CHAPTER

31

INDICATING RECORDING SYSTEMS

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CHAPTER 31 - INDICATING / RECORDING SYSTEM
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INDICATING/RECORDING SYSTEMS - MAINTENANCE PRACTICES

1. Description

This chapter describes and pictorially displays instruments and instrument panels, switches and indicators.

The indicating/recording system panels are installed in the flight compartment and are divided in:

- Instrument and control panels
- Center pedestal
- Glareshield
- Integrated Avionics Processor System

A. The instrument and control panels consists of: Pilot instrument panel, Center instrument panel, Copilot instrument panel, Pilot control panel, Pilot audio panel, Copilot control panel, Copilot audio panel, Central control panel.

B. The center pedestal consists of : Master control panel, Engine/fuel throttle panel, Lights control panel, Flap position panel, Cursor control Panel, CDU, Trim indicator panel, Trim control panel.

C. The glareshield consists of the Flight guidance panel and the Fire extinguisher controls.

D. The Integrated Avionics Processor System (IAPS), installed in the Avionics Bay, consist of:

- Integrated Card Cage (ICC)
- IAPS Enviromental Controller (IEC)
- Two Configuration Strapping Units (CSU)
- Two Options Control Modules (OCM) (installed on Central Strapping Unit)
- Two Input/Output Concentrators (IOC)
- Two Power Supplies (PWR)
- Two Flight Guidance Computers (FGC)
- One Flight Management Computer (FMC)
- One Maintenance Diagnostic Computer (MDC)

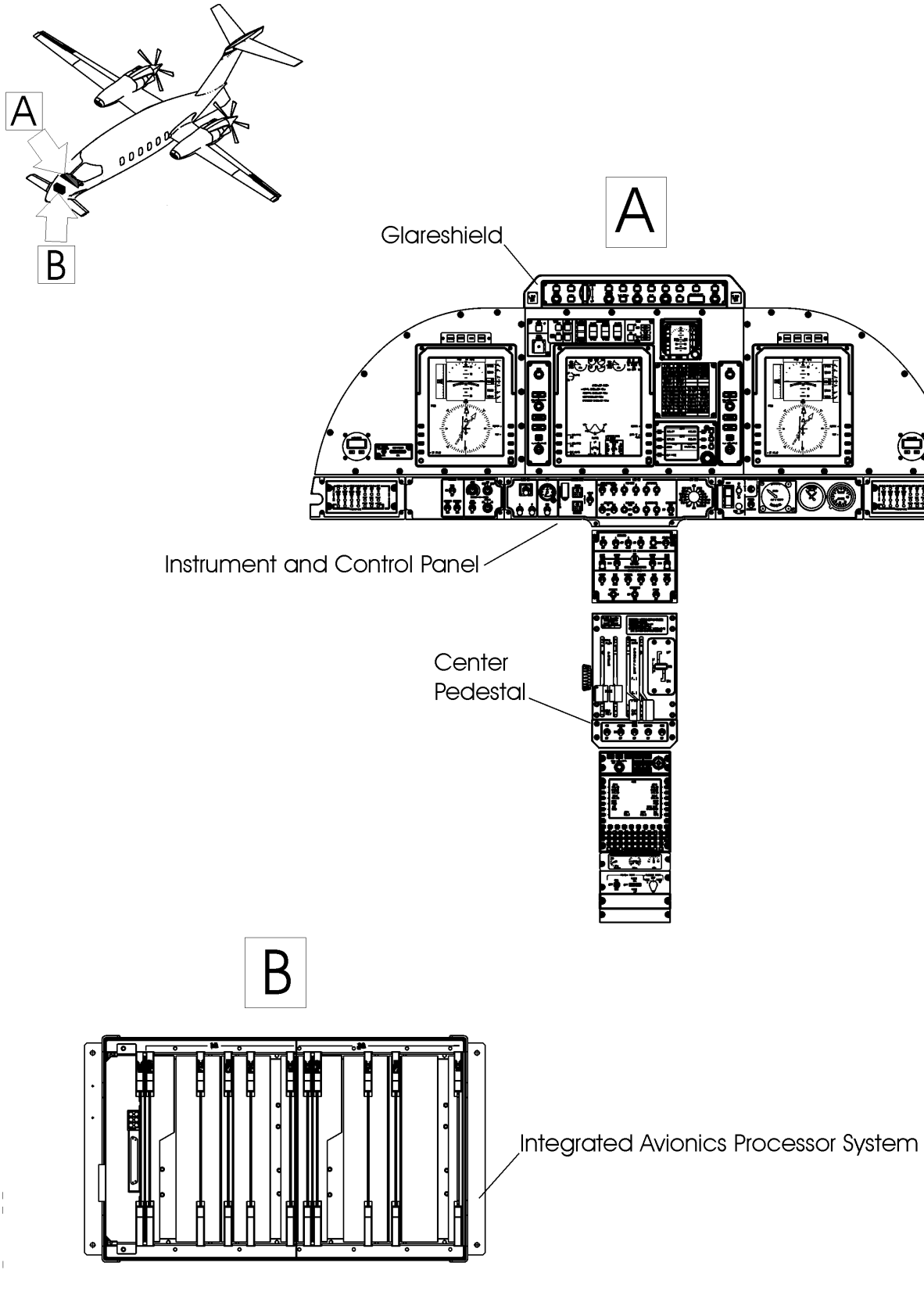

Fig. 1 - Components Location

INDICATING/RECORDING SYSTEMS - MAINTENANCE PRACTICES

1. General

A. Before starting maintenance on the control panels and instruments the following safety precautions should be familiarized.

2. Safety Precautions

A. Remove the electrical power and pull and tag applicable system circuit breakers.

B. Protect instrument faces using suitable means whenever removing or installing.

3. Cleaning Instrument Glass Lenses

A. All instrument glass should be cleaned at frequent intervals. Whenever instruments with glass lenses are handled, precautionary cleaning is advisable as fingerprint perspiration can permanently etch the glass.

B. Cleaning may be accomplished using a commercial liquid detergent or an approved solvent. If solvent is used, care should be taken to ensure compatibility of the instrument mounting finish with the solvent.

C. Before applying cleaning solution to the lens surface, all loose dust should be blown off with clean dry air. A clean, soft cloth must be used for both cleaning and drying.

D. The cleaning process can cause static electricity to build up in the lens. Each glass lens should be touched gently with a metallic object to ensure dissipation of any possible static charge.

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INSTRUMENTS AND CONTROL PANELS - DESCRIPTION AND OPERATION

1. General

The instrument and control panels are located in the Flight Compartment.

A. The instrument panel comprises:

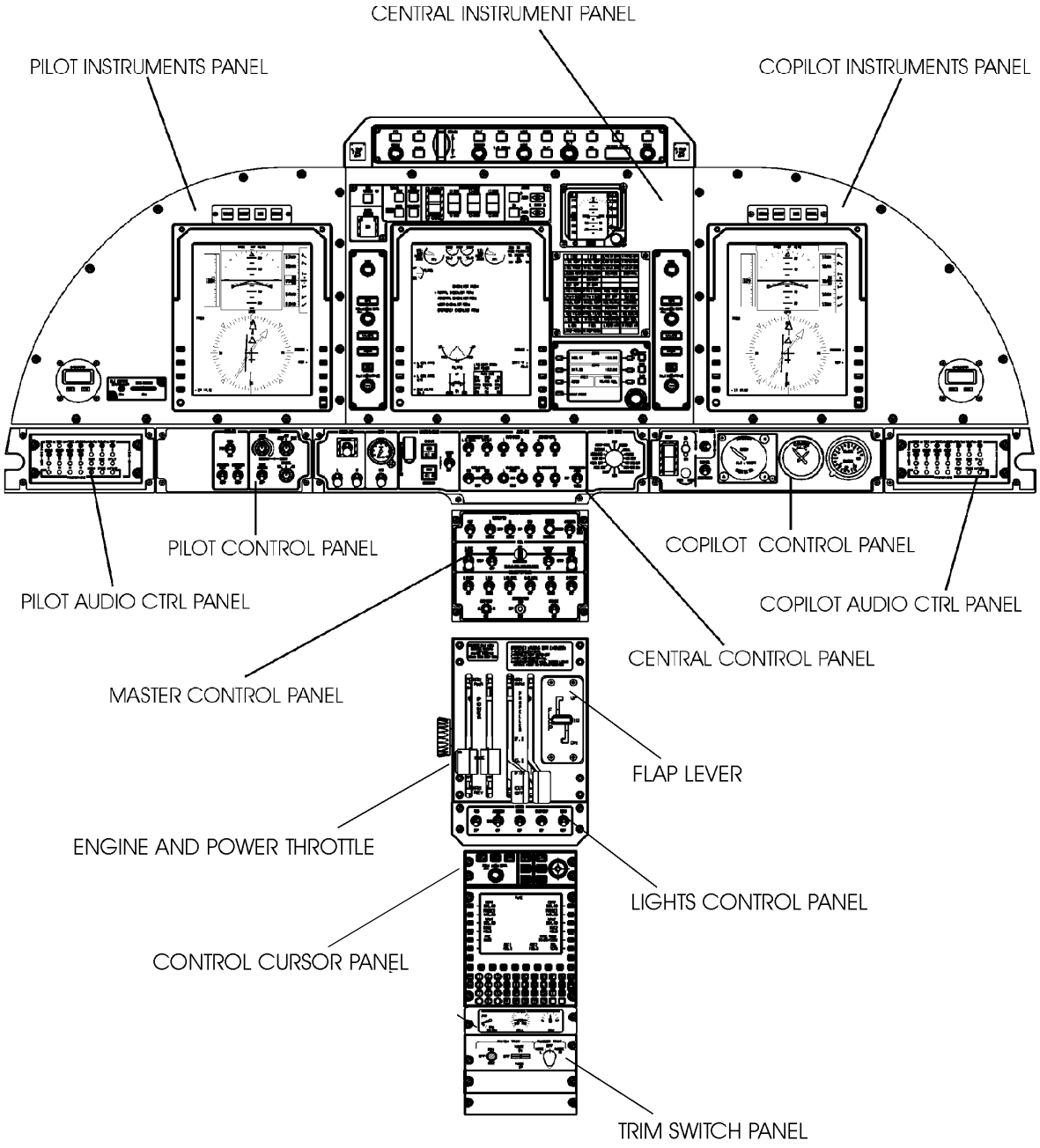
(1) Pilot instrument panel
(2) Center instrument panel
(3) Copilot instrument panel

B. The control panel comprises:

(1) Pilot control Panel
(2) Central control Panel
(3) Copilot control Panel

C. The center pedestal comprises:

(1) Master control panel
(2) Engine and Power throttle, Flap lever.
(3) Lights control panel.
(4) Control cursor panel
(5) Trim switch panel



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INSTRUMENTS AND CONTROL PANELS - MAINTENANCE PRACTICES

1. General

A. The Maintenance Practices for the Instrument and Control Panels are as follows:

- Pilot Instrument Panel - Removal/Installation
- Copilot Instrument Panel - Removal/Installation
- Central Instrument Panel - Removal/Installation
- Pilot Control Panel - Removal/Installation
- Copilot Control Panel - Removal/Installation
- Central Control Panel - Removal/Installation
- Pilot Audio Panel- Removal/Installation
- Copilot Audio Panel - Removal/Installation
- Master Control Panel - Removal/Installation
- Engine Power/Propeller panel - Removal/Installation (Ref. cap. 76)
- Flap Lever Panel - Removal/Installation (Ref. cap. 27)
- Lights Control Panel- Removal/Installation (Ref. cap. 33)
- Control Cursor Panel - Removal/Installation
- Multifunction Display Panel - Removal/Installation (Ref. cap. 34)
- Trim and Switch Panel - Removal/Installation (Ref. cap. 27)

B. The instrument and control panels are located in the Flight Compartment. The ground test/refuel panel is located in the right hand rear fuselage.

2. Pilot Instrument Panel - Removal (Ref. to Fig. 201)

A. Fixtures, Test and Support Equipment

Blanking Caps	Not Specified

B. Referenced Information

Maintenance Manual Chapter 20-00-00

C. Procedure

(1) Remove the electrical power (Rel. 24-00-00)
(2) Remove the screws (1) securing the Pilot instrument panel to the structure.

CAUTION: PROTECT THE INSTRUMENT FACES.

(3) Ease the instrument panel away from the structure.
(4) Tag all electrical connectors.
(5) Disconnect the electrical connectors from the rear of the instruments (Refer to 20-00-00).
(6) Put blanking caps on all the electrical connectors.
(7) Remove attaching parts and remove instrument panel.
(8) Withdraw the Pilot instrument panel into the flight compartment.

3. Pilot Instrument Panel - Installation (Ref. to Fig. 201)

A. Referenced Information

Maintenance Manual Chapter 20-00-00

B. Procedure

(1) Make sure, as necessary that:
  (a) There isn't electrical power on the airplane
  (b) The system is safe
  (c) Access is available
(2) Remove the caps from the electrical connectors.

CAUTION: PROTECT THE INSTRUMENT FACES.

(3) Install the attaching parts on the instrument panel.
(4) Connect the electrical connectors to the instruments (Refer to 20-00-00).
(5) Position the Pilot instrument panel on the structure and insert and tighten the securing screws (1).
(6) Remove the safety tags and close the applicable circuit breakers.

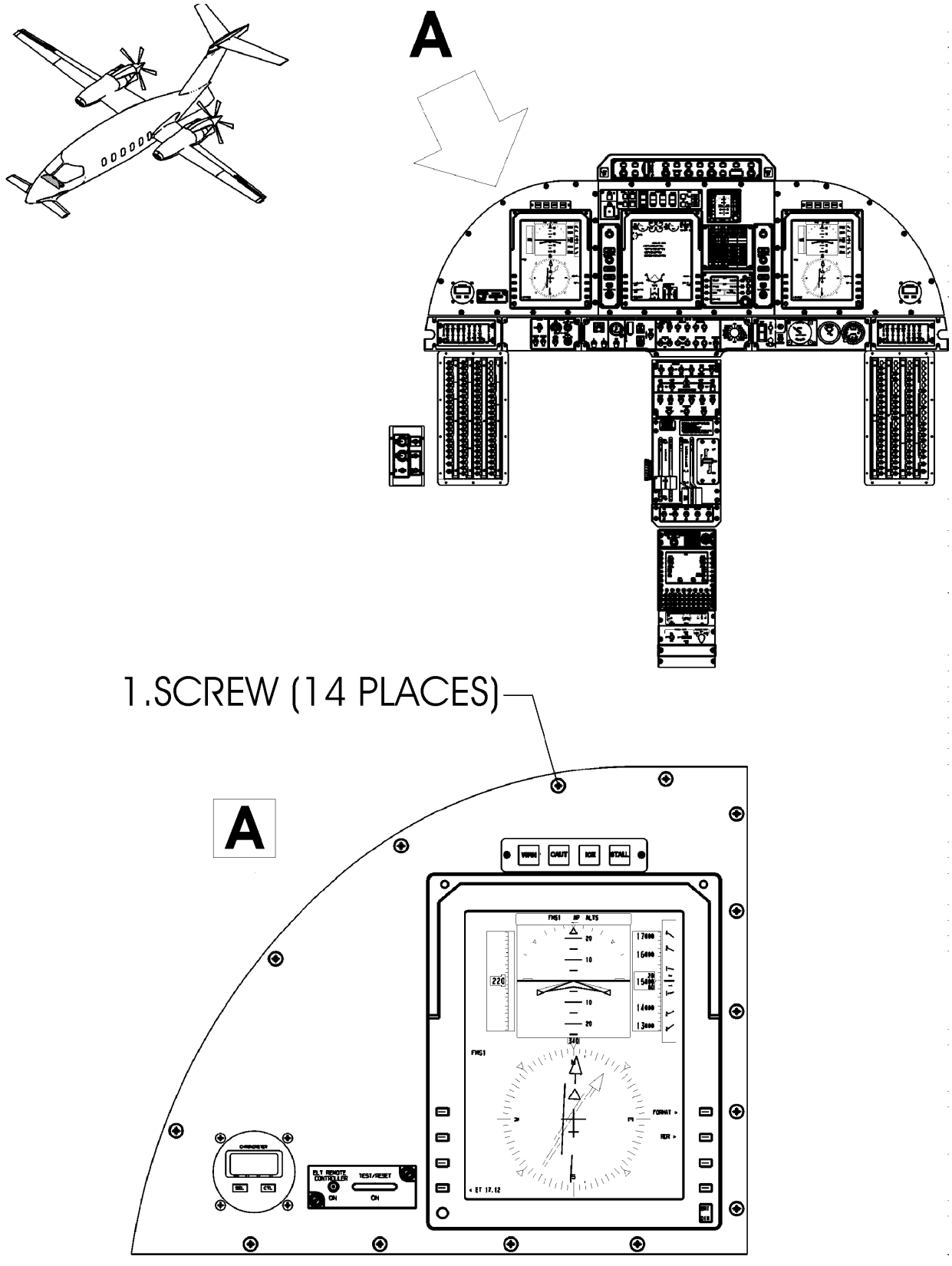

Fig. 201 - Pilot Instrument Panel - Removal/Installation

4. Copilot Instrument Panel - Removal (Ref. to Fig. 202)

A. Fixtures, Test and Support Equipment

Blanking Caps	Not Sepcified

B. Referenced Information

Maintenance Manual Chapter 20-00-00

C. Procedure

(1) Remove the electrical power (Ref. 24-00-00)
(2) Remove the screws (1) securing the Copilot instrument panel to the structure.

CAUTION: PROTECT THE INSTRUMENT FACES.

(3) Ease the instrument panel away from the structure.
(4) Tag all electrical connectors.
(5) Disconnect the electrical connectors .
(6) Put blanking caps on all the electrical connectors.
(7) Remove attaching parts and instruments from instrument panel.
(8) Withdraw the Copilot instrument panel into the flight compartment.

5. Copilot Instrument Panel - Installation (Ref. to Fig. 202)

A. Referenced Information

Maintenance Manual Chapter 20-00-00
Maintenance Manual Chapter 34-11-00

B. Procedure

(1) Make sure, as necessary that:
  (a) There isn't electrical power on the airplane
  (b) The system is safe
  (c) Access is available
(2) Install the instruments and attaching parts on the instrument panel.

CAUTION: PROTECT THE INSTRUMENT FACES.

