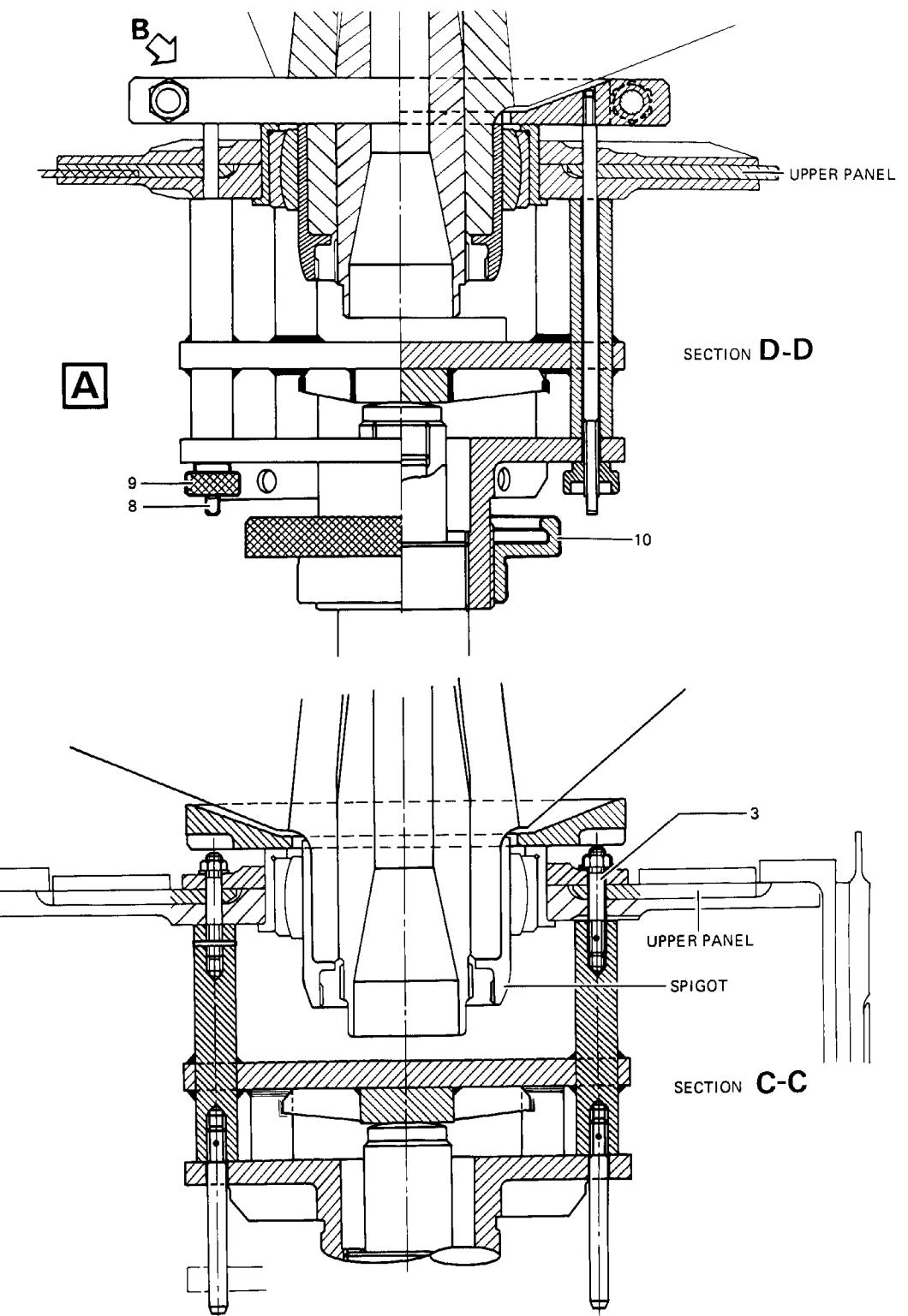
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Ball Joint Removal - First Step
Figure 402



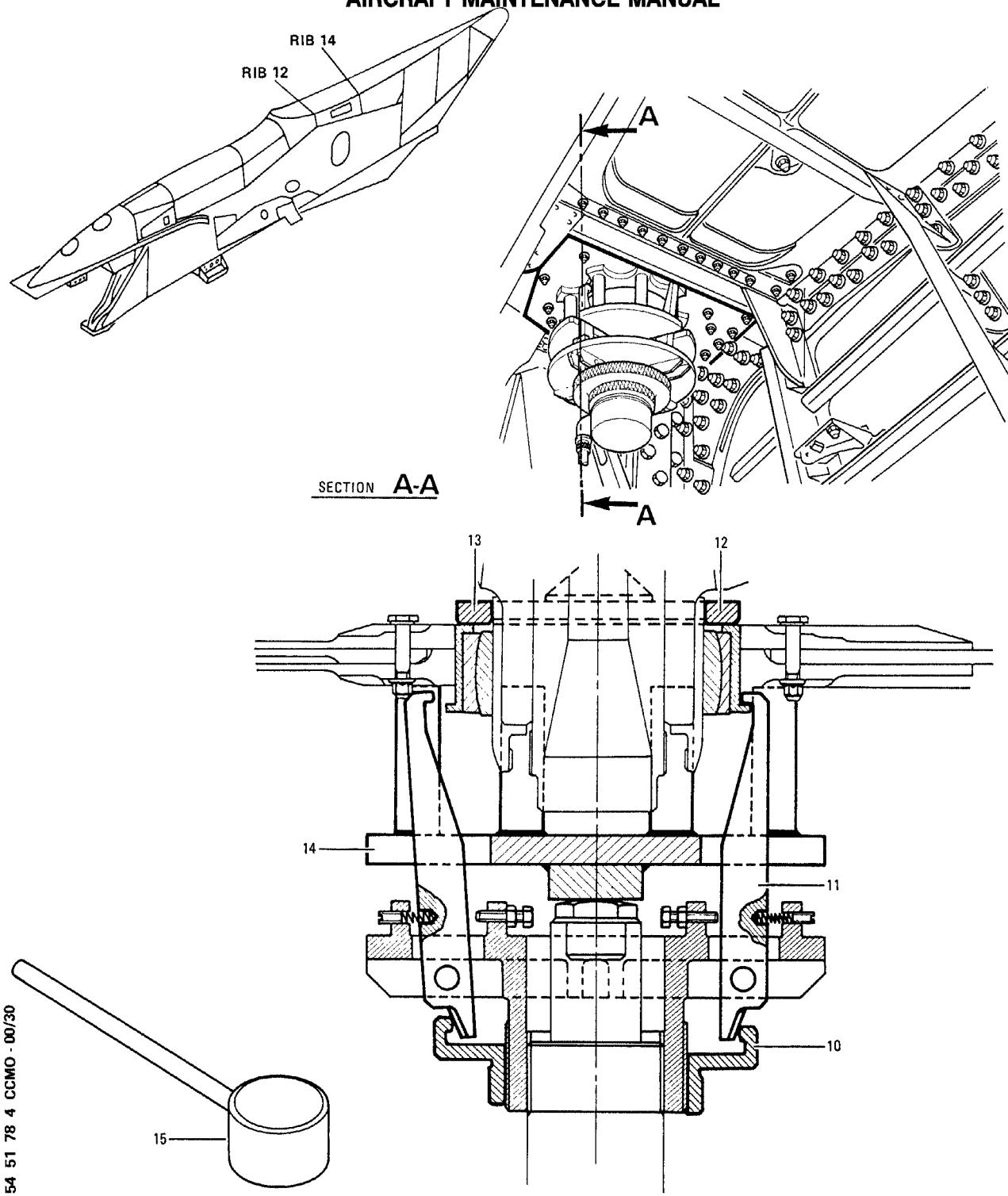
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Ball Joint Removal - Second Step
Figure 403

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- 2 Insert gently ball joint into housing.
 3 Install plate (19) on threaded rods and screw nuts (20).
 4 Install completely ball joint while progressively tightening nuts (20) and recover half segments (12) and (13).
 5 Remove tool 98A54403011002 (sub assy of 98A54403011000).
 6 Perform a seal with Material No. 08-004 between the upper panel and the lower section of the ball joint.
 (Ref. Fig. 404)
 (Ref. Fig. 405)
 (b)Install flange (2) on lower ball joint fitting using eight bolts (1)
 If two of the bolts (1) have been sawn off during removal, install
 R new bolts with heads downward (Ref. Fig.).
 R (c)Between upper panel and wing apply Material No. 08-004 to protect upper
 ball joint fitting (Ref. Fig.).
 (d)If engine has been removed, install it (Ref. 71-00-00, P. Block 401).
 (6)Close-up
 (a)Install fire extinguisher bottles (Ref. 26-21-15, P. Block 401)
 (b)Install panels
 1 RH pylon : 481AL, 482AR, 481BL, 482BR.
 2 LH pylon : 471AL, 472AR, 471BL, 472BR.
 (c)Close access doors
 1 RH pylon : 484AR, 483AL.
 2 LH PYLON : 474AR, 473AL.
 (d)Remove access platforms
 (e)In flight compartment on center pedestal remove tool 98A27503003000.

1. Removal/Installation of the Spigot Ball Joint (Pylon Removed)

A. Equipment and Materials

ITEM	DESIGNATION
(1)98A54403028000	Spigot Ball Joint - Removal Tool (Pylon Removed)
(2)Material No. 08-034	Loctite 672 (Ref. 20-31-00)
(3)Material No. 08-004	Bonding and Adhesive Compounds (Ref. 20-31-00)
(4)Material No. 11-003	Cleaning Agents (Ref. 20-31-00)
Referenced Procedures	
- 26-21-15, P. Block 401	Fire Extinguisher Bottle
- 54-50-00, P. Block 401	Pylon Removal/Installation

B. Job Set-Up

- (1)Remove the pylon (Ref. 54-50-00, P. Block 401).
 (2)Make sure that these access doors are open.
 (a)For the right pylon : 484AR
 (b)For the left pylon : 473AL
 (3)Make sure that the fire extinguisher bottles are removed (Ref. 26-21-15, P. Block 401).

C. Procedure

- (Ref. Fig. 406)
 (Ref. Fig. 407)

EFFECTIVITY: ALL

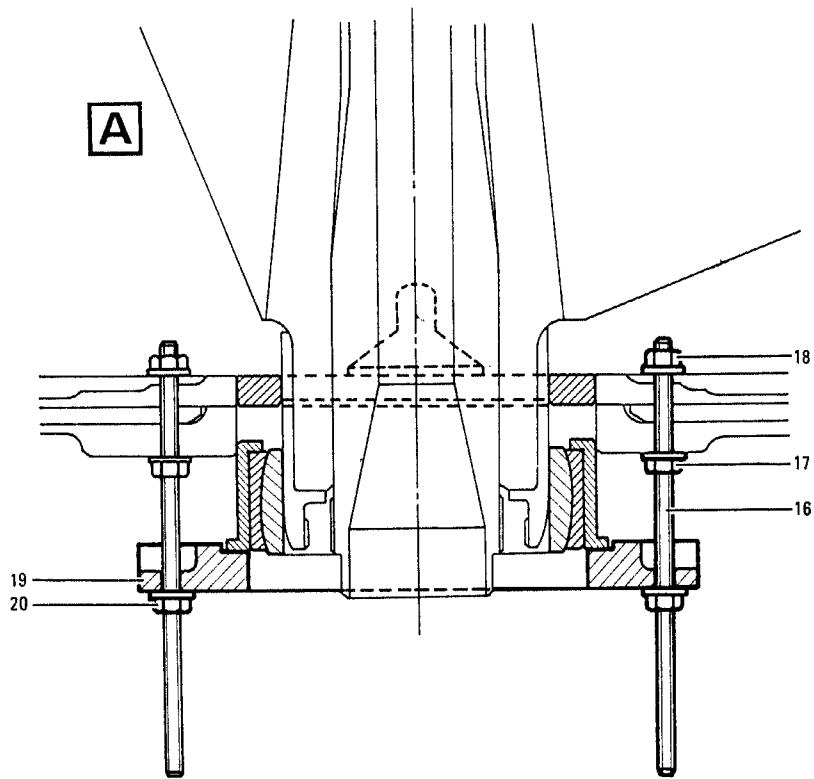
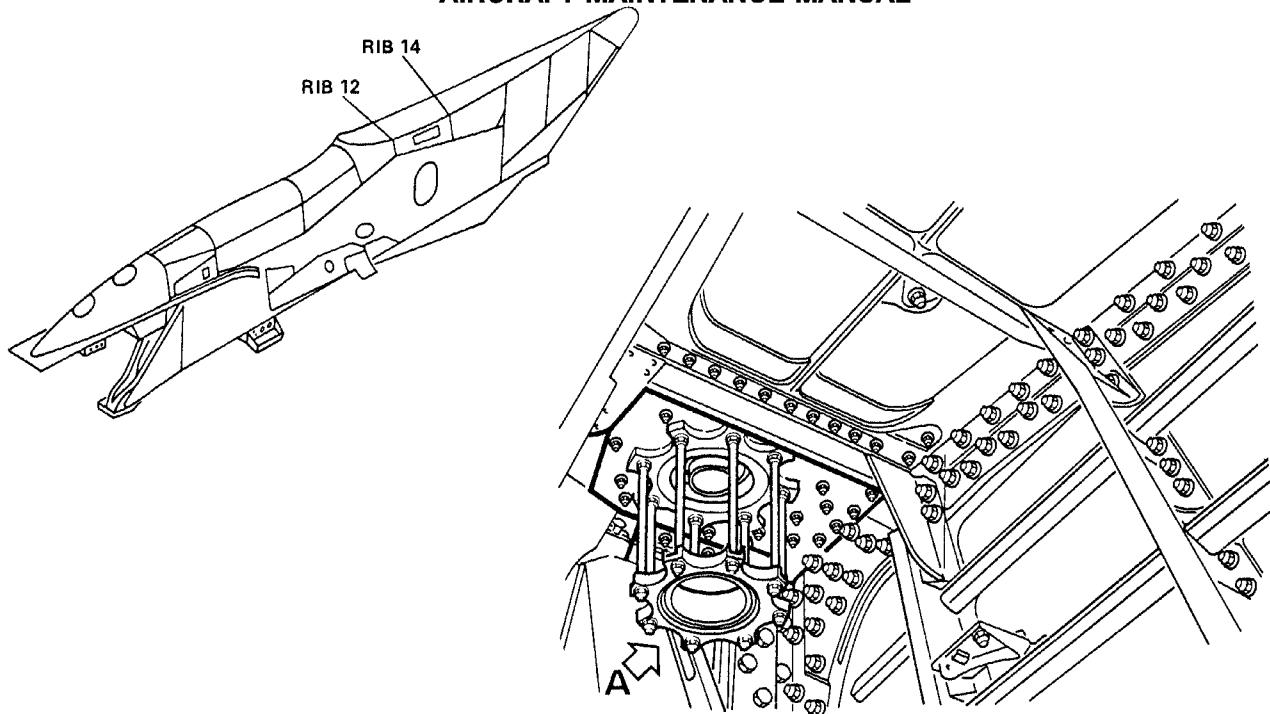
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Ball Joint Installation
Figure 404

R

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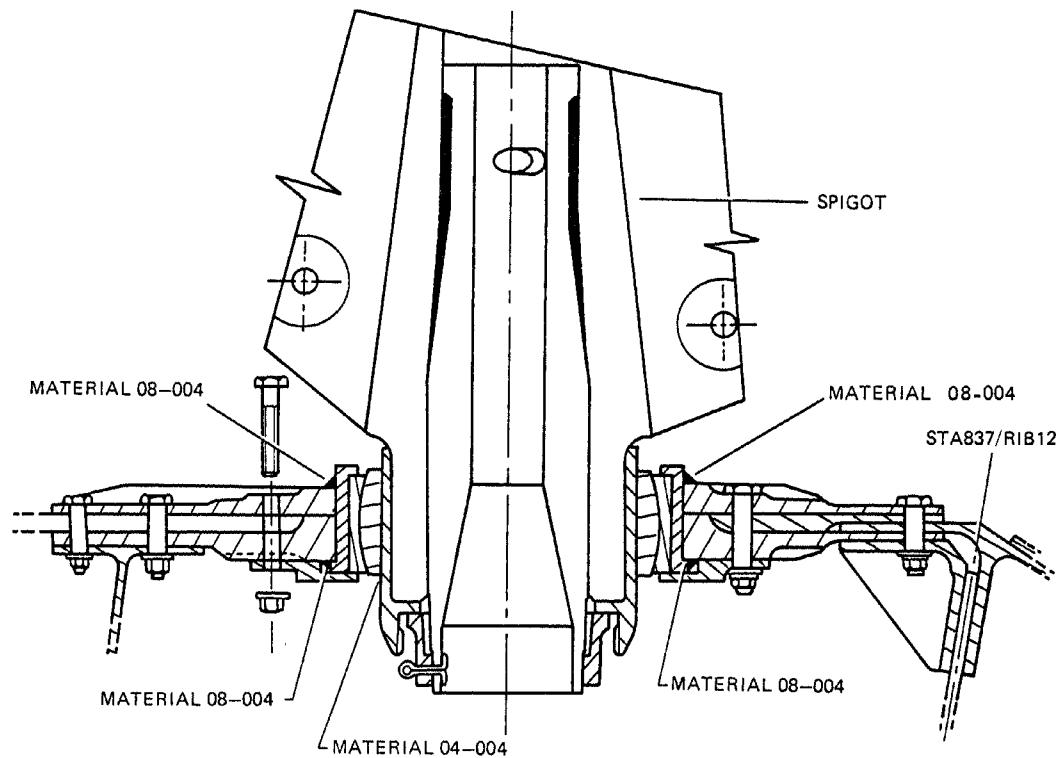
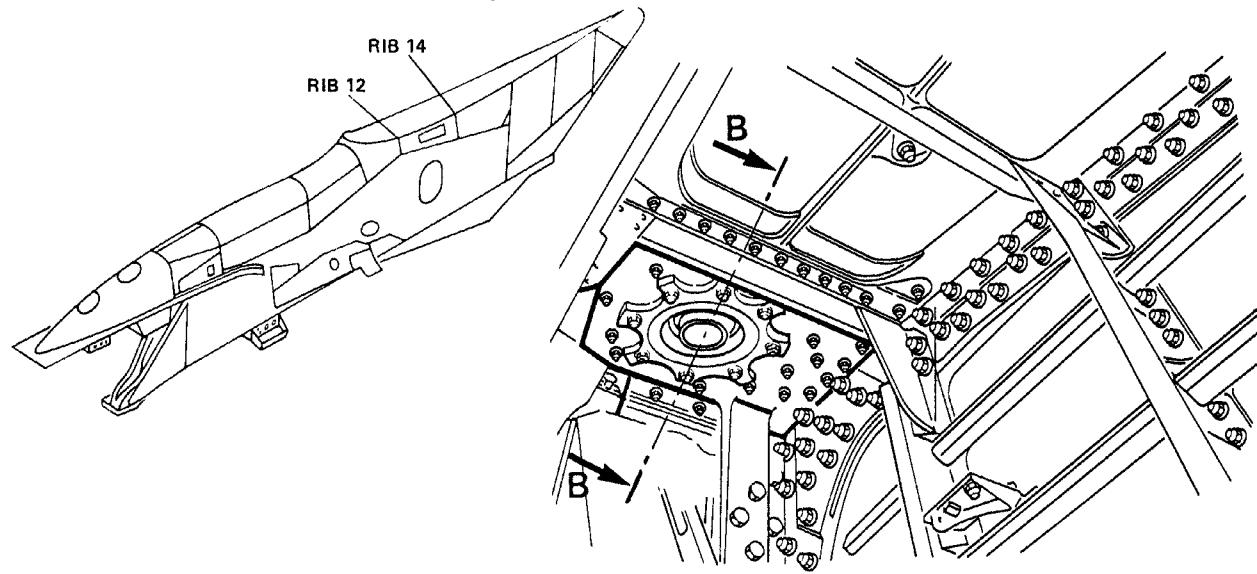
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Ball Joint Installation – Protection Against Corrosion
Figure 405

R

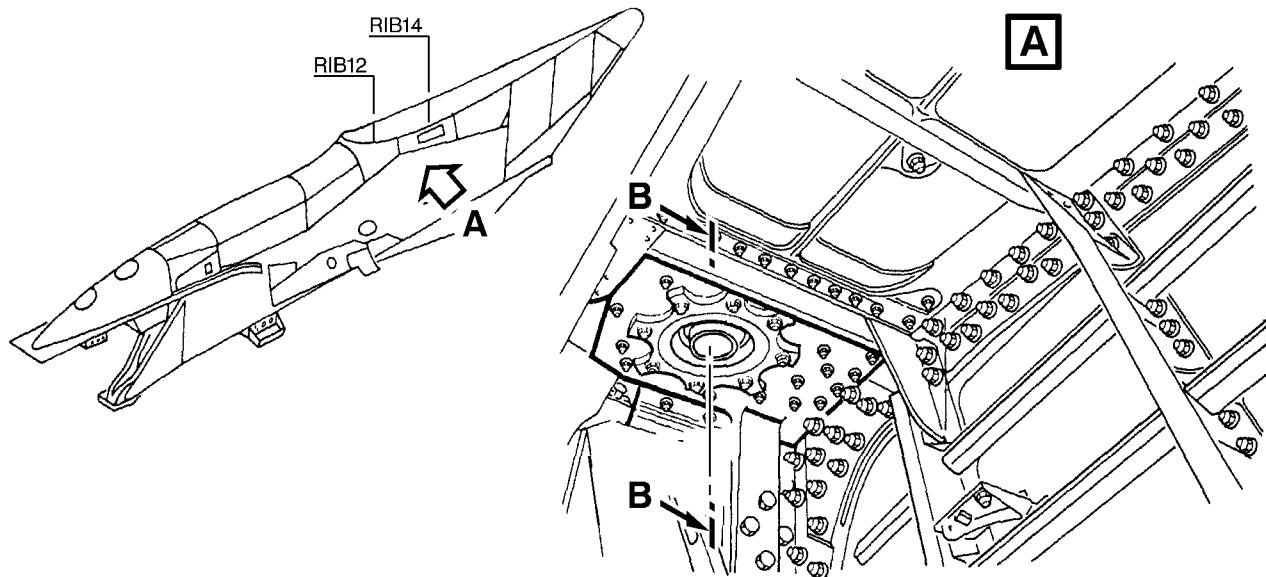
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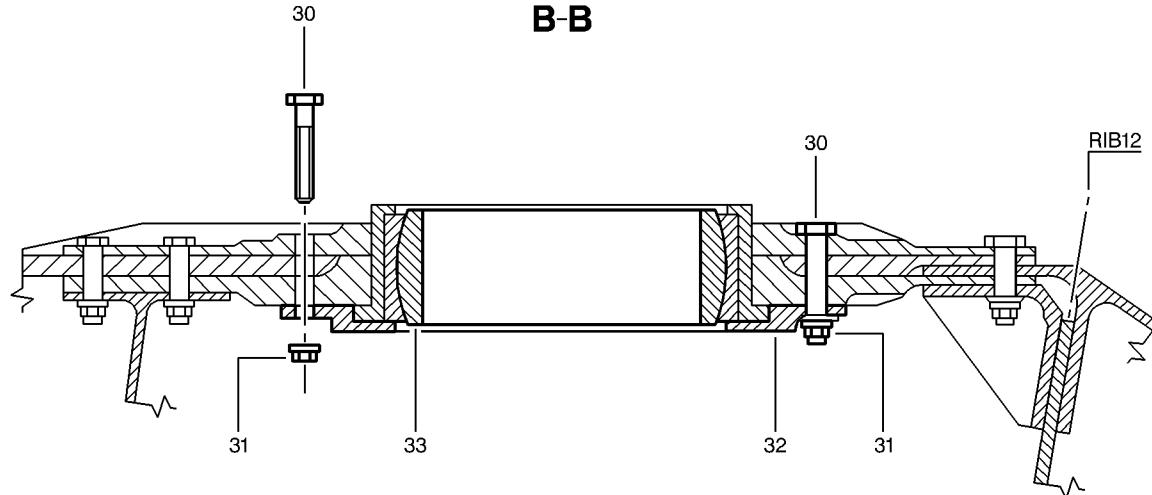
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SECTION
B-B



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Spigot/Ball Joint Assembly (Pylon Removed)
Figure 406

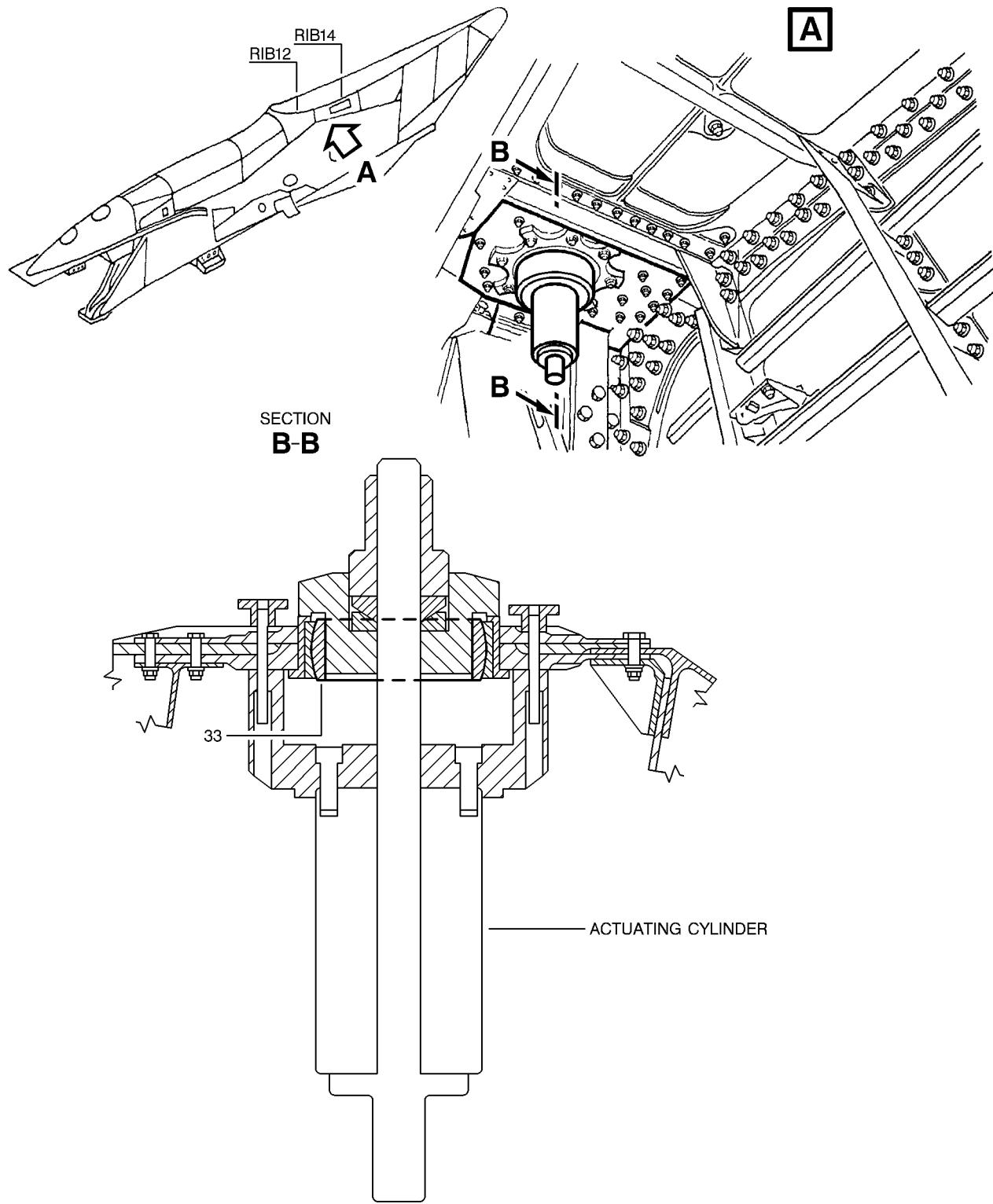
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Spigot/Ball Joint Assembly (Pylon Removed)
Figure 407

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- (1) Removal of the spigot ball joint (33).
 - (a) On the upper panel, between RIB12 and RIB14 remove the adhesive compound from the upper ball joint fitting.
 - (b) Remove the nuts (31), the bolts (30) and the flange (32).
 - (c) Put the tool 98A54403028000 in position under the upper panel.
 - (d) Pressurize the actuating cylinder of the tool and remove the spigot ball joint (33).
 - (e) Clean the housing of the spigot ball joint (33) with cleaning agent, Material No. 11-003.
- (2) Preparation for replacement
 - (a) Do a visual check of the spigot ball joint.
 - (b) Apply Material No. 08-034 on the spigot ball joint housing.
 - (c) Apply Material No. 08-034 on the spigot ball joint (33).
(Ref. Fig. 408)
- (3) Installation of the spigot ball joint (33).
 - (a) Install the spigot ball joint (33).
 - (b) Install the flange (32), the bolts (30) and the nuts (31) and tighten them.
 - (c) Apply Material No. 08-004 on the spigot ball joint (33).