(3) Connect the electrical connectors (Refer to 20-00-00).
(4) Remove the tags from the electrical connectors.
(5) Position the instrument panel on the structure and insert and tighten the securing screws (1).
(6) Remove the safety tags and close the applicable circuit breakers.

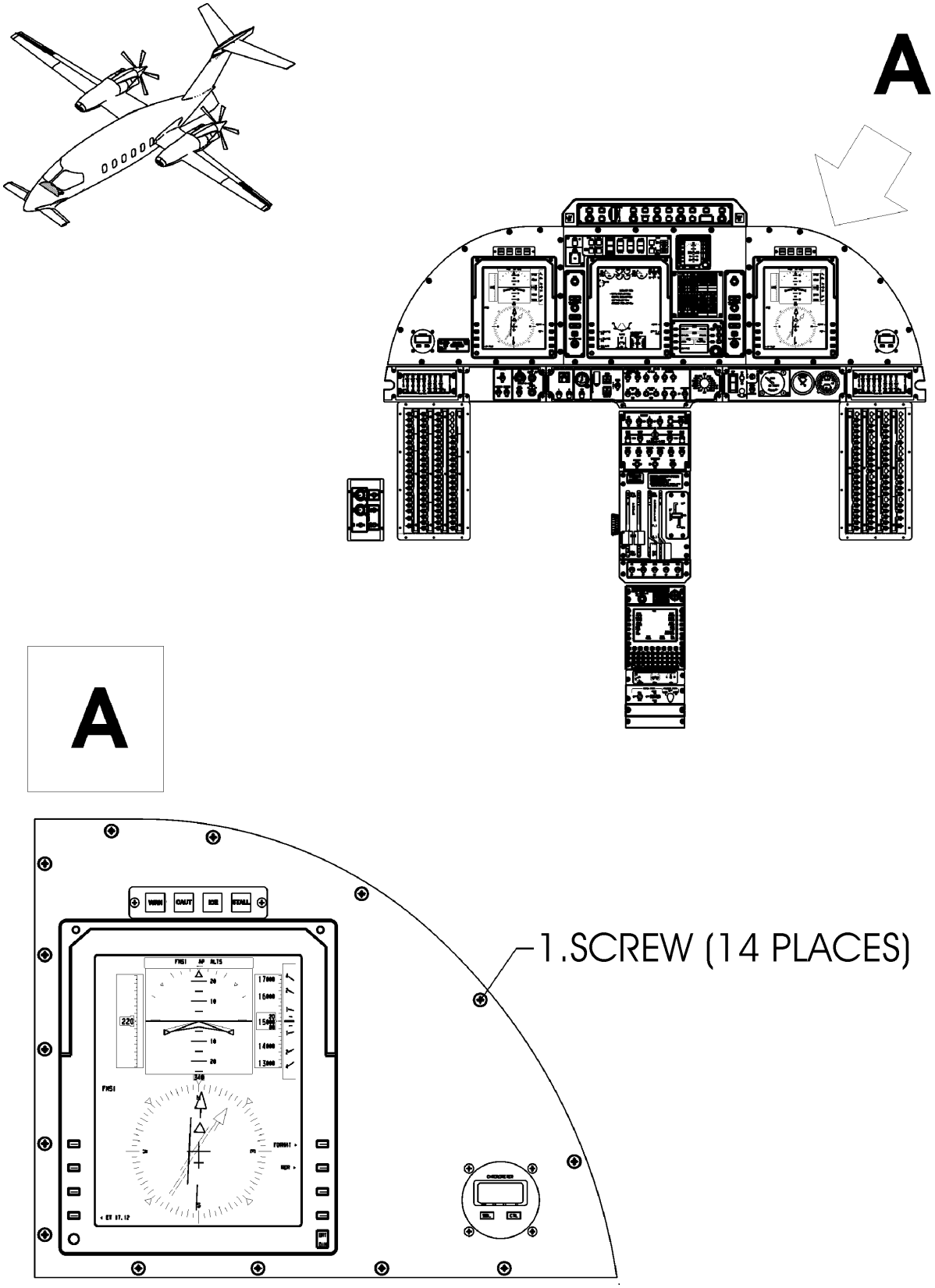

Fig. 202 - Copilot Instrument Panel - Removal/Installation

6. Central Instrument Panel - Removal (Ref. to Fig. 203)

A. Fixtures, Test and Support Equipment

Blanking Caps	Not Specified

B. Referenced Information

Maintenance Manual Chapter 20-00-00

C. Procedure

(1) Remove the electrical power (Refer to 24-00-00)
(2) Remove the screws securing the instrument panels to the structure (Refer to Para. 4 and 5) and support the instrument panels.
(3) Tag all electrical connectors.
(4) Tag and disconnect the pitot and static line from the rear of Stanby Giro.
(5) Ease the instrument panel away from the structure and disconnect the electrical connectors from the instruments (Refer to 20-00-00).
(6) Put blanking caps on all the electrical connectors and line ends.
(7) Withdraw the center instrument panel into the flight compartment.

7. Central Instrument Panel - Installation (Ref. to Fig. 203)

A. Referenced Information

Maintenance Manual Chapter 20-00-00

B. Procedure

(1) Make sure, as necessary that:
  (a) There isn't electrical power on the airplane
  (b) The system is safe
  (c) Access is available
(2) Position the center instrument panel so that the instruments can be connected.
(3) Connect the electrical connectors (Refer to 20-00-00).
(4) Remove the blanking caps from the electrical connectors and line ends.
(5) Insert the screws (1) and secure the central instrument panel in position.
(6) Remove the safety tags and close the applicable circuit breakers.
(7) Do an operational check of the pitot and static system (Refer to 34-11-00)

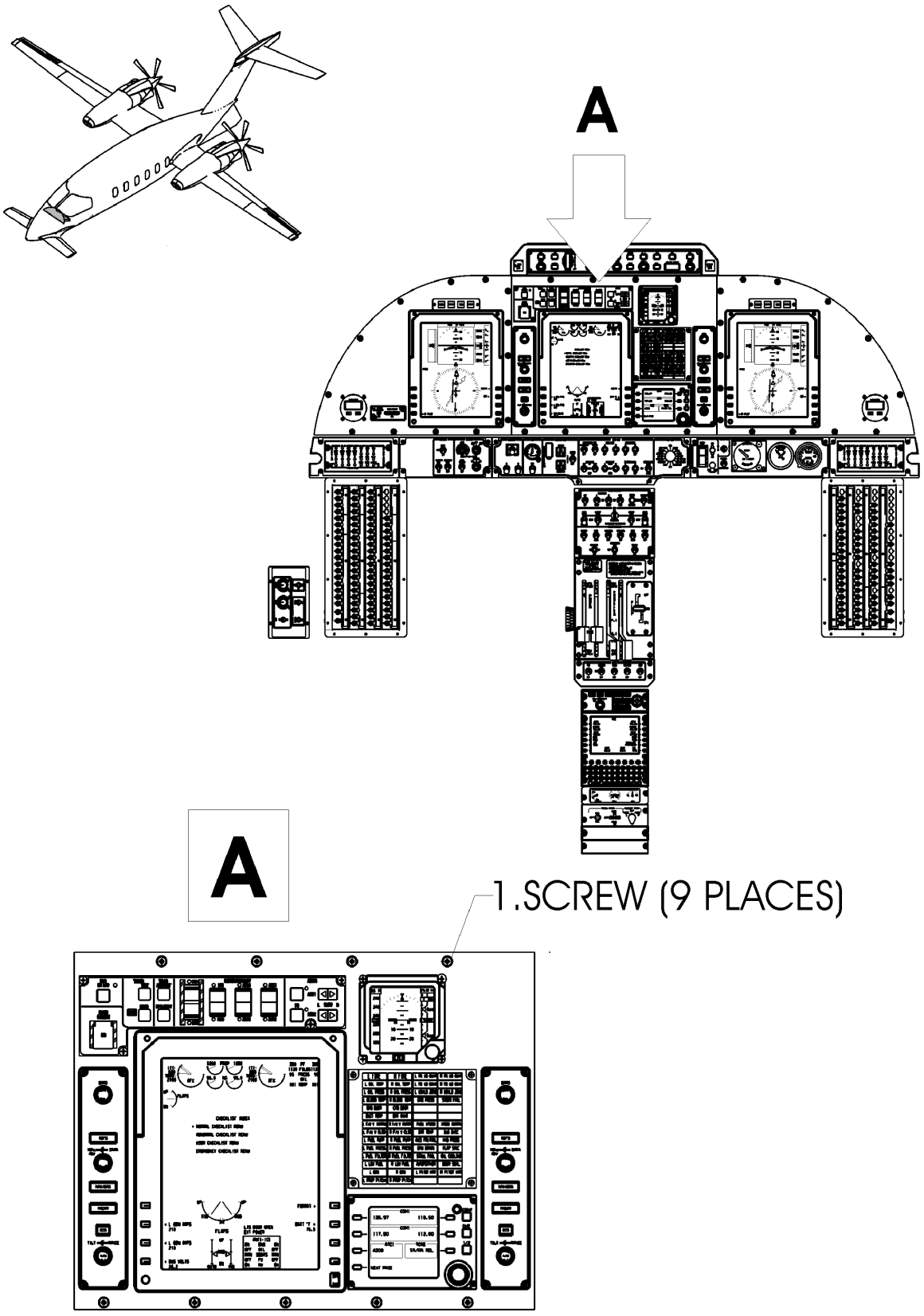

Fig. 203 - Central Instrument Panel - Removal/Installation

8. Pilot Control Panel - Removal (Ref. to Fig. 204)

A. Fixtures, Test and Support Equipment

Blanking Caps	Not Specified

B. Referenced Information

Maintenance Manual Chapter 20-00-00

Maintenance Manual Chapter 21-00-00

C. Procedure

(1) Remove the electrical power (Rel. 24-00-00)
(2) Remove the screws (1) securing thePilot Control Panel to the structure.
(3) Ease the panel away from the structure.
(4) Disconnect the electrical terminals and electrical connectors (Ref. to 20-00-00 and 21-00-00).
(5) Put blanking caps on the electrical connectors.
(6) Tag all electrical connectors.
(7) Withdraw the Pilot Control Panel into the flight compartment.

9. Pilot Control Panel - Installation (Ref. to Fig. 204)

A. Referenced Information

Maintenance Manual Chapter 20-00-00

Maintenance Manual Chapter 21-00-00

B. Procedure

(1) Make sure, as necessary that:
  (a) There isn't electrical power on the airplane
  (b) The system is safe
  (c) Access is available
(2) Remove the blanking caps from the electrical connectors.
(3) Connect the electrical connectors and terminals (Ref. to 20-00-00 and 21-00-00).
(4) Position the Pilot Control Panel on the structure, insert and tighten the securing screws (1).
(5) Remove the safety tags and close the applicable circuit breakers.

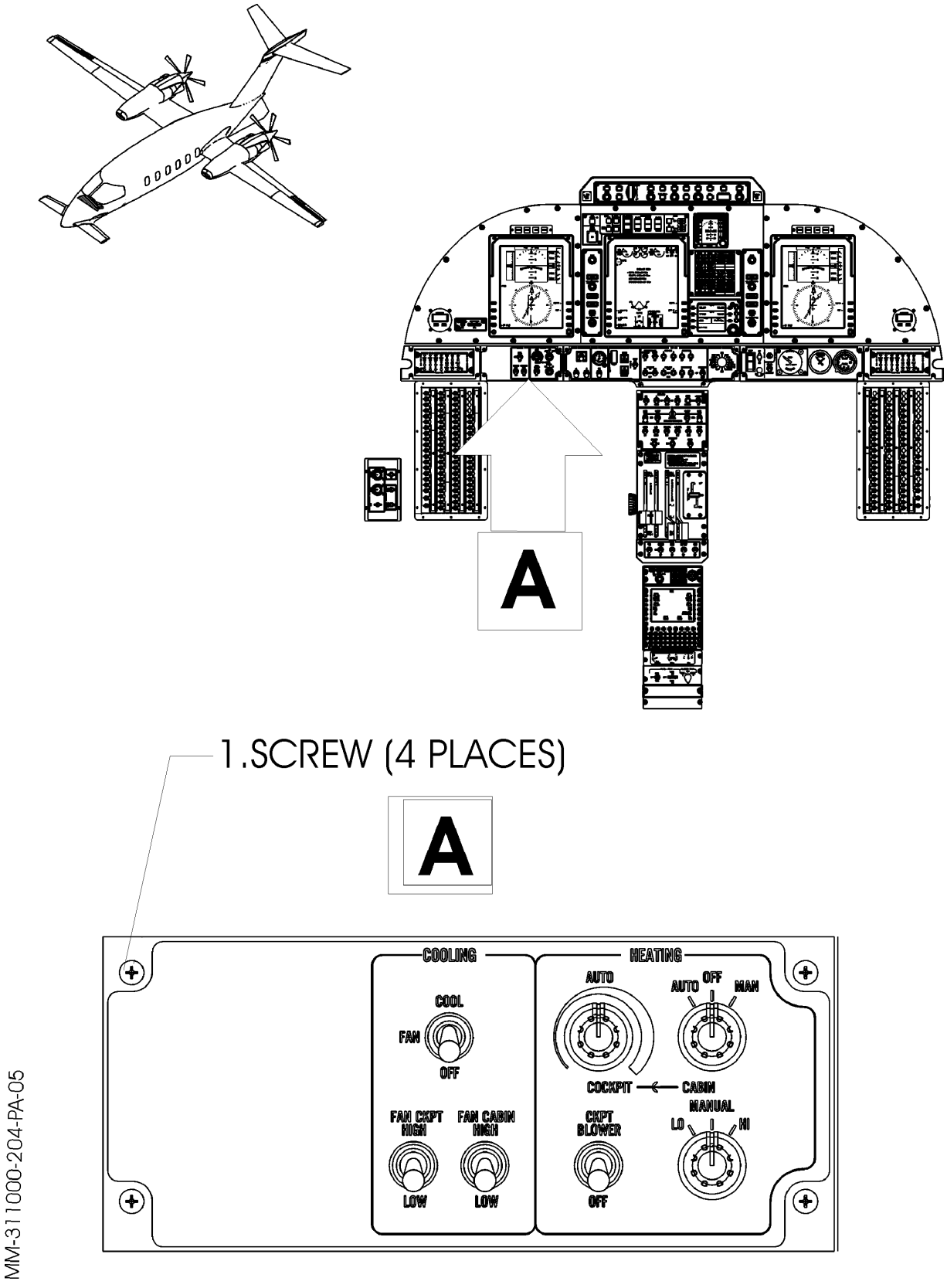

Fig. 204 - Pilot Control Panel- Removal/Installation

10. Central Control Panel - Removal (Ref. to Fig. 205)

A. Fixtures, Test and Support Equipment

Blanking Caps	Not Specified

B. Referenced Information

Maintenance Manual Chapter 21-00-00

C. Procedure

(1) Remove the electrical power (Rel. 24-00-00)
(2) Remove the screws (1) securing the Central Control Panel to the structure.
(3) Ease the panel away from the structure.
(4) Disconnect the electrical terminals and electrical connectors (Refer to 20-00-00).
(5) Put blanking caps on the electrical connectors.
(6) Tag all electrical connectors.
(7) Withdraw the Central Control Panel into the flight compartment.

11. Central Control Panel - Installation (Ref. to Fig. 205)

A. Referenced Information

Maintenance Manual Chapter 20-00-00

B. Procedure

(1) Make sure, as necessary that:
  (a) There isn't electrical power on the airplane
  (b) The system is safe
  (c) Access is available
(2) Remove the caps from the electrical connectors.
(3) Connect the electrical connectors and terminals (Refer to 20-00-00).
(4) Position the switch panel on the structure and insert and tighten the securing screws (1).
(5) Remove the safety tags and close the applicable circuit breakers.

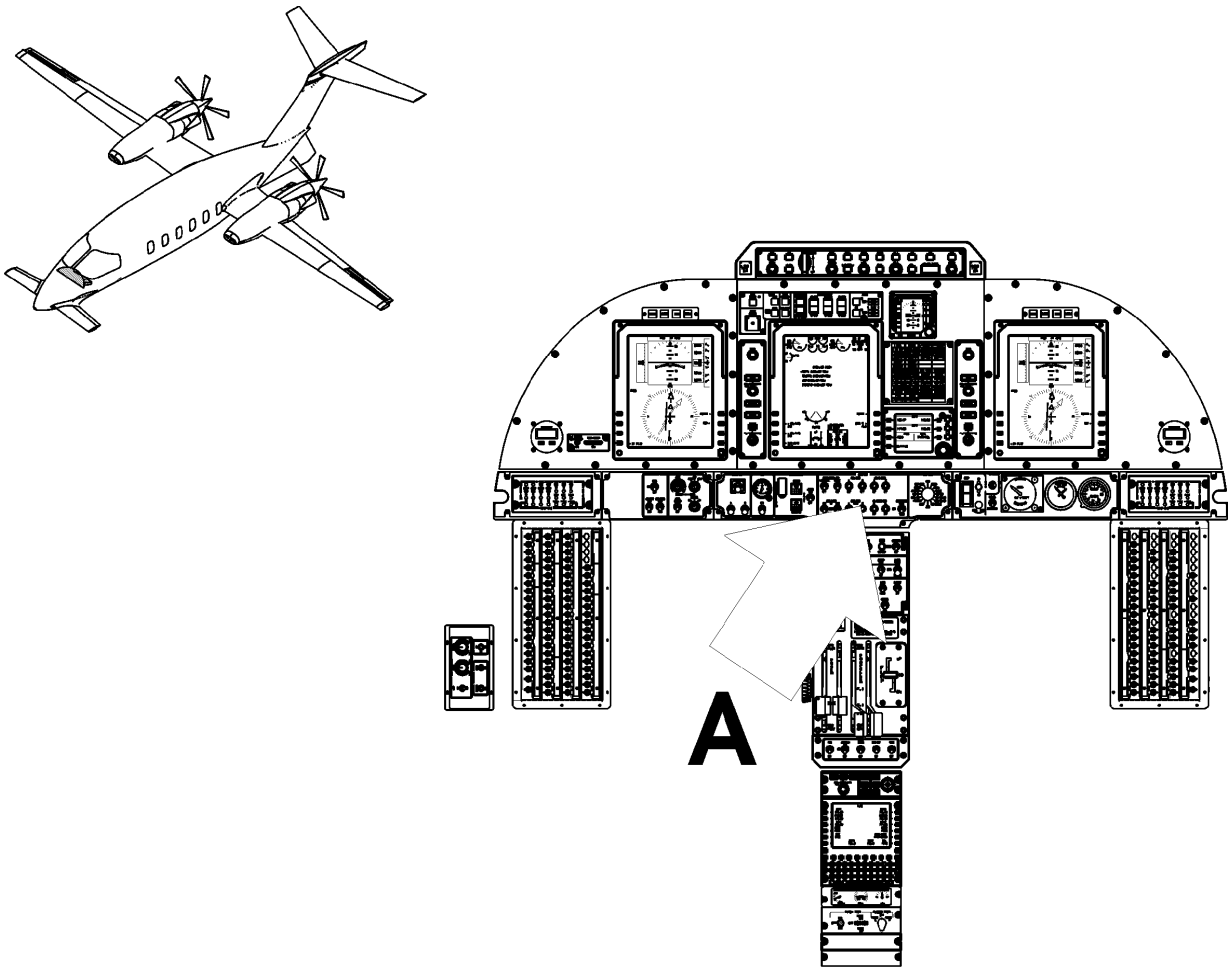

Fig. 205 -Central Control Panel - Removal/Installation

12. Copilot Control Panel - Removal (Ref. to Fig. 206)

A. Fixtures, Test and Support Equipment

Blanking Caps	Not Specified

B. Referenced Information

Maintenance Manual Chapter 21-00-00

C. Procedure

(1) Remove the electrical power (Rel. 24-00-00)
(2) Remove the screws (1) securing the Copilot Control Panel to the structure.
(3) Ease the panel away from the structure.
(4) Disconnect the electrical terminals and electrical connectors (Refer to 21-00-00).
(5) Tag and disconnect the pitot and static line from the rear of Instruments.
(6) Put blanking caps on the electrical connectors and lines end.
(7) Tag all electrical connectors.
(8) Withdraw the Copilot Control Panel into the flight compartment.