D. Close-Up

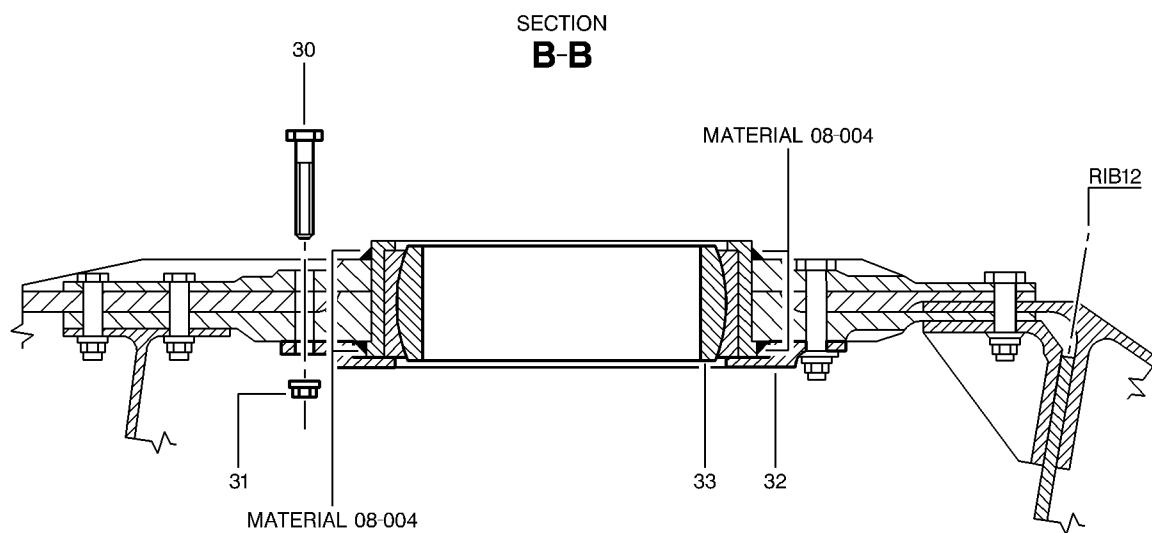
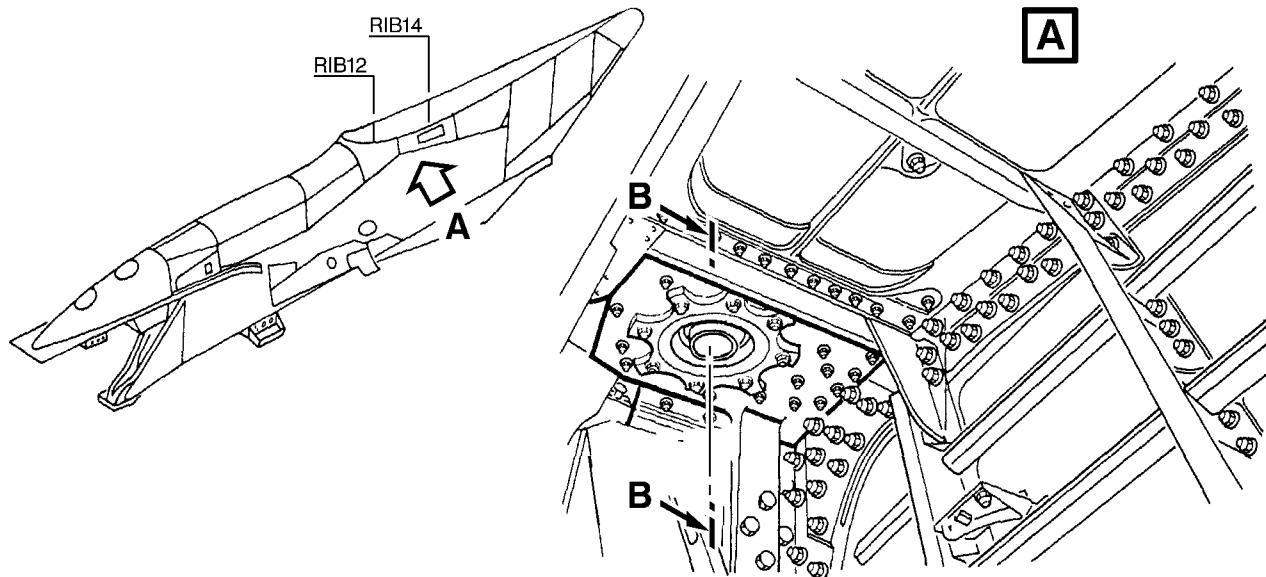
- (1) Install the fire extinguisher bottles (Ref. 26-21-15, P. Block 401).
- (2) Close the access doors :
 - (a) For the right pylon : 484AR
 - (b) For the left pylon : 473AL
- (3) Install the pylon (Ref. 54-50-00, P. Block 401).

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Spigot Ball Joint - Protection Against Corrosion
Figure 408

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SPIGOT BALL JOINT - INSPECTION CHECK

1. Dimensional Checks of Spigot Fitting

A. Reason for the Job

(1) Check of fits and clearances after removal of one pylon.

B. Equipment and Materials

ITEM	DESIGNATION
Referenced Procedure	
- 54-51-78, P. Block 401	Spigot Ball Joint

C. Procedure

(1) Job set-up

(a) Remove spigot ball joint (Ref. 54-51-78, P. Block 401).

(2) Inspection

(a) Check the following dimensions :

NOTE : When wear limits are exceeded, install an oversized ball joint
(2) (Ref. 54-51-78, P. Block 401).

(Ref. Fig. 601)

Detail and Item No.	Original Mfg Limits				In-Service Wear Limits		
	Dimension Inches (Millimeters)	Assy. Clearance Inches (Milli- meters)	Dimension Limits Inches (Milli- meters)	Max. Allow.	Min.	Max.	Clear in. (mm)
B OD1	3.4632 (87.966)	3.4641 (87.988)		3.4622 (87.942)			0.0056 (0.142)
			0.00055 (0.012)	0.0027 (0.069)			
ID2	3.4646 (88.000)	3.4659 (88.035)			3.4678 (88.083)		
OD2	4.7228 (119.960)	4.7244 (120.000)		4.7217 (119.933)			0.0063 (0.160)
			0.000 (0.080)	0.0032 (0.080)			
ID3	4.7244 (120.000)	4.7260 (120.040)			4.7281 (120.094)		
OD2	4.7228 (119.960)	4.7244 (120.000)		4.7217 (119.933)			0.0063 (0.160)
			0.000 (0.080)	0.0032 (0.080)			
ID4	4.7244	4.7260			4.7281		

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Detail and Item No.	Original Mfg Limits				In-Service Wear Limits			
	Dimension Inches (Millimeters)		Assy. Clearance Inches (Milli- meters)		Dimension Limits Inches (Milli- meters)		Max. Allow. Clear in. (mm)	
	Min.	Max.	Min.	Max.	Min.	Max.	(120.094)	
	(120.000)	(120.040)						

(3) Close-up

(a) Install spigot ball joint (Ref. 54-51-78, P. Block 401).

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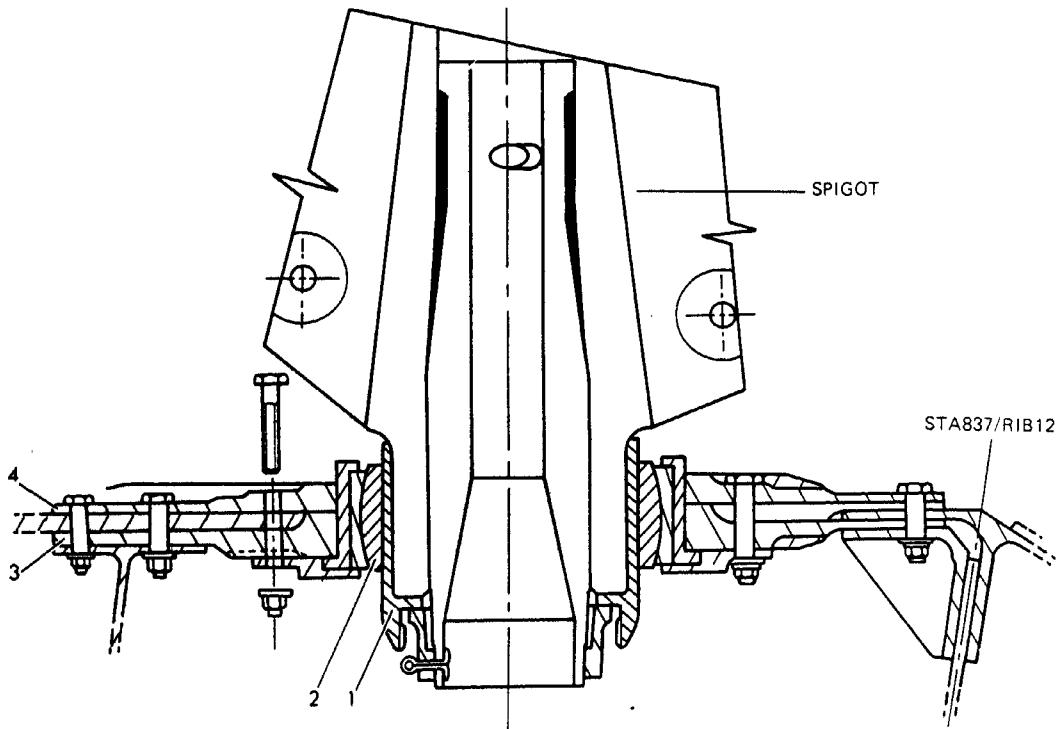
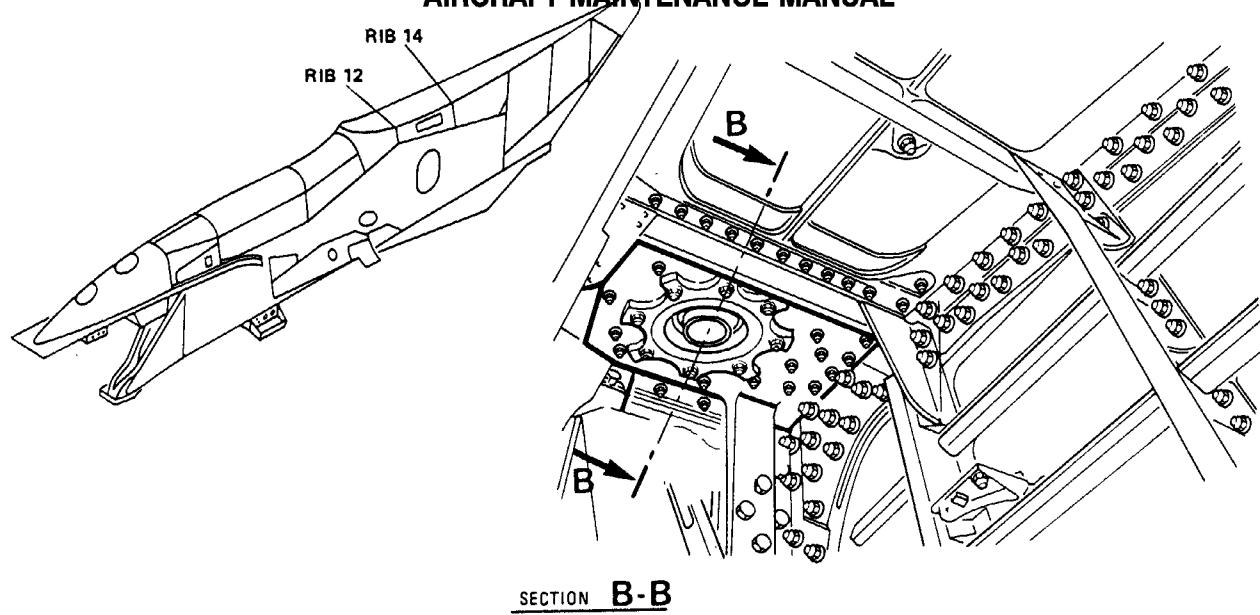
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Spigot Ball Joint
Figure 601

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1. General

A. This procedure provides instructions for removal and installation of the engine aft mount upper beam.

2. Equipment and Materials

ITEM	DESIGNATION
R A.	Access Platform
R B.	Corrosion Resistant Steel Lockwire
R C.	Hand Wrench
R D.	Torque Wrench 1 to 88.12 m.daN (88 to 7800 lbf.in.)
R E. 98A54503005040	Adjustable Centering Pin
R F. 98A54503005042	Centering Pin
R G. 98A54503005100	Centering Pin Engine Mount Box
R H. 98A54503005705	Allen Key
R J. Material No. 04-014A Referenced Procedures - 71-00-00, P. Block 401 - 71-13-00, P. Block 301	Common Greases (Ref. 20-31-00) Power Plant Cowl Doors

3. Procedure**A. Job Set-up**

- (1) Open engine cowl doors (Ref. 71-13-00, P. Block 301).
- (2) Remove engine (Ref. 71-00-00, P. Block 401).
- (3) Install pylon access platform.
- (4) Remove hydraulic reservoir pressurization line as follows:
(Ref. Fig. 401)
 - (a) Loosen nuts (3) and (9) of line couplings.
 - (b) Loosen nuts (2) and (4) and retain bolts (1) and (5) with washers.
 - (c) Detach clamps (8) from lower cap.
 - (d) Remove line by pulling it towards aircraft forward section.
 - (e) Blank open ends of lines with blanking caps.
 - (f) Remove plate (6) if required by removing nut (7).

B. Removal (Ref. Fig. 402)

CAUTION : LOSEN ALL FOUR BOLTS 1/3 TURNS BEFORE REMOVING THE BOLTS.

FAILURE TO DO SO MIGHT CAUSE GALLING IN ONE OF THE HOLE SURFACES.

- (1) Remove bolts (1) and (4) and washers (2) from beam and remove beam from pylon.

NOTE : You must first remove the adjusted shear bolt (1) located on the forward left hole of the beam and then the three tension bolts (4).

C. Preparation of Replacement Component

- (1) Visually inspect the beam and the bolts (1) and (4), replace the bolts

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(1) and (4) if necessary.

D. Check of the Running Torque and the Breakaway Torque (Ref. Fig. 403)

(1) Install the bolts (4) and the bolt (1) into the nuts (3).

(2) With a torque wrench calibrated to 9 m.daN (800 lbf.in.), measure the running torque required to tighten the bolts (4) and the bolt (1) until:

- two thread minimum show out of the nut (3) or

- you get a distance A plus 1 mm (0.039 in.) between the lower surface of the lower spar and the contact surface between the bolt head and the beam (beam removed).

(3) If the running torque is more than 9 m.daN (800 lbf.in.), replace the nut (3).

(4) Loosen the bolts (4) and the bolt (1).

(5) With a torque wrench calibrated to 1.02 m.daN (90 lbf.in.), measure the breakaway torque required to loosen the bolts (4) and the bolt (1).

(6) If the breakaway torque is less than 1.02 m.daN (90 lbf.in.), replace the nut (3).

NOTE : Before installation of the new nuts (3), do a check of the running torque and breakaway torque as described in Para. D.

E. Replacement of the nuts (3)

NOTE : The removal procedure is identical for each nut (3).

(1) Open access panels 415AL, 416AR, 425AL or 426AR.

(2) Remove bolt (15), washer (14) and nut (11).

(3) Remove concerned retainer (12) and shim (13).

(4) Remove defective nut (3).

(5) Position new nut (3) with its retainer (12) and shim (13).

(6) Assemble bolt (15), washer (14), retainers (12), shims (13) and nut (11).

(7) Tighten nut (11).

(8) Install access panels 415AL, 416AR, 425AL or 426AR.

R F. Installation (Ref. Fig. 402, 404)

(1) Lubricate bolts (4) and (1) threads and shank and washers (2) with grease "Never Seez Standard" (Material No. 04-014A).

(2) Put the upper beam in position so that it touches under the pylon.

(3) Engage the adjustable centering pin PN 98A54503005040 of dimension between 25.502 - 25.654 mm (1.004 - 1.010 in.) into the bore hole position #2.

NOTE : Tighten gently adjustable centering pin with the allen key PN 98A54503005705 if necessary to reduce the contact diameter.

NOTE : This pin is a part element of centering pin engine mount GE (98A54503005100).

(4) Engage the centering pin PN 98A54503005042 of dimension between 25.40 - 25.425 mm (1 - 1.001 in.) into the bore hole position #1.

NOTE : This pin is a part element of centering pin engine mount GE (98A54503005100).

(5) Install the bolts (4) and washers (2) at positions #3 and #4.

(a) Tighten the bolts by hand (use fingers only, do not use a wrench)

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- R until you get the nut to lock.
- R (6) Check that the centering pin PN 98A54503005042 of dimension between
R 25.40 - 25.425 mm (1 - 1.001 in.) in bore hole position #1 can move
R freely into the hole.
- R (7) Complete seating of the bolts (4) at positions #3 and #4 with use
R of a standard hand wrench.
R (a) Tighten so the mount upper beam and pylon are pulled together
R with no gap.
- R (8) Do a preliminary torque (by hand wrench) of bolts at positions #3 and
R #4 while you make sure that the centering pin PN 98A54503005042 can still
R move freely into the bore hole position #1.
- R (9) Remove the centering pin PN 98A54503005042 from hole position #1.
- R (10) Install the bolt (1) and washer (2) into the bore hole position #1.
R (a) Make sure the bolt (1) at position #1 can be fully installed by hand
R (use fingers only, do not use a wrench) until you get the nut to lock
R in a minimum of 10 turns.
R (b) If the bolt (1) cannot be installed by hand before you get the nut to
R lock, loosen bolts at positions #3 and #4 and align the mount upper
R beam and pylon again.
- R (11) Complete seating of the bolt (1) at hole position #1 (by hand wrench).
- R (12) Remove the adjustable centering pin PN 98A54503005040 from hole
R position #2.
- R (13) Install the bolt (4) and washer (2) into the bore hole position #2.
R (a) Make sure the bolt (4) at position #2 can be fully installed by
R hand (use fingers only, do not use a wrench) until you get the nut
R to lock in a minimum of 10 turns.
- R (14) Complete seating of the bolt (4) at position #2 with use of a standard
R hand wrench.
- R (15) TORQUE bolts (4) and (1) to between 81.35 and 88.12 m.daN (7200 and
R 7800 lbf.in.) and wirelock.

G. Close-up

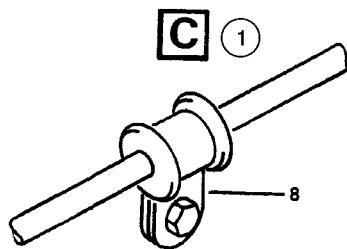
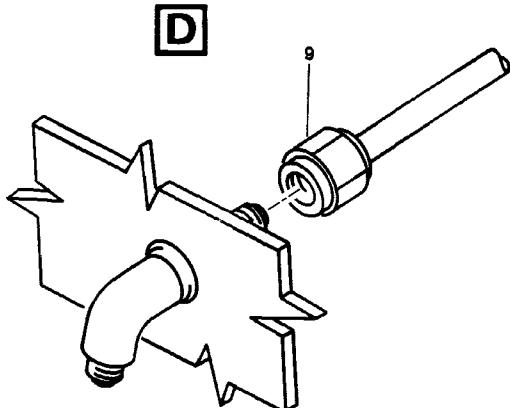
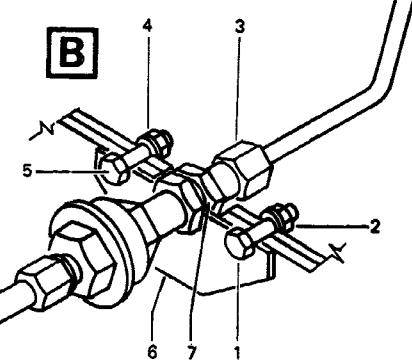
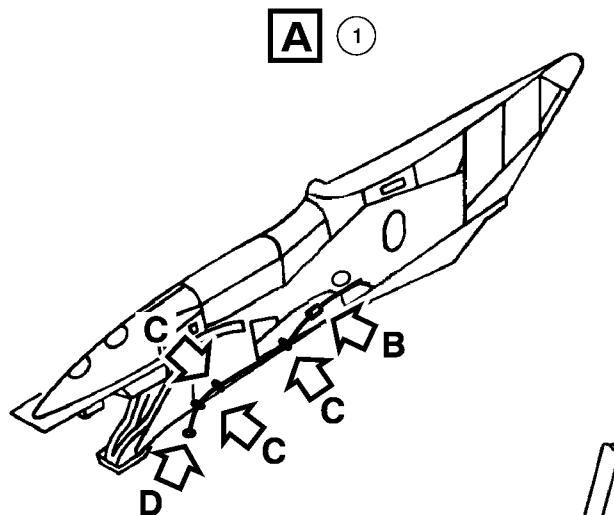
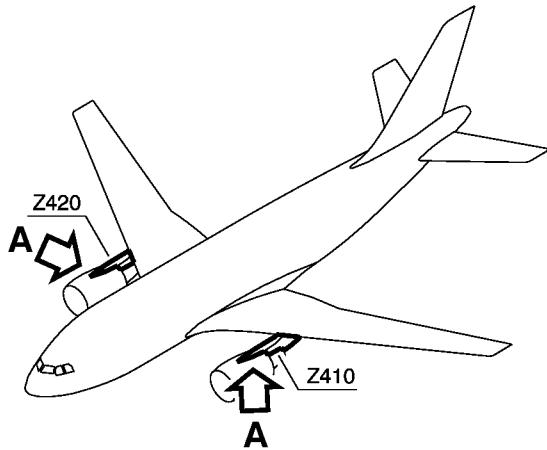
- (1) Install hydraulic reservoir pressurization line as follows:
(Ref. Fig. 401)
- (a) Install plate (6) on pressurization line and screw in nut (7). Do not tighten.
(b) Position line with clamps.
(c) Attach plate (6) to aft attach fitting using bolts (1) and (5) provided with washers and nuts (2) and (4).
(d) TORQUE nuts (3) and (9) of line couplings to between 1.5 and 1.7 m.daN (132 and 150 lbf.in.).
(e) TORQUE nut (7) to 1.5 m.daN (132 lbf.in.).
(f) Position and attach clamps (8) to lower cap.
(g) Make certain that minimum distance between lower cap and line is greater than or equal to 3 mm (0.118 in.).
- (2) Remove pylon access platform.
(3) Install engine (Ref. 71-00-00, P. Block 401).
(4) Close engine cowl doors (Ref. 71-13-00, P. Block 301).
(5) Make certain that working area is clean and clear of tools and miscellaneous items of equipment.

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NOTE:

(1) EXAMPLE

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Hydraulic Reservoir Pressurization Line
Figure 401

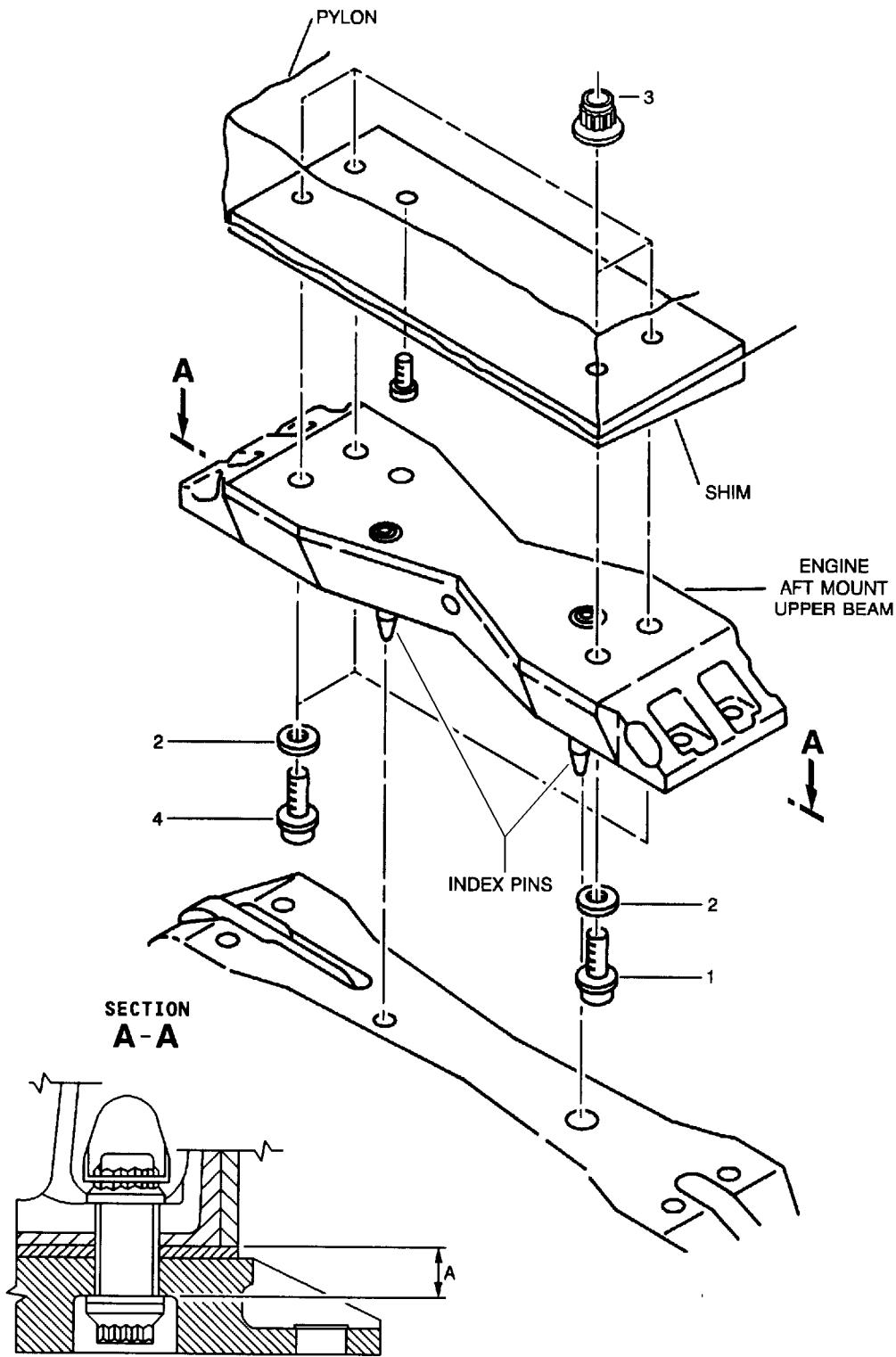
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Engine Aft Mount Upper Beam
Figure 402

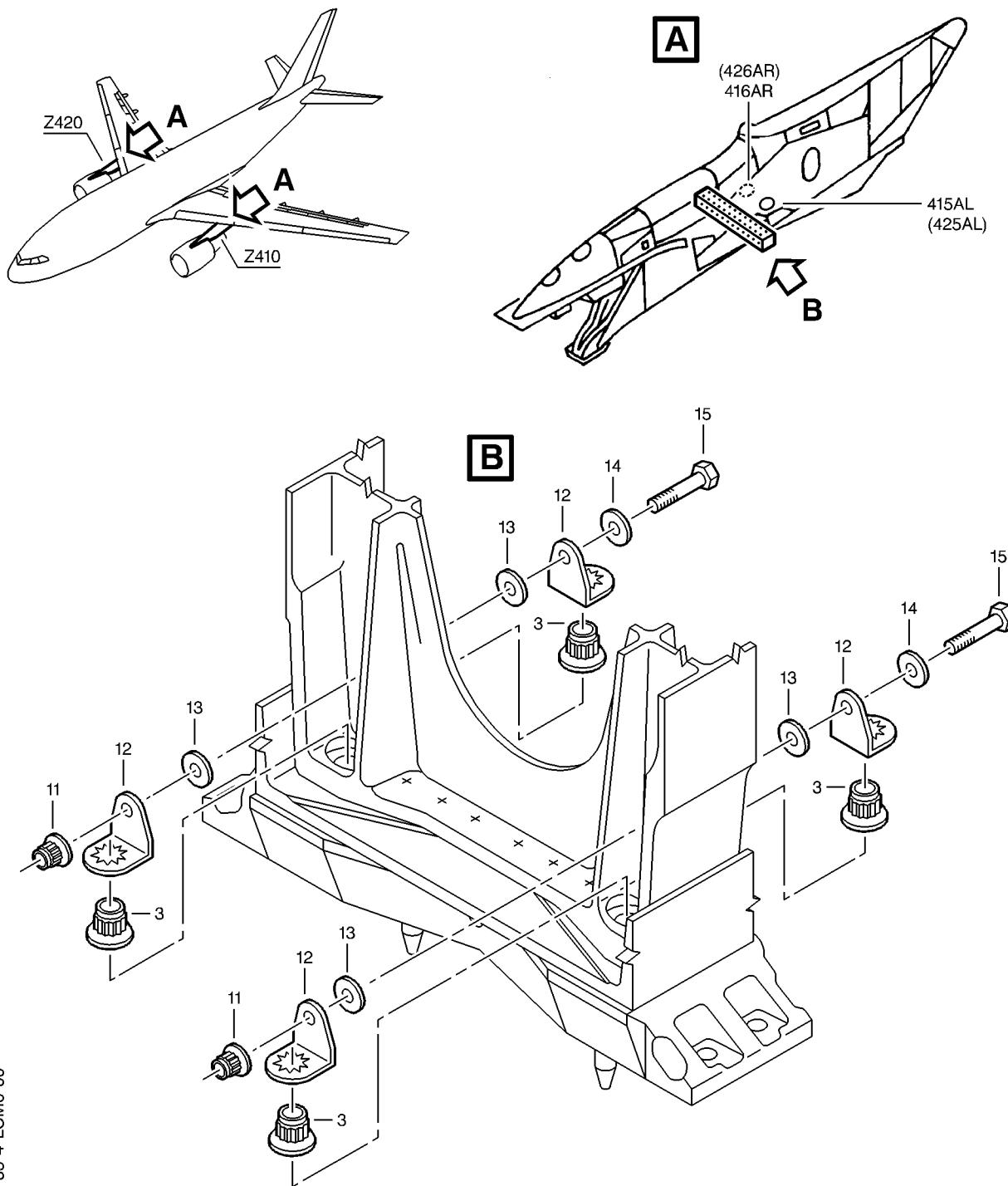
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Aft Attach Fitting - Replacement of the Nuts
Figure 403

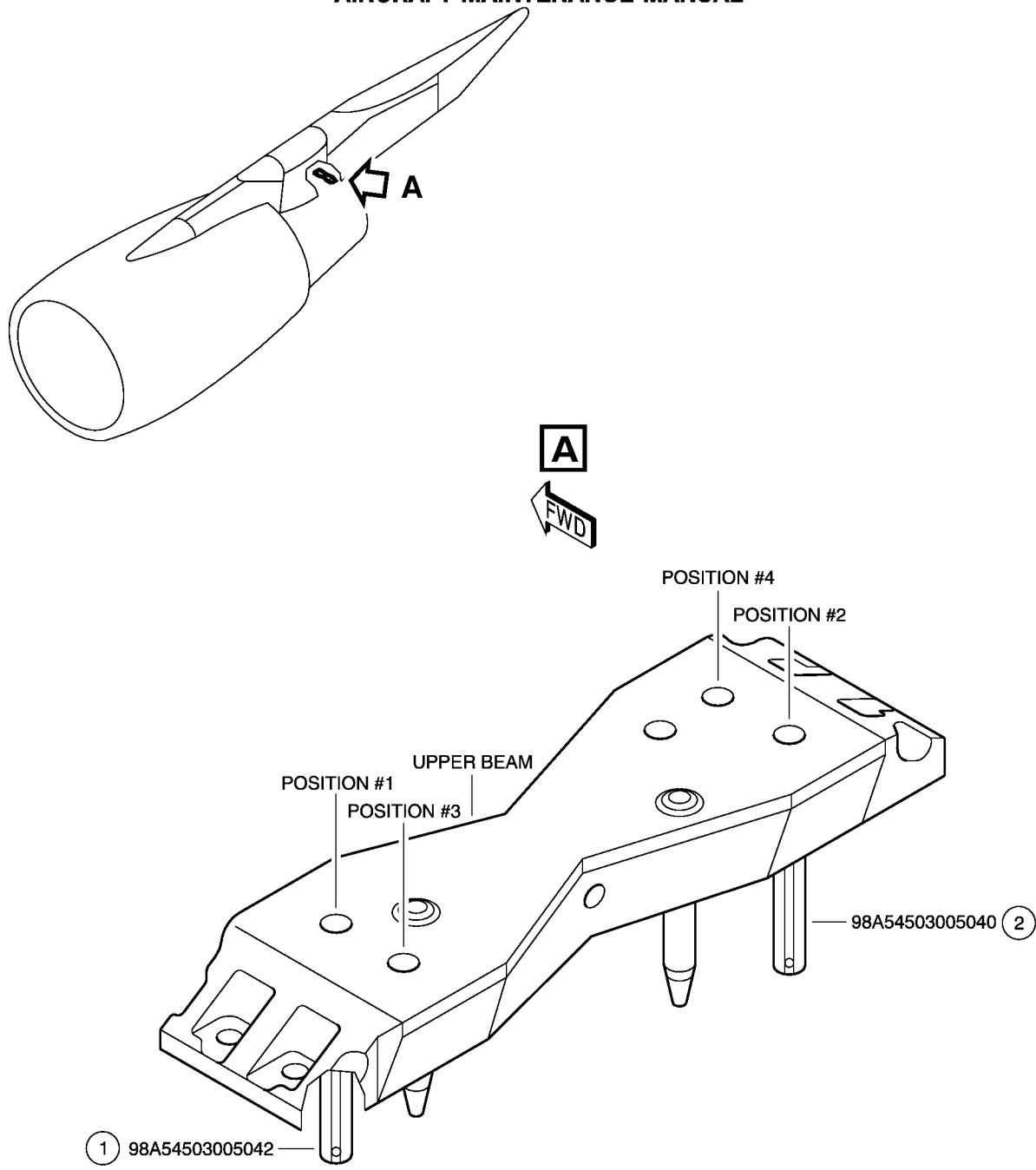
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NOTE:

- (1) USED FOR POSITION #1
- (2) USED FOR POSITION #2

R

Centering Pin Engine Mount
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ENGINE AFT MOUNT UPPER BEAM - INSPECTION/CHECK

1. General

A. This procedure provides information for inspecting the engine aft mount upper beam.

2. Equipment and Materials

ITEM	DESIGNATION
A.	Access Platform
Referenced Procedures	
- 54-51-85, P. Block 401	Engine Aft Mount Upper Beam
- 71-00-00, P. Block 401	Power Plant
R - CMM 71-20-05 (07482)	

3. Procedure

A. Job Set-up

- (1) Remove engine (Ref. 71-00-00, P. Block 401).
- (2) Install access platform.
- (3) Remove/Disassemble the aft mount upper beam assembly (Ref. 54-51-85, P. Block 401).