13. Copilot Control Panel - Installation (Ref. to Fig. 206)

A. Referenced Information

Maintenance Manual Chapter 21-00-00

B. Procedure

(1) Make sure, as necessary that:
  (a) There isn't electrical power on the airplane
  (b) The system is safe
  (c) Access is available
(2) Remove the caps from the electrical connectors and lines end.
(3) Connect the electrical connectors and terminals (Refer to 21-00-00).
(4) Connect the pitot and static line from to the rear of Instruments.
(5) Position the panel on the structure and insert and tighten the securing screws (1).
(6) Remove the safety tags and close the applicable circuit breakers.

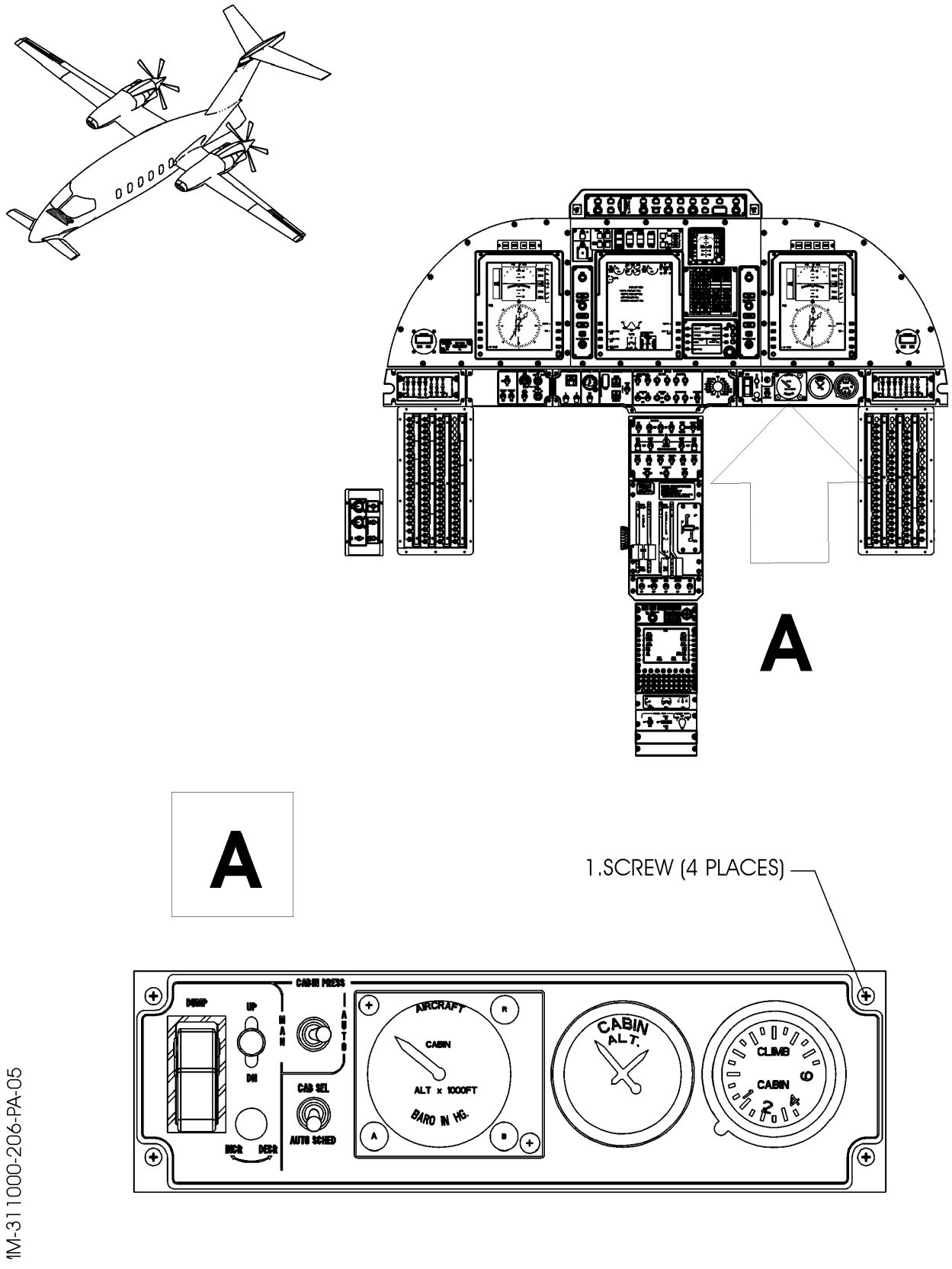

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Fig. 206 - Copilot Control Panel - Removal/Installation

14. Pilot Audio Panel - Removal (Ref. to Fig. 207)

NOTE: This procedure is applicable to both Pilot and Copilot audio panel installations.

A. Referenced Information

Maintenance Manual Chapter 21-00-00

B. Procedure

(1) Remove the electrical power (Rel. 24-00-00)
(2) Remove the screws (1) securing the audio panel (2) to the LH instrument panel.
(3) Ease the audio panel away from the instrument panel.
(4) Tag all electrical connectors.
(5) Disconnect all electrical connectors (Ref. Fig. 207).

15. Pilot Audio Panel - Installation (Ref. to Fig.207)

NOTE: This procedure is applicable to both Pilot and Copilot audio panel installations.

A. Referenced Information

Maintenance Manual Chapter 21-00-00

B. Procedure

(1) Make sure, as necessary that:
  (a) There isn't electrical power on the airplane
  (b) The system is safe
  (c) Access is available
(2) Position the audio panel on the instrument panel.
(3) Connect the electrical connectors (Refer to 21-00-00).
(4) Remove the tags from the electrical connectors.
(5) Install and tighten the securing screws (1).

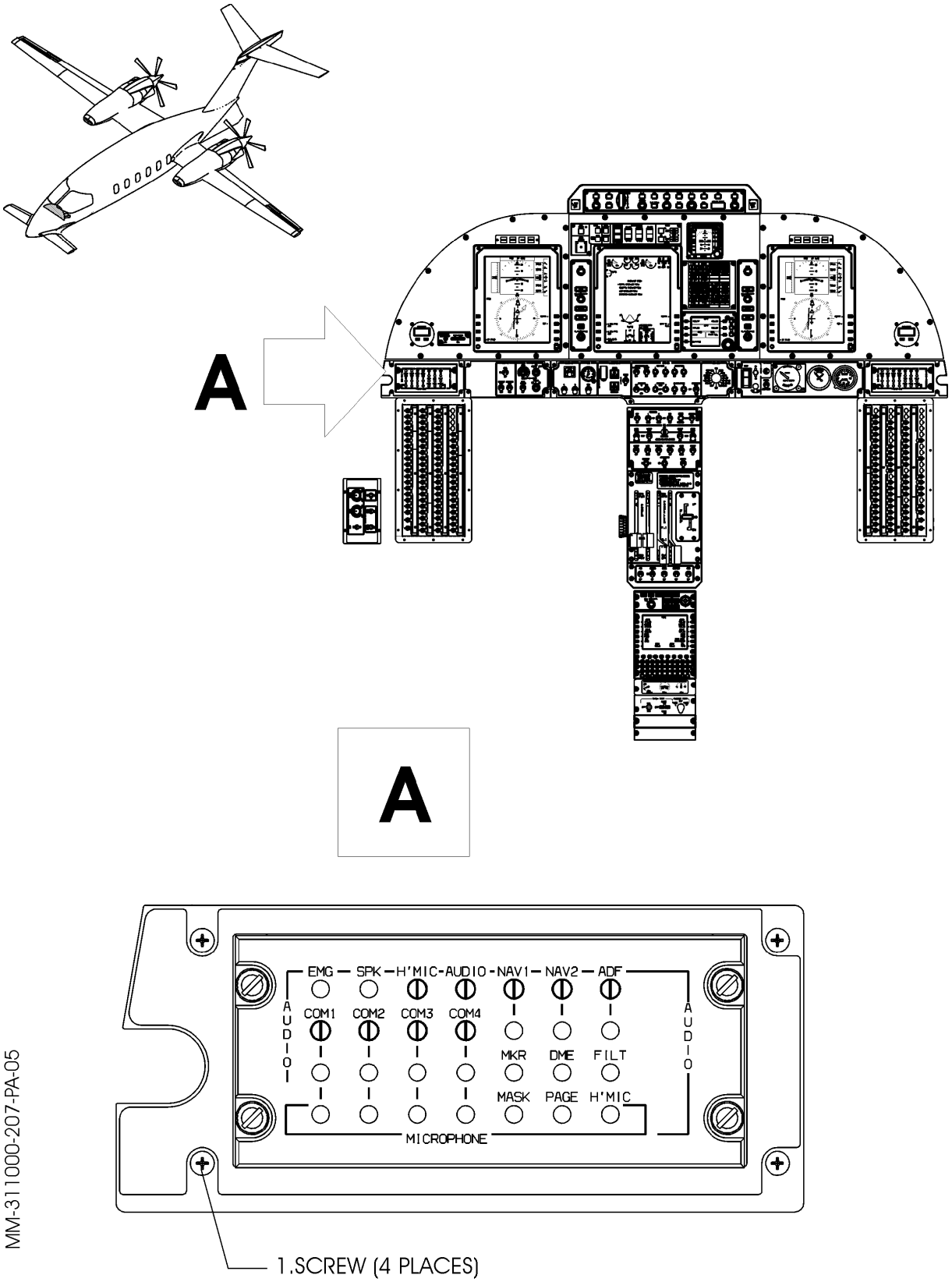

Fig. 207 - Pilot Audio Panel - Removal/Installation

16. Master Control Panel - Removal (Ref. to Fig.208)

A. Referenced Information

Maintenance Manual Chapter 21-00-00

B. Procedure

(1) Remove the electrical power (Rel. 24-00-00)
(2) Remove the screws (1) that securing the Master Control Panel to the structure.
(3) Ease the Master Control Panel away from the center pedestal structure.
(4) Tag all electrical connectors.
(5) Disconnect all electrical connectors
(6) Put blanking caps on all the electrical connectors.

17. Master Control Panel - Installation (Ref. to Fig.208)

A. Referenced Information

Maintenance Manual Chapter 21-00-00

B. Procedure

(1) Make sure, as necessary that:
  (a) There isn't electrical power on the airplane
  (b) The system is safe
  (c) Access is available
(2) Remove the blanking caps from all the electrical connectors.
(3) Connect all electrical connectors on the Master Control Panel.
(4) Position the Master Control Panel on the center pedestal structure.
(5) Insert and tightening the securing screws(1) that assure the MCP to the structure.
(6) Remove the safety tags and close the applicable circuit breakers.

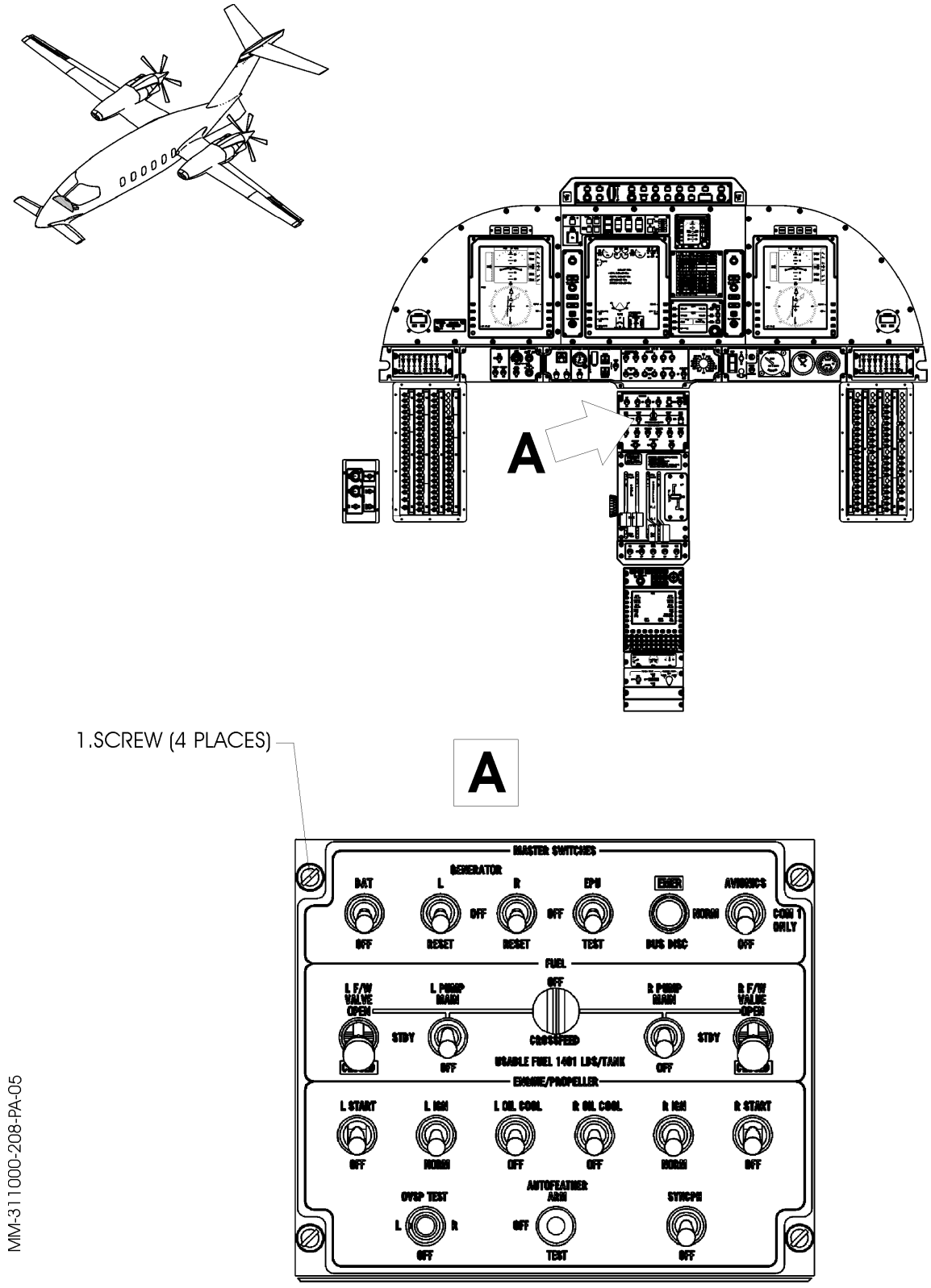

Fig.208 - Master Control Panel Removal / Instl.

18. Control Cursor Panel- Removal (Ref. to Fig.209)

A. Referenced Information

Maintenance Manual Chapter 21-00-00

B. Procedure

(1) Remove the electrical power (Rel. 24-00-00)
(2) Remove the screws (1) that securing the Control Cursor Panel to the structure.
(3) Ease the Control Cursor Panel away from the center pedestal's structure.
(4) Tag all electrical connectors.
(5) Disconnect all electrical connectors
(6) Put blanking caps on all the electrical connectors.

19. Control Cursor Panel-- Installation (Ref. to Fig.209)

A. Referenced Information

Maintenance Manual Chapter 21-00-00

B. Procedure

(1) Make sure, as necessary that:
  (a) There isn't electrical power on the airplane
  (b) The system is safe
  (c) Access is available
(2) Remove the blanking caps from all the electrical connectors.
(3) Connect all electrical connectors on the Control Cursor Panel .
(4) Position the Control Cursor Panel on the center pedestal structure.
(5) Insert and tightening the securing screws(1) that assure the CCP to the structure.
(6) Remove the safety tags and close the applicable circuit breakers.

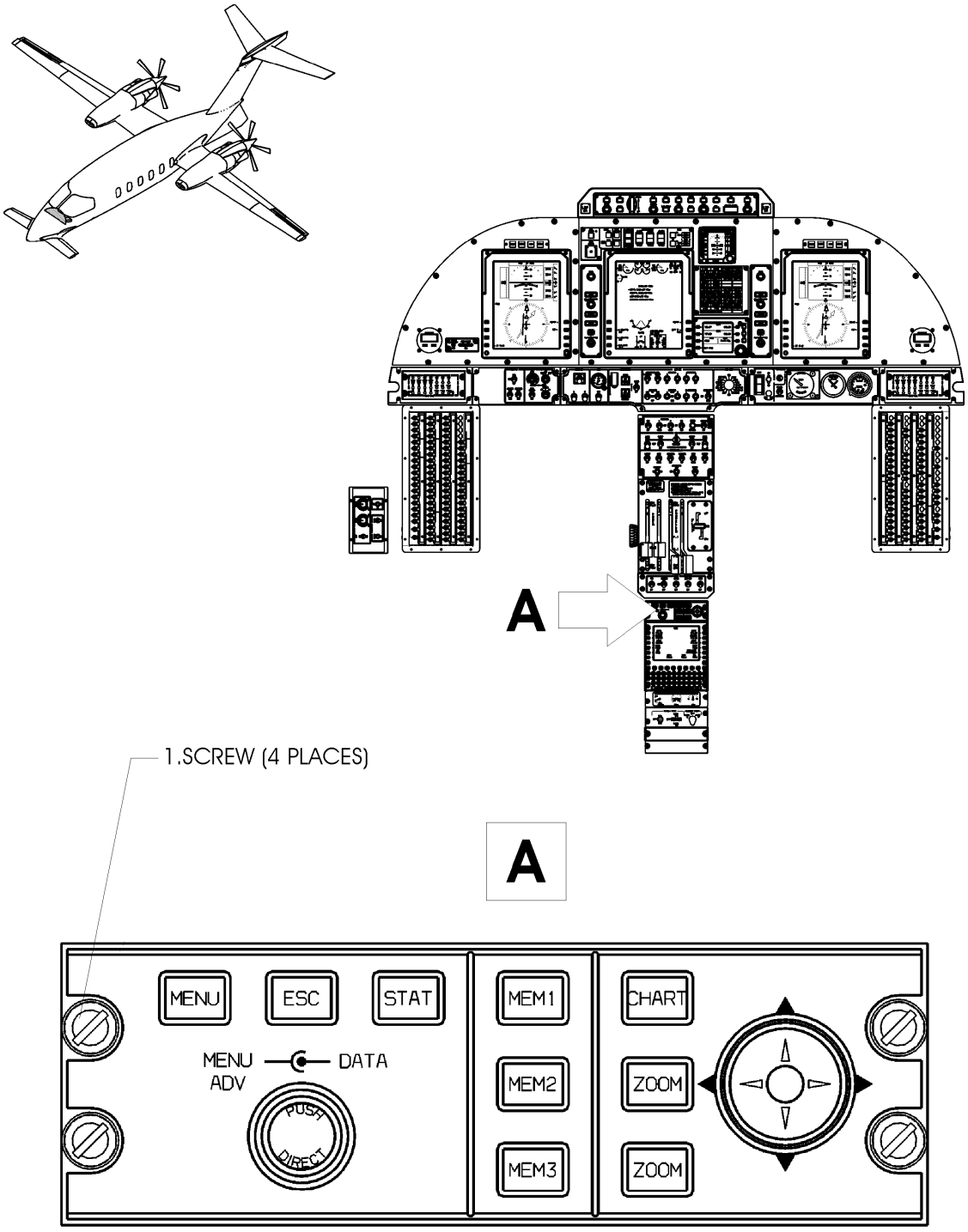

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Fig. 209 - Cursor Control Panel - Removal/Installation

20. Ground Test/Refuel Panel - Removal (Ref. to Fig. 210)

A. Procedure

(1) Open, tag and safety these circuit breakers:

Baggage Compartment CB Panel
REFUEL
GRD TEST PANEL

(2) Get access to ground test/refuel panel.
(3) Remove the two screws (1) securing the panel (3) in position.
(4) Carefully move the panel away from the structure so that the electrical connector can be disconnected.
(5) Disconnect the electrical connector and remove the panel.

21. Ground Test/Refuel Panel - Installation (Ref. to Fig. 210)

A. Referenced Information

Maintenance Manual Chapter 12-10-08
Maintenance Manual Chapter 79-30-00

B. Procedure

(1) Make sure that the circuit breakers:

REFUEL
GRD TEST PANEL

are safetied and tagged.

(2) Position the panel so that the electrical connector can be connected.
(3) Connect the electrical connector.
(4) Install the panel (3) in position.
(5) Install the two screws (1) and tighten.
(6) Remove the safety tags and close these circuit breakers:

Baggage Compartment CB Panel
REFUEL
GRD TEST PANEL

(7) Do the following ground test/refuel panel test (Ref. to Fig. 210)

WARNING: ON THE AIRPLANE EQUIPPED WITH THE SIRIO PANEL UPGRADED GROUND TEST/REFUEL PANEL (MODIFICATION N° 80-467 OR SERVICE BULLETIN N° 80-0194 EMBODIED), IF THE L OR R ENG OIL ANNUNCIATOR LIGHT IS FLASHING WHILE THE GROUND TEST SWITCH IS HELD IN THE SYS POSITION, A REAL CHIP DETECTION CONDITION OCCURS IN THE RELATED ENGINE OIL.

HAVE AN IMMEDIATE ENGINE MAINTENANCE CHECK AS PER THE APPLICABLE ENGINE MANUAL.
FOR MORE INFORMATION REFER TO CHAPTERS 12-10-08 AND 79-30-00.

	Action	Result
(a)	Make sure that these circuit breakers are closed: Baggage Compartment CB Panel REFUEL GRD TEST PANEL	
(b)	Open the ground test/refuel panel door 272A.	
(c)	Set and hold the GROUND TEST switch (2) in the LAMP position.	Four red and two amber annunciators come ON. Burnt out bulbs should be replaced before flight.
(d)	Set and hold the GROUND TEST switch (2) in the SYST position.	The following annunciators come ON: – L ENG OIL – R ENG OIL – HYD LEVEL – HYD FILTER If any of these annunciators stay OFF during the test it indicates a fault in the monitoring system circuit. Find and correct the fault.
(e)	Release the GROUND TEST switch (2).	The switch returns to the center (OFF) position.

NOTE: If when the GROUND TEST/REFUEL panel is opened one or both L ENG OIL, R ENG OIL annunciators is ON, replenish the engine oil as required (Ref. MM 20-00-00) to cause annunciator(s) to go OFF. If the HYD LEVEL annunciator is ON, this indicates low hydraulic fluid level and if the HYD FILTER annunciator is ON this indicates a clogged hydraulic filter. Both conditions must be corrected before flight.

(f)	Close the ground test/refuel panel door.	

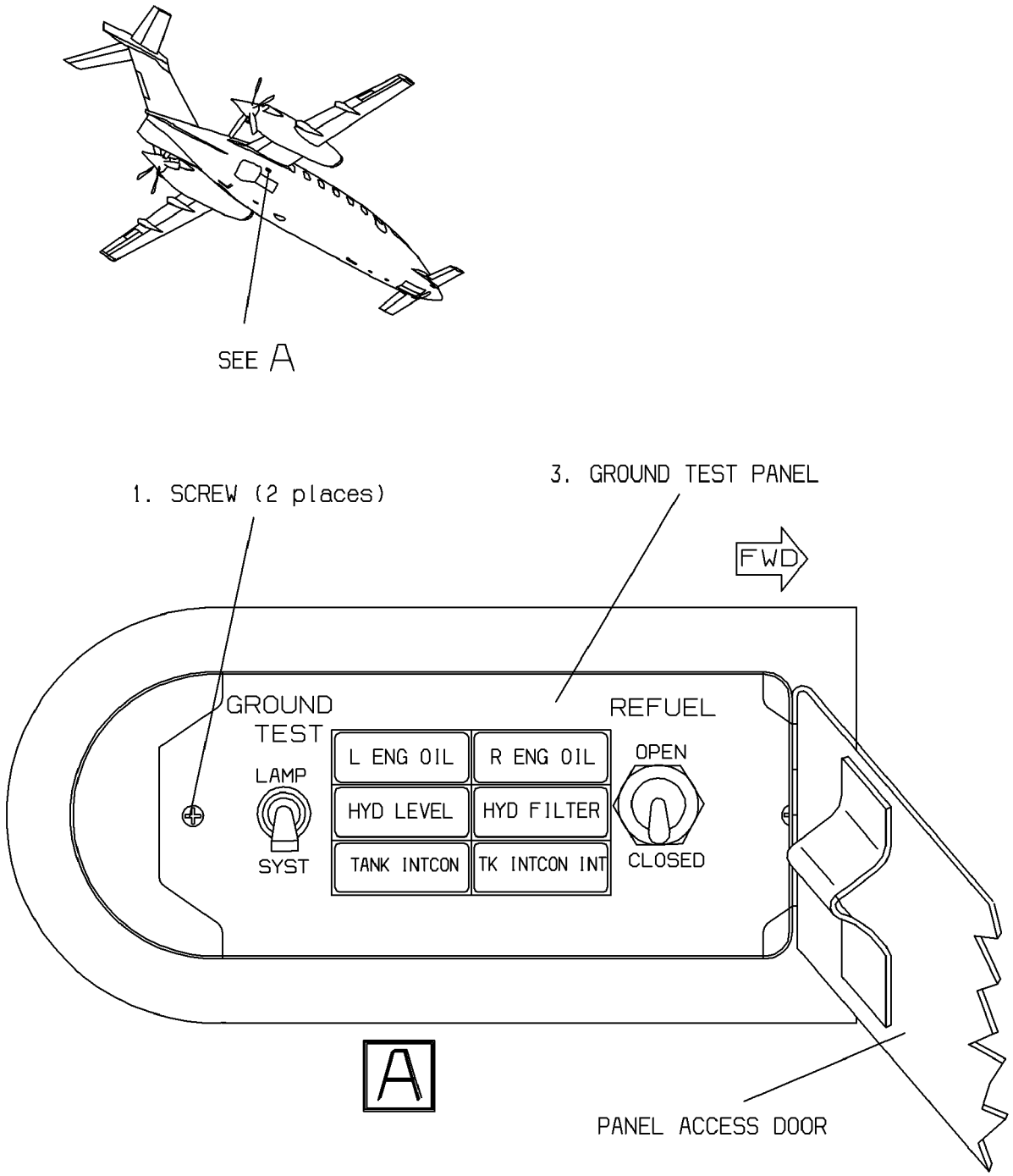

Fig. 210 - Ground Test/Refuel Panel

INSTRUMENTS AND CONTROL PANELS - ADJUSMENT/TEST

1. Display Control Panels - Ground Check

A. Procedure

(1) Check that DCP 1 and DCP 2 on the MFD in the Maintenance Section operate correctly.

(2) Check that PFD 1 and PFD 2 on the MFD in the Maintenance Section operate correctly.

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INSTRUMENTS AND CONTROL PANELS - DESCRIPTION AND OPERATION

1. General Ref. Fig. 1)

The instrument and control panels are divided in: Pilot instrument panel, Pilot control Panel, Pilot audio panel, Central instrument panel, Central control panel, Copilot instrument panel, Copilot control panel, Copilot audio panel.

A. Pilot Instrument Panel comprises:

(1) Primary Flight Display
(2) Master Warning Control Panel
(3) Emergency Location Transmitter (Ref. 25-00-00)
(4) Chronometer (Ref. 31-10-00)

B. Pilot Control Panel comprises:

(1) Cooling System Control Switch (Ref. 21-00-00).
(2) Heating System Control Switch (Ref. 21-00-00).

C. Pilot Audio Control Panel .

D. Central instrument panel comprises:

(1) Multifunctional Display
(2) Rh & Lh Display Control Panel
(3) Warning Caution Annunciator
(4) Radio Tuning Unit (Ref. 34-00-00)
(5) Stand-by Gyro (Ref. 24-00-00)
(6) Reversionary Miscellaneous Panel

E. Central Control Panel Comprises:

(1) System Control Panel
(2) Anti-ice Control Panel
(3) Landing Gear Control Ppanel
(4) Bleed Air Control Panel
(5) Hydraulic Control Panel

F. Copilot Instrument Panel Comprises:

(1) Primary Flight Displayl
(2) Master Warning Control Panel
(3) Chronometer

G. Copilot Control Panel comprises:

(1) Cabin Pressurization Panel (Ref. 21-00-00).

H. Copilot audio control panel.

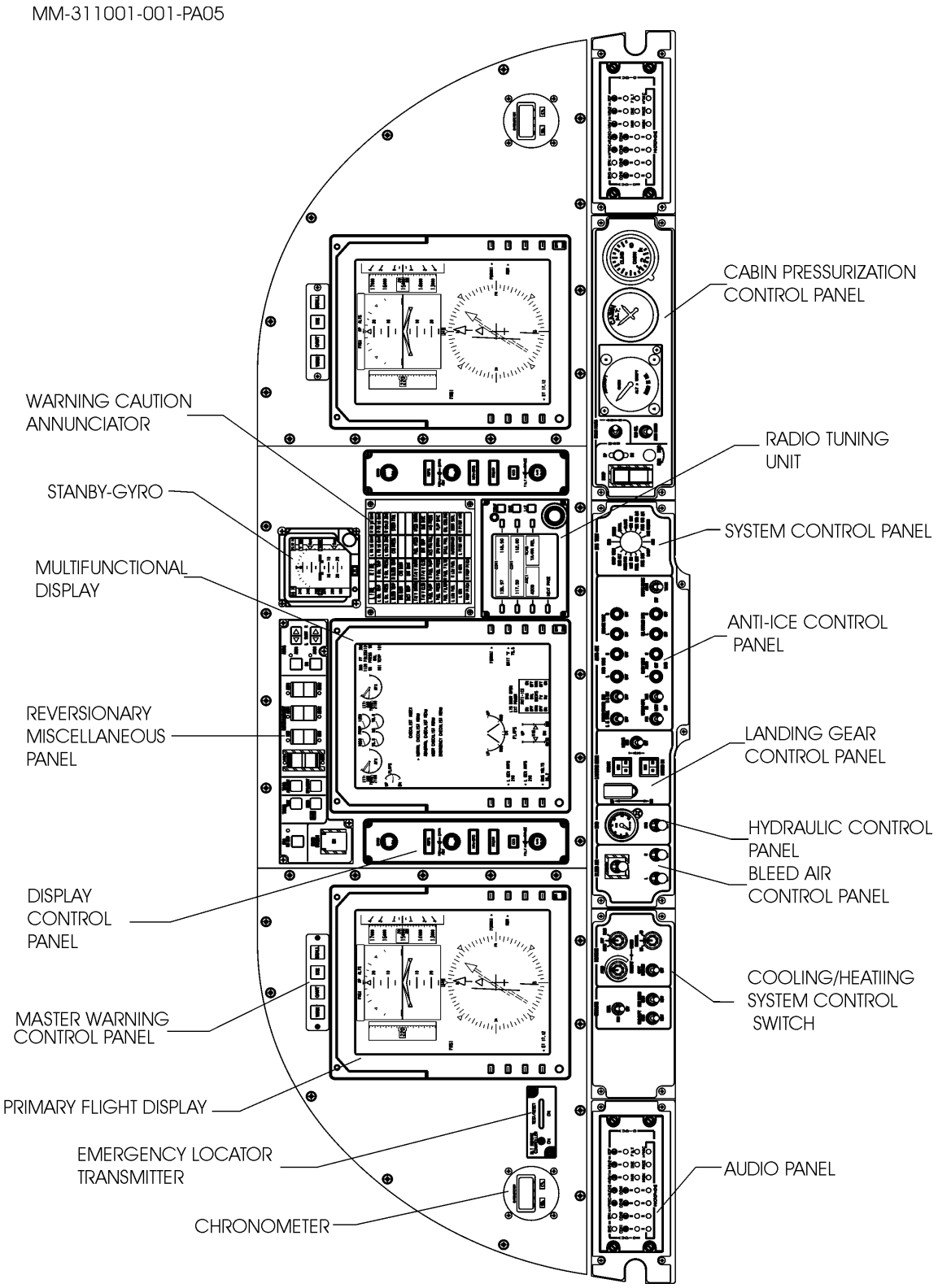


Fig. 1 - Instruments & Ctrl. Panels

INSTRUMENTS AND CONTROL PANELS - MAINTENANCE PRACTICES

1. General

A. The Maintenance Practices for the Instrument and Control Panels are as follows:

- Rh & Lh Primary Flight Display - Removal/Installation
- Rh & Lh Master Warning Control Panel - Removal/Installation
- Multifunctional Display - Removal/Installation
- Rh & Lh Display Control Panel - Removal/Installation
- Warning Caution Annunciator - Removal/Installation
- Reversionary Miscellaneous Panel - Removal/Installation

B. The instrument and control panels are located in the Flight Compartment. . Primary Flight Display.

C. The Multifunction Display is equipped with graphic capabilities as well as Ethernet communications.

2. Primary Flight Display - Removal (Ref. to Fig. 201)

A. Fixtures, Test and Support Equipment

Blanking Caps	Not Specified

B. Referenced Information

Maintenance Manual Chapter 20-00-00

NOTE: this procedure is applicable to MFD and both Pilot and Copilot PFD removals.

CAUTION: BEFORE EASE THE DISPLAY ASSURE THAT THE CONTROL WHEEL ARE IN ZERO POSITION.

(1) Remove the electrical power (Ref. cap.24-00-00).
(2) Loose the screws (1) securing the Primary Flight Display to the Pilot panel.

CAUTION: PROTECT THE INSTRUMENT FACES.

(3) Pull the handle until the handle's hook disengaged the pins on the structurel
(4) Slide out the instrument panel away from the Pilot panel.
(5) Tag all electrical connectors.
(6) Disconnect the electrical connectors from the rear of the instruments (Refer to 20-00-00).
(7) Put blanking caps on all the electrical connectors.
(8) Remove attaching parts.