B. Inspection

- (1) Inspect the following

INSPECT/CHECK	MAXIMUM SERVICEABLE LIMITS	REMARKS
(a)Upper Beam for :		
<u>1</u> Cracks	No cracks allowed	Replace if defective
<u>2</u> Corrosion	Any amount up to 0.005 in (0.13 mm) deep	Blend
<u>3</u> Nicks/Scratches	One per every 4 sq in (26 sq cm), 0.015 in (0.38 mm) deep, 1 in (25.0 mm) long. No sharp grooves allowed	Blend
<u>4</u> High metal on mating surfaces	No high metal allowed	Remove high metal
<u>5</u> Fretting on lower beam interface	Any amount not exceeding 0.003 in (0.08 mm) after removal of high metal	
	Any amount not exceeding 0.007 in (0.18 mm) deep	Blend

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INSPECT/CHECK	MAXIMUM SERVICEABLE LIMITS	REMARKS
	on interface surface and not to exceed 10 % of interface area	
R (b) Allowable in- Service Hole oversize	Refer to CMM 71-20-05 (07482).	
C. Close-up		
	(1) Install aft mount upper beam assembly (Ref. 54-51-85, P. Block 401). (2) Make sure that the work area is clean and clear of tools and other items of equipment. (3) Remove the access platform. (4) Install the engine (Ref. 71-00-00, P. Block 401).	

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AFT ATTACH FITTING SHIM - REMOVAL/INSTALLATION1. Equipment and Materials

ITEM	DESIGNATION
A.	Access Platform
Referenced Procedures	
R - 36-11-00, P. Block 401	Engine Bleed Air Supply System
- 36-11-15, P. Block 401	Bleed Air Precooler
- 54-51-85, P. Block 401	Aft Attach Fitting
- 71-00-00, P. Block 401	Power Plant - General

2. Procedure

A. Job set-up

- (1) Remove engine (Ref. 71-00-00, P. Block 401).
- (2) Remove engine aft attach fitting (Ref. 54-51-85, P. Block 401).
- (3) Install access platforms at engine pylon.
- (4) Open upper cowls 413DL (423DL) and 413BL (423BL).
- (5) Remove bleed air precooler (Ref. 36-11-15, P. Block 401).

- R (6) Remove bleed air precooler duct assembly (Ref. 36-11-00, P. Block 401).
CAUTION : UNCAP COLD AIR INLET DUCTS AT LEVEL OF BLEED AIR PRECOOLER
(7) Protect hydraulic lines and electrical cables to avoid deterioration.

B. Removal

(Ref. Fig. 401)

- (1) Remove nuts and bolts (12) and collect washers.
- (2) Remove nuts and bolts (10).
- (3) Remove nuts and bolts (11). Hold shim during fastener removal.
- (4) Remove shim (22).

C. Installation

- (1) Position and hold shim (22).
- (2) Install bolts and nuts (11).
- (3) Install bolts and nuts (10).
- (4) Install bolts (12) fitted with washers and install nuts (12).
- (5) Tighten nuts (10), (11) and (12).

D. Close-up

- (1) Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
CAUTION : UNCAP COLD AIR INLET DUCTS AT LEVEL OF BLEED AIR PRECOOLER
- (2) Install bleed air precooler duct assembly
(Ref. 36-11-00, P. Block 401).
- (3) Remove hydraulic lines and electrical cables protection.
- (4) Install bleed air precooler (Ref. 36-11-15, P. Block 401).
- (5) Close upper cowls 413DL (423DL) and 413BL (423BL).
- (6) Remove access platforms.
- (7) Install aft attach fitting (Ref. 54-51-85, P. Block 401).
- (8) Install engine (Ref. 71-00-00, P. Block 401).

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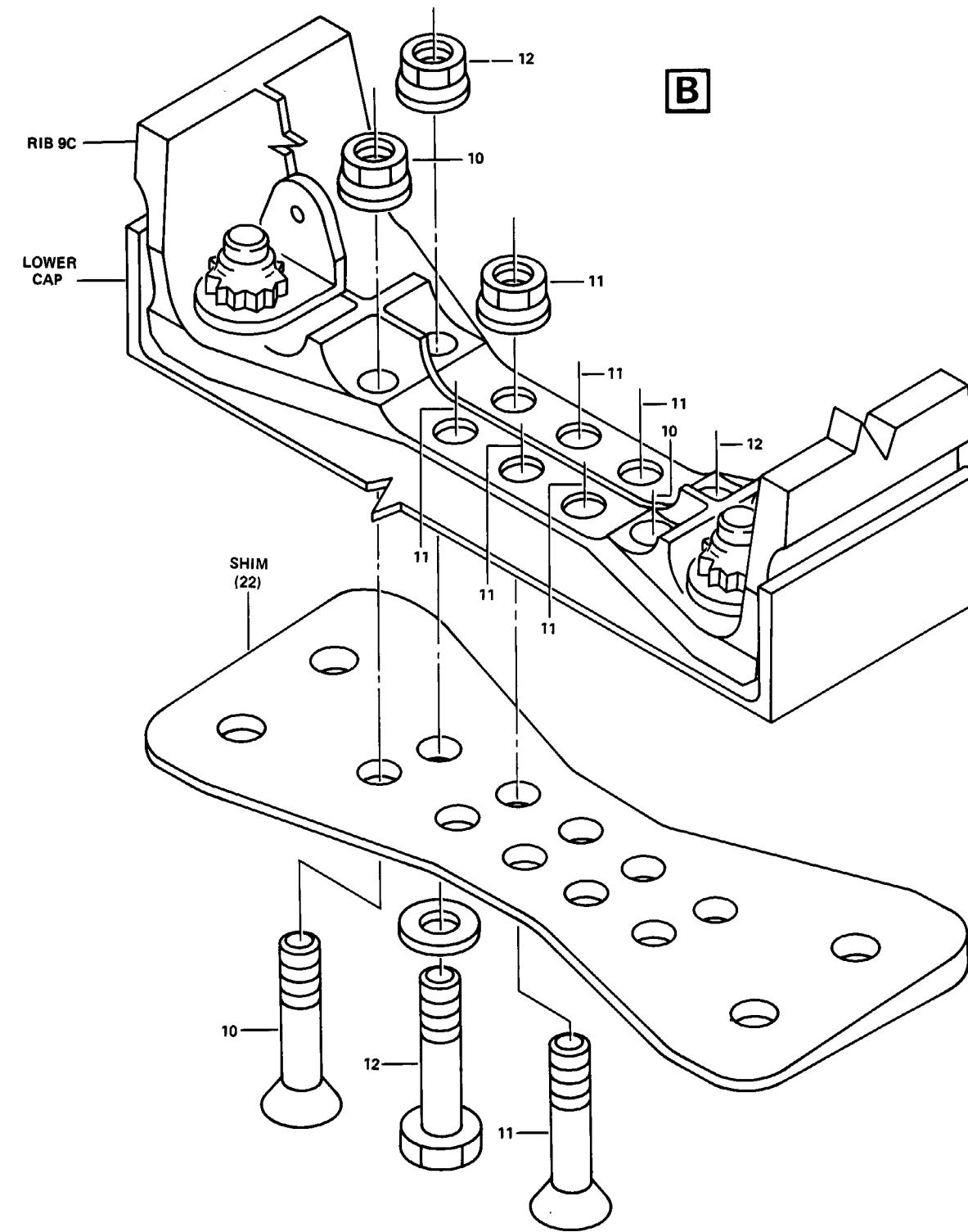
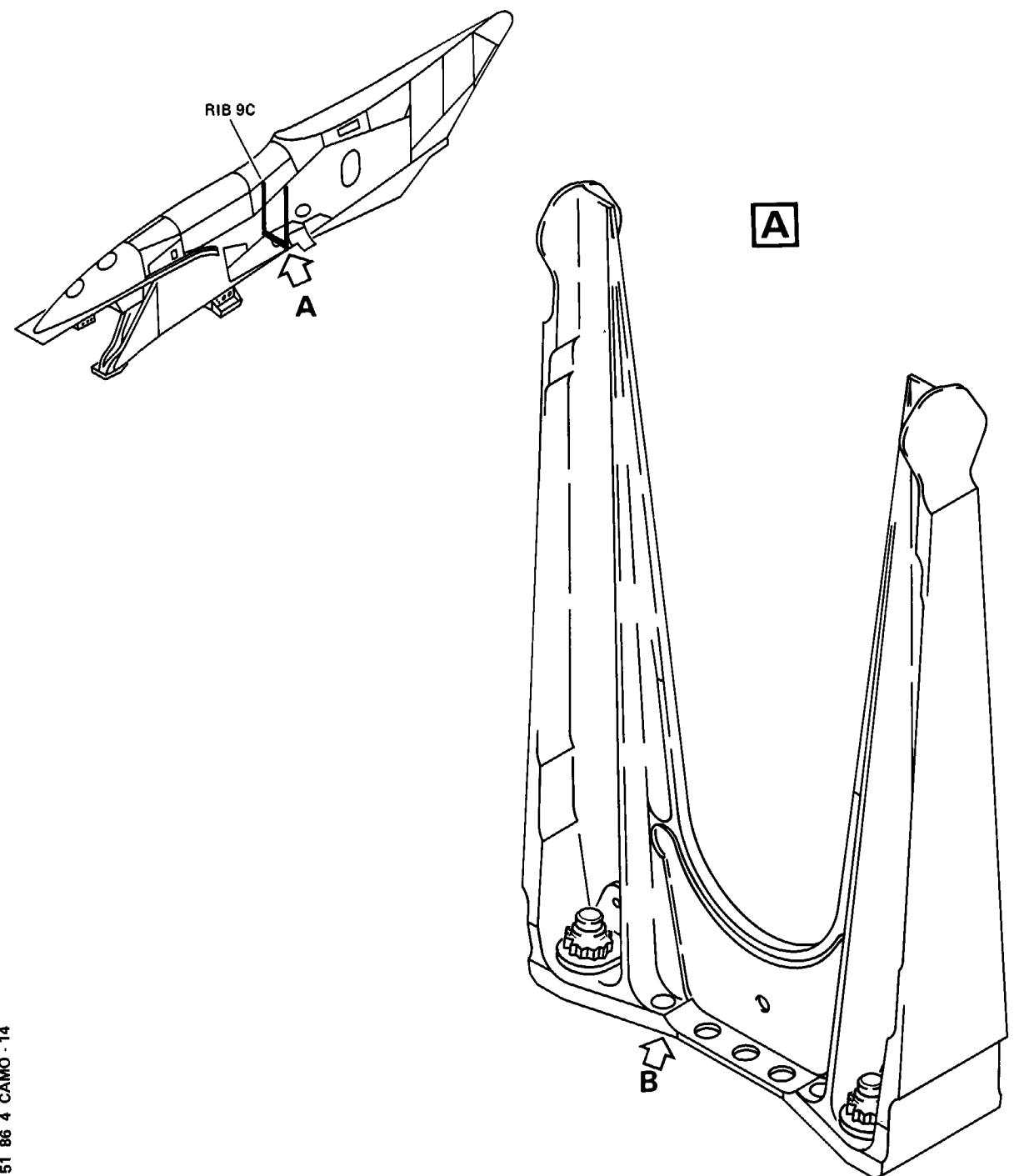
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Aft Attach Fitting Shim
Figure 401

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1. General

The three main functions of the engine pylon forward fairing are to :

- provide an aerodynamic fairing to engine pylon
- route and ensure protection of lines and components of various systems
- separate the various systems for safety reasons.

2. Description**A. Structure**

The forward fairing can be divided into two sections structurally different :

- the cantilever structure
- structure between RIBs J08 and 10A.

(1) Cantilever structure

It is comprised of :

(Ref. Fig. 001)

- 12 stamped sheet metal ribs, each fitted on their lower section with a transversal stiffener made of folded sheet metal or machined steel
- one stamped sheet spar, on which are attached transverse stiffeners
- two stamped sheet metal plates connecting the transverse ribs and forming a rigid assembly
- two junction edgings which prolong engine cowl contour and are riveted to the spar

The spar is bolted to the pylon main structure.

The cantilever structure provides an aero-dynamic contour between engine nose cowl and pylon box.

Two electrical junction boxes are installed on the cantilever beam and ensure pylon-to-engine interface.

(Ref. Fig. 002).

(Ref. Fig. 003)

The cantilever beam is divided into two compartments separated by a sealed wall (RIBA9).

The forward compartment is located between RIBs A1 and A9.

It comprises the following routings :

- electrical wiring leading to forward electrical junction box
- pressure lines for thrust reverser opening system
- throttle control and reverse interlock cables.

The aft compartment is located between RIBs A9 and J08.

It comprises the following routings :

- electrical wiring leading to forward and center electrical junction boxes
- pressure lines for thrust reverser opening system
- throttle control and reverse interlock cables.

Each compartment has a door in its upper section giving access to the various cables.

Engine cowl hinge fittings are secured to the spar (Ref. 54-56-00).

(2) Forward fairing between RIBs J08 and 10A.

It provides an aerodynamic contour between the cantilever struture and the wing leading edge and enables the routing of various system lines and cables.

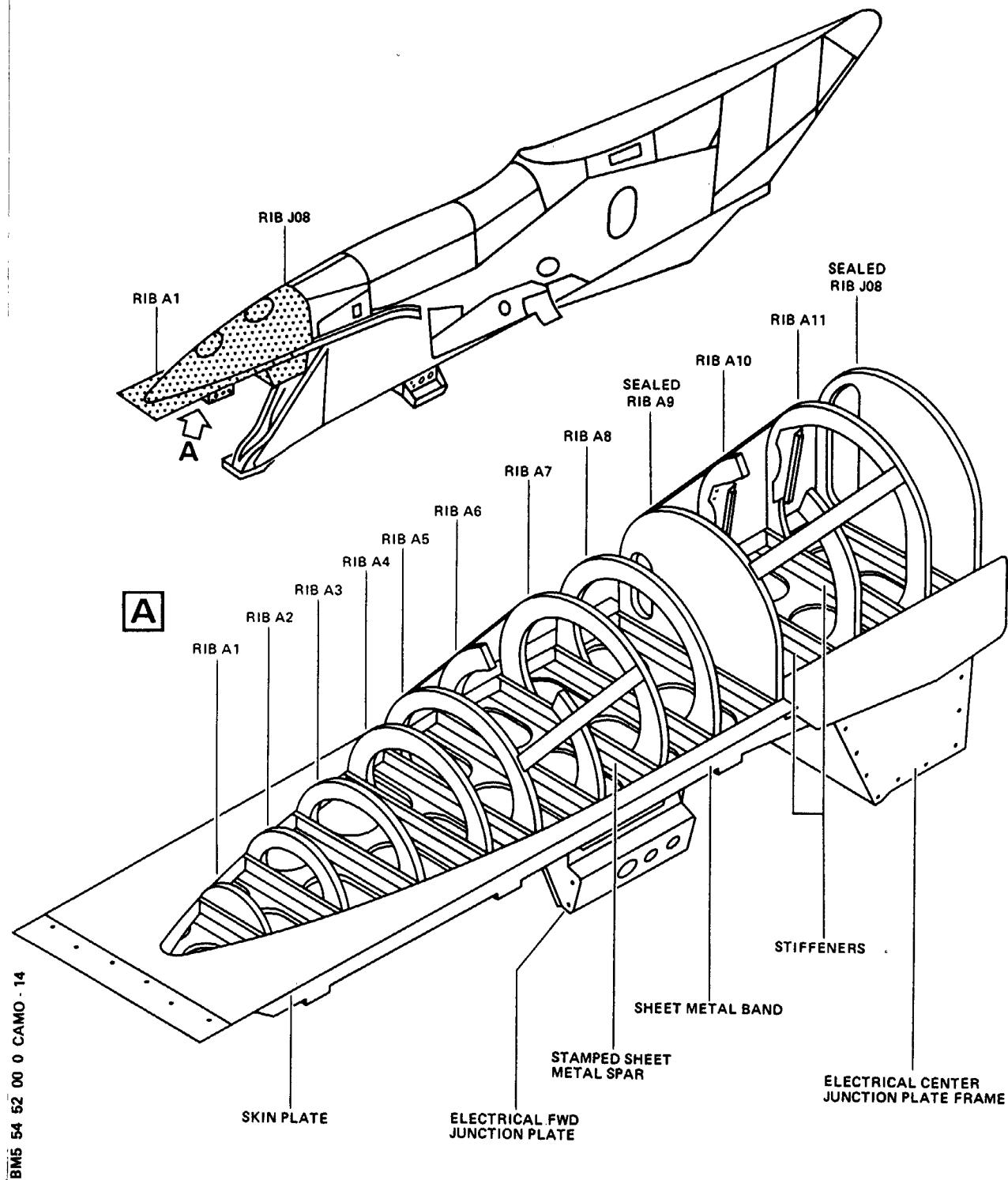
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Cantilever Structure
Figure 001

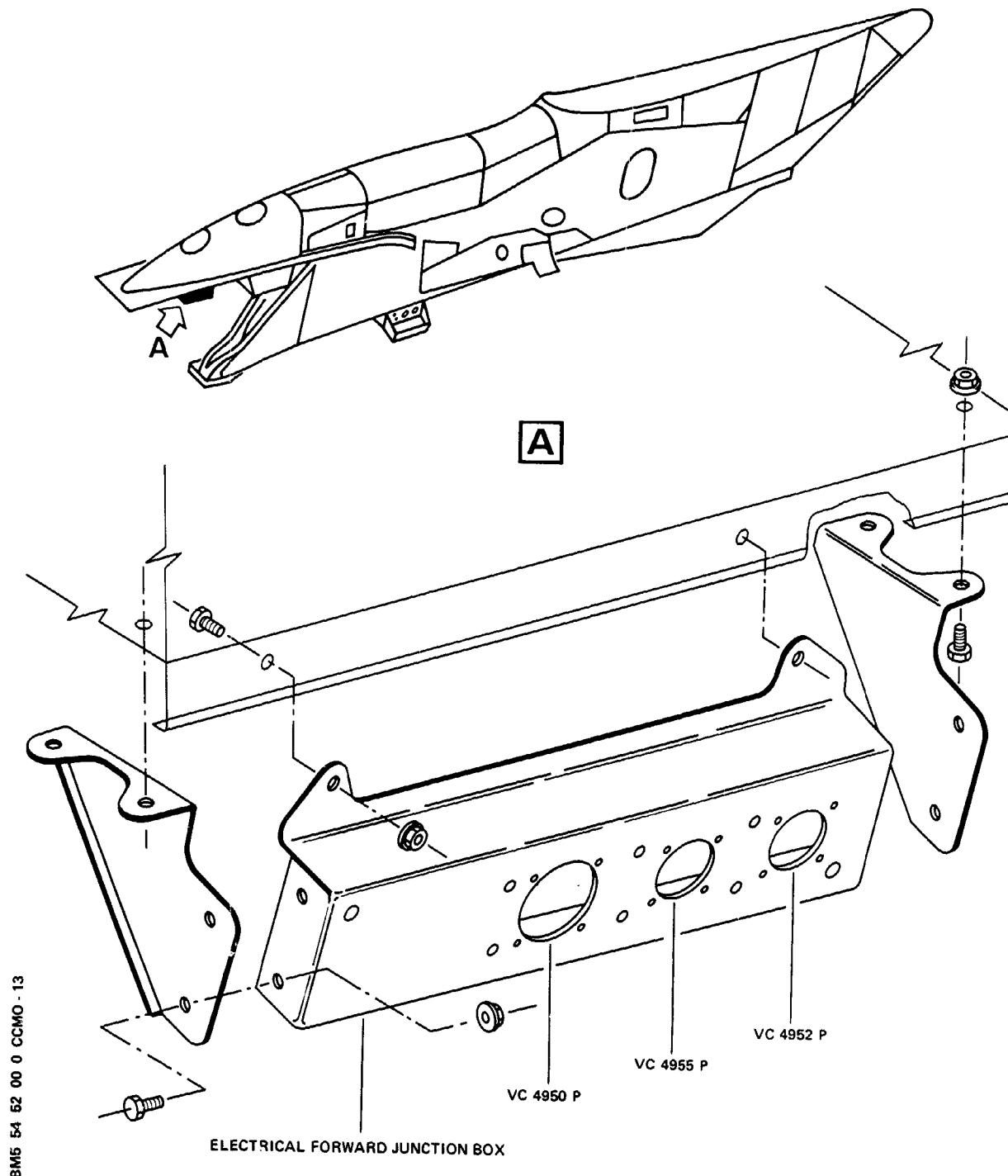
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Engine-to-Pylon Interface Forward Electrical Junction Box
Figure 002

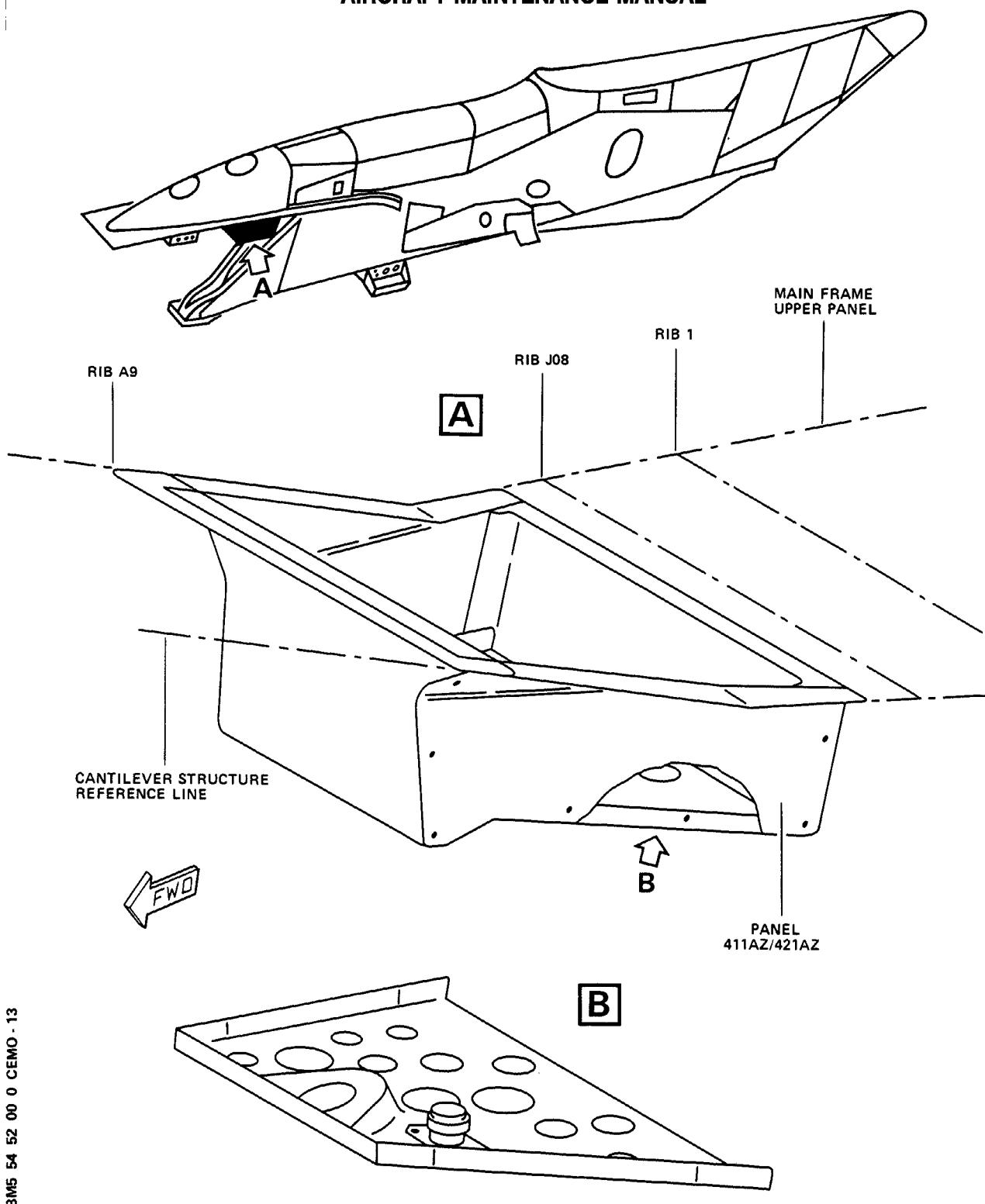
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Engine-to-Pylon Interface Center Electrical Junction Box
Figure 003

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The four main elements of this structure are RIBs J08, 3A, 8A and 10A which are attached to the upper panel of the main structure and divide the structure into three sections.

(a) Section between RIBs J08 and 3A.

(Ref. Fig. 004)

(Ref. Fig. 005)

This section is divided into three compartments, A, B1 and B2, by two metallic panels which are parallel to the pylon longitudinal axis and secured at their ends to RIBs J08 and 3A.

Compartment A comprises :

- the fuel line elbow. At this level, the fuel line is routed into the main frame via a sealed bulkhead feedthrough
- throttle and reverse interlock cables which are routed into the cantilever structure via a sealed bulkhead feedthrough.
- pressure lines for thrust reverser opening system.

Access to the various systems in compartment A is gained by a light alloy panel bolted to the structure.

(Ref. Fig. 006)

This panel is fitted with a calibrated door designed to open in case of fuel line bursting.

Compartment B1 comprises :

- the precooler hot air bleed duct
- the overpressure valve.

Compartment B1 is fitted with two pressure relief doors calibrated to 200 mbars and designed to open in case of hot air bleed duct bursting.

Compartment B2 comprises the electrical cables routed towards the cantilever structure. The cables are run via a sealed bulkhead feedthrough. Access to the system is gained through a light alloy panel, identical to that of compartment A but without pressure relief door.

(b) Section between RIBs 3A and 8A.

(Ref. Fig. 007)

This section is divided into three compartments in the same way as the previous section.

Compartment A comprises :

- a fuel line section with no union
- throttle and reverse interlock cables.

Access to these systems is gained by means of a light-alloy removable panel bolted to the structure.

Compartment B1 encloses the precooler. A bolted removable cowl hermetically seals the precooler and is used as an outlet duct for the precooler cooling air in its upper section.

(Ref. Fig. 008).

Compartment B2 comprises electrical cables. Access is gained through a removable panel identical to that of compartment A.

(c) Section between RIBs 8A and 10A.

The separation is the same as for the two other compartments.

Compartment A comprises :

- the fuel line.

Access to the system is gained through a light-alloy removable panel bolted to the structure.