3. Primary Flight Display - Installation (Ref. to Fig. 201)

A. Referenced Information

Maintenance Manual Chapter 20-00-00

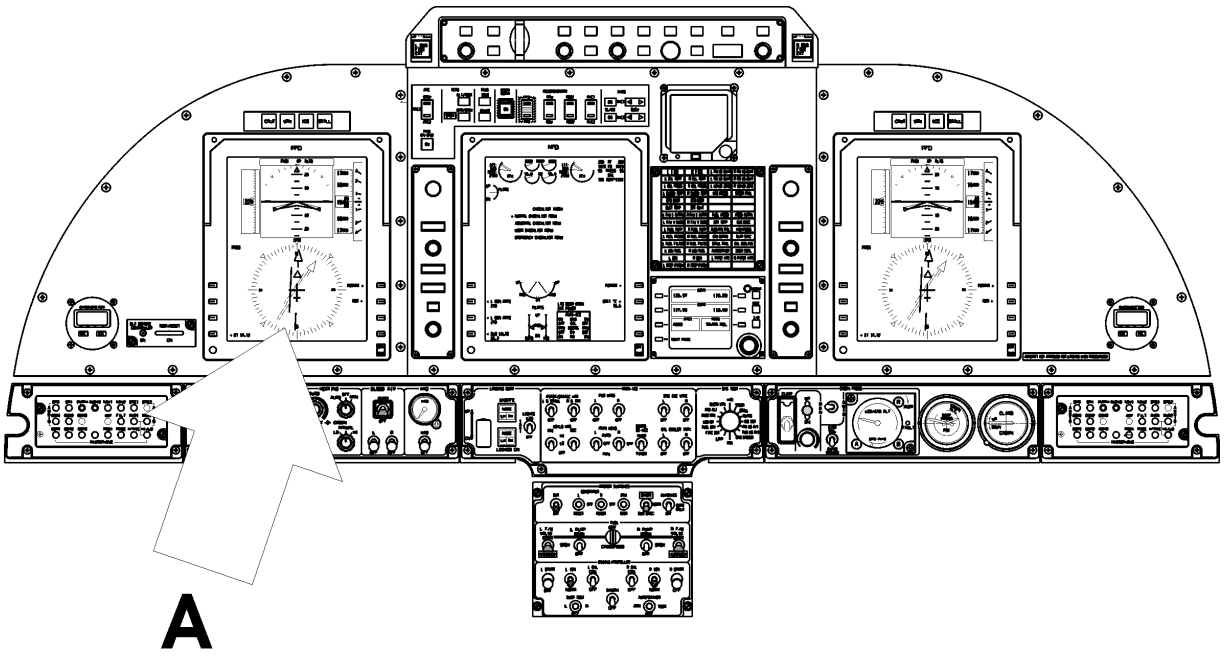
NOTE: this procedure is applicable to MFD and both Pilot and Copilot PFD installations

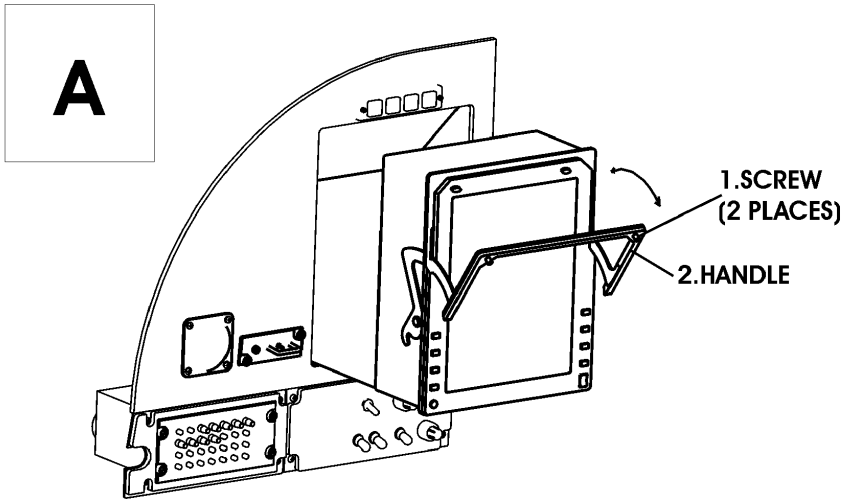
B. Procedure

(1) Make sure, as necessary that:
  (a) There isn't electrical power on the airplane
  (b) The system is safe
  (c) Access is available
(2) Remove the caps from the electrical connectors.

CAUTION: PROTECT THE INSTRUMENT FACES.

(3) Install the attaching parts on the instrument panel.
(4) Connect the electrical connectors to the instruments (Refer to 20-00-00).
(5) Place in its own position the Primary Flight Display on the Pilot panel.
(6) Push the handle that secure the display to the panel.
(7) Tightening the screw that securing the handle in its own position.
(8) Remove the safety tags.





MM-311001-201-PA-05

Fig. 201 - PFD Pilot Panel - Removal/Installation

4. Master Warning Control Panel - Removal (Ref. to Fig. 202)

A. Fixtures, Test and Support Equipment

Blanking Caps	Not Sepcified

B. Referenced Information

Maintenance Manual Chapter 20-00-00

NOTE: this procedure is applicable to both Pilot and Copilot MWCP Removals

C. Procedure

(1) Remove the electrical power (Ref. cap.24-00-00).
(2) Remove the screws (1) securing the MWCP to the Pilot panel.

CAUTION: PROTECT THE INSTRUMENT FACES.

(3) Ease the MWCP away from the Pilot panel.
(4) Tag all electrical connectors.
(5) Put blanking caps on all the electrical connectors and line ends.
(6) Remove attaching parts and instruments from Pilot panel.

5. Master Warning Control Panel - Installation (Ref. to Fig. 202)

A. Referenced Information

Maintenance Manual Chapter 20-00-00
Maintenance Manual Chapter 34-11-00

NOTE: this procedure is applicable to both Pilot and Copilot MWCP intallations.

B. Procedure

(1) Make sure, as necessary that:
  (a) There isn't electrical power on the airplane
  (b) The system is safe
  (c) Access is available
(2) Remove the caps from the electrical connectors.
(3) Install the instruments and attaching parts on the instrument panel.
(4) Connect the electrical connectors (Refer to 20-00-00).
(5) Remove the tags from the electrical connectors.
(6) Position the MWCP on the Pilot panel and insert and tighten the securing screws (1).
(7) Remove the safety tags .

6. Master Warning Control Panel - Operational Check

A. Procedure

(1) Make sure electrical power is available (Refer to 24-00-00

(2) Set the Battery Switch to ON and check that the WRN and CAUT Lights, located on the Master Warning Control Panel, comes ON.

(3) Position the SYS TEST Selector to ICE DET, push the pushbutton and check that the ICE Light, located on the Master Warning Control Panel, comes ON.

(4) Position the SYS TEST Selector to STALL, push the pushbutton and check that the STALL and CAUT Lights, located on the Master Warning Control Panel, comes ON.

(5) Position the SYS TEST Selector to LAMP, push the pushbutton and check that the MASTER WARNING and MASTER CAUTION Lights, located on the Master Warning Control Panel, comes ON.

(6) Set the Battery switch to OFF.

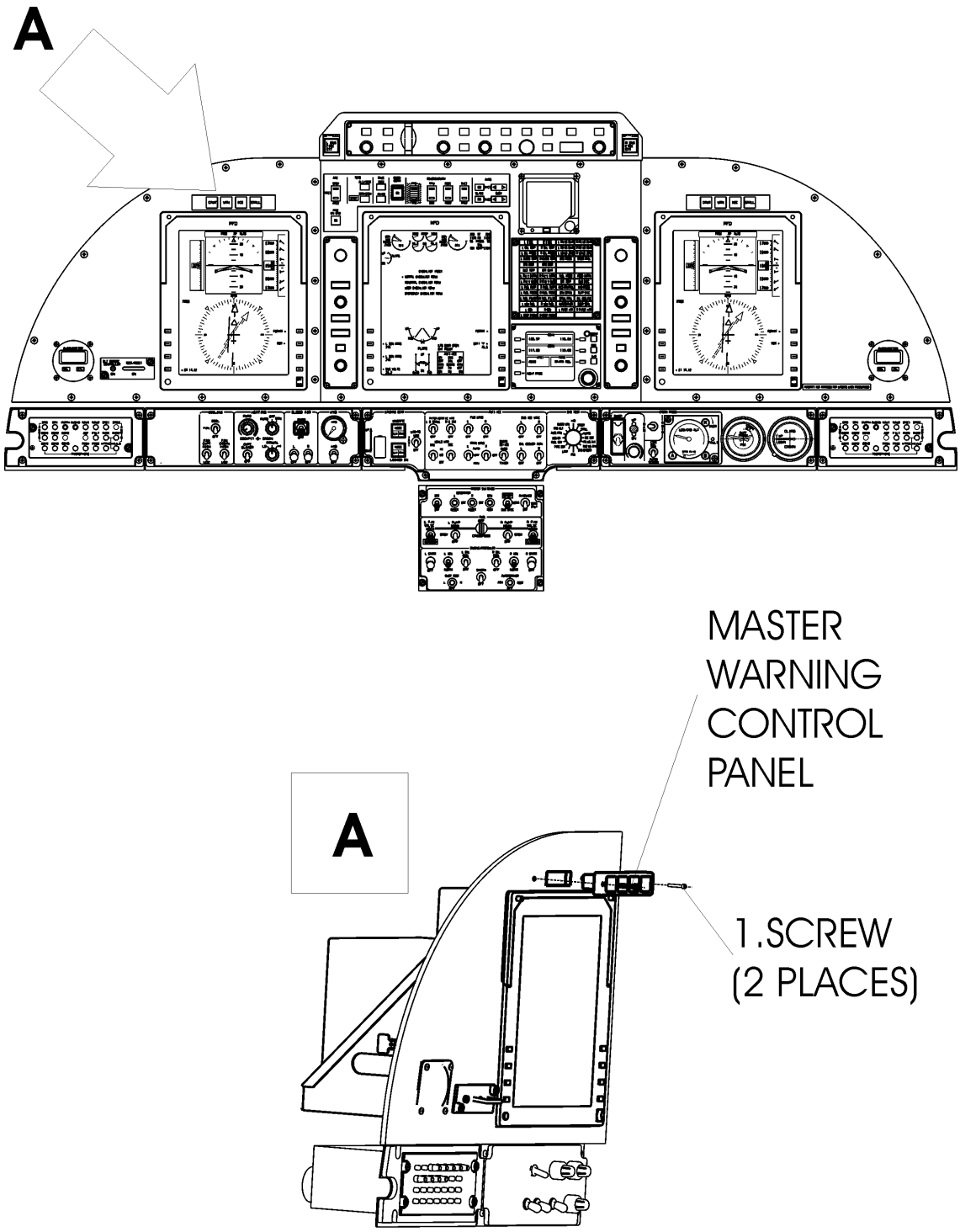


Fig. 202 - Master Warning Control Panel- Removal/Installation

7. MultiFunctional Display - Removal

Fixtures, Test and Support Equipment

Blanking Caps	Not Specified

A. Referenced Information

Maintenance Manual Chapter 20-00-00

B. Procedure

(1) For Removal procedure Ref. this Section Par.2.

8. MultiFunctional Display - Installation

A. Referenced Information

Maintenance Manual Chapter 20-00-00 Procedure

B. Procedure

(1) For Installationl procedure Ref. this Section Par.2.

9. Display Control Panel - Removal (Ref. to Fig. 203)

A. Fixtures, Test and Support Equipment

Blanking Caps	Not Specified

B. Referenced Information

Maintenance Manual Chapter 20-00-00

NOTE: this procedure is applicable to both Lh and Lh DCP intallations

C. Procedure

(1) Remove the electrical power (Ref. cap.24-00-00).
(2) Remove the screws (1) that securing the Display Control Panel to the Central Panel.
(3) Ease the DCP away from the structure.
(4) Disconnect the electrical terminals and electrical connectors (Refer to 20-00-00).
(5) Put blanking caps on the electrical connectors.
(6) Tag all electrical connectors.

10. Display Control Panel- Installation (Ref. to Fig. 203)

A. Referenced Information

Maintenance Manual Chapter 20-00-00

B. Procedure

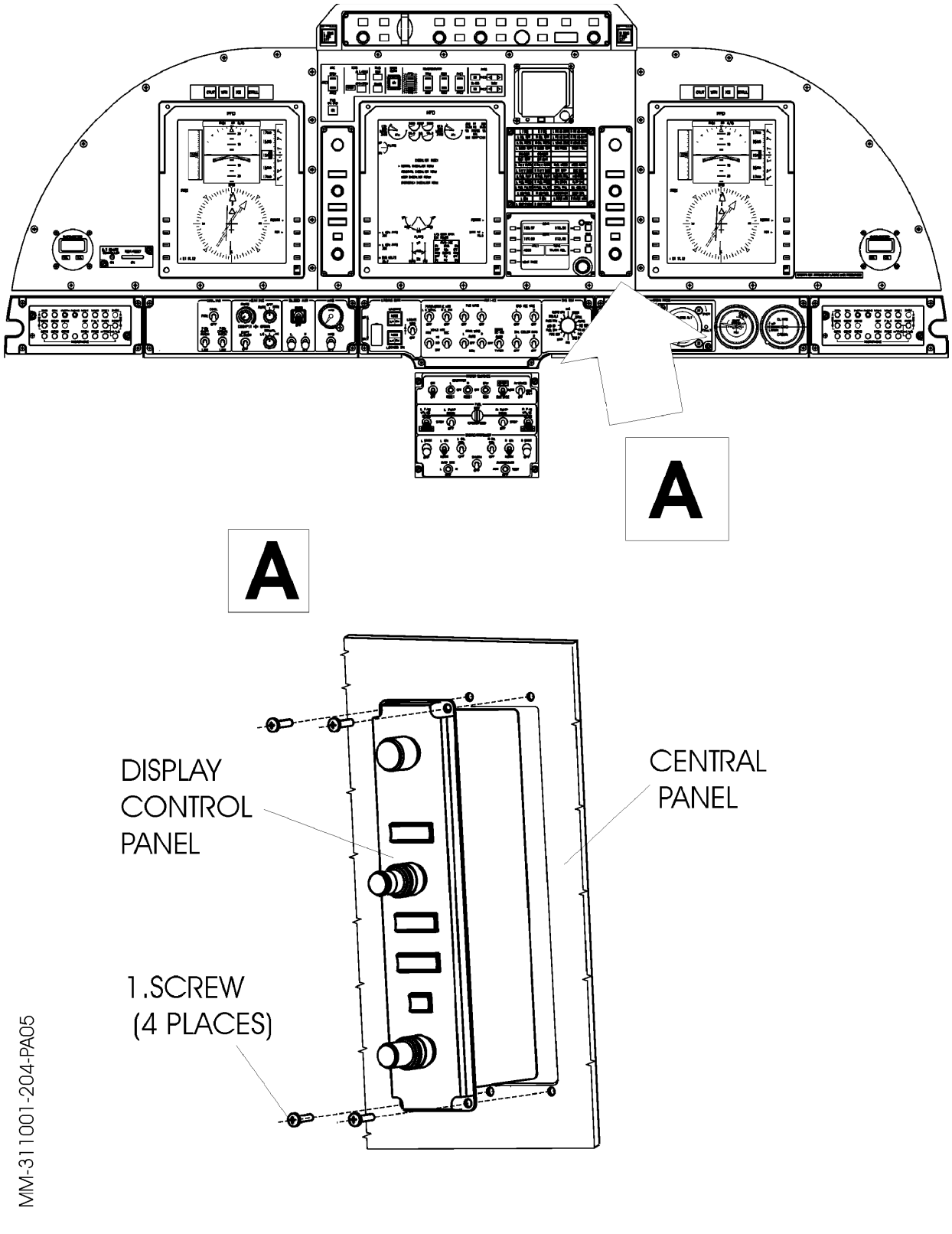


Fig. 203 - Display Control Panel - Removal/Installation

NOTE: this procedure is applicable to both Lh and Lh DCP intallations

(1) Make sure, as necessary that:
  (a) There isn't electrical power on the airplane
  (b) The system is safe
  (c) Access is available
(2) Remove the caps from the electrical connectors.
(3) Connect the electrical connectors and terminals (Refer to 20-00-00).
(4) Position the DSP l on the Central Panel and insert and tighten the securing screws (1).
(5) Remove the safety tags and close the applicable circuit breakers.

11. Warning Caution Annunciator - Removal (Ref. to Fig. 204)

A. Fixtures, Test and Support Equipment

Blanking Caps	Not Specified

B. Referenced Information

Maintenance Manual Chapter 20-00-00

C. Procedure

(1) Remove the electrical power (Ref. cap.24-00-00).
(2) Remove the screws (1) securing the Warning Caution Annunciator to theCentral Panel.
(3) Ease the WCA away from the structure.
(4) Disconnect the electrical terminals and electrical connectors (Refer to 20-00-00).
(5) Put blanking caps on the electrical connectors.
(6) Tag all electrical connectors.

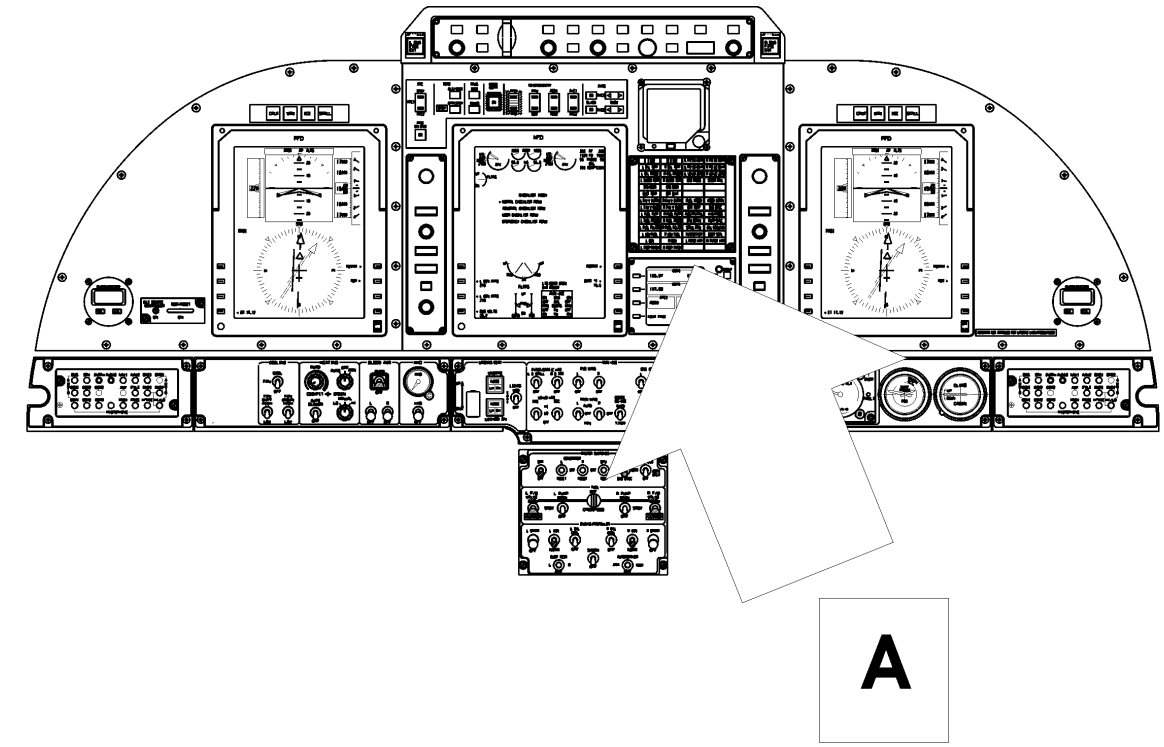
12. Warning Caution Annunciator - Installation (Ref. to Fig. 204)

A. Referenced Information

Maintenance Manual Chapter 20-00-00

B. Procedure

(1) Make sure, as necessary that:
  (a) There isn't electrical power on the airplane
  (b) The system is safe
  (c) Access is available
(2) Remove the caps from the electrical connectors.
(3) Connect the electrical connectors and terminals (Refer to 20-00-00).
(4) Position the WCA on the Central Panel and insert and tighten the securing screws (1).



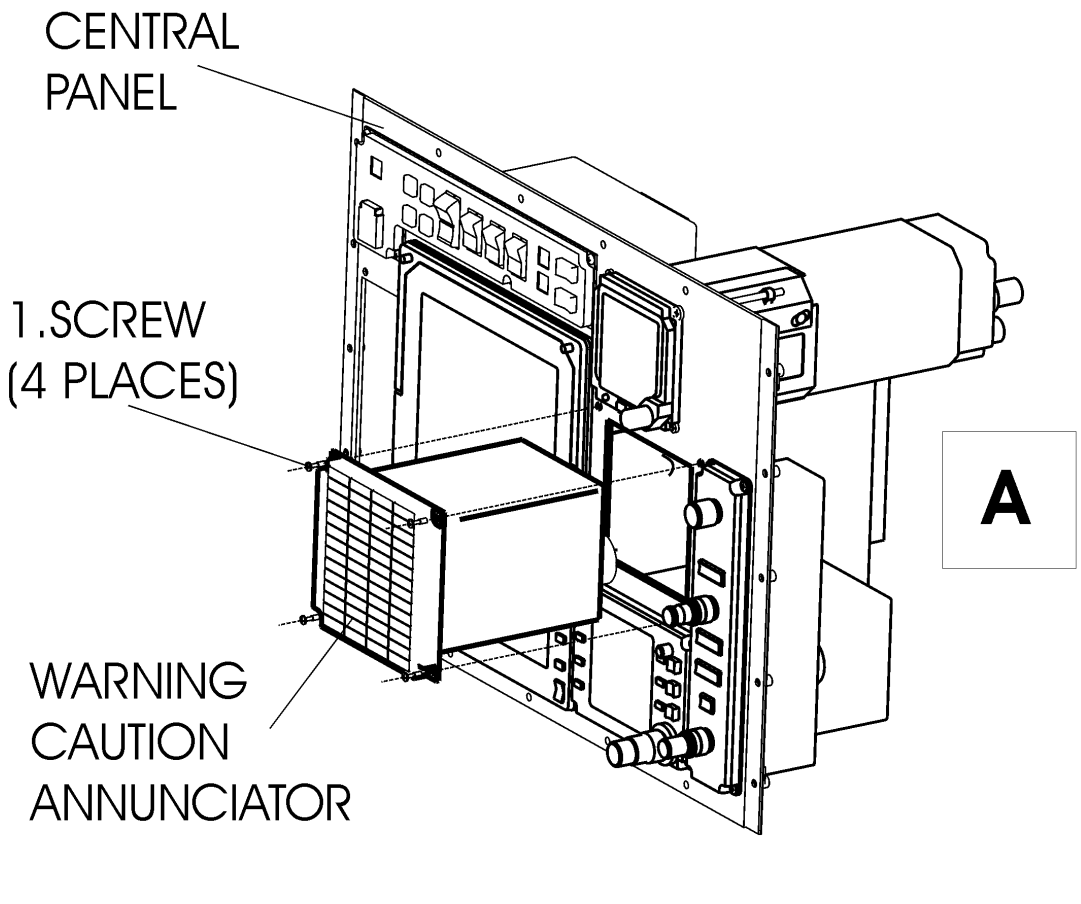


Fig. 204 - Warning Caution Annunciator - Removal/Installation

(5) Remove the safety tags and close the applicable circuit breakers.

13. Reversionary Miscellaneous Panel - Removal (Ref. to Fig. 205)

A. Fixtures, Test and Support Equipment

Blanking Caps	Not Specified

B. Referenced Information

Maintenance Manual Chapter 20-00-00

C. Procedure

(1) Remove the electrical power (Ref. cap.24-00-00).
(2) Remove the screws (1) securing the Reversionary Miscellaneous Panel to the Central Panel.
(3) Ease the RMP away from the structure.
(4) Disconnect the electrical terminals and electrical connectors (Refer to 20-00-00).
(5) Put blanking caps on the electrical connectors.
(6) Tag all electrical connectors.

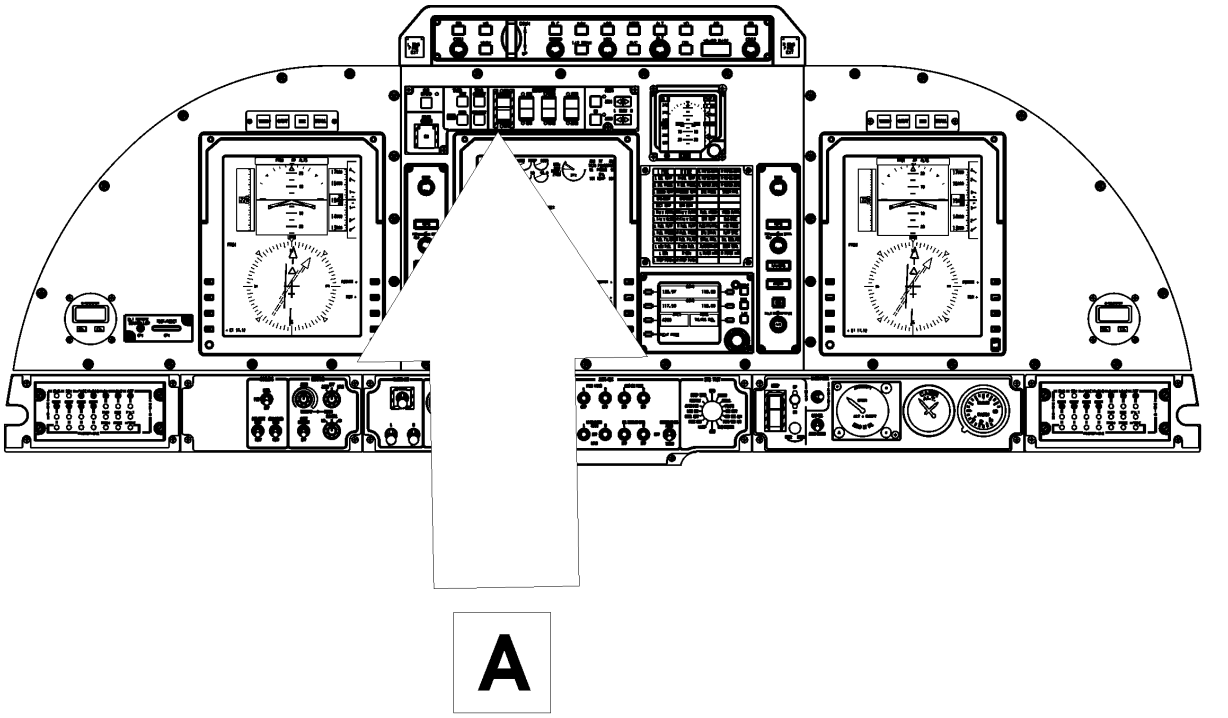
14. Reversionary Miscellaneous Panel - Installation (Ref. to Fig. 205)

A. Referenced Information

Maintenance Manual Chapter 20-00-00

B. Procedure

(1) Make sure, as necessary that:
(a) There isn't electrical power on the airplane
(b) The system is safe
(c) Access is available
(2) Remove the caps from the electrical connectors.
(3) Connect the electrical connectors and terminals (Refer to 20-00-00).
(4) Position the Reversionary Miscellaneous Panel on the panel and insert and tighten the securing screws (1).
(5) Remove the safety tags and close the applicable circuit breakers.



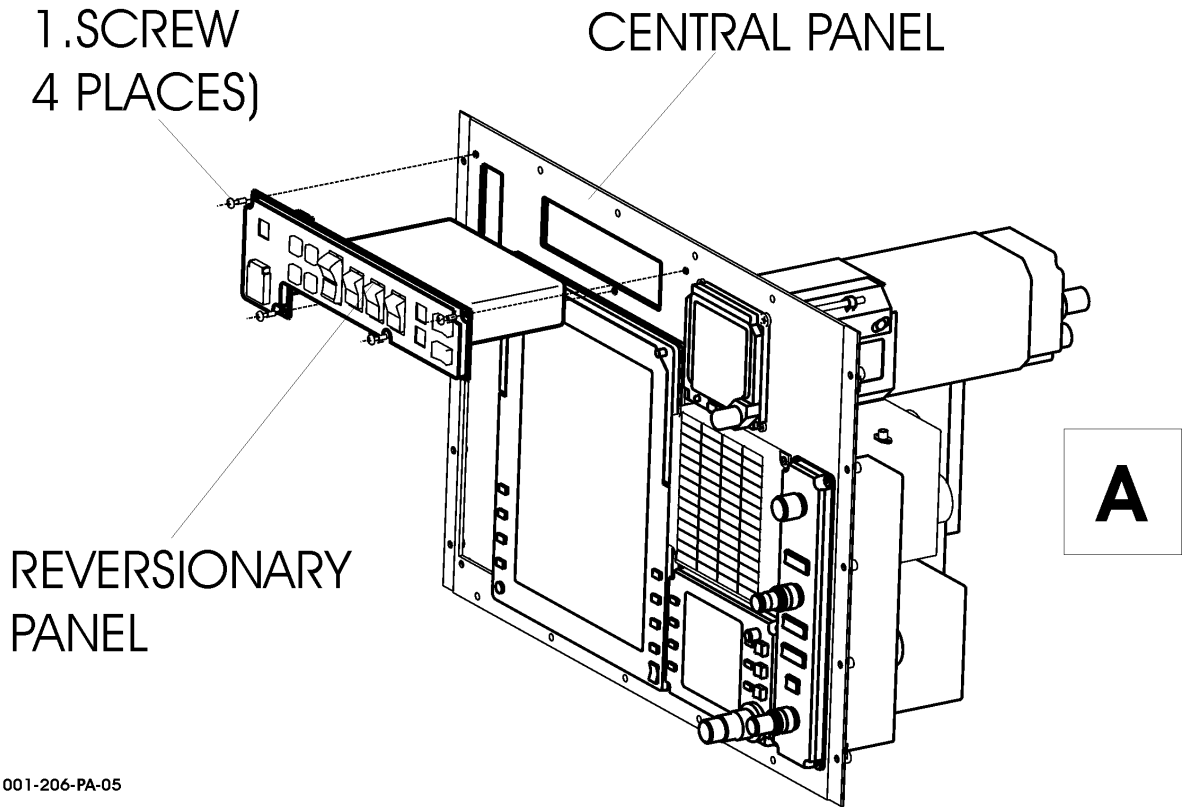


Fig. 205 - Reversionary Miscellaneous Panel - Removal/Installation

CENTRAL PEDESTAL - DESCRIPTION AND OPERATION

A. The center pedestal comprises (Fig.1)

- Master Switches (Ref. 27-00-00)
- Engines/Propellers Panel (Ref. 76-00-00)
- Flap Control (Ref. 27-00-00)
- Lights Panel (Ref. 33-00-00)
- Central Cursor Panel.
- Control Display Unit (Ref. 34-11-00)
- Trim Indicator Panel (Ref. 27-00-00)
- Trim Switch Panel (Ref. 27-00-00)

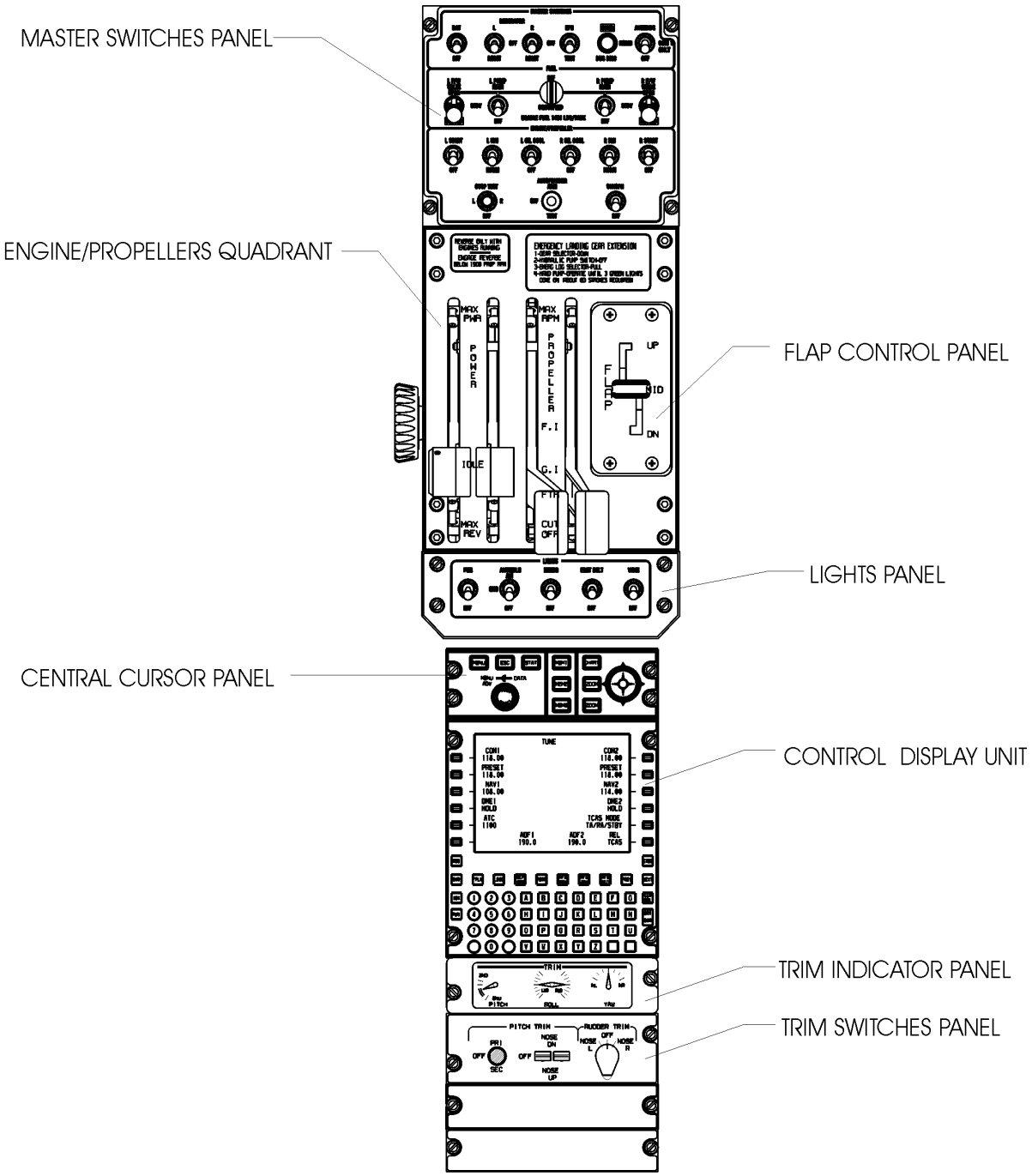


Fig. 1 - Center Pedestal Panels

GLARESHIELD - DESCRIPTION AND OPERATION

A. The Glareshield comprises (Fig.1):

- Flight Guidance System (Ref. 22-00-00)
- Fire Extinguisher Controls (Ref. 26-00-00)

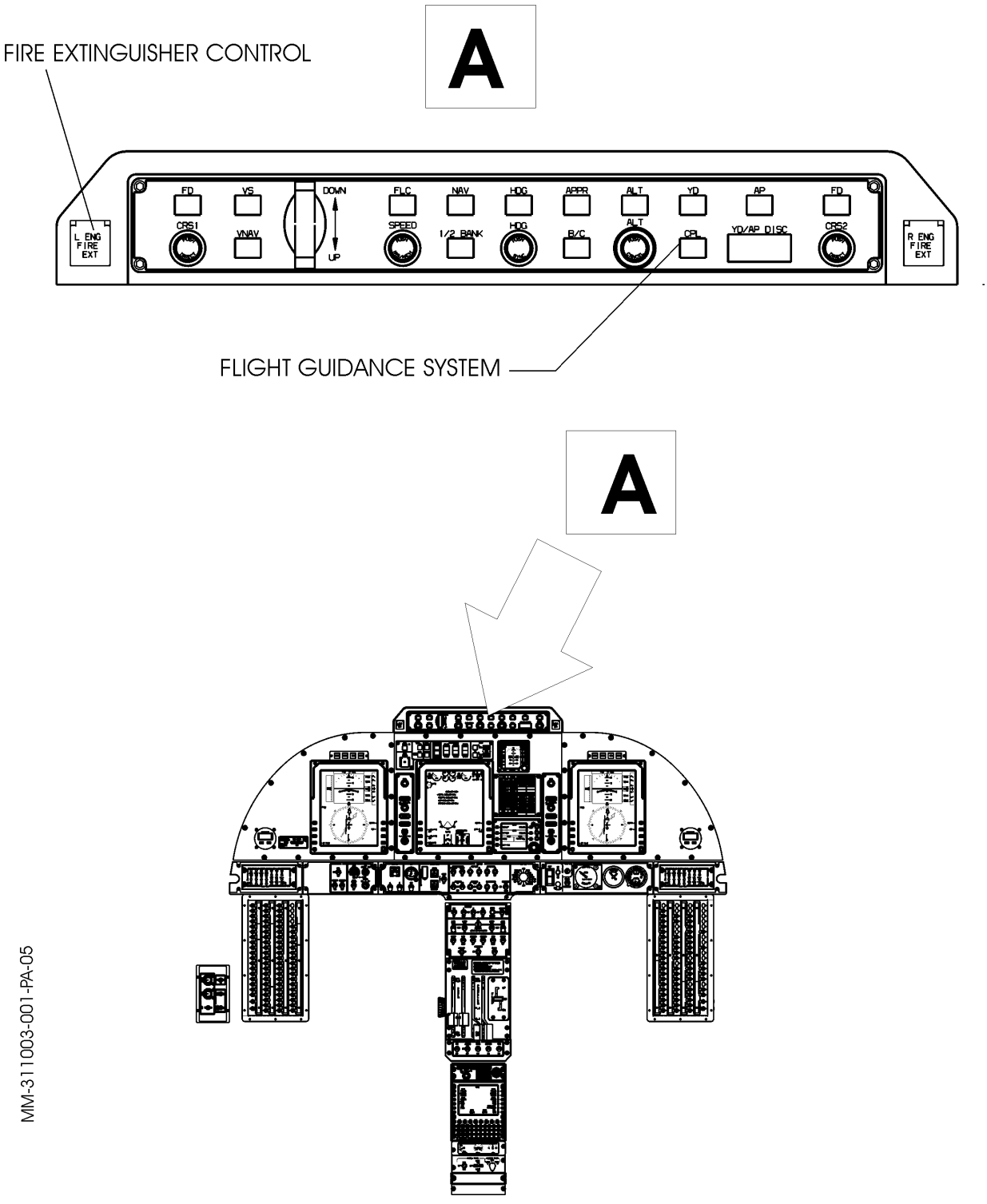


Fig. 1 - Glareshield

INDEPENDENT INSTRUMENTS - DESCRIPTION AND OPERATION

1. General

   A. Independent instruments are those instruments, units and components which are not related to specific systems.

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DIGITAL CLOCK - MAINTENANCE PRACTICES

1. General

WARNING: OBEY THE SAFETY PRECAUTIONS GIVEN IN 34-00-00.