Compartment B1 comprises :

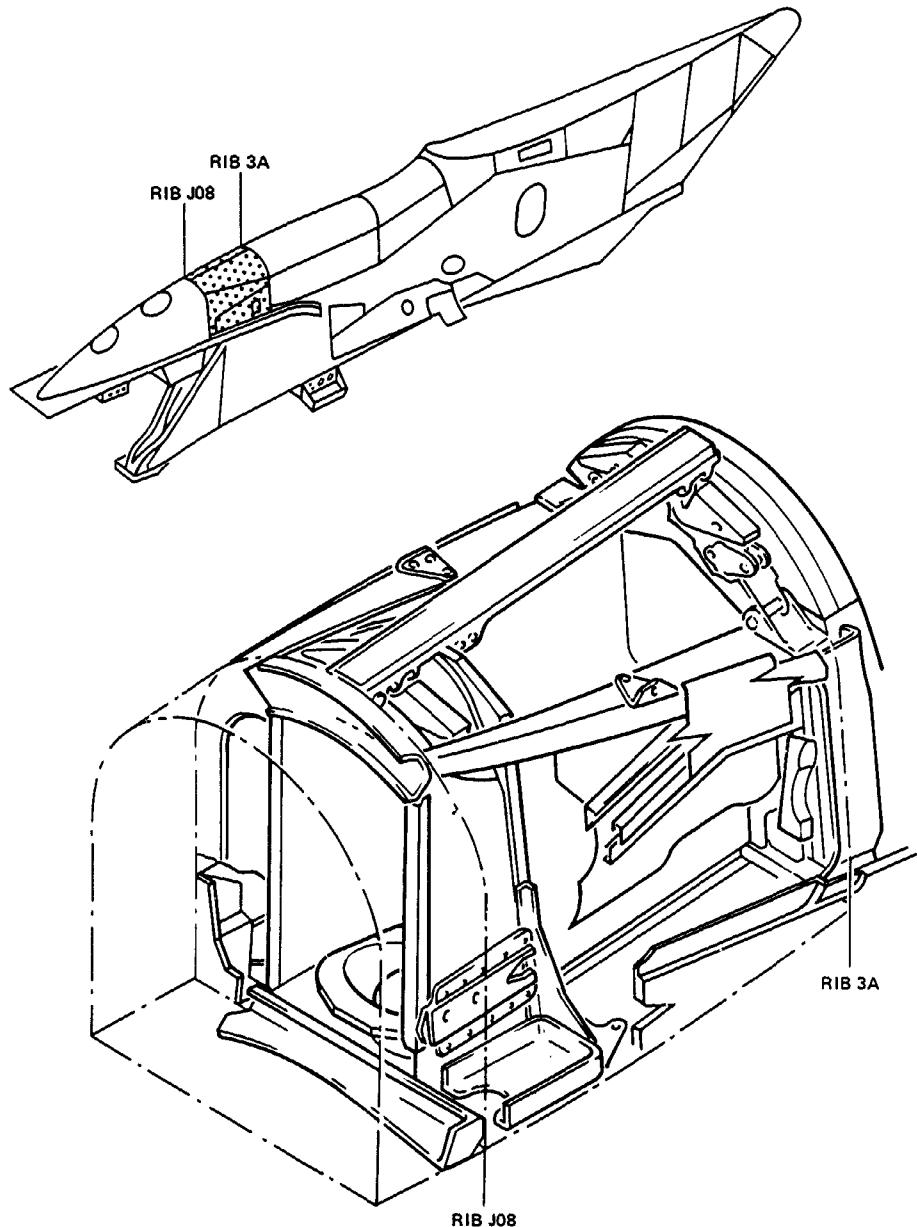
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Forward Fairing Between RIBs J08 and 3A
Figure 004

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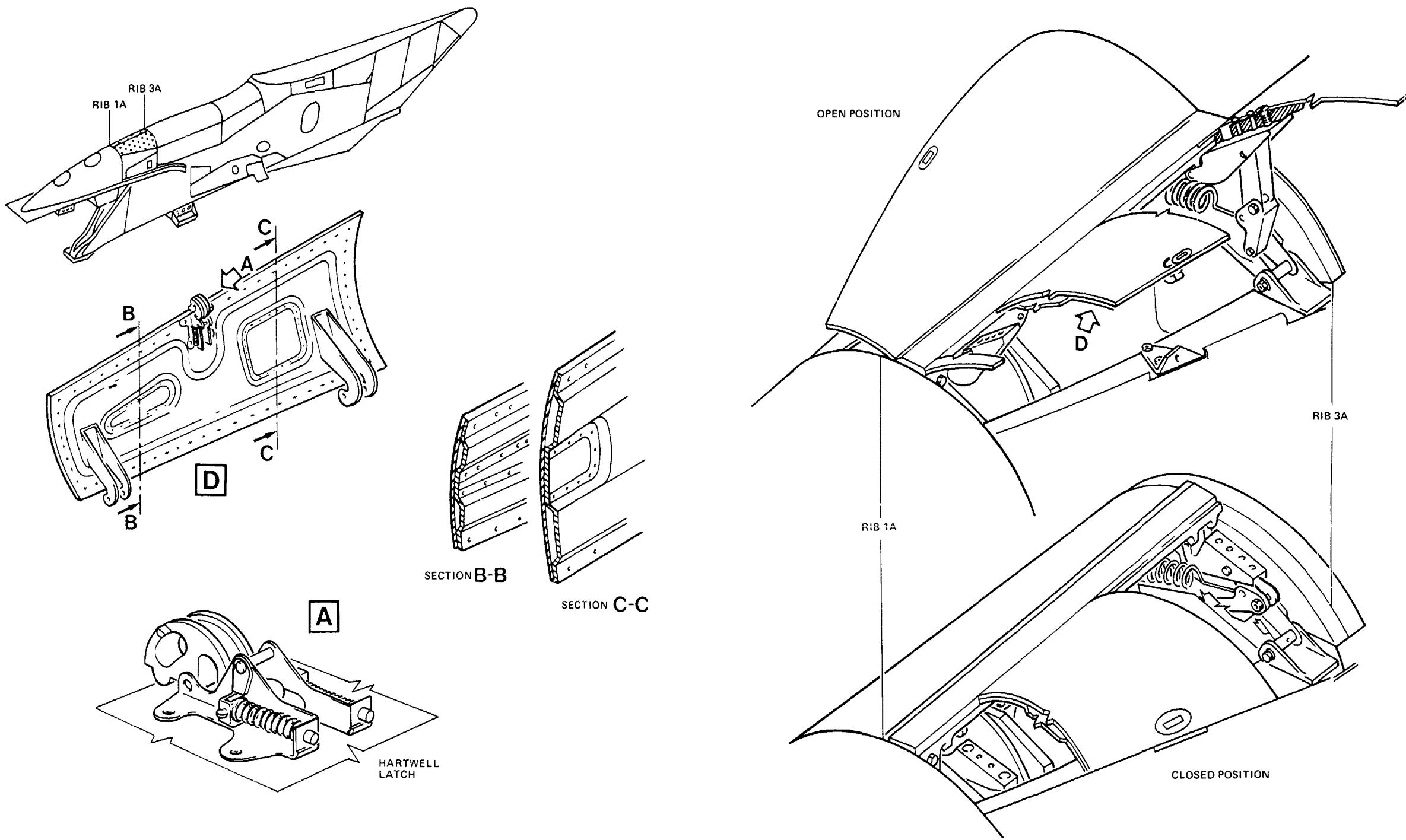
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Forward Pressure Relief Doors and Upper Fixed Cowl
Figure 005

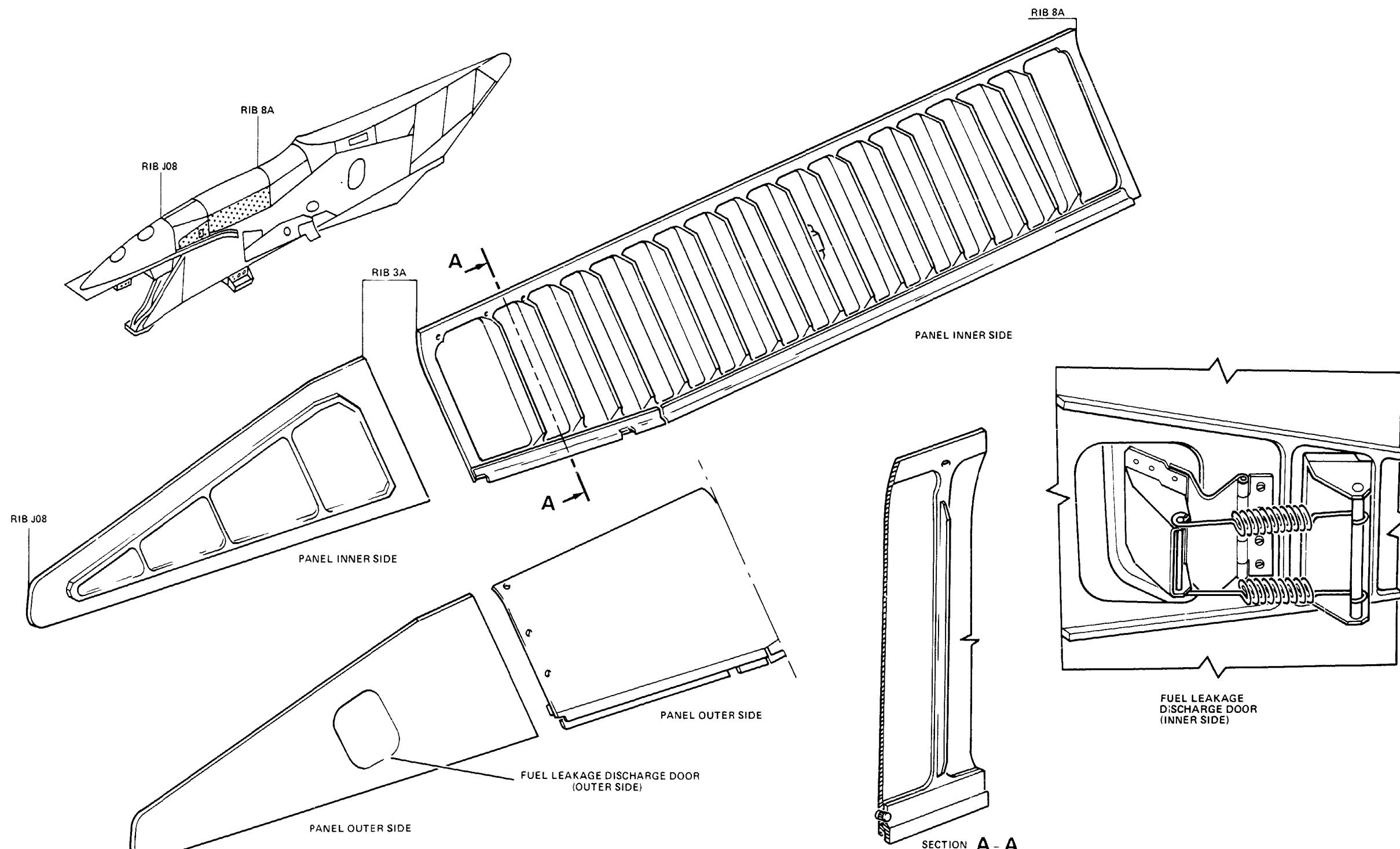
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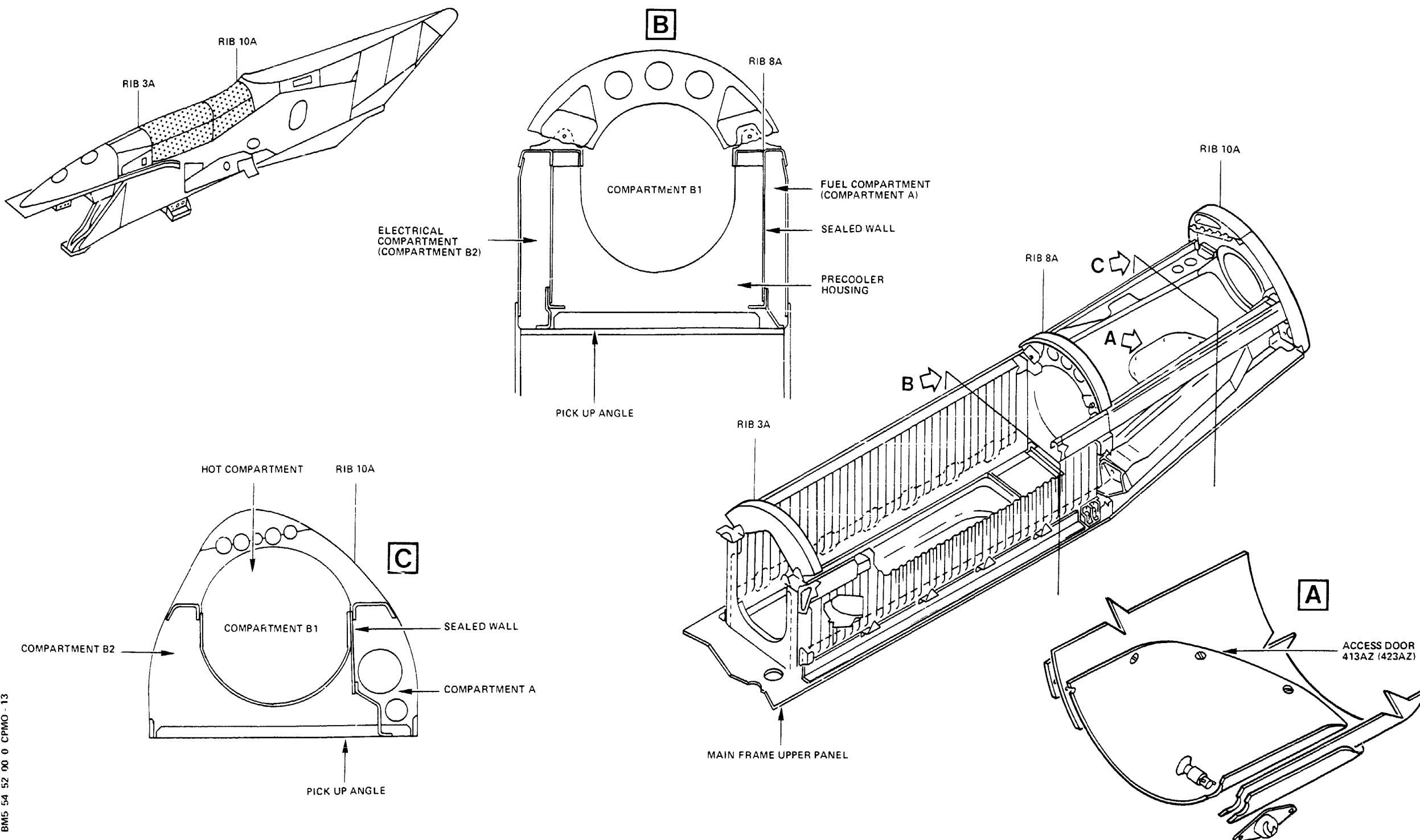
Side Skin Panel Between RIBs J08 and 10A
Figure 006

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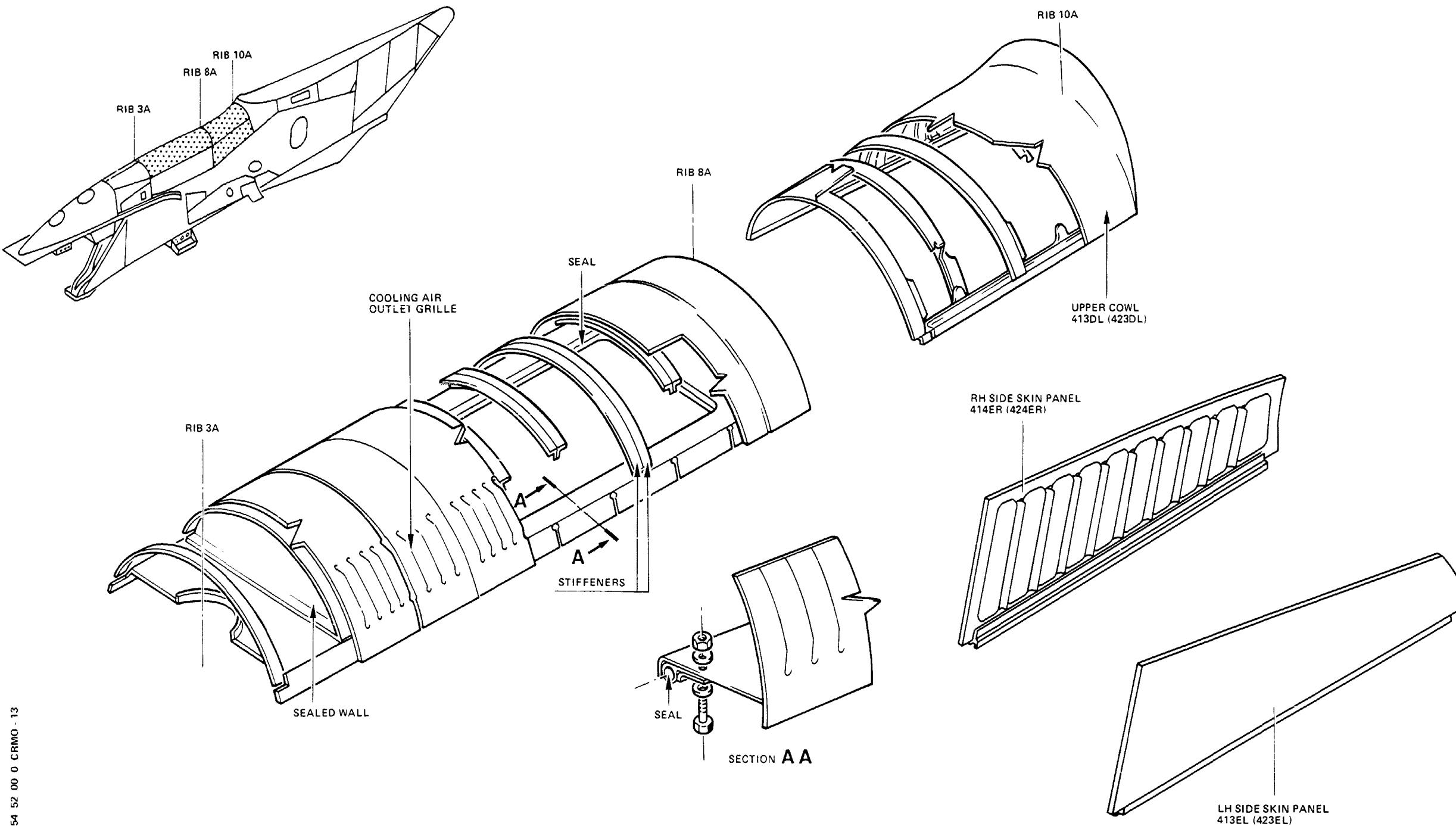
Forward Fairing Between RIBs 3A and 10A
Figure 007

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Side Skin Panels and Upper Cowls Between RIBs 3A and 10A
Figure 008

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- the bleed air duct running between the precooler and the wing. As the air blowing inside is at high temperature, the duct is routed into a metallic shield which isolates it from the structure. The metallic shield is fitted with a door giving access to compartment B2, and thus facilitating removal of the secondary transmission pulley when necessary.

Access to compartment B1 is gained by means of a sheet metal cowl bolted to the structure.

Compartment B2 comprises :

- the electrical cables
- the mechanical part of the secondary transmission pulley
- the throttle control heating system.

Access is gained through a light alloy removable panel bolted to the structure.

At RIB10A compartment B2 has an outlet duct enabling the air from compartment B1 to be discharged. A temperature sensor calibrated at 200°C and installed on the outlet duct enables any overheat due to hot air bleed duct bursting to be rapidly detected.

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FORWARD FAIRING - INSPECTION/CHECK

1. Inspection of the Forward Fairing

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Warning Notice
Referenced Procedure R - SRM 54-50-00	

B. Procedure

(1) Job set-up

- (a) Install access platform.
- (b) Make certain that slats are retracted. In flight compartment, place a warning notice prohibiting operation of flap and slat control lever.

(2) Inspection

(Ref. Fig. 601)

- (a) Do an inspection of the forward fairing.
- (b) Make sure that there is no damage (cracks, nicks, scores, dents, etc.) refer to SRM 54-50-00, P. Block 101.

(3) Close-up

- (a) In flight compartment, remove warning notice from flap and slat control lever.
- (b) Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
- (c) Remove access platform.

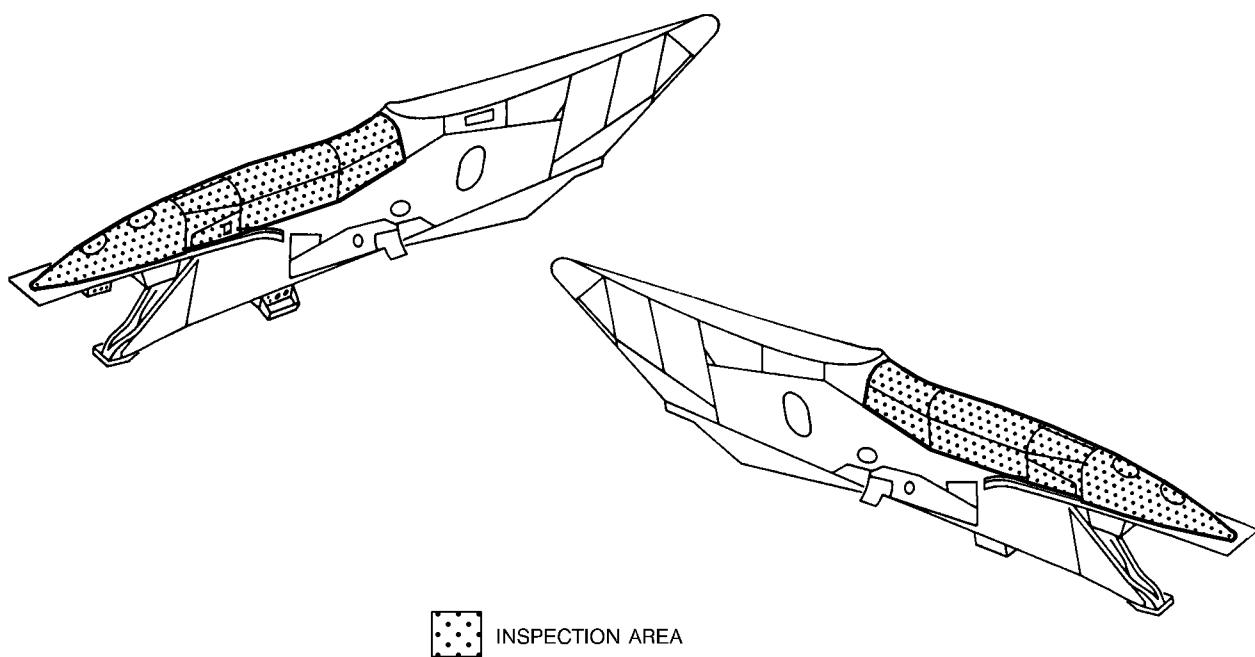
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Forward Fairing - Inspection Area
Figure 601

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DOORS - REMOVAL/INSTALLATION1. Removal/Installation of Forward Pressure Relief Doors**A. Reason for the Job**

Removal of pressure relief doors enables access to air bleed ducts and pneumatic system overpressure valve.

B. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform 4 m (13 ft. 4 in.)

NOTE : Removal/Installation procedure is identical for both engine pylons.

C. Procedure

(1) Job set-up

(a) Open, safety and tag the following circuit breakers :

PANEL	SERVICE	IDENT.	LOCATION
133VU	ENGINES/ENG2/REVERSE/CTL	2KM	331/V74
133VU	ENGINES/ENG1/REVERSE/CTL	1KM	332/U69
133VU	ENGINES/ENG1 & 2/IGNITION/SYS B	2JH	333/T72
133VU	ENGINES/ENG1 & 2/IGNITION/SYS A	1JH	334/S72
133VU	ENGINES/ENG1 & 2/START CTL & WARN	1KG	335/R68

(b) Position access platform.

- R (c) Remove skin panel 413BL (423BL).
 (d) Open the two pressure relief doors.

(2) Removal

(Ref. Fig. 401)

NOTE : Take all necessary precautions during removal/installation to prevent spacer (9) and nuts (8) from falling into main frame bottom and to collect them easily.

- (a) Remove and retain bolt (1), spacer (9) and nut (8).
 (b) Remove and retain two bolts (2) and nuts (10).
 (c) Remove and retain four bolts (7) and nuts (6) (symmetrical assembly with respect to small spar).
 (d) Remove and retain bolts (5), spacers (4) and nuts (3).
 (e) Remove small spar and door assembly.

(3) Check

- (a) Carry out a visual check of pressure relief doors to make certain that they are free of cracks, traces of wear or distortion.
 (b) Check condition of automatic opening mechanism and hinge fittings.
 (c) Check Hartwell latches for correct operation.
 (d) Check condition of junction parts and spacers.

(4) Installation

CAUTION : THE ASSOCIATION OF INCONEL BOLTS AND NUTS WITH STEEL BOLTS AND NUTS (CADMIUM PROTECTED) IS PROHIBITED.

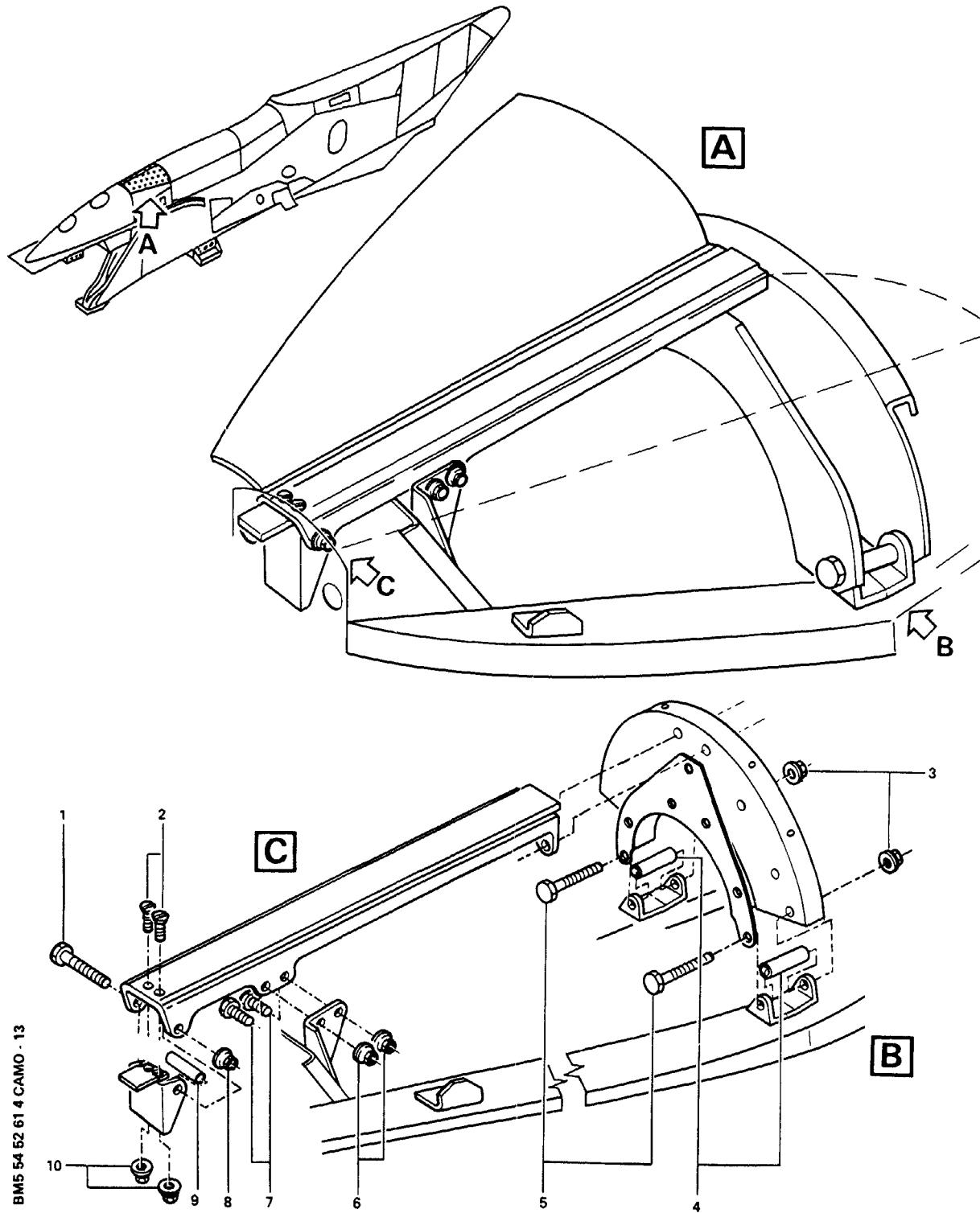
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Doors
Figure 401

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- (a)Install small spar and door assembly between RIB1 and RIB3.
 - (b)Install two bolts (7) and nuts (6).
 - (c)Install two bolts (2) and nuts (10).
 - (d)Install two spacers (4), bolts (5) and nuts (3).
 - (e)Install spacer (9), bolt (1) and nut (8).
- (5)Close-up
- (a)Open and close pressure relief doors several times to make certain that assembly is correct.
 - (b)Install skin panel 413BL (423BL).
 - (c)Remove access platform.
 - (d)Remove safety clips and tags and close circuit breakers 1JH, 2JH, 1KG, 1KM and 2KM.
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PYLON-TO-WING CENTER FILLETS - DESCRIPTION AND OPERATION

1. General

The center section of the auxiliary structure is between RIB 10A and the aft fairing and provides :

- an aerodynamic contour between the pylon box frame and wing under surface
- routing and protection of fuel line and bleed air precooler duct.

2. Description

The center section consists in :

- light alloy gussets attached to the upper panel of the pylon box L and R sides between RIBs 12 and 18.
(Ref. Fig. 001)
- transverse stiffeners attached to the upper panel of the pylon box and which connect and stiffen the L and R gussets located in the same transverse plan.
- fillets bolted to the gussets. The fillets are made up of a honeycomb web enclosed in epoxy impregnated aramid fiber layers.
The fillets are fitted with seals providing an aerodynamic profile to the pylon-to-wing under surface junction.

****ON A/C ALL**

R

(Ref. Fig. 002)

****ON A/C ALL**

The center section comprises :

- throttle control secondary transmission assembly
- the fuel line
- the bleed air duct
- the pressure transmitters and associated lines
- the electrical cables associated to the fire extinguisher bottles.

The auxiliary structure center section comprises a transverse sealed wall at level of RIB14A.

Between RIBs 12A and 14A, the structure is fitted on the outboard side with a pressure relief door calibrated to 200 mbars, so that any damage due to bleed air duct bursting at wing junction may be reduced.

(Ref. Fig. 003)

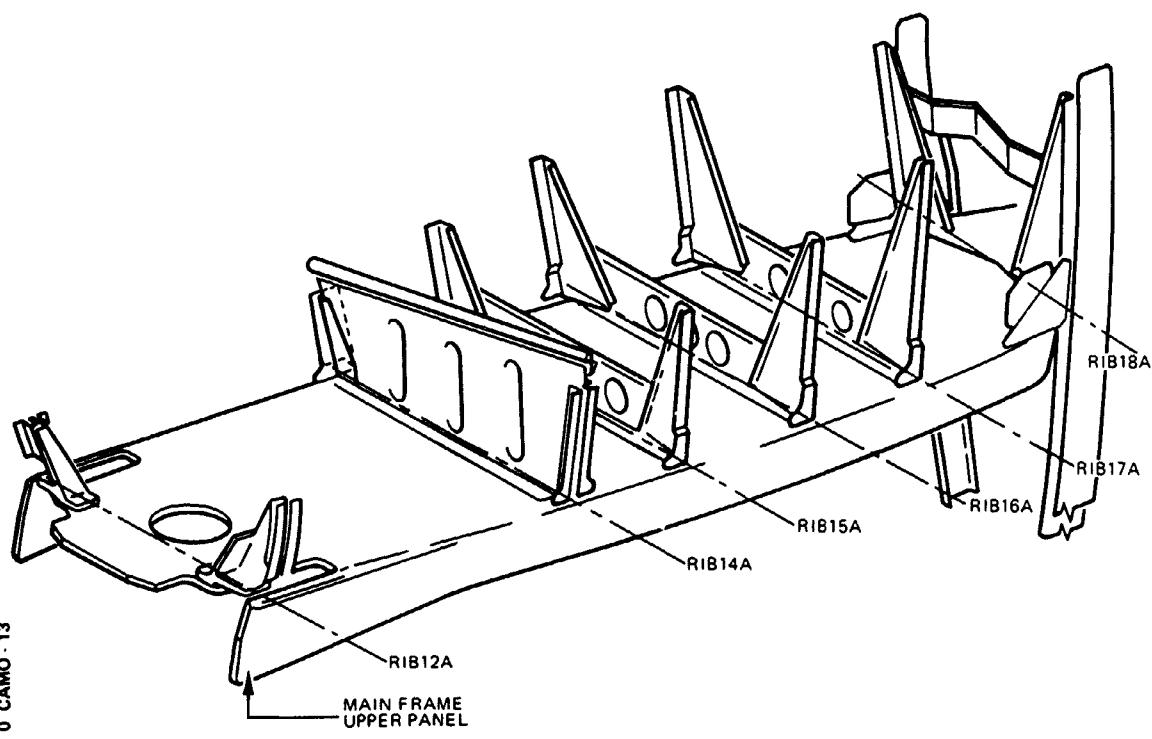
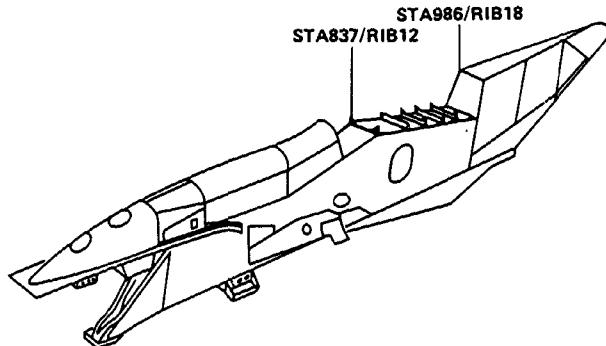
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Center Section - Frame
Figure 001

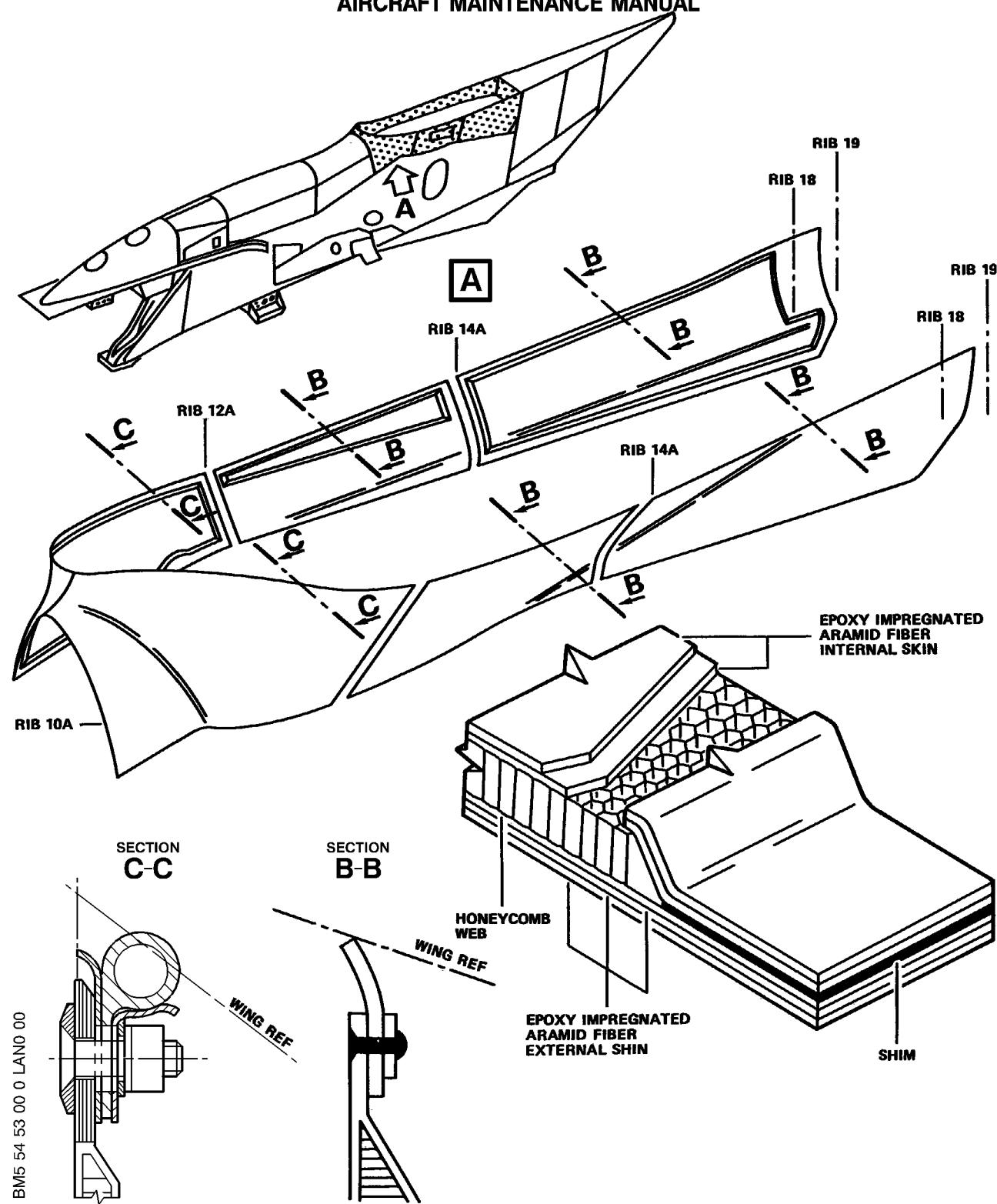
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Center Section Fillets
Figure 002

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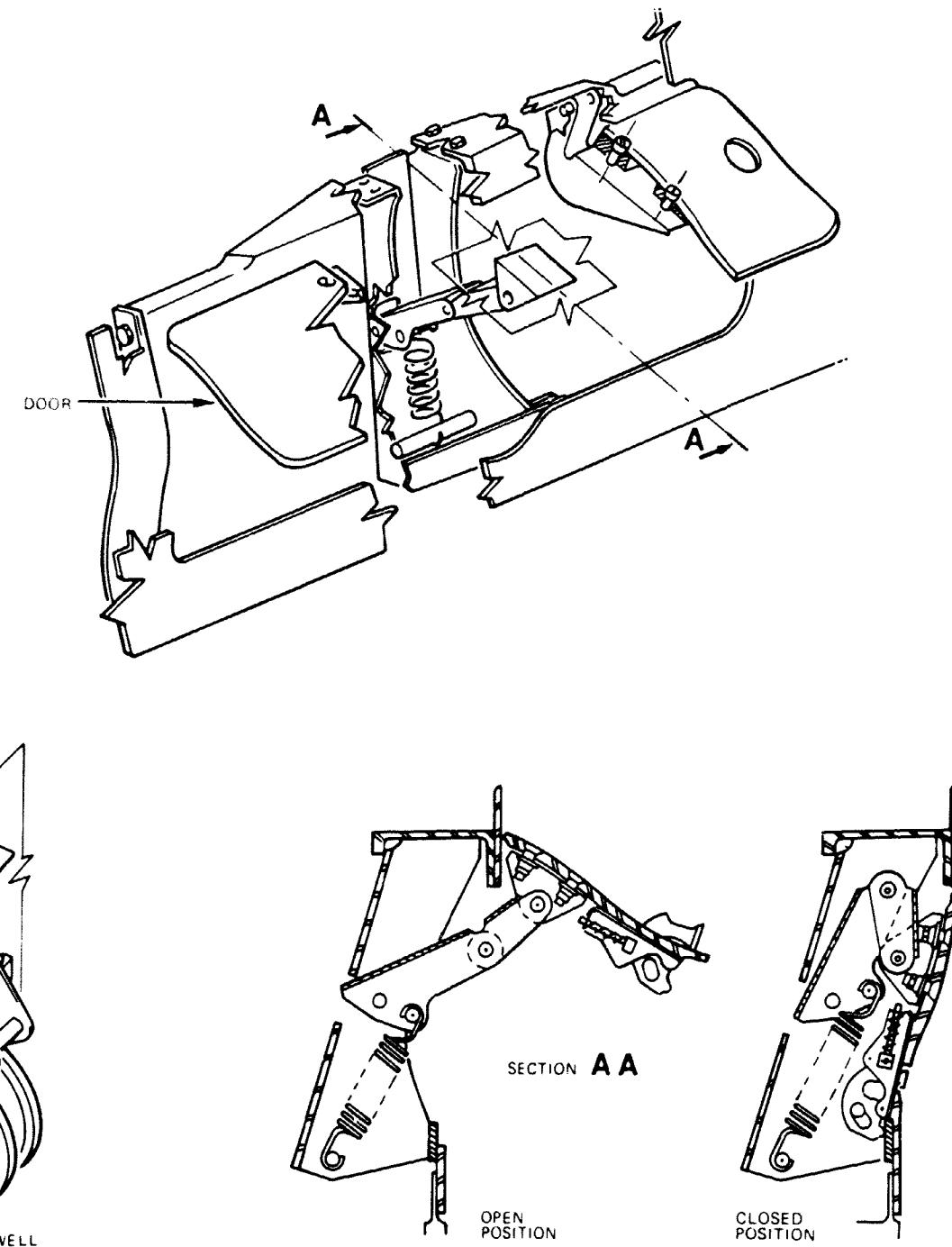
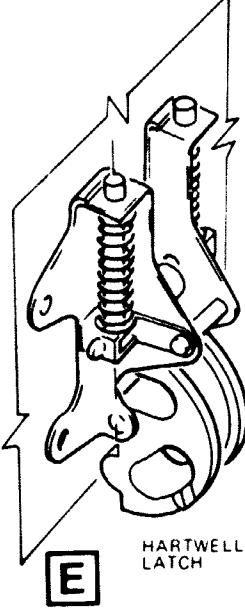
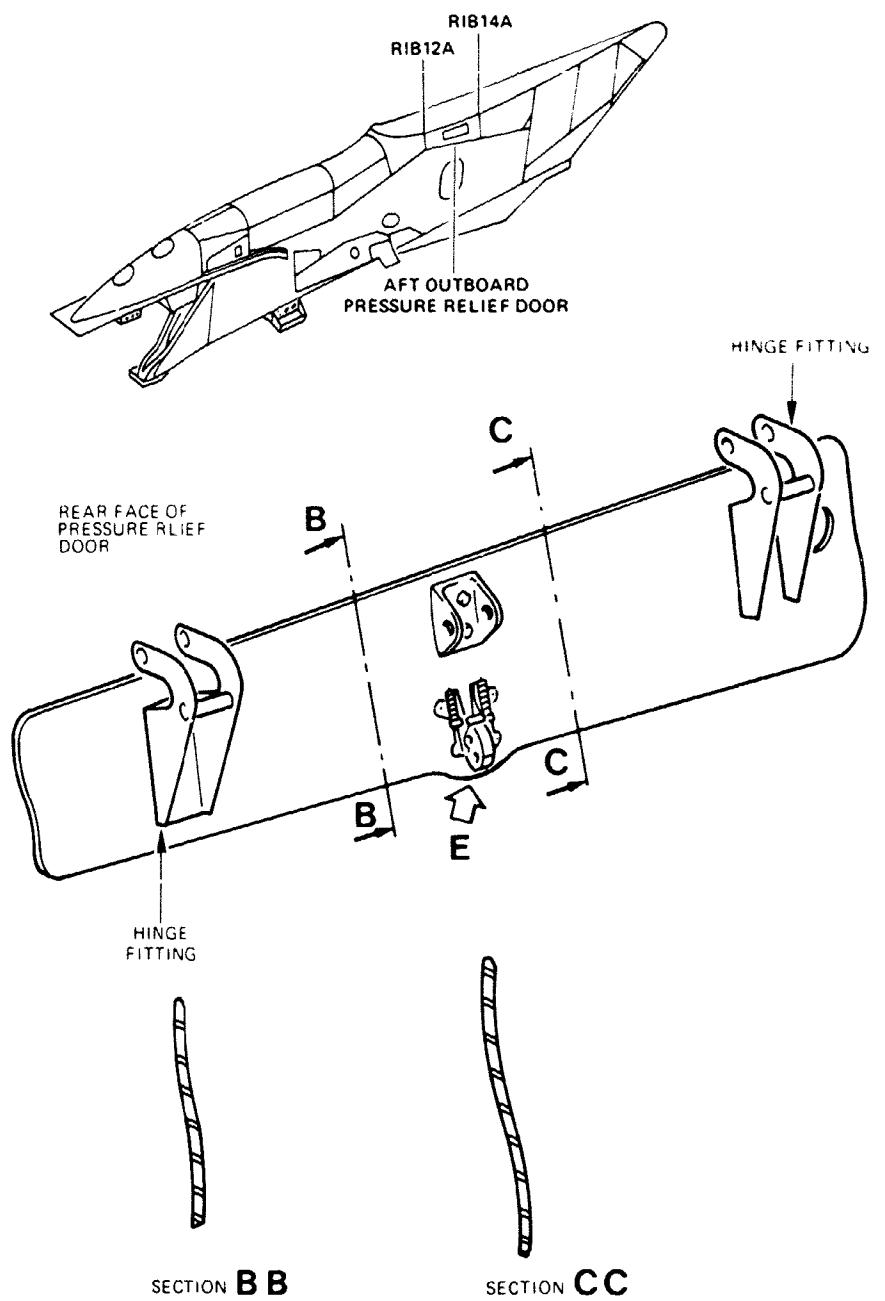
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Aft Pressure Relief Door
Figure 003

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PYLON-TO-WING CENTER FILLETS - GENERAL - INSPECTION/CHECK

1. Inspection of the Pylon-to-Wing Center Fillets

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Warning Notice
Referenced Procedure R - SRM 54-50-00	

B. Procedure

(1) Job Set-up

- (a) Install access platform.
- (b) Make sure that slats are retracted. In flight compartment, place a warning notice prohibiting operation of flap and slat control lever.

(2) Inspection

(Ref. Fig. 601)

- (a) Do an inspection of the pylon-to-wing center fillets.
- (b) Make sure that there is no damage (cracks, nicks, erosion, separation of layers, etc.) refer to SRM 54-50-00, P. Block 101.

(3) Close-up

- (a) Make sure that working area is clean and clear of tools and miscellaneous items of equipment.
- (b) Remove access platform.
- (c) In flight compartment, remove warning notice from flap and slat control lever.

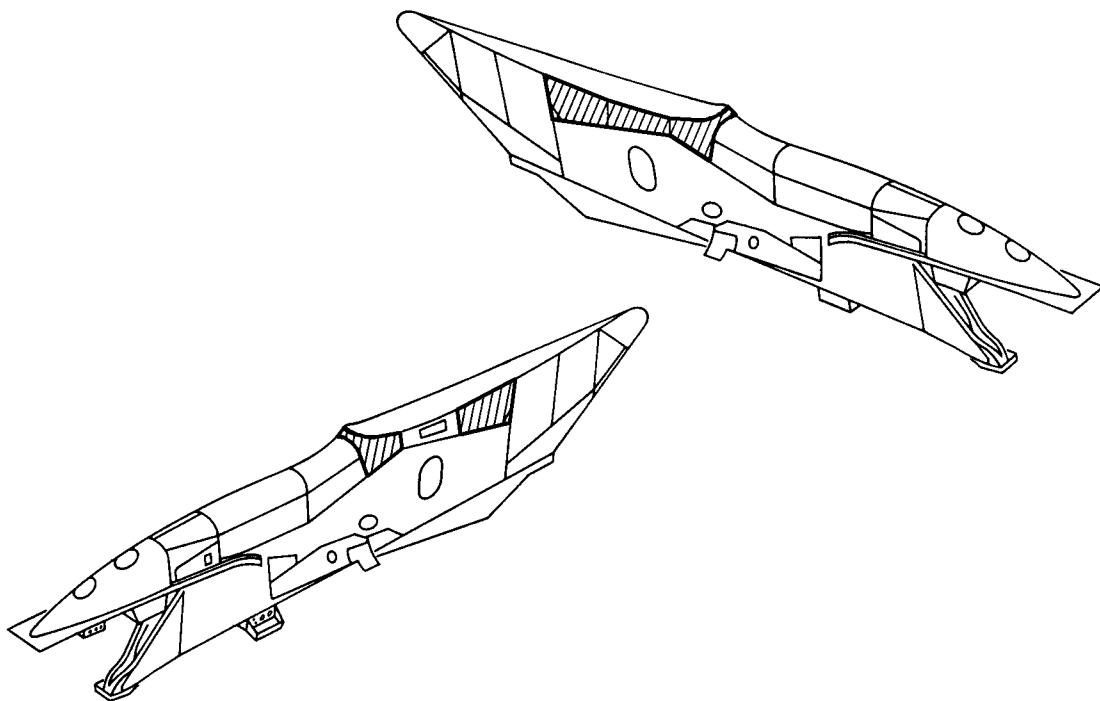
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INSPECTION AREA

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Pylon-to-Wing Center Fillets - Inspection Area
Figure 601

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1. General

The auxiliary structure aft section prolongs the main frame and improves the aerodynamic profile. It is made up of a frame on which are installed six skin panels and one aft tip.

The frame is attached to the wing by means of Tee fittings.

Frame-to-pylon box junction at RIB 19 is provided by overlapping sheet metal bands attached to pylon box side panels.

(Ref. Fig. 001)

(Ref. Fig. 002)

2. Description

The main components of the frame are

- three light alloy RIBs 19, 20, 21.
- a light alloy stamped spar on which is secured the rib upper end by means of angles. Two T formed sections which are attached to the spar and provide the aft fairing-to-wing junction.
- a lower spar attached to the lower ends of RIBs 19 and 20.
- two light alloy stiffeners attached under the lower spar.
- two side skin panels secured to the rib lower section and stiffeners so as to form the trailing edge.
- one canted spar attached to RIBs 19 and 21.

The six skin panels and the aft tip are made of aramid fiber layers enclosing a honeycomb web.

The following system lines are routed inside the aft auxiliary structure :

- Green and Yellow or Green and Blue hydraulic lines.
- Green and Yellow or Green and Blue case drain lines.
- hydraulic tank pressurizing line.
- fire extinguisher bottle percussion electrical cable run.

The aft tip and four skin panels between RIBs 19 and 20 are bolted and removable. These panels give access to the union nuts of the various lines at main frame-to-aft auxiliary structure interface. The aft tip gives access to line union nuts at pylon-to-wing interface.

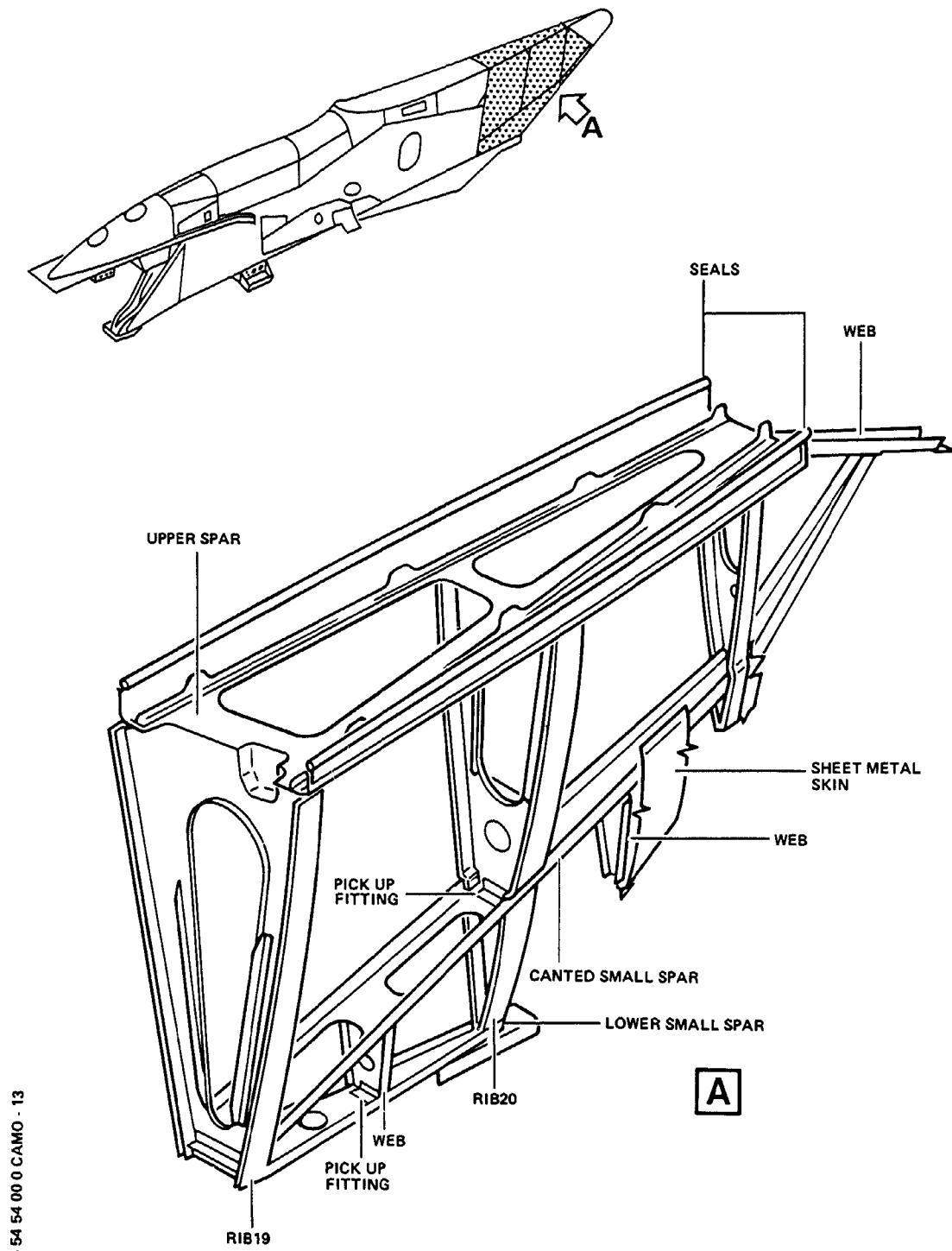
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Aft Section - Structure
Figure 001

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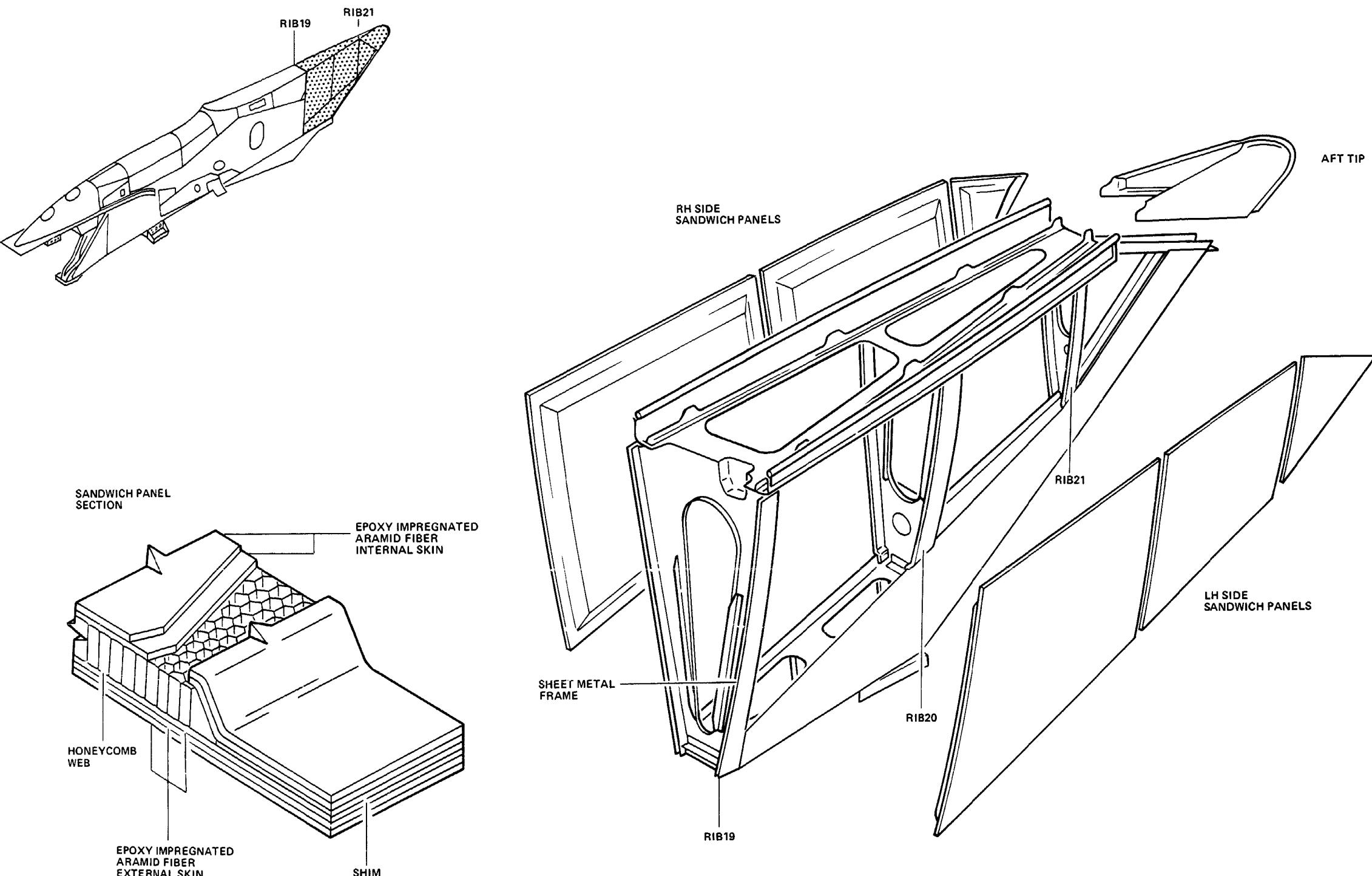
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Aft Section - Side Skin Panels
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AFT FAIRING - REMOVAL/INSTALLATION

WARNING : BEFORE ATTEMPTING MAINTENANCE PROCEDURES ON FUEL SYSTEM, MAKE CERTAIN THAT FIRE EXTINGUISHING EQUIPMENT IS AVAILABLE IN PROXIMITY TO WORKING AREA.

BEFORE ATTEMPTING MAINTENANCE PROCEDURES ON ENGINE PYLON, DISPLAY WARNING NOTICES OR LOCK FLAP AND SLAT CONTROL LEVER TO PROHIBIT MANEUVERS.

CAUTION : TO PREVENT DAMAGE, CONTAMINATION AND INGESTION OF FOREIGN MATTER, PIPES, PNEUMATIC DUCTS AND ELECTRICAL CONNECTORS SHALL BE CAPPED.

NOTE : It would be more advisable to carry out this operation during an engine removal/installation or during hydraulic component Removal/Installation.

1. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
R (2)	Blanking Caps
R (3)98A26213501000 or 98A26213502000	Wrench - Special
R (4)98A29113501000 or 98A29113502000 or 98A29113503000	Wrench - Special
R (5)	Warning Notices
Referenced Procedures	
- 12-12-29, P. Block 1	Hydraulics
R - 26-21-00, P. Block 501	Engine Fire Extinguishing
- 26-21-13, P. Block 401	Discharge Cartridge
- 29-00-00, P. Block 401	General
- 29-10-00, P. Block 301	Main
- 29-11-32, P. Block 401	Engine Pump
- 29-14-00, P. Block 301	Hydraulic Reservoir Pressurizing System

2. Procedure

NOTE : Removal/installation of pylon aft fairing is identical for both engine pylons.

CAUTION : WEIGHT OF THE AFT FAIRING IS CONSIDERABLE, TAKE NECESSARY PROVISIONS TO SUPPORT IT.

A. Job Set-Up

- (1) In flight compartment, on center pedestal, install a warning notice on flap and slat control lever to prevent any inadvertent operation.
- (2) Open, safety and tag the following circuit breakers :

PANEL	SERVICE	IDENT.	LOCATION
22VU	FIRE EXTING/ENG 1 & 2/SQUIB B/BTL 1	5WE	207/C19
22VU	FIRE EXTING/ENG 1 & 2/SQUIB B/BTL 2	7WE	207/C20
133VU	ENGINES/ENG 2/REVERSE/CTL	2KM	331/V74

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PANEL	SERVICE	IDENT.	LOCATION
133VU	ENGINES/ENG 1/REVERSE/CTL	1KM	332/U69
133VU	ENGINES/ENG 1/FUEL HP VALVE/WARN	1KC	333/T68
133VU	ENGINES/ENG 1/FUEL HP VALVE/CTL	3KC	333/T69
133VU	ENGINES/ENG 2/FUEL HP VALVE/CTL	4KC	333/T70
133VU	ENGINES/ENG 1 & 2/IGNITION/SYS B	2JH	333/T72
133VU	ENGINES/ENG 1 & 2/IGNITION/SYS A	1JH	334/S72
133VU	ENGINES/ENG 1 & 2/START CTL & WARN	1KG	335/R68
133VU	ENGINES/ENG 1 & 2/FIRE EXTING/SQUIB A/ BTL 1	1WE	335/R71
133VU	ENGINES/ENG 1 & 2/FIRE EXTING/SQUIB A/ BTL 2	3WE	335/R72
133VU	ENGINES/ENG 2/FUEL HP VALVE/WARN	2KC	335/R73

- (3) Depressurize hydraulic reservoirs (Ref. 29-14-00, P. Block 301).
- (4) Depressurize Green and Blue or Green and Yellow hydraulic systems (Ref. 29-10-00, P. Block 301).
- (5) In flight compartment, overhead panel, pull ENG 1 FIRE and ENG 2 FIRE handles. Install a warning notice to prohibit actuation.
- (6) Install access platforms at engine pylon.