A. This topics provides the following Digital Clock Maintenance Practices:

- Digital Clock - Removal
- Digital Clock - Installation
- Digital Clock - Adjustment/Test

B. The Digital Clock is installed in the LH Instrument Panel.

C. A second Digital Clock can be installed as optional equipment in the RH Instrument Panel.

2. Digital Clock - Removal (Ref. to Fig. 201)

A. Procedure

(1) Open, tag and safety the applicable circuit breakers.
(2) Remove the sixteen screws securing the RH instrument panel to the structure.
(3) Ease the RH instrument panel away from the structure.
(4) Get access to the rear of the panel and tag the digital clock electrical connectors.
(5) Disconnect the digital clock electrical connectors.
(6) Remove the battery from the digital clock.
(7) Remove the four screws (3) securing the digital clock (1) to the LH instrument panel (2).
(8) Remove the digital clock from the instrument panel.

3. Digital Clock - Installation (Ref. to Fig. 201)

A. Procedure

(1) Make sure that the applicable circuit breakers are open, tagged and safetied.
(2) Get access to the rear of the RH instrument panel and install the digital clock in the correct position.
(3) Install and tighten the four securing screws (3).
(4) Remove the tags from the digital clock electrical connectors.
(5) Connect the electrical connectors to the digital clock.
(6) Install the battery in the digital clock.
(7) Correctly position the LH instrument panel (2) and install the sixteen securing screws.
(8) Remove the safety tags and close the applicable circuit breakers.

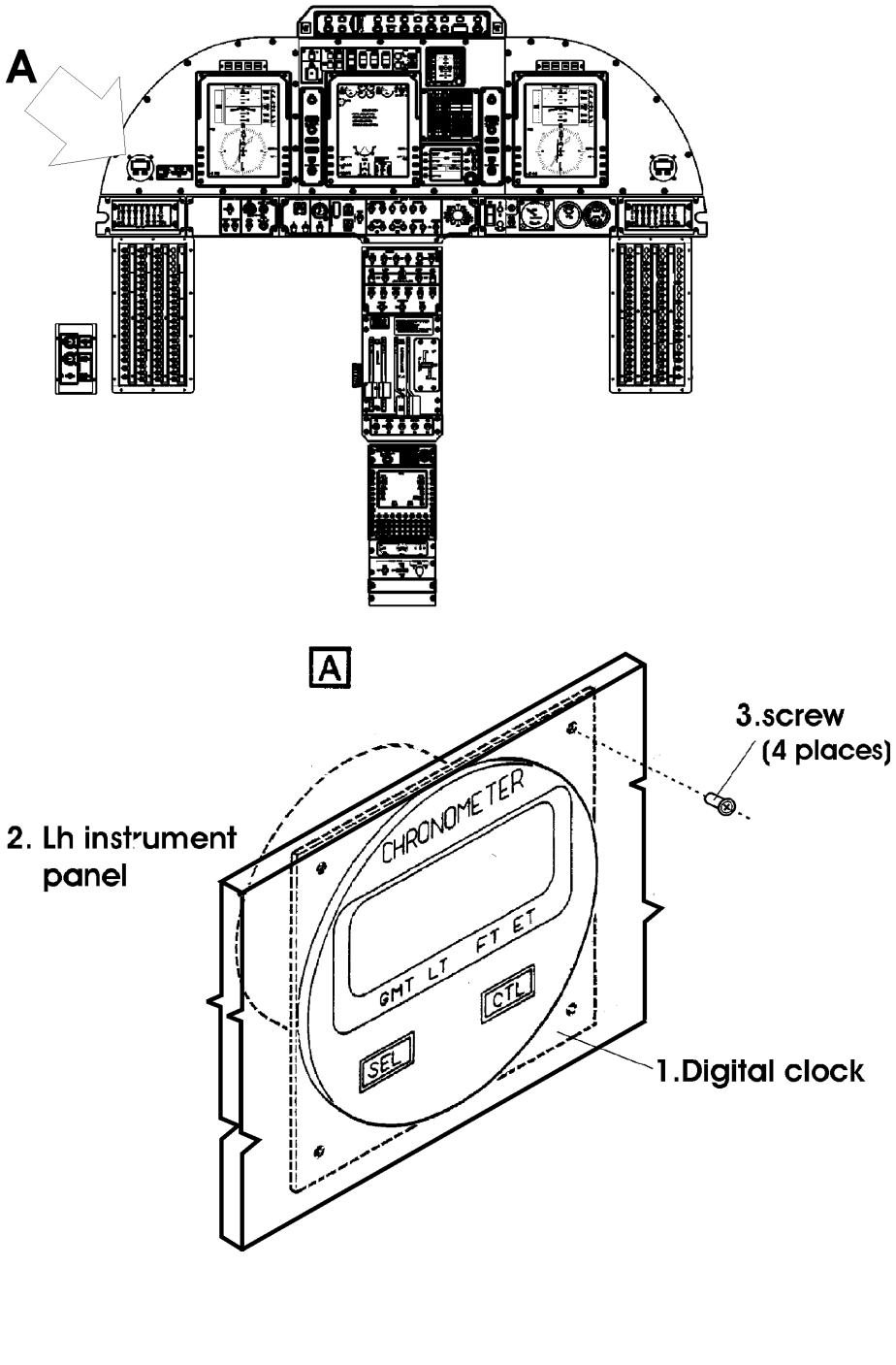

Fig. 201 - Digital Clock - Removal/Installation

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MAGNETIC COMPASS - MAINTENANCE PRACTICIES

1. General

WARNING: OBEY THE SAFETY PRECAUTIONS GIVEN IN 34-00-00.

A. This topics provides the following Magnetc Compass Maintenance Practices:

- Magnetic Compass - Removal
- Magnetic Compass - Installation
- Magnetic Compass - Adjustment / Test

B. The Magnetic Compass is installed between the windshields.

2. Magnetic Compass - Removal (Ref. Fig. 201)

A. Procedure

(1) Remove the two screws (1) that secure the Magnetic Compass (2) to the airplane structure between the windshields.
(2) Remove the Magnetic Compass.

3. Magnetic Compass - Installation (Ref. Fig. 201)

A. Procedure

(1) Install the two screws (1) that secure the Magnetic Compass (2) to the airplane structure between the windshields.
(2) Do a Magnetic Compass Test.

4. Magnetic Compass - Adjustment / Test

A. Procedure

(1) Position the airplane on the Approved Compass Adjustment Platform.
(2) The Reference line is the axis passing through the Main Wheel Centers.
(3) Rotate the airplane around its own vertical axis at 30 degrees steps and verify that the indication (reference line) coincides with the magnetic compass indication within 10% tolerance.

TEMPORARY REVISION NO. 130

To Chapter 31-22-00

This Temporary Revision is now considered a part of P. 180 Avanti II MAINTENANCE MANUAL

NOTE: Record the incorporation of this Temporary Revision on the RECORD OF TEMPORARY REVISIONS sheet at the front of the manual

Insert: MAINTENANCE MANUAL
Report: 180-MAN-0200-01105 Rev. B3 Sept.21/12
After Page 201

Reason for issue : **Procedure Update**
Magnetic Compass - Adjustment / Test

2. Magnetic Compass - Removal (Ref. Fig. 201)

A. Procedure

(1) Remove the two screws (1) that secure the Magnetic Compass (2) to the airplane structure between the windshields.
(2) Remove the Magnetic Compass.

3. Magnetic Compass - Installation (Ref. Fig. 201)

A. Procedure

(1) Install the two screws (1) that secure the Magnetic Compass (2) to the airplane structure between the windshields.
(2) Do a Magnetic Compass Test.

4. Magnetic Compass - Adjustment / Test

A. Fixture, Test and Support Equipment

Not Applicable

B. Consumable Materials

Not Applicable

C. Reference Information

Not Applicable

D. Procedure - (Avionics ON)

(1) Position the airplane in the APRON dedicated compass test area with the airplane nose toward North.

CAUTION: SWITCH ON A/I IMMEDIATELY BEFORE COMPASS READING, THEN SWITCH THEM OFF, TO AVOID DAMAGES (REFER TO CHAPTERS 30, 34, 56 - LIMITATIONS).

(2) Make sure that the airplane configuration is representative of
(3) ard flight configuration:
- Engines are running
- Both Starter Generators are switched ON
- Battery is switched ON
- A/I heaters are ON
- Windshield heaters are ON
- Other significant electrical loads (depending on A/C configuration) are active

(4) Read the Magnetic Compass indication and record the value in Table 1.
(5) Compute the error.

CAUTION: BEFORE CHANGING THE AIRPLANE NOSE DIRECTION, MAKE SURE THAT THE ENGINES ARE OFF.

(6) Repeat the step 2 to 4 by moving the airplane nose to face EAST, SOUTH, and WEST positions.

CAUTION: IF AFTER COMPENSATION IT IS NOT POSSIBLE OBTAIN AN ERROR LOWER THAN 10 DEG. FOR EACH OF THE FOUR AIRPLANE NOSE DIRECTIONS, THE MAGNETIC COMPASS MUST BE REPLACED.

(7) Compensate the Magnetic Compass error by turning the magnet knobs on compass body and distributing the errors on axes NORTH/SOUTH and EAST/WEST.

CAUTION: BEFORE CHANGING THE AIRCRAFT NOSE DIRECTION, MAKE SURE THAT THE ENGINES ARE OFF.

(8) Repeat the step 2 and 4, after compensation, moving the airplane nose to face intermediate directions spaced of 30 deg. , then compute the error in the Table 2 and fill in the Table 3.

E. Procedure - (Battery OFF)

(1) Position the airplane in the APRON dedicated compass test area with the airplane nose toward North.

(2) Make sure that:

- Engines are running
- Both Starter Generators are switched OFF
- Battery is switched OFF
- EPU is ON (Integrated Stand By instrument ON)

(3) Read the Magnetic Compass indication and insert the value in Table 4.

(4) Compute the error.

CAUTION: BEFORE CHANGING THE AIRPLANE NOSE DIRECTION, MAKE SURE THAT THE ENGINES ARE OFF.

(5) Repeat the step 2 to 4 by moving the airplane nose to face EAST, SOUTH, and WEST positions.

CAUTION: IF AFTER COMPENSATION IT IS NOT POSSIBLE OBTAIN AN ERROR LOWER THAN 10 DEG. FOR EACH OF THE FOUR AIRPLANE NOSE DIRECTIONS, THE MAGNETIC COMPASS MUST BE REPLACED.

(6) Compensate the Magnetic Compass error by turning the magnet knobs on compass body and distributing the errors on axes NORTH/SOUTH and EAST/WEST.

CAUTION: BEFORE CHANGING THE AIRPLANE NOSE DIRECTION, MAKE SURE THAT THE ENGINES ARE OFF.

(7) Repeat the step 2 and 4, after compensation, moving the airplane nose to face intermediate directions spaced of 30 deg. , then compute the error in the Table 5 and fill in the Table 6.

Table 1: Avionics ON

POSITION	REF	READING	ERROR
NORTH	0°		
EAST	90°		
SOUTH	180°		
WEST	270°		

Table 2: Data Recording - Avionics ON

POSITION	REF	READING	ERROR
NORTH	0°		
N-NE	30°		
E-NE	60°		
EAST	90°		
E-SE	120°		
S-SE	150°		
SOUTH	180°		
S-SW	210°		
W-SW	240°		
WEST	270°		
W-NW	300°		
N-NW	330°		

Table 3: Avionics ON

For	N	30°	60°	E	120°	150°
Steer						
For	S	210°	240°	W	300°	330°
Steer						
DATE:						AIRPATH

Table 4: Battery OFF

POSITION	REF	READING	ERROR
NORTH	0°		
EAST	90°		
SOUTH	180°		
WEST	270°		

Table 5: Data Recording - Battery OFF

POSITION	REF	READING	ERROR
NORTH	0°		
N-NE	30°		
E-NE	60°		
EAST	90°		
E-SE	120°		
S-SE	150°		
SOUTH	180°		
S-SW	210°		
W-SW	240°		
WEST	270°		
W-NW	300°		
N-NW	330°		

Table 6: Battery OFF

For	N	30°	60°	E	120°	150°
Steer						
For	S	210°	240°	W	300°	330°
Steer						
DATE:						AIRPATH