B. Removal

- (1) L engine pylon
 - (a) Remove panels 474CR, 473CL, 474DR
 - (b) Open access doors 473AL, 474AR
 - (c) Remove aft tip 473EL.
- (2) R engine pylon
 - (a) Remove panels 484CR, 483CL, 483DL
 - (b) Open access doors 483AL, 484AR
 - (c) Remove aft tip 483EL.
- (3) Remove cables routed in this area as follows :
 - (Ref. Fig. 401)
 - (a) Remove fire extinguisher bottle discharge cartridges (Ref. 26-21-13, P. Block 401).
 - (b) Disconnect plugs from pressure switch (2), cartridges (4) and HP fuel shut off valve control plug (3). Install blanking caps on coupling ends.
 - (c) Cut and remove lockwires. Disconnect electrical connectors from pressure switches (9) and (10).
 - (d) Install blanking caps on pressure switches coupling ends.
 - (e) Disconnect grounding leads (5).
 - (f) Remove clamps (7) and (8) holding leads at aft main and auxiliary structure.
 - (g) Disengage cables from main structure.
 - (h) Coil cable and attach it momentarily to aft structure.
- (4) Remove fasteners from pick-up element (5), then draw it backward (Ref. Fig. 402)
- (5) Remove overlapping band (6).
- (6) Disconnect lines routed between RIB19 and RIB21

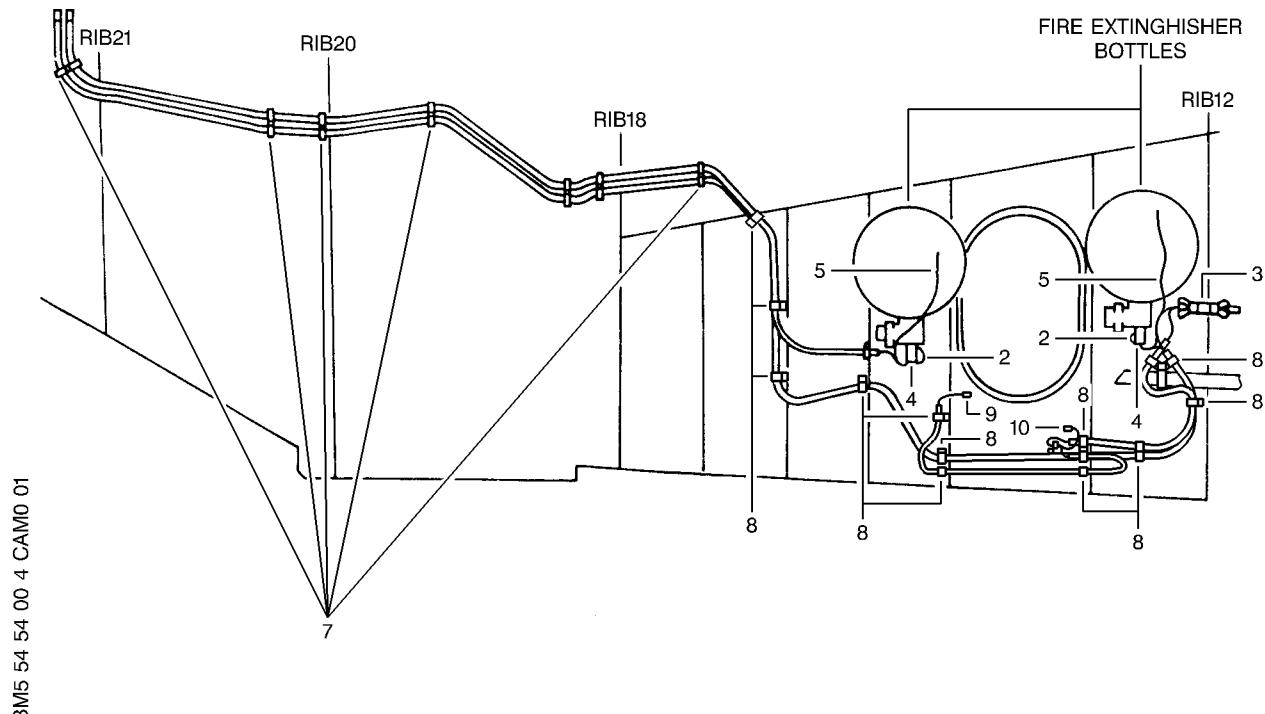
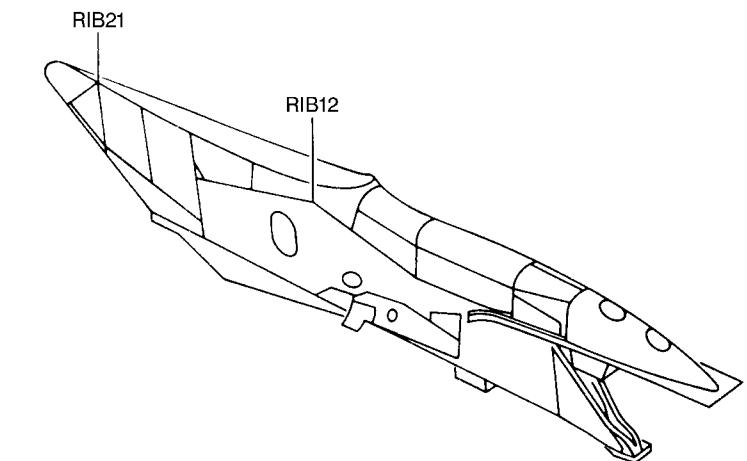
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Routing of Electrical Wiring in Pylon Between
RIB12 and RIB21
Figure 401

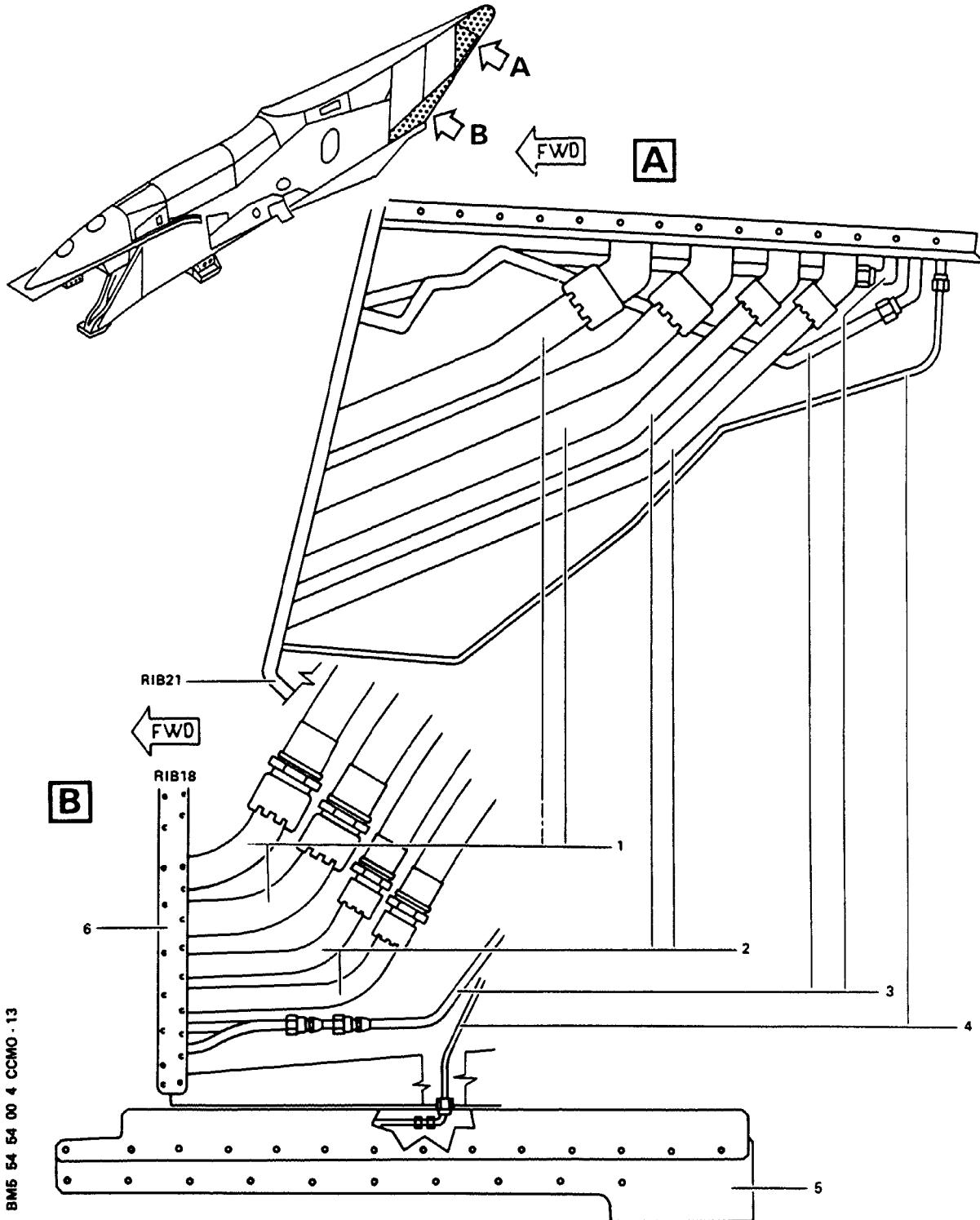
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Line Removal Between RIB19 and RIB21
Figure 402

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- NOTE :** Place a container under line unions to recover hydraulic fluid flowing out from system lines during removal.
- (a) On L pylon only disconnect hydraulic reservoir pressurizing line (4) at wing-to-pylon interface and under aft pylon structure between RIB19 and RIB20.
- (b) Remove hydraulic line (1), (2) and hydraulic drainage line (3) unions at wing-to-pylon interface, at RIB19 (Ref. 29-00-00, P. Block 401). Use special 98A26213501000 (or 98A26213502000) to remove castellated nuts from lines (1). Use special 98A29113501000 (or 98A29113502000 or 98A29113503000) to remove castellated nuts from lines (2).
- (7) Disassemble aft structure from wing lower surface
(Ref. Fig. 403)
- (a) For each attach fitting, remove bolts (51) and lockwashers (50).
- (b) Disengage fire extinguisher bottle control cable.
- (c) Remove aft structure taking care not to damage fire extinguisher bottle control cable, drainage tubes and hydraulic junctions at wing.
- (d) Coil fire extinguisher bottle control cable and attach it to wing lower surface.

C. Installation

- (1) Secure aft structure fitted with hydraulic and pneumatic lines to wing lower surface.
- (2) Connect lines as follows
- (a) Between RIB19 and RIB20, connect hydraulic and hydraulic drainage lines (Ref. 29-00-00, P. Block 401).
- (b) Under aft pylon structure and at RIB19 and RIB20, connect reservoir pressurizing line (on L Pylon only).
- (c) Connect hydraulic reservoir pressurizing line and lines at wing-to-pylon junction.
- (d) Tighten line couplings :
- For hydraulic lines (1), TORQUE unions to between 15.8 and 18.1 m.daN (1398.23 lbf.in and 1601.77 lbf.in). Use special wrench 98A26213501000 (or 98A26213502000) to install castellated nuts.
 - For hydraulic lines (2), TORQUE unions to between 12.9 and 14.2 m.daN (1141.59 lbf.in and 1256.63 lbf.in). Use special wrench 98A29113501000 (or 98A29113502000 or 98A29113503000) to install castellated nuts.
 - For hydraulic drainage lines (3), TORQUE unions to between 2.9 and 3.2 m.daN (256.67 lbf.in and 283.22 lbf.in).
 - For hydraulic reservoir pressurizing line (4), TORQUE union to between 1.5 and 1.7 m.daN (132.74 lbf.in and 150.44 lbf.in).
- (3) Install electrical cables as follows :
- (a) Install cables and attach with clamps (7) and (8).
- (b) Connect fire extinguisher bottle and HP fuel shut off valve wiring junction.
- (c) Install fire extinguisher bottle discharge cartridges (Ref. 26-21-13, P. Block 401).
- (d) Remove blanking caps from pressure switch (2), cartridges (4), HP fuel shut off valve control plug (3) and pressure switches (9), (10).
- (e) Connect plugs on pressure switch (2), cartridges (4) and HP fuel shut

R

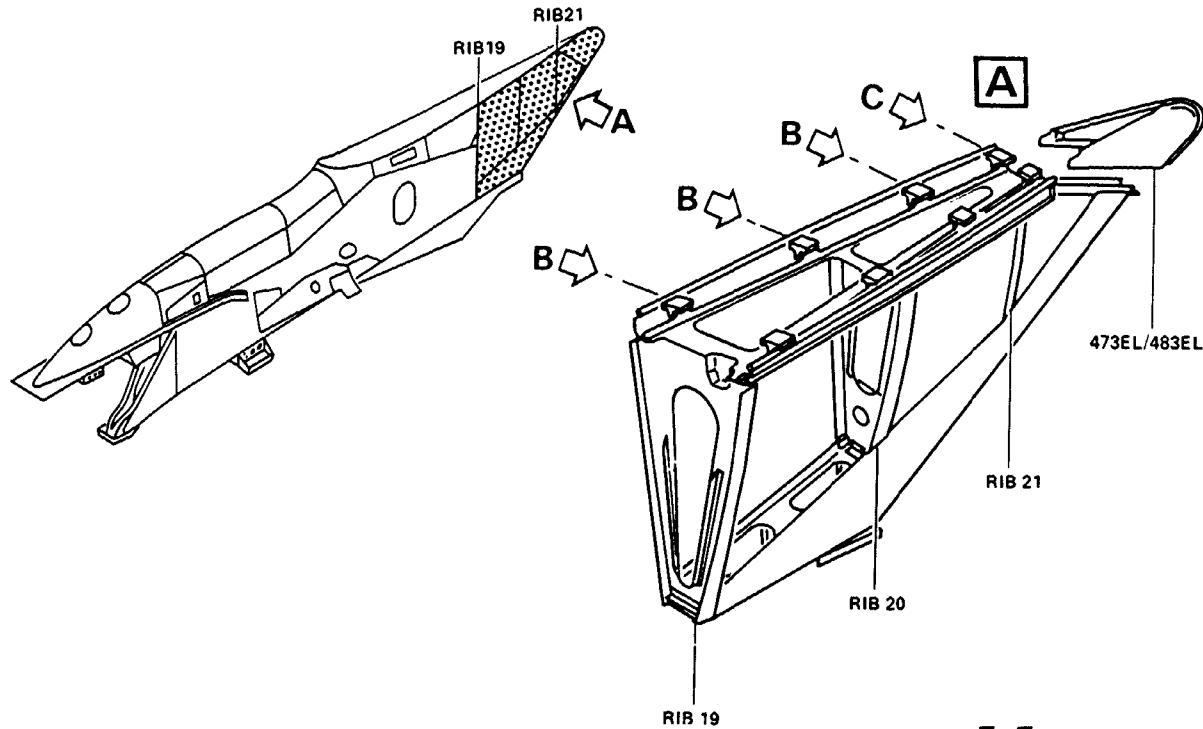
EFFECTIVITY: ALL

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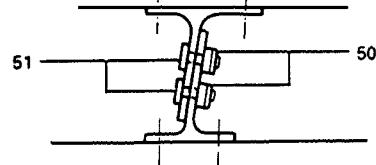
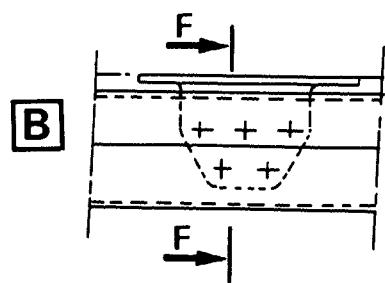
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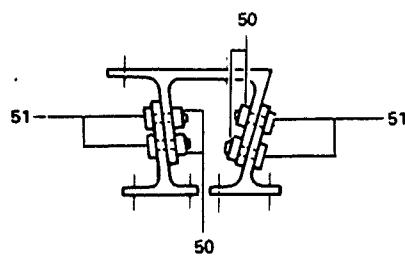
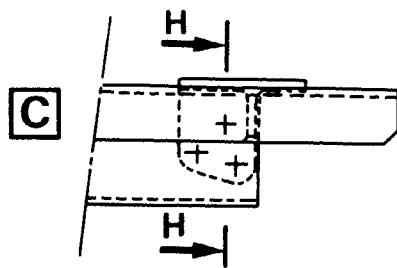
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AIRCRAFT MAINTENANCE MANUAL



SECTION F-F



SECTION H-H



BM5 54 54 00 4 CEMO : 13

Removal of Aft Structure
Figure 403

EFFECTIVITY: ALL

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- off valve control plug (3).
(f) Connect electrical connectors on pressure switches (9), (10) and wirelock.
(4) Position and tighten fasteners of pick-up element and overlapping band.

D. Test

- (1) Do an operational test (SQUIB TEST) of discharge cartridges (Ref. 26-21-00, P. Block 501).
(2) Do a Fire Extinguisher Bottle Low Pressure. Indicating circuits functional Test (Ref. 26-21-00, P. Block 501).
(3) Make sure that electrical connectors of pressure switches (9) and (10) are correctly connected.

E. Close-Up

- (1) Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
(2) L engine pylon.
 (a) Install aft tip 473EL.
 (b) Close access doors 473AL, 474AR.
 (c) Install panels 474CR, 473CL, 474DR.
(3) R engine pylon.
 (a) Install aft tip 483EL.
 (b) Close access doors 483AL, 484AR.
 (c) Install panels 484CR, 483CL, 483DL.
(4) In flight compartment, overhead panel, push ENG 1 FIRE and ENG 2 FIRE handles in normal position.
(5) Top-up hydraulic reservoirs (Ref. 12-12-29, P. Block 1).
(6) Pressurize and bleed hydraulic system (Ref. 29-14-00, P. Block 301, 29-10-00, P. Block 301, 29-00-00, P. Block 401 and 29-11-32, P. Block 401).
(7) Remove safety clips and tags and close circuit breakers.
(8) Remove access platform.

EFFECTIVITY: ALL

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AIRCRAFT MAINTENANCE MANUAL
AFT FAIRING - INSPECTION/CHECK

1. Inspection of the Aft Fairing

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Warning Notice
Referenced Procedure R - SRM 54-50-00	

B. Procedure

- (1) Job set-up
(a) Install access platform.
(b) Make certain that slats are retracted. In flight compartment, place a warning notice prohibiting operation of flap and slat control lever.
- (2) Inspection
(Ref. Fig. 601, 602)
(a) Do an inspection of the aft fairing (honeycomb and metallic skin panels).
(b) Make sure that there is no damage (cracks, nicks, erosion, separation of layers, etc.) refer to SRM 54-50-00, P. Block 101.
- R (3) Close-up
(a) In flight compartment, remove warning notice from flap and slat control lever.
(b) Make certain that working area is clean and clear of tools and miscellaneous items of equipment.
(c) Remove access platform.

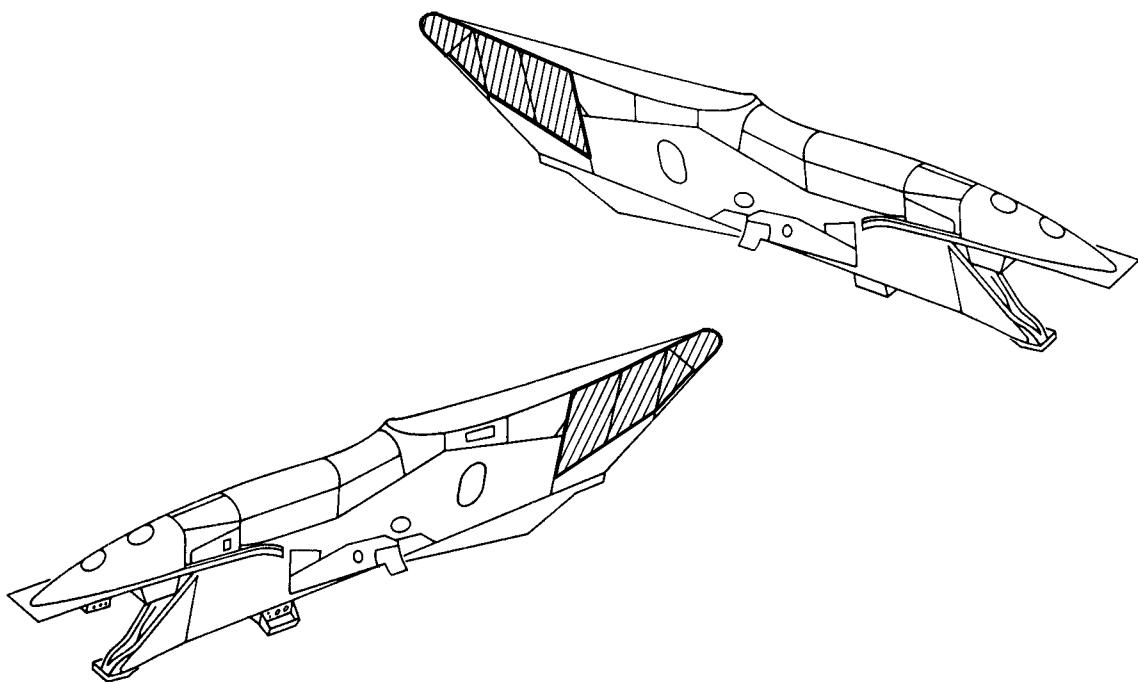
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INSPECTION AREA

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Aft Fairing - Inspection Area
Figure 601

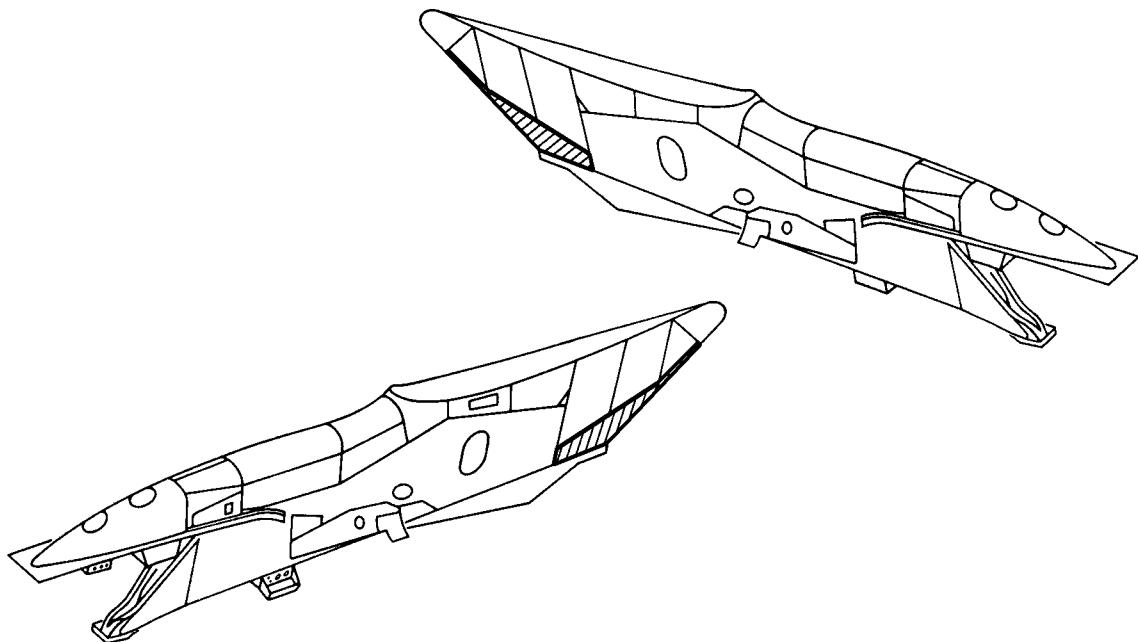
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INSPECTION AREA

BM5 54 00 6 CCM0 02

Metallic Skin Panels - Inspection Area
Figure 602

EFFECTIVITY: ALL

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AIRCRAFT MAINTENANCE MANUAL
LOWER FAIRING - REMOVAL/INSTALLATION

1. Removal/Installation of Pylon Aft Fairing

A. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platform
(2)	Torque Wrench 24 to 27 lbf.in. (0.27 to 0.30 m.daN)
(3)Material No. 08-007A	Bonding and Adhesive Compounds (Ref. 20-31-00)
(4)Material No. 08-007C	Bonding and Adhesive Compounds (Ref. 20-31-00)

NOTE : Removal/Installation procedure is identical for both engine pylons.

B. Procedure

(1) Job Set-up

(a) Open, safety and tag the following circuit breakers:

PANEL	SERVICE	IDENT.	LOCATION
22VU	FIRE EXTING/ENG 1 & 2/SQUIB B/BTL 1	5WE	207/C19
22VU	FIRE EXTING/ENG 1 & 2/SQUIB B/BTL 2	7WE	207/C20
133VU	ENGINES/ENG 2/REVERSE/CTL	2KM	331/V74
133VU	ENGINES/ENG 1/REVERSE/CTL	1KM	332/U69
133VU	ENGINES/IGNITION/ENG 1 & 2/SYS B	2JH	333/T72
133VU	ENGINES/IGNITION/ENG 1/SYS A	1JH	334/S72
133VU	ENGINES/ENG 1 & 2/START CTL & WARN	1KG	335/R68
133VU	ENGINES/ENG 1 & 2/FIRE EXTING/SQUIB A/ BTL1	1WE	335/R71
133VU	ENGINES/ENG 1 & 2/FIRE EXTING/SQUIB A/ BTL2	3WE	335/R72

(b) Position access platform.

(2) Removal of Pylon Lower Fairing (Ref. Fig. 401)

**CAUTION : PROVIDE ADEQUATE SUPPORT. FAIRING WEIGHS APPROXIMATELY 85 LBS
(39 KG).**

(a) Remove screws and washers attaching aft fairing to pylon and aft edge of forward fairing.

(b) Remove fairing from pylon.

(3) Installation of Pylon Lower Fairing (Ref. Fig. 401)

(a) Position aft fairing on pylon and slide forward edge of fairing under aft edge of forward fairing.

(b) Install aft fairing to pylon and forward fairing with screws and washers.

(c) Apply a small amount of Material No. 08-007A or Material No. 08-007C to the threads of the screws.

(d) TORQUE screws to between 24 and 27 lbf.in. (0.27 to 0.30 m.daN).

EFFECTIVITY: ALL

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(4) Close-up

(a) Remove access platform.

(b) Remove safety clips and tags and close circuit breakers 1JH, 2JH, 1KG, 1KM, 2KM, 1WE, 3WE, 5WE and 7WE.

2. Removal/Installation of Lower Fairing Aluminum Skin**A. Equipment and Materials**

ITEM	DESIGNATION
(1)	Access Platform
(2)	Circuit Breaker Safety Clips
(3) Material No.C03-001	Finishes and Protective Coatings (Ref. 70-00-00)
(4) Material No.C03-002	Finishes and Protective Coatings (Ref. 70-00-00)
(5) Material No.C03-006	Finishes and Protective Coatings (Ref. 70-00-00)
Referenced Procedures	
R - 70-00-00, P. Block 201	Engine - Standard Practices
- SRM 51-40-00	

NOTE : Removal/Installation procedure is identical for both engine pylons.**B. Procedure**

(1) Job Set-up

(a) Open, safety and tag the following circuit breakers:

PANEL	SERVICE	IDENT.	LOCATION
22VU	FIRE EXTING/ENG 1 & 2/SQUIB B/BTL1	5WE	207/C19
22VU	FIRE EXTING/ENG 1 & 2/SQUIB B/BTL2	7WE	207/C20
133VU	ENGINES/ENG 2/REVERSE/CTL	2KM	331/V74
133VU	ENGINES/ENG 1/REVERSE/CTL	1KM	332/U69
133VU	ENGINES/IGNITION/ENG 2/SYS A	8JH	333/T71
133VU	ENGINES/IGNITION/ENG 1 & 2/SYS B	2JH	333/T72
133VU	ENGINES/IGNITION/ENG 1/SYS A	1JH	334/S72
133VU	ENGINES/ENG 1 & 2/START CTL & WARN	1KG	335/R68
133VU	ENGINES/ENG 1 & 2/FIRE EXTING/SQUIB A/ BTL1	1WE	335/R71
133VU	ENGINES/ENG 1 & 2/FIRE EXTING/SQUIB A/ BTL2	3WE	335/R72

(b) Position access platform.

(2) Removal of Lower Fairing Aluminum Skin

(a) Get a sheet of the correct material and thickness large enough to be trimmed to the same size as the current panel. For material and thickness of each panel (Ref. Fig. 402) (Sheet 4/4).

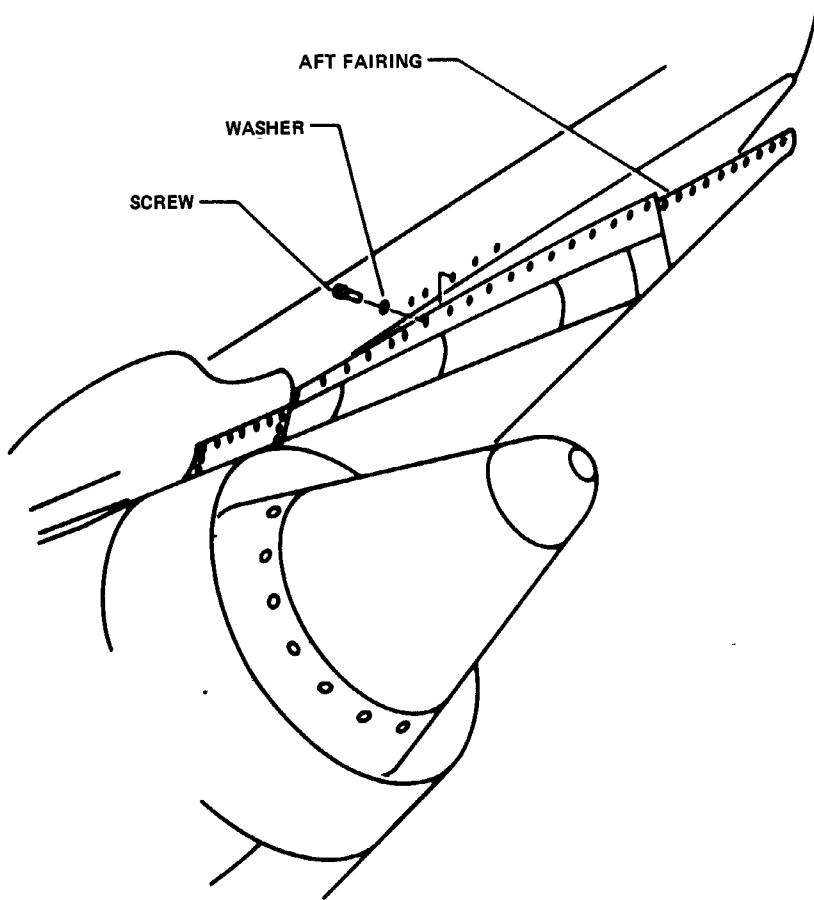
(b) Use the original panel as a pattern to put attachment holes into the new panel in the same locations.

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DM5

Removal/Installation of Pylon Lower Fairing
Figure 401

EFFECTIVITY: ALL

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- R (c) Permanently make a mark of the part number listed in
R (Ref. Fig. 402) (Sheet 4/4). Use permanent marking method, Vibro-peen
R marking or Electrochemical Etch Marking or equivalent
R (Ref. 70-00-00, P. Block 201).
- (3) Installation of Lower Fairing Aluminum Skin
(a) Apply Material No.C03-006 or equivalent to the new aluminum panel.
(b) Install the new panel in the same location as the replaced panel. Use fasteners identified in (Ref. Fig. 402) (Sheet 4/4) or equivalent. All permanent aluminum fasteners must be coated with Material No.C03-001 or Material No.C03-002 and fully cover the fastener. Refer to SRM 51-40-00, P. Block 1, Mechanical Fastening.
- (4) Close-up
(a) Remove access platform.
(b) Remove safety clips and tags and close circuit breakers 1JH, 2JH, 8JH, 1KG, 1KM, 2KM, 1WE, 3WE, 5WE and 7WE.
(Ref. Fig. 402)

3. Removal/Installation of Lower Fairing Inconel Skin**A. Equipment and Materials**

ITEM	DESIGNATION
(1)	Access Platform
(2)	Circuit Breaker Safety Clips
Referenced Procedures	
R - 70-00-00, P. Block 201	Engine - Standard Practices
- SRM 51-40-00	

NOTE : Removal/Installation procedure is identical for both engine pylons.

B. Procedure

- (1) Job Set-up
(a) Open, safety and tag the following circuit breakers:

PANEL	SERVICE	IDENT.	LOCATION
22VU	FIRE EXTING/ENG 1 & 2/SQUIB B/BTL1	5WE	207/C19
22VU	FIRE EXTING/ENG 1 & 2/SQUIB B/BTL2	7WE	207/C20
133VU	ENGINES/ENG 2/REVERSE/CTL	2KM	331/V74
133VU	ENGINES/ENG 1/REVERSE/CTL	1KM	332/U69
133VU	ENGINES/IGNITION/ENG 2/SYS A	8JH	333/T71
133VU	ENGINES/IGNITION/ENG 1 & 2/SYS B	2JH	333/T72
133VU	ENGINES/IGNITION/ENG 1/SYS A	1JH	334/S72
133VU	ENGINES/ENG 1 & 2/START CTL & WARN	1KG	335/R68
133VU	ENGINES/ENG 1 & 2/FIRE EXTING/SQUIB A/ BTL1	1WE	335/R71
133VU	ENGINES/ENG 1 & 2/FIRE EXTING/SQUIB A/ BTL2	3WE	335/R72

- (b) Position access platform.

EFFECTIVITY: ALL

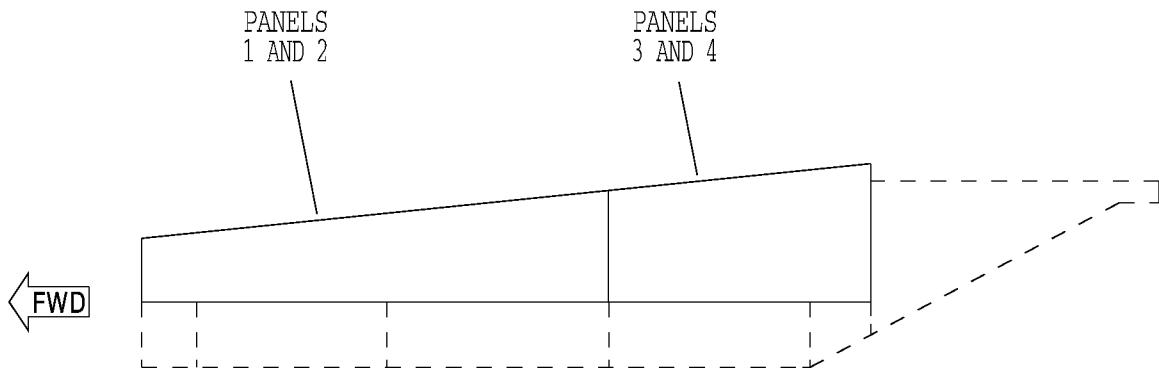
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AIRCRAFT MAINTENANCE MANUAL

NOTE: EVEN NUMBERED PANELS ARE ON
THE RIGHT SIDE OF PYLON AFT LOOKING
FORWARD. ODD NUMBERED PANELS ARE
ON THE LEFT SIDE OF PYLON AFT LOOKING
FORWARD.



BM5 54 55 00 4 LAPA 00

1359265-00

R

Aluminum Panels (Sheet 1/4)
Figure 402

EFFECTIVITY: ALL

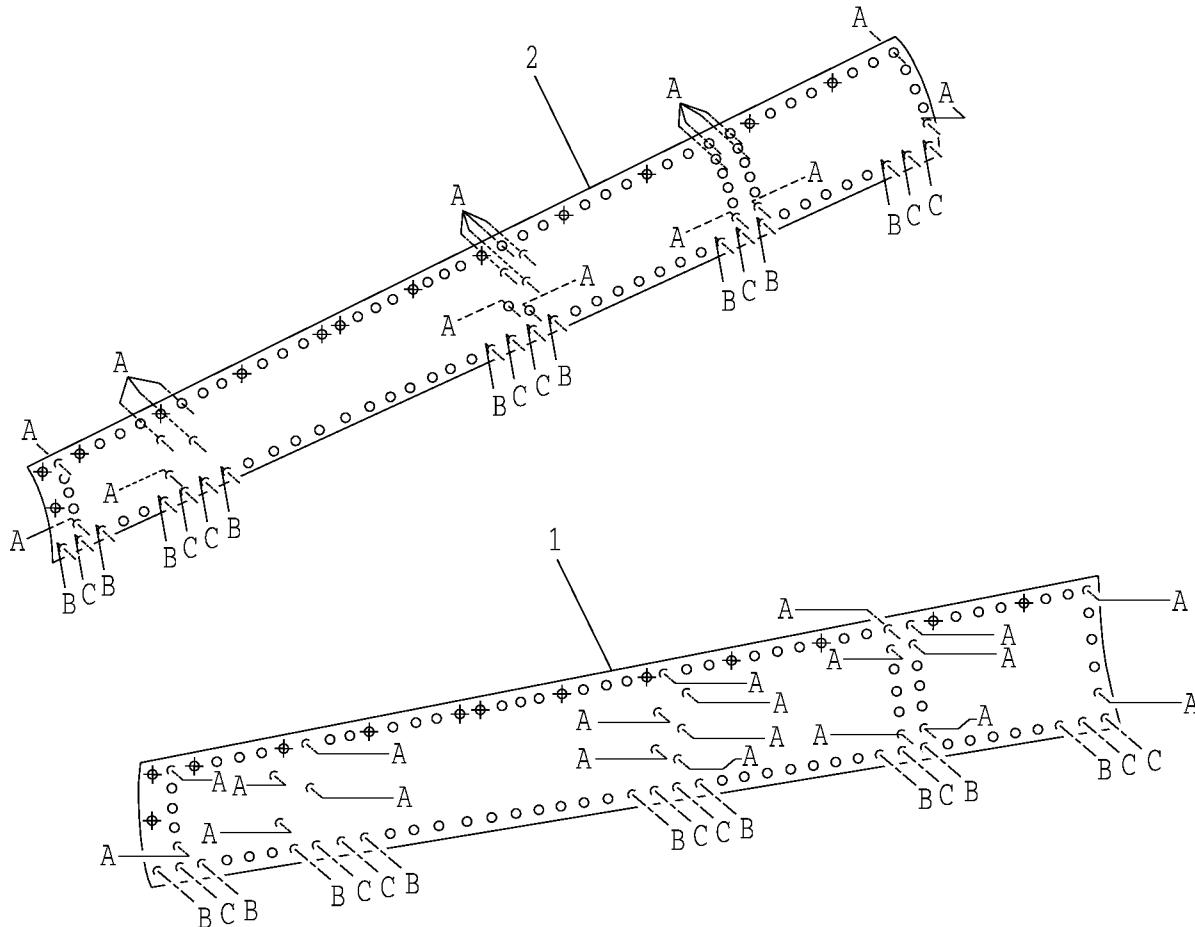
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AIRCRAFT MAINTENANCE MANUAL

NOTE: HOLES IDENTIFIED WITH AN "X" ARE ALIGNMENT HOLES.



NOTE: ALL LOCATIONS IN A HORIZONTAL OR VERTICAL ROW BETWEEN IDENTIFIED FASTENERS ARE THE SAME AS THE FASTENER AT EACH END OF THE ROW.

BM5 54 55 00 4 LAPF 00

1359266-00

Aluminum Panels (Sheet 2/4)
Figure 402

R

EFFECTIVITY: ALL

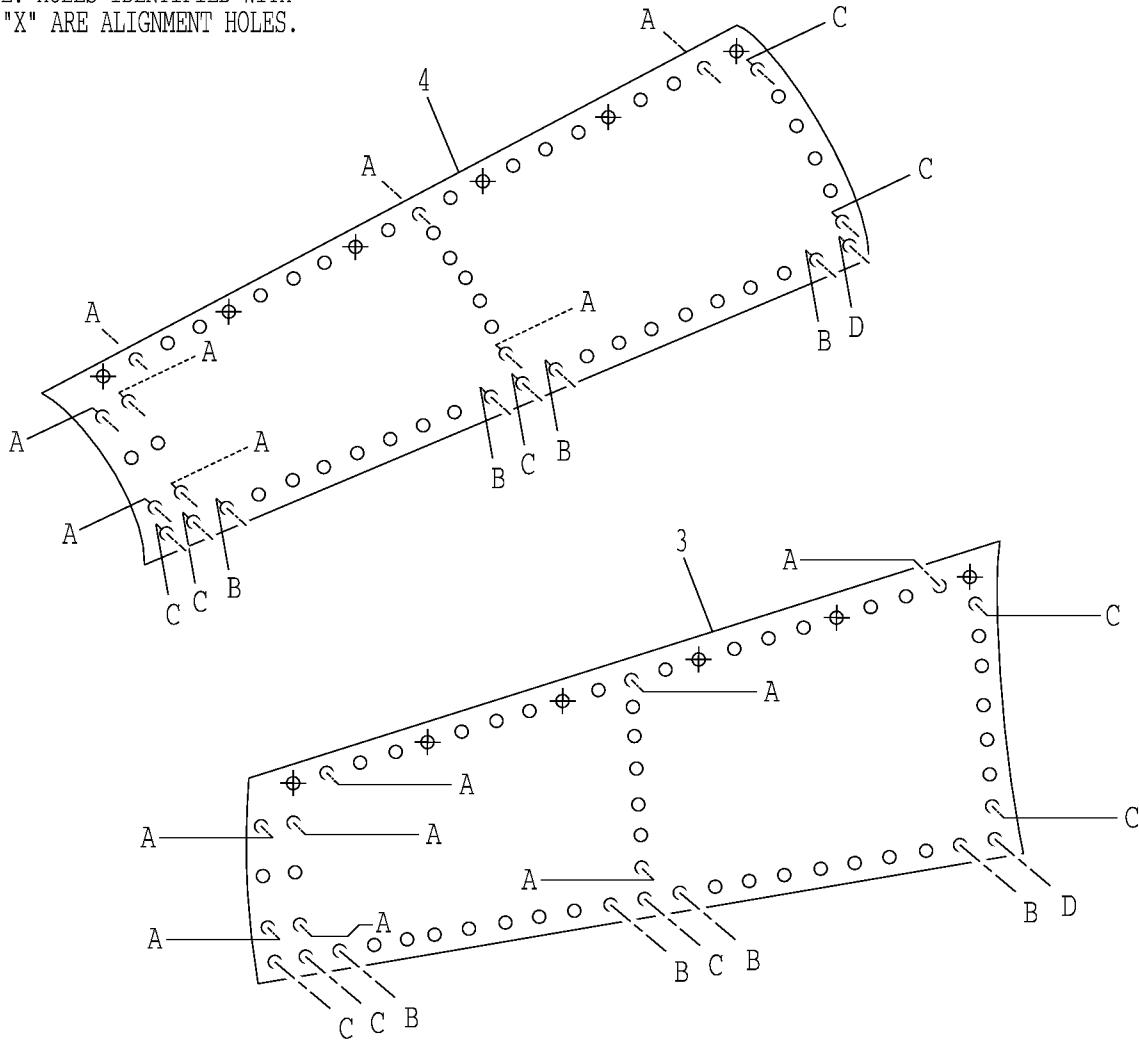
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NOTE: HOLES IDENTIFIED WITH AN "X" ARE ALIGNMENT HOLES.



NOTE: ALL LOCATIONS IN A HORIZONTAL OR VERTICAL ROW BETWEEN IDENTIFIED FASTENERS ARE THE SAME AS THE FASTENER AT EACH END OF THE ROW.

BM5 54 55 00 4 LAPM 00

1359267-00

Aluminum Panels (Sheet 3/4)
Figure 402

R

EFFECTIVITY: ALL

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AIRCRAFT MAINTENANCE MANUAL

NOTE: EVEN NUMBERED PANELS ARE ON THE RIGHT SIDE OF PYLON AFT LOOKING FORWARD. ODD NUMBERED PANELS ARE ON THE LEFT SIDE OF PYLON AFT LOOKING FORWARD.

PANEL LEGEND			
ITEM NUMBER	PART NUMBER	MATERIAL	MATERIAL THICKNESS
1	9333M29P001A	2024-T62 (QQ-A-250/5)	0.059-0.067 INCH
2	9333M29P002A	2024-T62 (QQ-A-250/5)	0.059-0.067 INCH
3	9333M29P003A	2024-T62 (QQ-A-250/5)	0.059-0.067 INCH
4	9333M29P004A	2024-T62 (QQ-A-250/5)	0.059-0.067 INCH

FASTENER LEGEND		
ITEM LETTER	PART DESCRIPTION	MATERIAL
A	MS20426AD	2017-T4 AL ALLOY
B	NAS1200-5 RIVET	NICKEL-COPPER ALLOY (MONEL), QQ-N-281, CLASS A
C	1749M72P02 PIN	AMS5737
D	1749M72P03 PIN	AMS5737

BM5 54 55 00 4 LAPU 00

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R

Aluminum Panels (Sheet 4/4)
Figure 402

EFFECTIVITY: ALL

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AIRCRAFT MAINTENANCE MANUAL**(2) Removal of Lower Fairing Inconel Skin**

- (a) Get a sheet of the correct material and thickness large enough to be trimmed to the same size as the current panel. For material and thickness of each panel (Ref. Fig. 403) (Sheet 6/6).
- (b) Use the original panel as a pattern to put attachment holes into the new panel in the same locations.
- (c) Permanently make a mark of the part number listed in (Ref. Fig. 403) (Sheet 6/6). Use permanent marking method, Vibro-peen marking or Electrochemical Etch Marking or equivalent (Ref. 70-00-00, P. Block 201).

R
R
R**(3) Installation of Lower fairing Inconel Skin**

- (a) Install the new panel in the same location as the replaced panel. Use fasteners identified in (Ref. Fig. 403) (Sheet 6/6) or equivalent. Refer to SRM 51-40-00, P. Block 1, Mechanical Fastening.

(4) Close-up

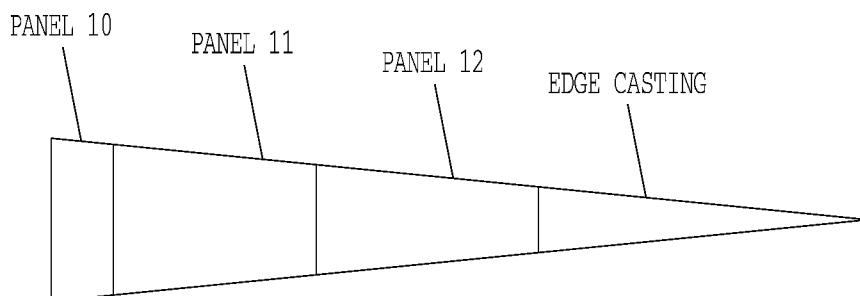
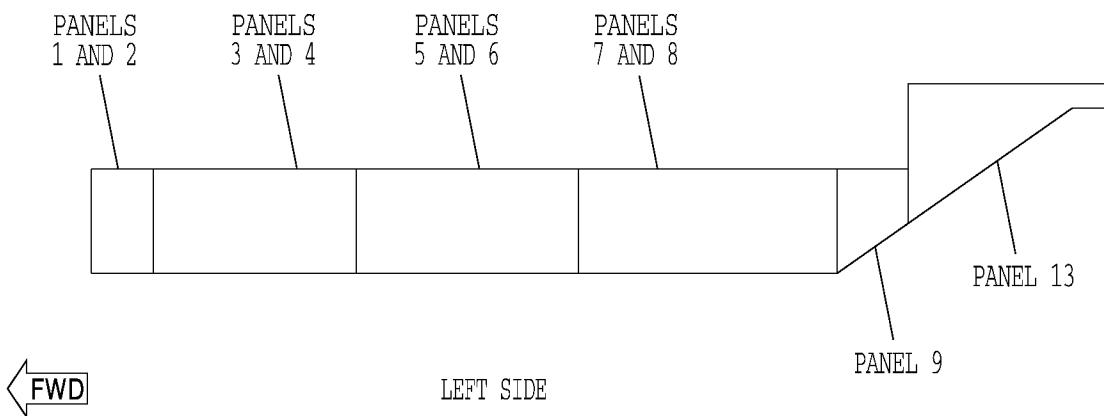
- (a) Remove access platform.
- (b) Remove safety clips and tags and close circuit breakers 1JH, 2JH, 8JH, 1KG, 1KM, 2KM, 1WE, 3WE, 5WE and 7WE.

(Ref. Fig. 403)

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NOTE: EVEN NUMBERED PANELS ARE ON THE RIGHT SIDE OF PYLON AFT LOOKING FORWARD. ODD NUMBERED PANELS ARE ON THE LEFT SIDE OF PYLON AFT LOOKING FORWARD.



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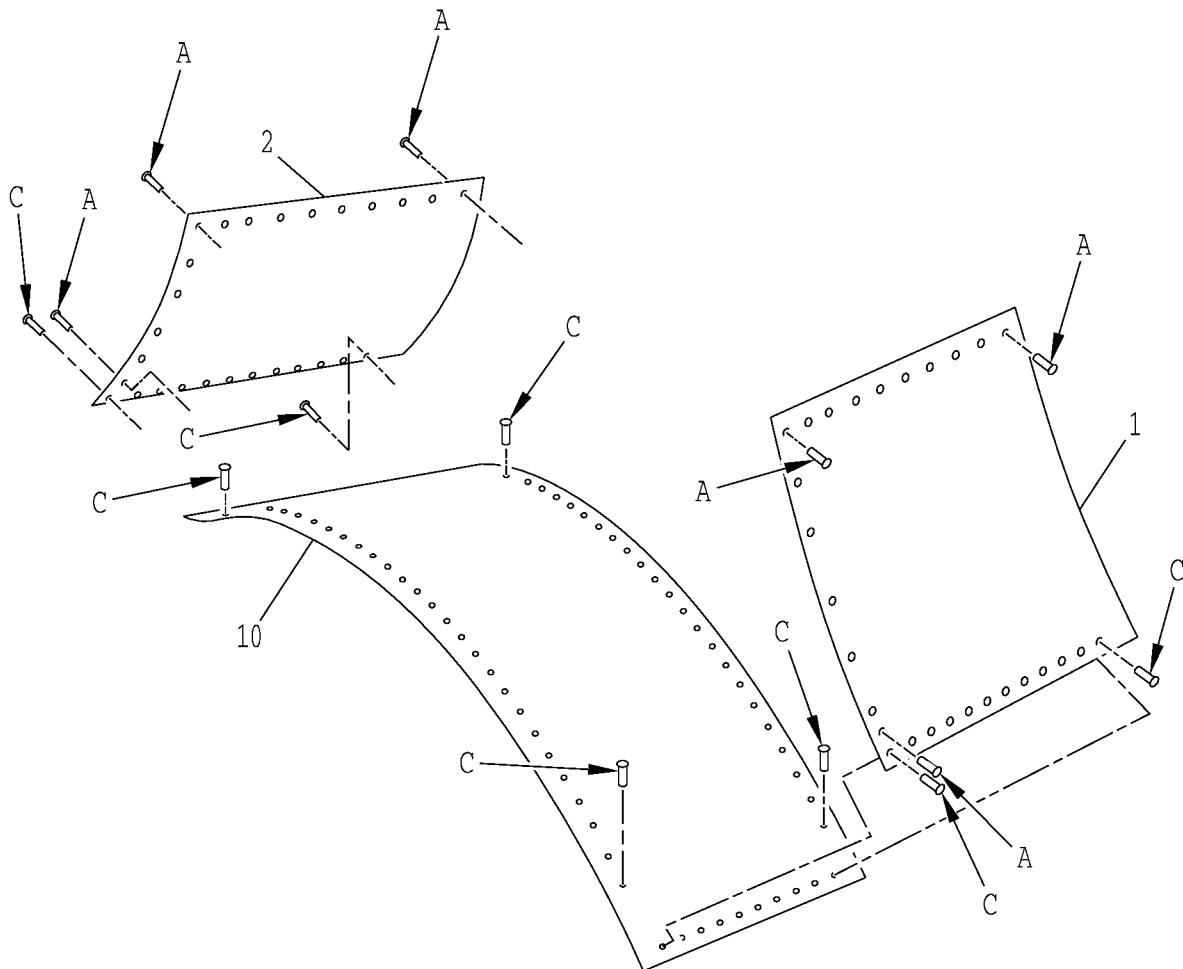
Inconel Panels (Sheet 1/6)
Figure 403

EFFECTIVITY: ALL

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**NOTE:**

ALL LOCATIONS IN A HORIZONTAL OR VERTICAL ROW BETWEEN IDENTIFIED FASTENERS ARE THE SAME AS THE FASTENER AT EACH END OF THE ROW.

Inconel Panels (Sheet 2/6)
Figure 403

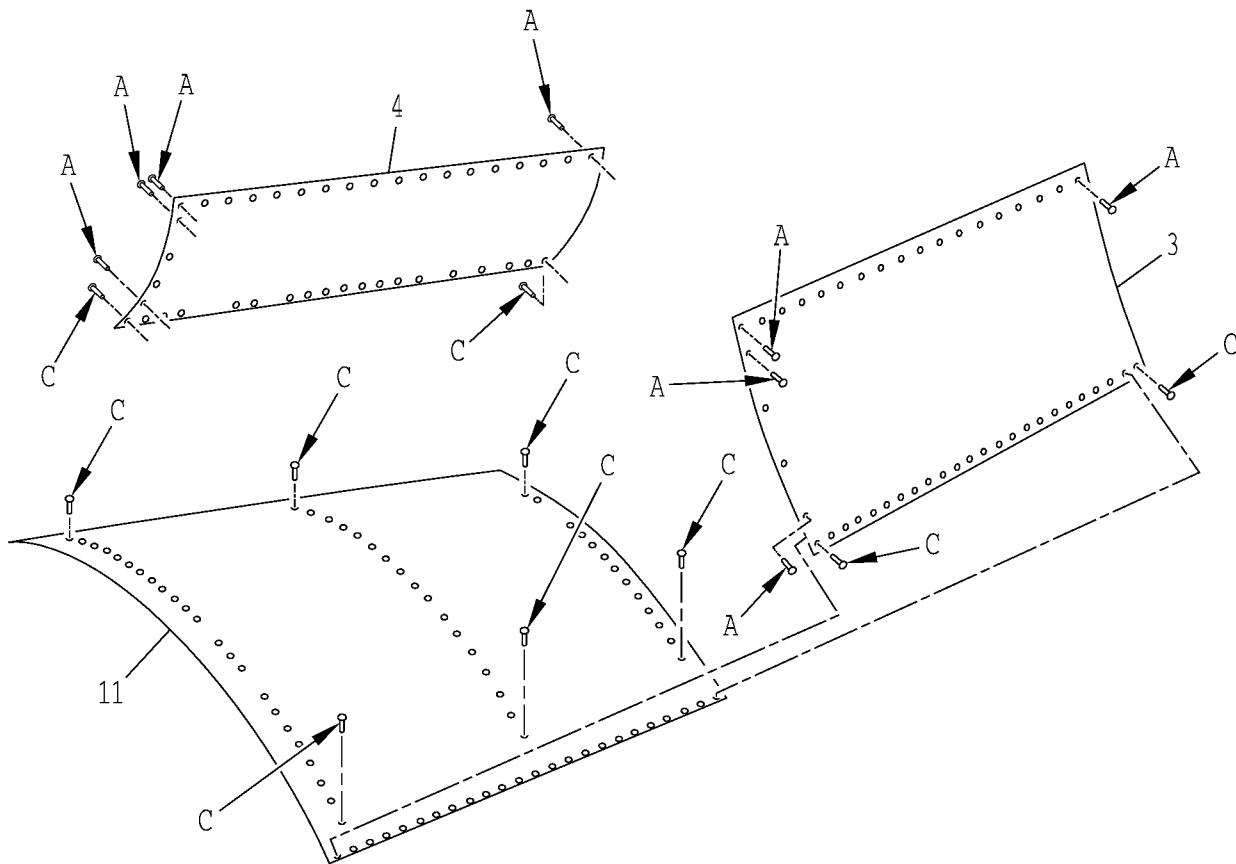
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EFFECTIVITY: ALL

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AIRCRAFT MAINTENANCE MANUAL



NOTE:

ALL LOCATIONS IN A HORIZONTAL OR VERTICAL
ROW BETWEEN IDENTIFIED FASTENERS ARE THE
SAME AS THE FASTENER AT EACH END OF THE ROW.

BM5 54 55 00 4 LARE 00

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Inconel Panels (Sheet 3/6)
Figure 403

R

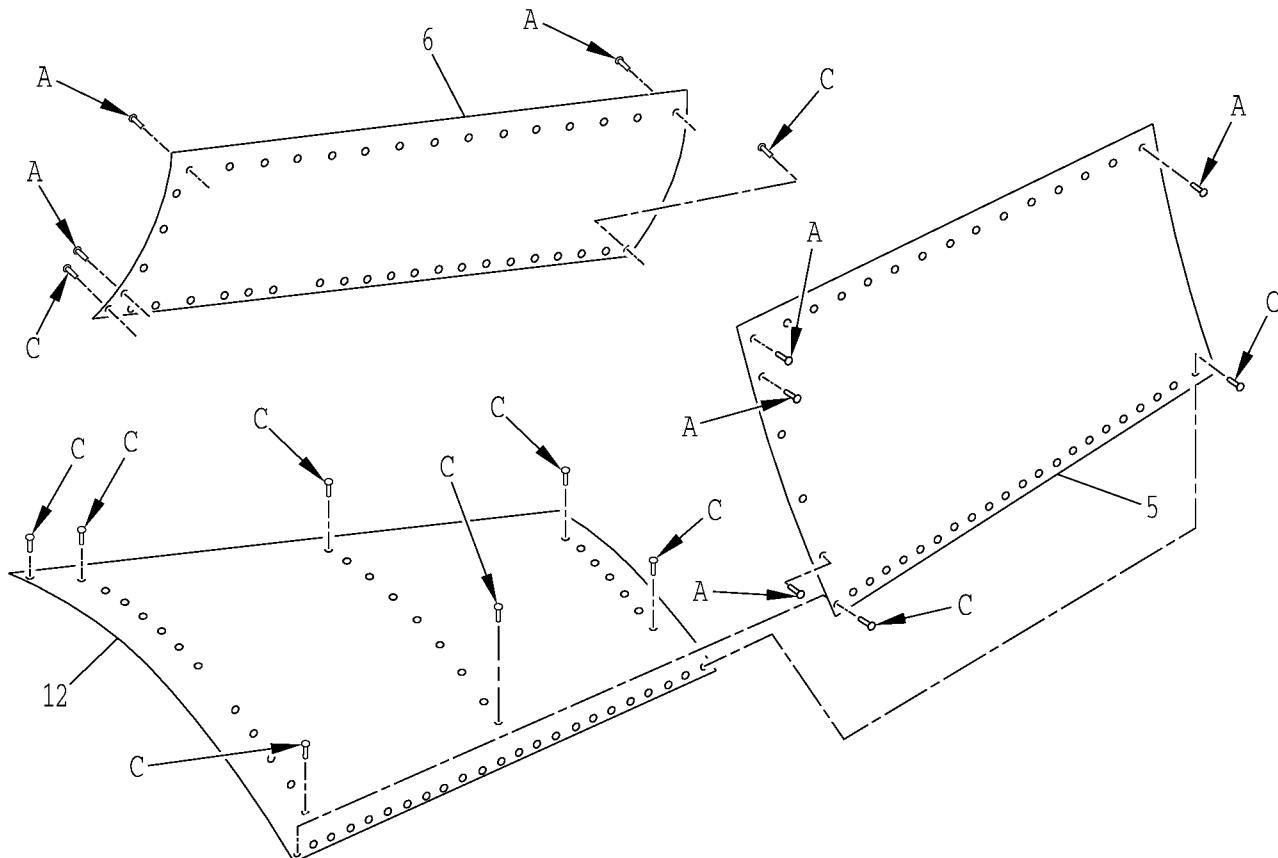
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NOTE:

ALL LOCATIONS IN A HORIZONTAL OR VERTICAL ROW BETWEEN IDENTIFIED FASTENERS ARE THE SAME AS THE FASTENER AT EACH END OF THE ROW.

BM5 54 55 00 4 LARG 00

1357238-00

Inconel Panels (Sheet 4/6)
Figure 403

R

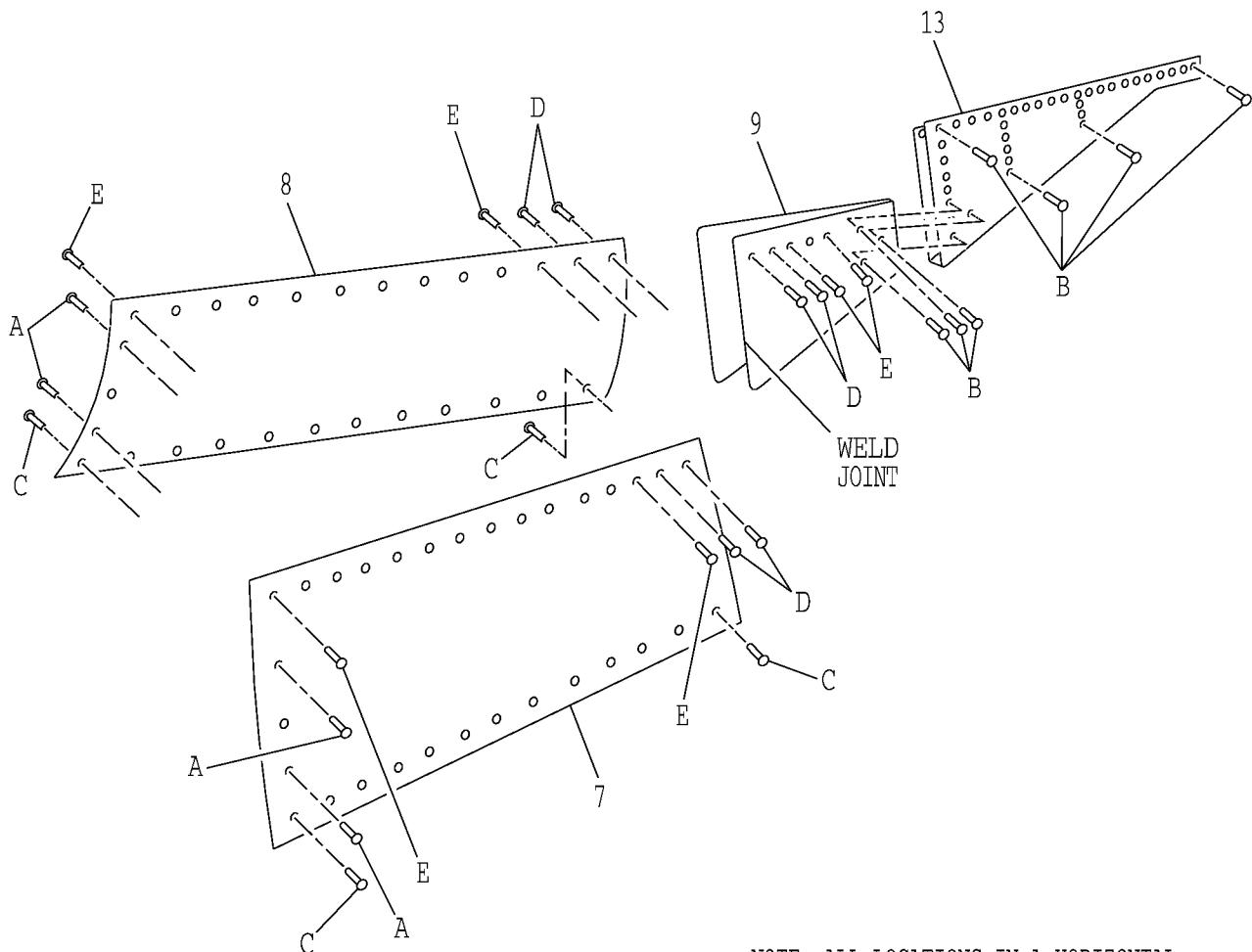
EFFECTIVITY: ALL

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NOTE: ALL LOCATIONS IN A HORIZONTAL OR VERTICAL ROW BETWEEN IDENTIFIED FASTENERS ARE THE SAME AS THE FASTENER AT EACH END OF THE ROW.

BM5 54 55 00 4 LARJ 00

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R

Inconel Panels (Sheet 5/6)
Figure 403

EFFECTIVITY: ALL

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NOTE: EVEN NUMBERED PANELS ARE ON THE RIGHT SIDE OF PYLON AFT LOOKING FORWARD. ODD NUMBERED PANELS ARE ON THE LEFT SIDE OF PYLON AFT LOOKING FORWARD. PANELS 9 AND 13 ARE SINGLE PANELS.

PANEL LEGEND

PANEL NUMBER	PART NUMBER	MATERIAL	MATERIAL THICKNESS
1	9333M29P005A	INCO 625 (AMS5599)	0.058-0.068 INCH
2	9333M29P006A	INCO 625 (AMS5599)	0.058-0.068 INCH
3	9333M29P007A	INCO 625 (AMS5599)	0.058-0.068 INCH
4	9333M29P008A	INCO 625 (AMS5599)	0.058-0.068 INCH
5	9333M29P009A	INCO 625 (AMS5599)	0.058-0.068 INCH
6	9333M29P010A	INCO 625 (AMS5599)	0.058-0.068 INCH
7	9333M29P011A	INCO 718 (AMS5596)	0.058-0.068 INCH
8	9333M29P012A	INCO 718 (AMS5596)	0.058-0.068 INCH
9	9333M29P013A	INCO 718 (AMS5596)	0.058-0.068 INCH
10	9333M29P017A	INCO 625 (AMS5599)	0.058-0.068 INCH
11	9333M29P019A	INCO 625 (AMS5599)	0.058-0.068 INCH
12	9333M29P021A	INCO 625 (AMS5599)	0.058-0.068 INCH
13	9333M29P015A	INCO 625 (AMS5599)	0.046-0.054 INCH

FASTENER LEGEND

ITEM LETTER	PART DESCRIPTION	MATERIAL
A	NAS1200-5 RIVET	A286 CORROSION RESISTANT STEEL
B	NAS1200M-5 RIVET	NICKEL-COPPER ALLOY (MONEL), QQ-N-281, CLASS A
C	MS20615-()M RIVET	NICKEL-COPPER ALLOY (MONEL), QQ-N-281, CLASS A
D	1749M72P02 PIN	AMS5737
E	1749M72P01 PIN	AMS5737

BM5 54 55 00 4 LARL 00

1359287-00

Inconel Panels (Sheet 6/6)
Figure 403

R

EFFECTIVITY: ALL

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AIRCRAFT MAINTENANCE MANUAL

PYLON-TO-NACELLE JUNCTION - DESCRIPTION AND OPERATION

1. General

Junction fillets are installed on the pylon box to provide an aerodynamic profile between pylon and nacelle. The junction fillets also prevent engine fire propagation.

Engine cowl hinge fittings are attached to the forward fairing and pylon box.

2. Description

A. Junction Fillets

(Ref. Fig. 001)

The junction fillets are riveted on cantilever structure and side panels of the pylon box between RIBsA9 and 12.

Pylon-to-engine cowls junction between RIBsA9 and 6 is provided by a sheet metal formed section riveted on pylon structure.

Fairings are installed between pylon RIBs6 and 12 to provide junction with fan thrust reverser and core cowl.

B. Auxiliary Fittings

(1) Cowl hinge fittings

(Ref. Fig. 002)

(Ref. Fig. 003)

- fan cowl hinge fittings are attached to cantilever beam at RIBsA1, A4 and A8.
- thrust reverser cowl hinge fittings are attached to the pylon box and cantilever beam at RIBsA11, 2 and 4.
- core cowl hinge fittings are attached to the pylon box at RIBs6, 8 and 9.

(2) Hoist fitting

(Ref. Fig. 004)

A hoist fitting located between RIBs6 and 7 of pylon box enables attachment of engine hoisting tool.

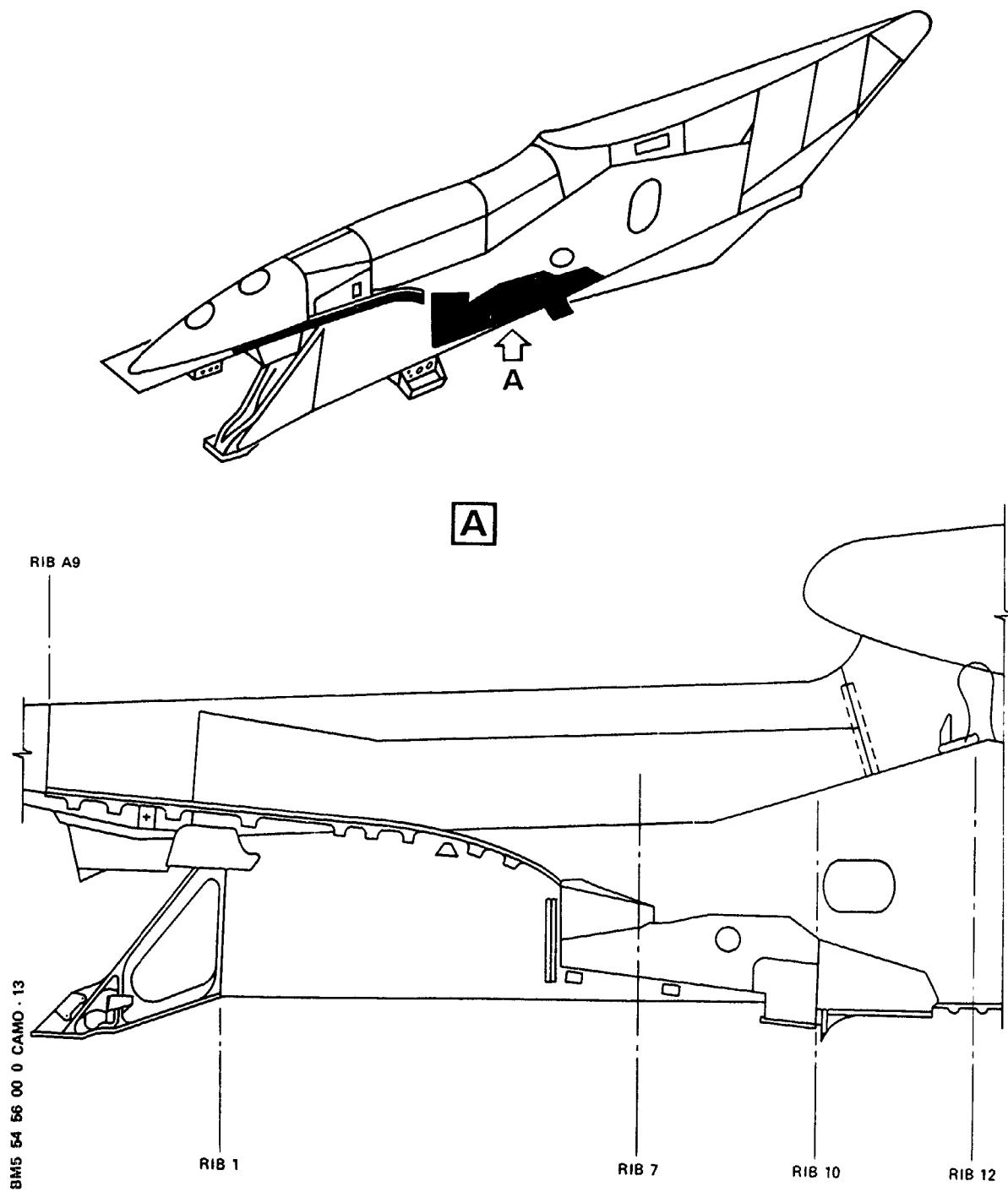
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Pylon-to-Nacelle Junction Fillets
Figure 001

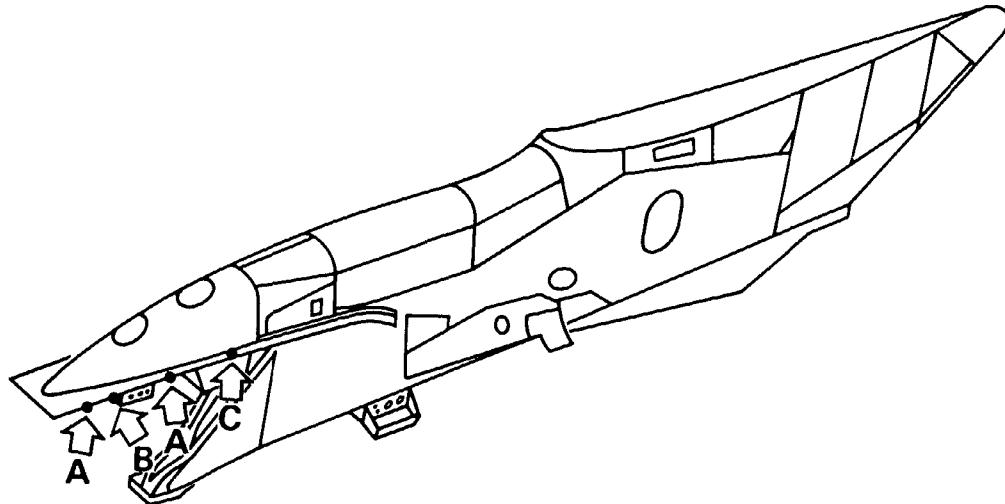
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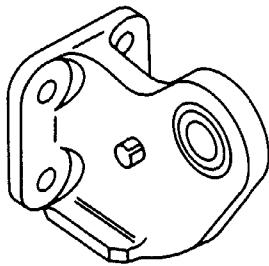
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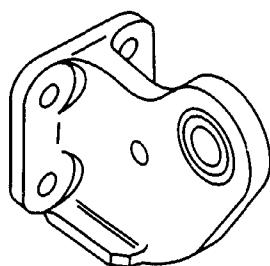
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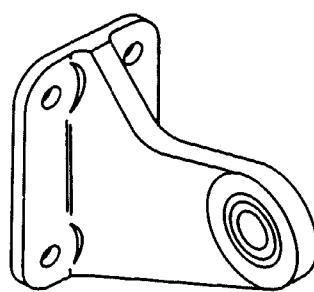
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Cantilever Structure - Cowl Hinge Fittings
Figure 002

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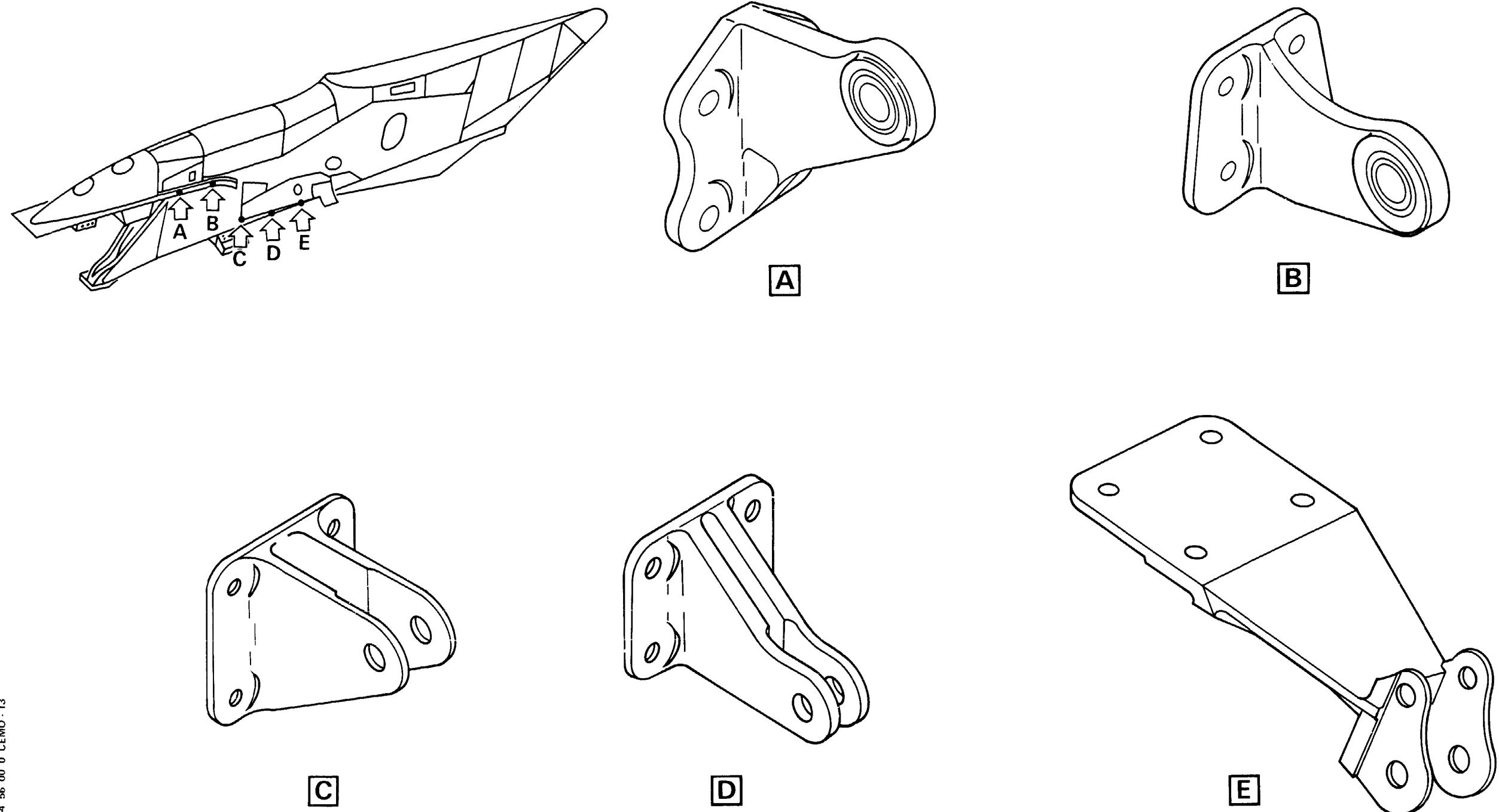
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Pylon Box - Cowl Hinge Fittings
Figure 003

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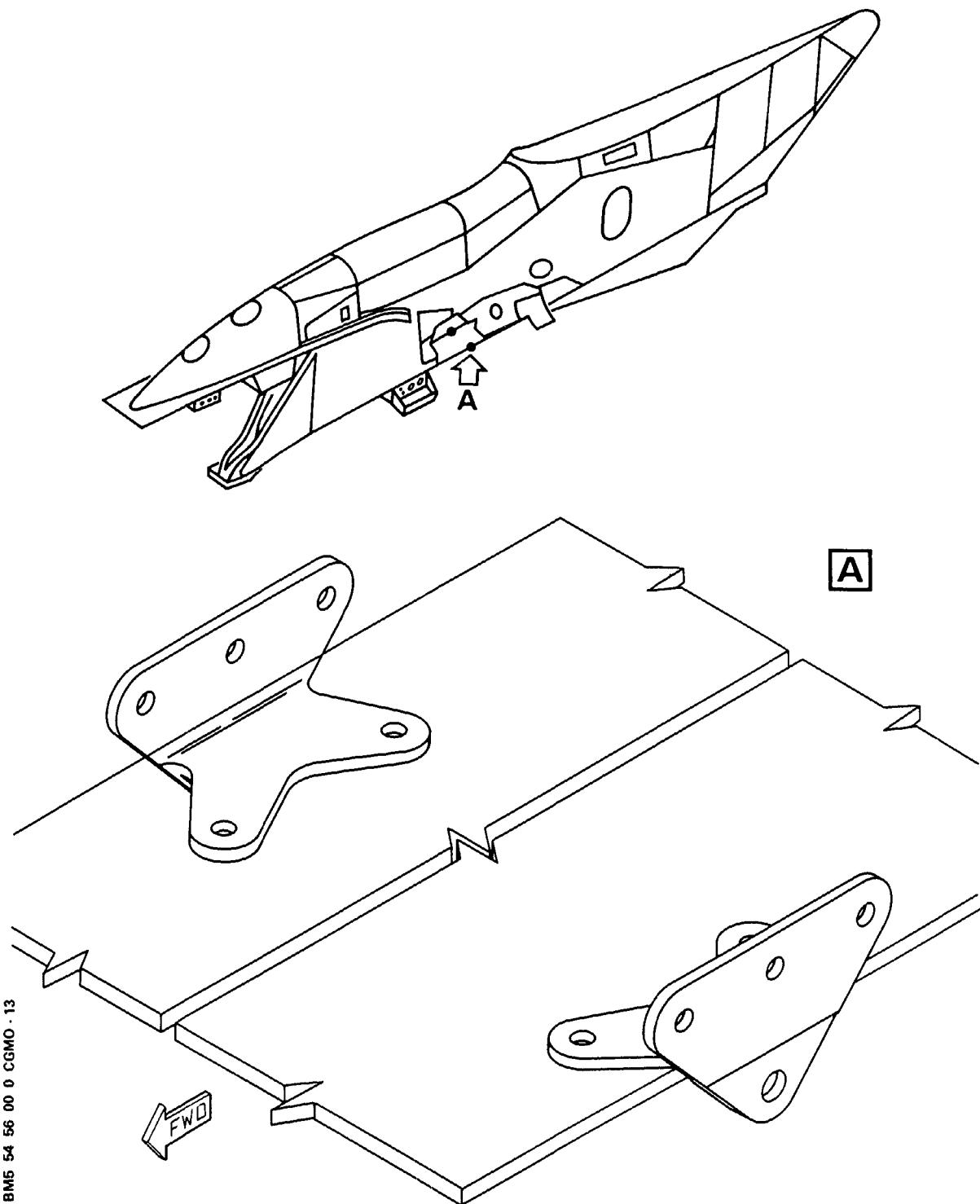
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Hoist Fitting
Figure 004

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HINGE FITTING - FAN AND THRUST REVERSER - REMOVAL/INSTALLATION1. Fan Reverser Hinge Fittings**A. Reason for the Job**

Removal of hinge fittings and installation of the hinge fittings removed (no replacement of the hinge fittings).

B. Equipment and Materials

ITEM	DESIGNATION
(1)	Access Platforms
Referenced Procedures	
- 20-21-12, P. Block 1	Tightening Torques for Standard Threaded Fasteners
- 36-11-00, P. Block 401	Engine Bleed Air Supply System
- 36-11-15, P. Block 401	Bleed Air Precooler
- 54-51-43, P. Block 401	Upper Panel Rods Between RIBS1 and 8
- 71-13-01, P. Block 401	Core Cowl
- 71-13-02, P. Block 401	Fan Cowl
- 71-13-03, P. Block 401	Fan Thrust Reverser Cowl

C. Procedure

(1) Job set-up

(a) Remove engine cowls (Ref. 71-13-01, 71-13-02, 71-13-03, P. Block 401).

(b) Position access platforms at pylons.

(c) Remove the following side skin panels from pylon :

1 On left side pylon, remove panels : 413AL (414AR), 411DL (412DL),
413BL and 413CL (414CR).

2 On right side pylon, remove panels : 423AL (424AR), 421DL (422DR),
423BL and 423CL (424CL).

(d) Remove bleed air precooler (Ref. 36-11-15, P. Block 401).

WARNING : MAKE CERTAIN THAT FLAP AND SLAT CONTROL LEVER LOCKING TOOL IS INSTALLED IN FLIGHT COMPARTMENT.

(e) Remove the two rods from main frame upper panel between RIB1 and RIB8
(Ref. 54-51-43, P. Block 401).

(f) Remove bleed air precooler cold air inlet duct (Ref. 36-11-00, P. Block 401).

(2) Removal (Ref. Fig. 401)

NOTE : Before removal, mark the shim location.

NOTE : The removal procedure is described for left pylon left side. This procedure is identical for the other sides of the engine pylon.

(a) Remove bolts securing hinge fittings and retain washers and nuts.
Record location of bolts, nuts and washers for installation.

(b) Remove hinge fittings and collect shims located under hinge fitting base (Ref. Fig. 401).

(3) Check

(a) Before installation, carry out a visual check of hinge fittings.

(b) Check condition of shims. They must not show evidence of wear or cracks

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around bolt attach holes. Check that the 4 washers bonded to shims are present.

(c)Check washers, nuts and bolts retained at removal for correct condition.

Replace as necessary.

(4) Installation (Ref. Fig. 401)

(a)Install shims under hinge fitting base in accordance with the location recorded at removal.

NOTE : If necessary, adjust the shim, taking into account the thickness of a doubler introduced by a repair in the hinge fitting base area, to maintain the original interchangeability location.

(b)Install hinge fittings on main frame or auxiliary structure. Install bolts, washers and screws (Ref. Fig. 401).

(c)TORQUE bolts attaching hinge fittings (Ref. 20-21-12, P. Block 1).

(5) Close-up

(a)Install bleed air precooler cold air inlet duct (Ref. 36-11-00, P. Block 401).

(b)Install the two rods on main frame upper panel (Ref. 54-51-43, P. Block 401).

(c)Install bleed air precooler (Ref. 36-11-15, P. Block 401).

(d)Install side skin panels :

1 On left side pylon : 413AL (414AR), 411DL (412DL), 413BL and 413CL (414CR).

2 On right side pylon : 423AL (424AR), 421DL (422DR), 423BL and 423CL (424CL).

(e)Remove pylon access platforms.

(f)Install engine cowls (Ref. 71-13-01, 73-13-02, 71-13-03, P. Block 401).

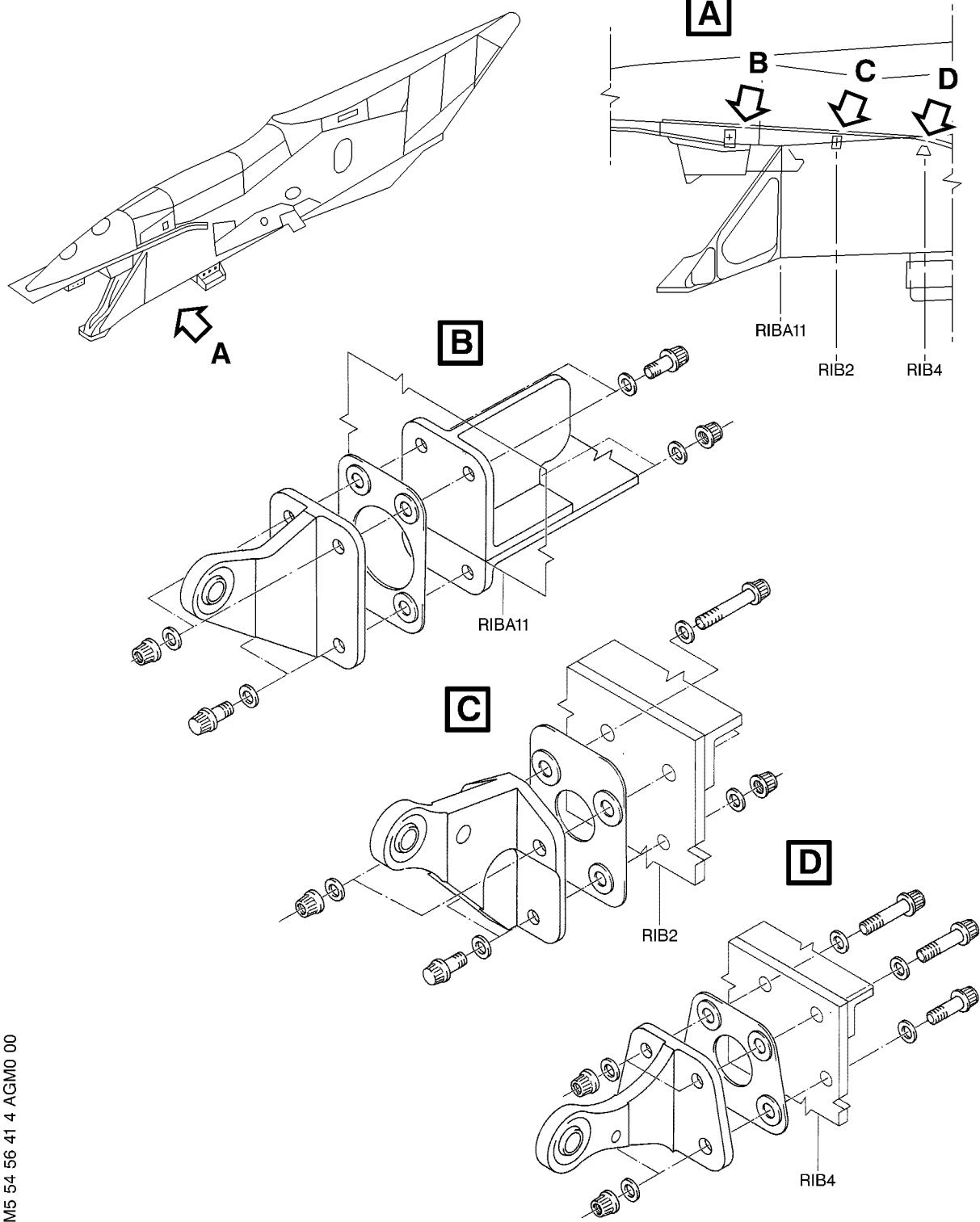
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Fan Reverser Hinge Fittings
Figure 401

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1. Reason for the Job

A. Inspection during Scheduled Maintenance.

2. Equipment and Materials

ITEM	DESIGNATION
A.	Adjustable Access Platform
B. Material No. 11-003	Cleaning Agent (Ref. 20-31-00)
Referenced Procedure - 71-13-00, P. Block 301	Cowl Doors

3. Procedure**A. Job Set-Up**

(1) Open, safety and tag the following circuit breakers:

PANEL	SERVICE	IDENT	LOCATION
133VU	ENG1 & 2/START/CTL/WARM	1KG	335/R68
133VU	ENG1 & 2/IGNITION/SYS A	1JH	334/S72
133VU	ENG1 & 2/IGNITION/SYS B	2JH	333/T72
133VU	ENG1/REV/CTL	1KM	332/U69
133VU	ENG2/REV/CTL	2KM	331/V74
133VU	ENG1/THRUST REVERSER LOCK	45KM	332/U67
133VU	ENG2/THRUST REVERSER LOCK	44KM	331/V75

(2) Open the fan cowls and the fan thrust reverser cowls:

435AL, 436AR, 445AL, 446AR, 451AR, 452AR, 461AL and 462AR.

(3) Put an access platform at pylons.

B. Cleaning of the structure

WARNING : USE SOLVENTS/CLEANING AGENTS, SEALANTS AND OTHER SPECIAL MATERIALS ONLY WITH A GOOD FLOW OF AIR THROUGH THE WORK AREA. THESE MATERIALS ARE POISONOUS AND FLAMMABLE AND SKIN IRRITANTS.

OBEY THE MANUFACTURERS INSTRUCTIONS.

PUT ON PROTECTIVE CLOTHING.

DO NOT GET THEM IN YOUR MOUTH.

DO NOT SMOKE.

DO NOT BREATHE THE GAS.

GET MEDICAL HELP IF YOUR SKIN OR EYES BECOME IRRITATED.

(1) Clean the inspection surface with cleaning agents and a lint-free cotton cloth, if necessary.

C. Inspection (Ref. Fig. 601)

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(1) Do a detailed visual inspection of the engine cowl hinge fittings (including nacelle hinge side). This inspection includes the left and right sides.

(2) Make sure that there is no:

- Corrosion damage
- Superficial wear
- Deformation
- Structure defects
- Bore deformation
- Wear on bore

NOTE : If you find damage, a structural repair must be carried out, or the component must be replaced.

C. Close-Up

(1) Close the fan cowls and the fan thrust reverser cowls:

435AL, 436AR, 445AL, 446AR, 451AR, 452AR, 461AL and 462AR.

(2) Make certain that working area is clean and clear of tools and miscellaneous items of equipment.

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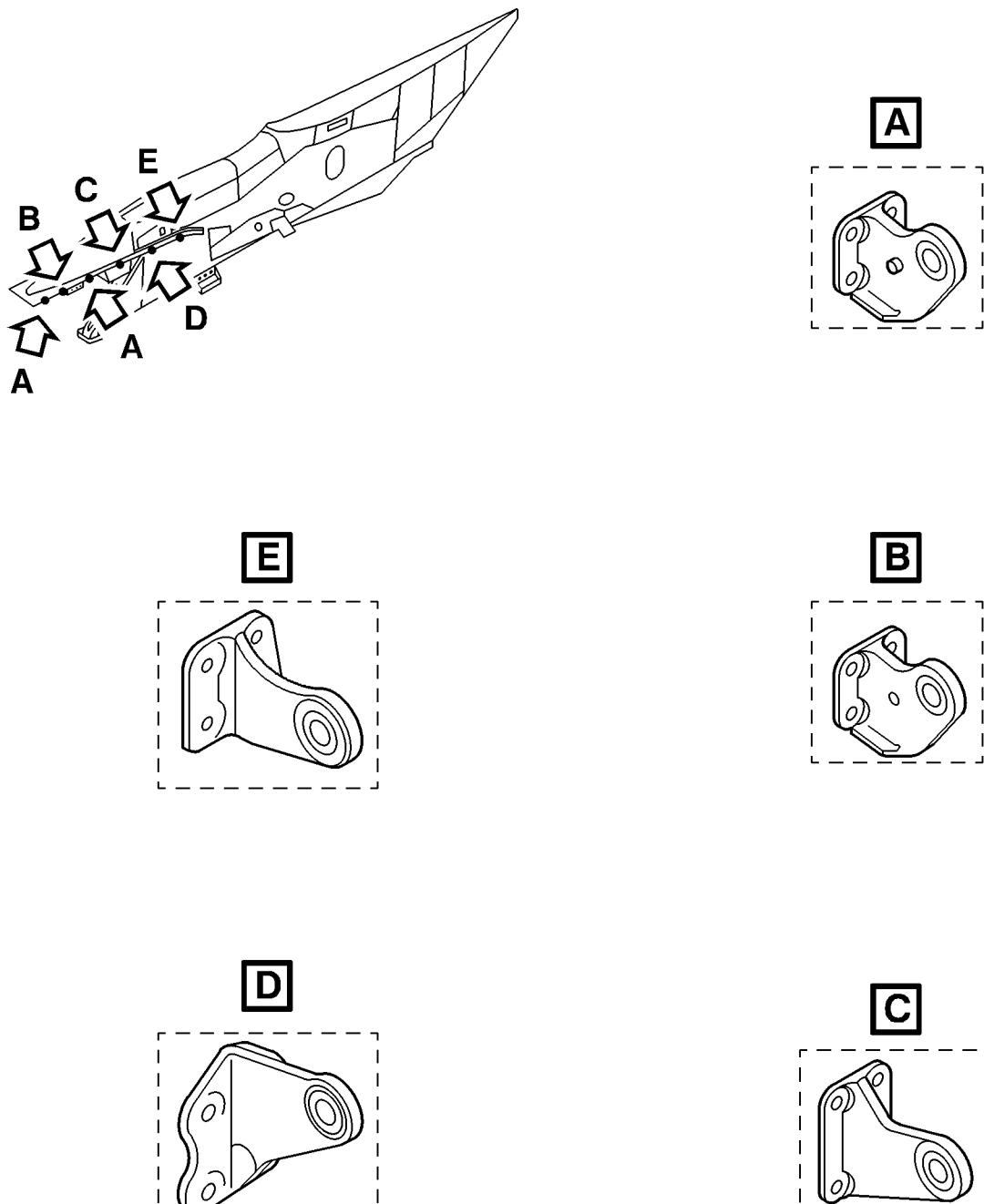
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[] INSPECTION AREA

Cowl Hinge Fittings
Figure 601

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