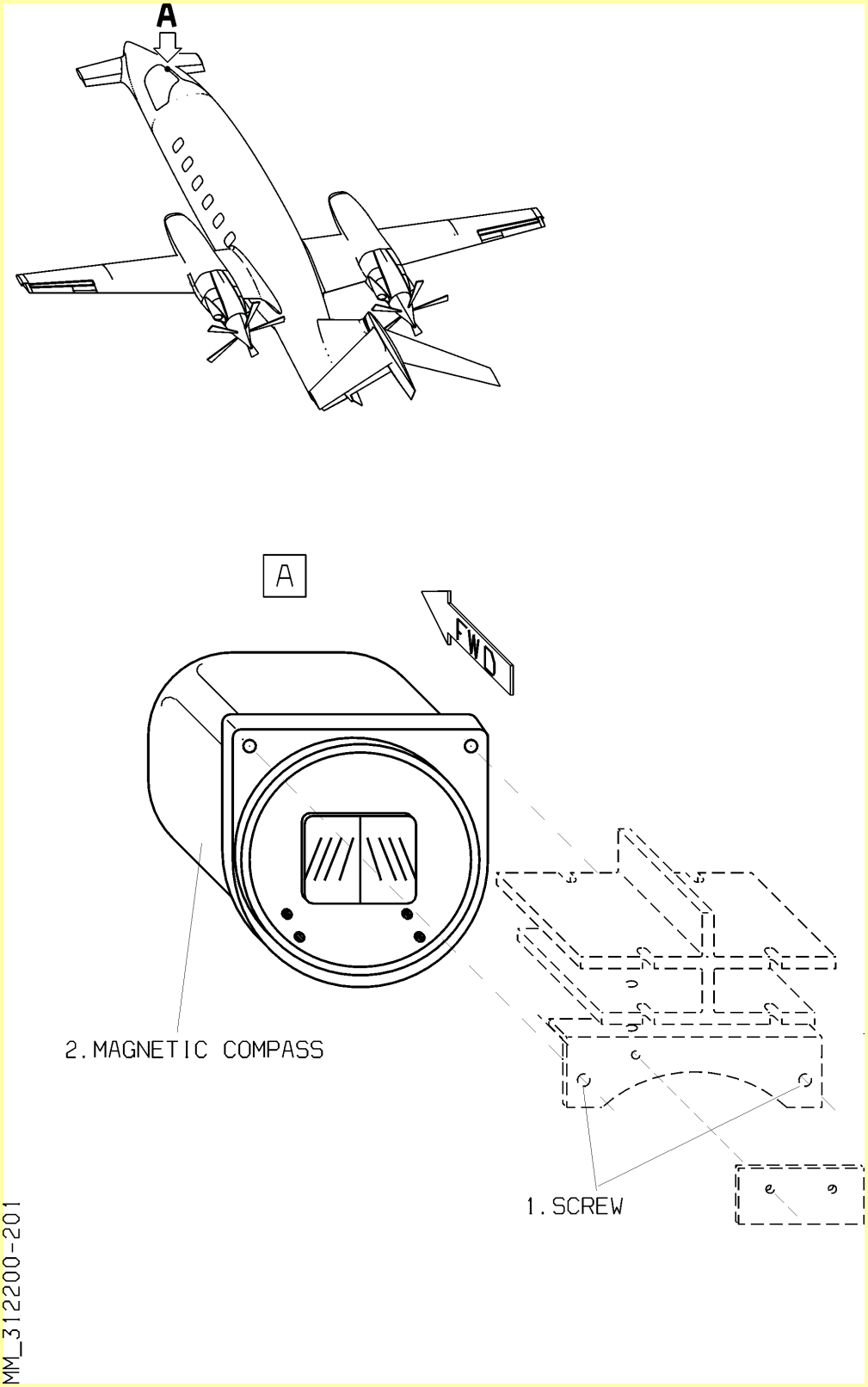

Fig. 201 - Magnetic Compass - Removal Installation

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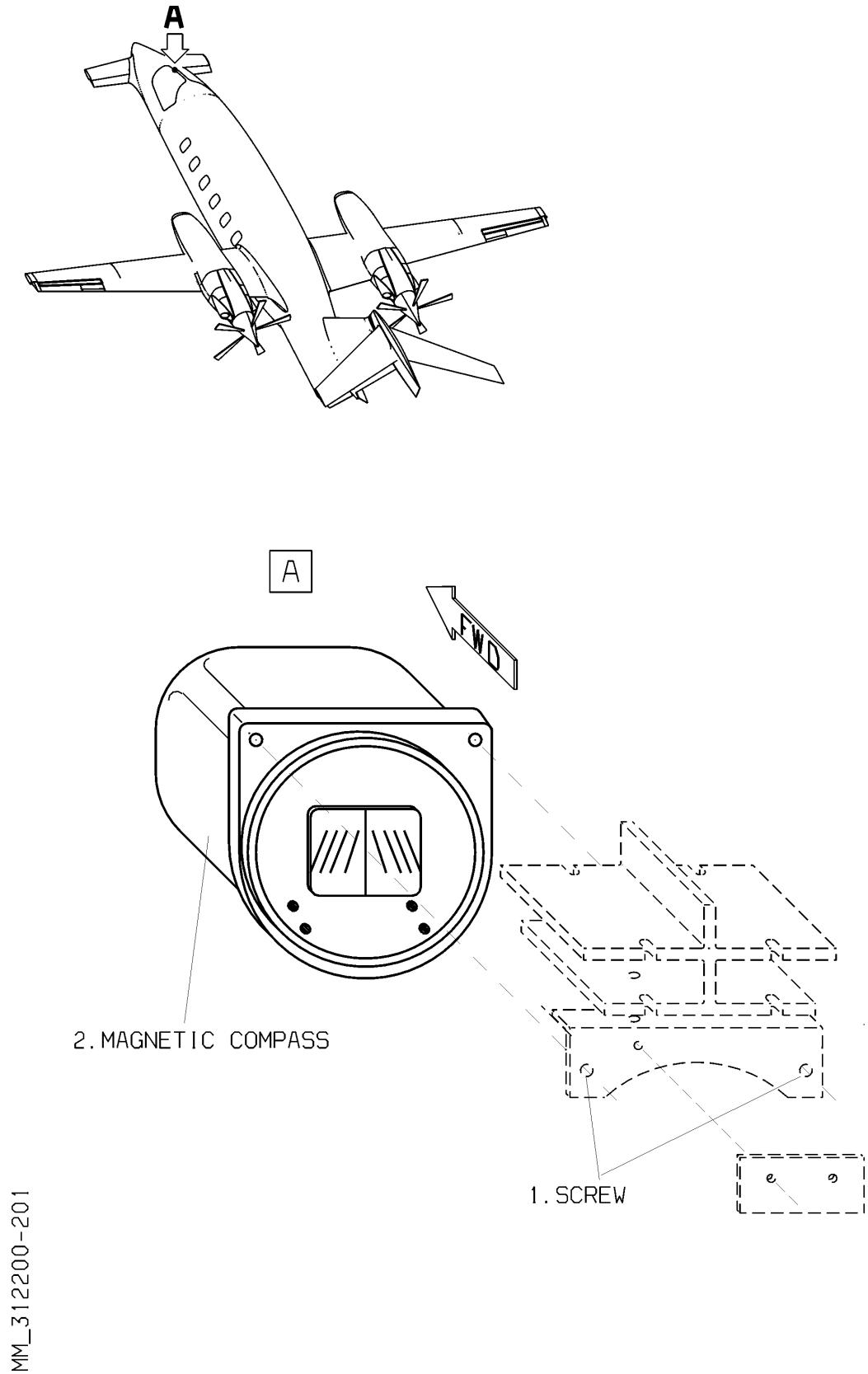

Fig. 201 - Magnetic Compass - Removal Installation

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HOBBS HOUR METER - MAINTENANCE PRACTICIES

1. General

WARNING: OBEY THE SAFETY PRECAUTIONS GIVEN IN 34-00-00.

A. This topics provides the following Hobbs Hour Meter Maintenance Practices:

- Hobbs Hour Meter - Removal
- Hobbs Hour Meter - Installation

B. The Hobbs Hour Meter is installed on the Copilot Sidewall.

C. The Hobbs Hour Meter System is installed onboard P.180 for total a/c flight hours counting. As soon as the on flight conditions are met (Weight off Wheels and RH Generator ON) the equipment starts operating.
The Hobbs Hour Meter is powered from the R Single Feed Bus, through 3A C/B labeled HOUR METER, located on the Copilot's C/B Panel.

2. Hobbs Hour Meter - Removal (Ref. Fig. 201)

A. Procedure

(1) Open, tag and safety the HOUR METER circuit breaker.
(2) Remove the two screws (1) and washer (2), that secure the Hobbs Hour Meter (3) to the Copilot Sidewall.
(3) Slide out the Hobbs Hour Meter (3) from the Copilot Sidewall to get access to the electrical connection located rear of the unit.
(4) Remove the two bolts (6) that secure the two Eye Terminal End (5) and the washers (4) to the Hobbs Hour Meter Electrical Terminals.
(5) Remove the Hobbs Hour Meter (3) from the Copilot Sidewall.

3. Hobbs Hour Meter - Installation (Ref. Fig. 201)

A. Procedure

(1) Make sure that the applicable circuit breakers are open, tagged and safetied.
(2) Install the two bolts (6) that secure the washers (4) and the two Eye Terminal End (5) to the Hobbs Hour Meter Electrical Terminals.
(3) Insert the Hobbs Hour Meter (3) in the proper position to the Copilot Sidewall.
(4) Install the two washer (2) and screws (1) that secure the Hobbs Hour Meter (3) to the Copilot Sidewall.
(5) Remove the safety tag and close the HOUR METER circuit breaker.

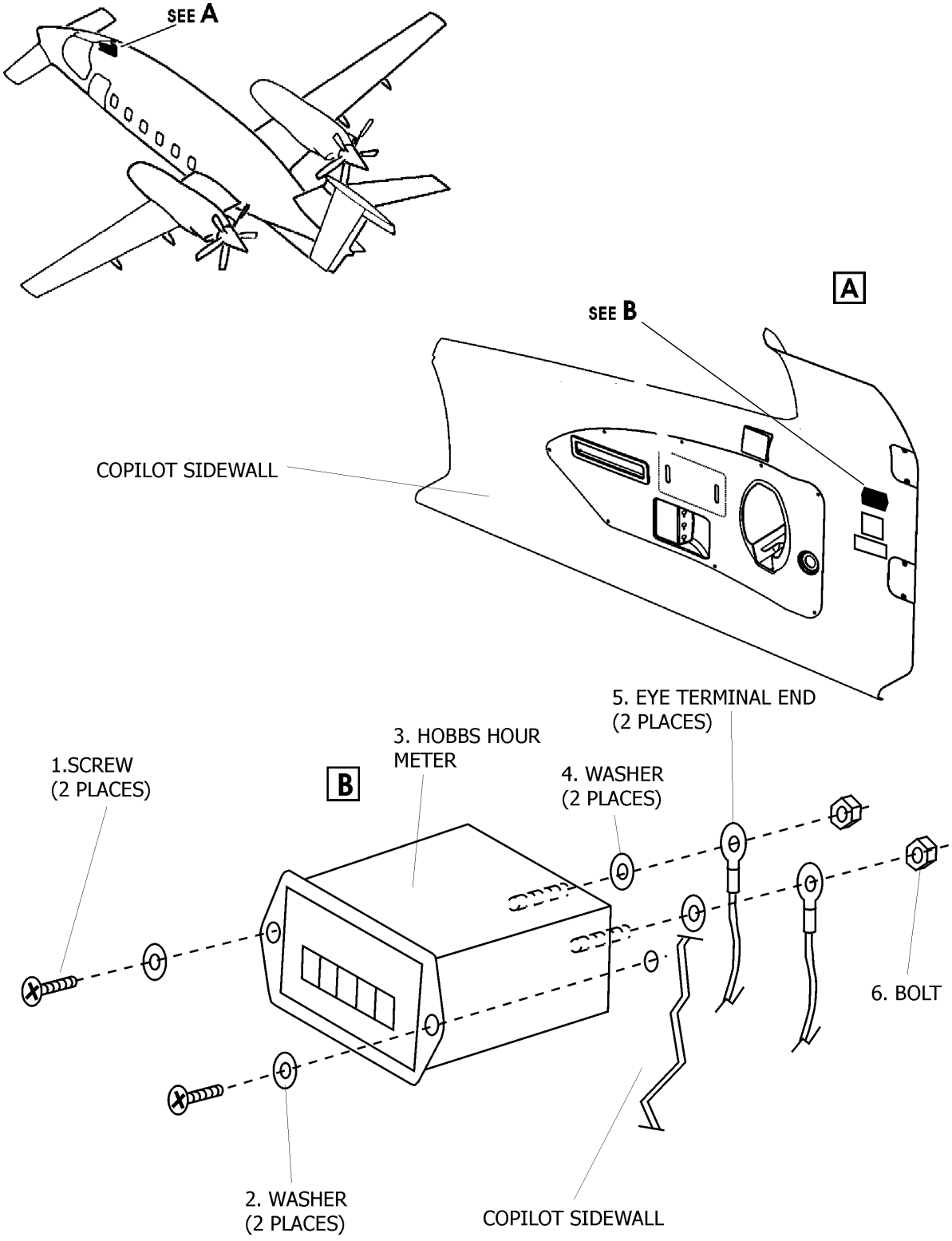

Fig. 201 - Hobbs Hour Meter - Removal Installation

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INTEGRATED AVIONICS PROCESSOR SYSTEM - DESCRIPTION AND OPERATION

1. General (Fig.1)

A. The Integrated Avionics Processor System (IAPS) is the central feature of the avionics system (Fig.2). To minimize weight, installation cost and aircraft wiring, is provide a housing (Integrated Card Cage) for several functional modules providing avionics data concentration and distribution. It's consist of the following:

- Integrated Card Cage (ICC) that provides physical and electrical segregation between left and right side signals. Two Power Modules (PWR) provide the necessary power requirements for all the relevant modules.
- IAPS Enviromental Control (IEC) pRovides enviromental control for the whole cage.
- Central Strapping Unit (CSU) that, by means of switches and plug-in modules provided avionic configuration and activation of optional.
- Two Options Control Modules (OCM) installed on CSU.
- Two Input/Output Concentators (IOC) accomplished the data concentration to IAPS
- Two Flight Guidance Computer (FGC) that processing signals and logical information of sensor/systems according to the mode of operation selected by the pilot. (Ref. Cap.22)
- A Flight Management Computer (FMC) or Flight Management System (FMS) provides the capability of en route, terminal, and non-precision approach navigation. (Ref. Cap.34)
- A Maintenance Diagnostic Computer (MDC) collects daignostic data, reporting of fault and provides storage of the Fault History.

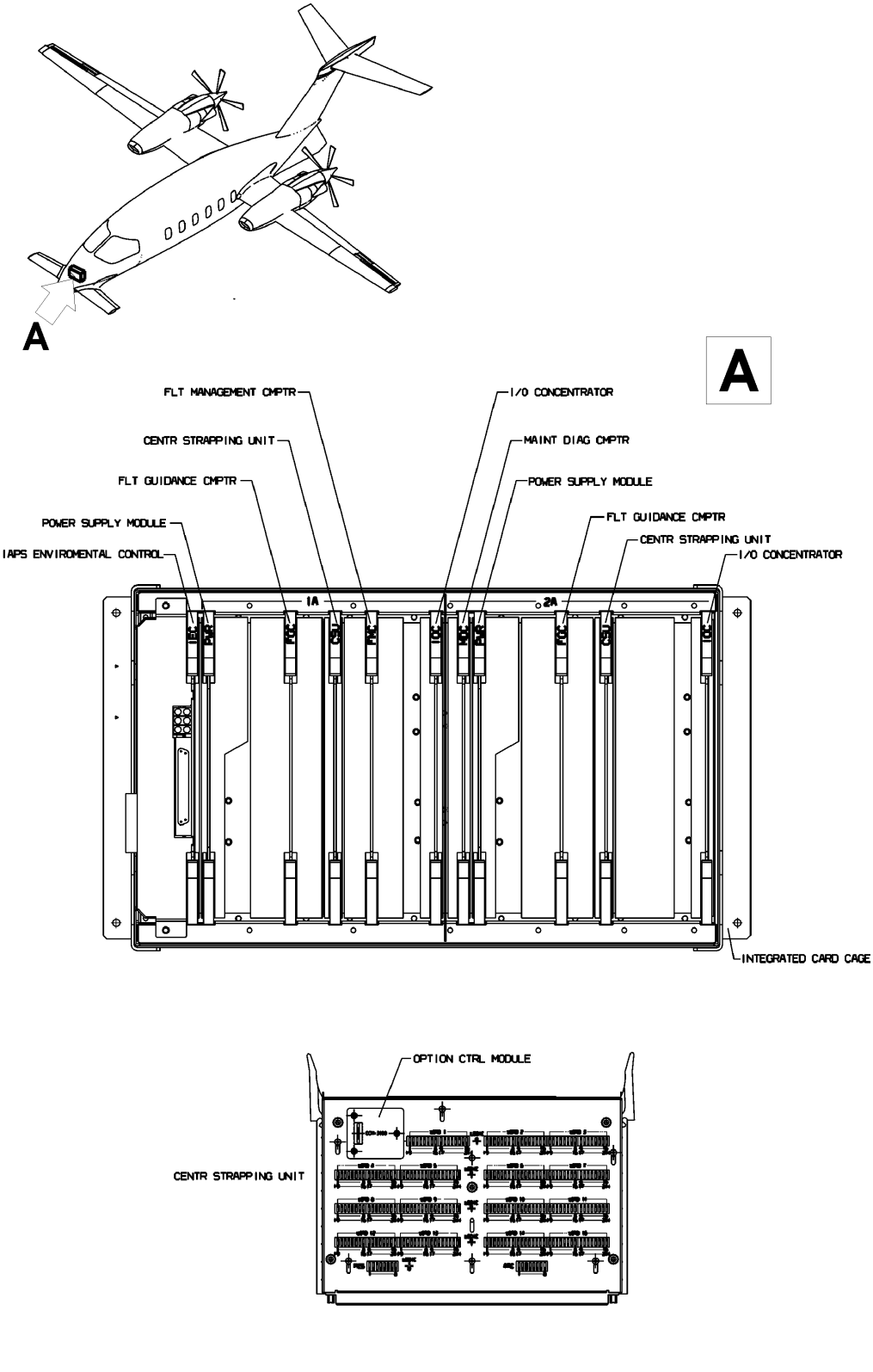

Fig. 1 - Integrated Avionics Processor System

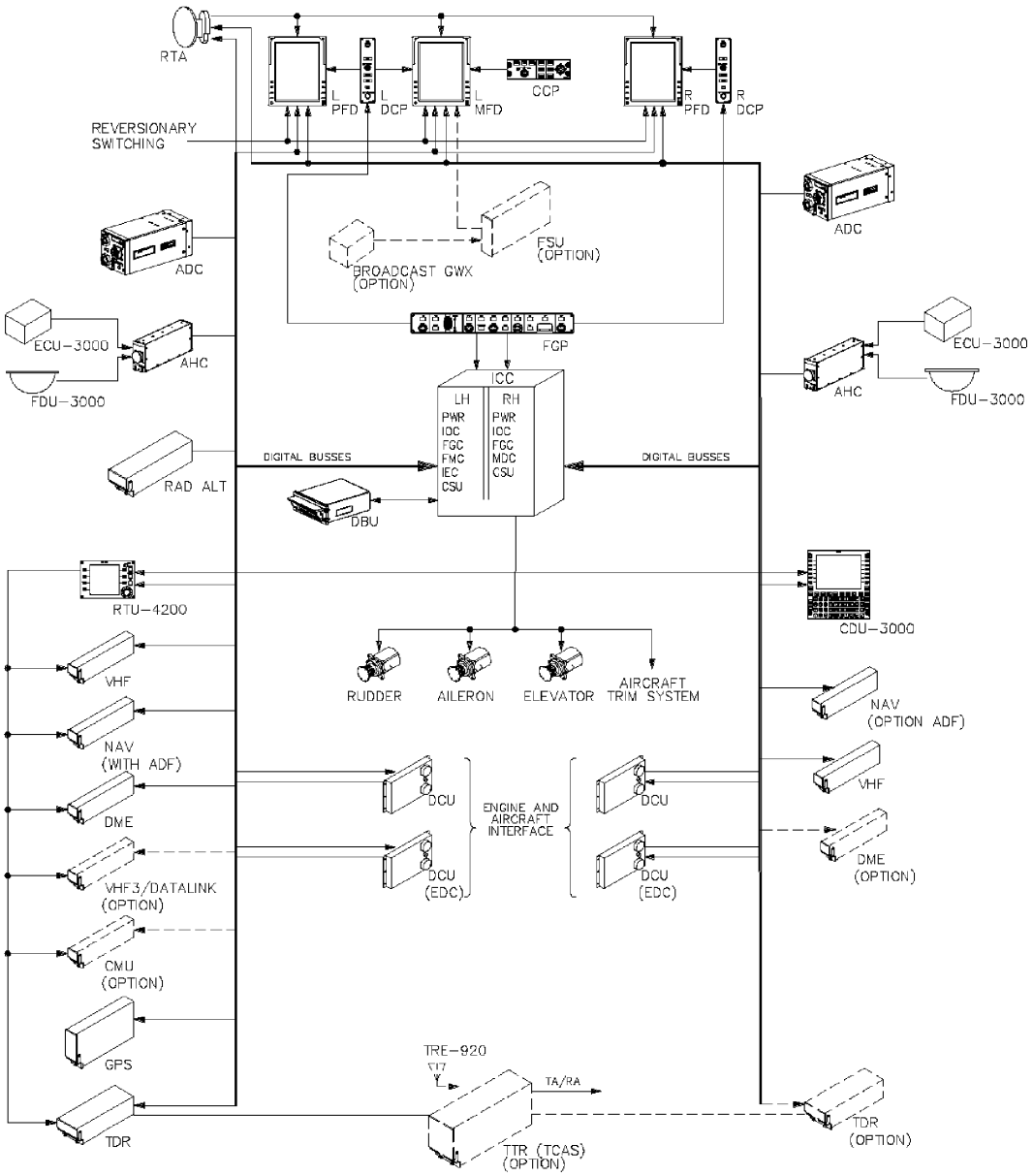

Fig. 2 - IAPS - Block Diagram

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INTEGRATED AVIONICS PROCESSOR SYSTEM - MAINTENANCE PRACTICIES

1. General

   A. This topics provides the following Integrated Avonics Processor System:
   - IAPS- Removal
   - IAPS Installation

   B. The Integrated Avonics Processor System installed in the Avionics Bay.

   C. Before starting maintenance on the IAPS the following safety precautions should be familiarized.

   D. Safety Precautions

      (1) Remove the electrical power and pull and tag applicable system circuit breakers.

2. IAPS Electronic Board- Removal (Typical) (Ref. Fig. 201)

   CAUTION: MAINTENANCE OF THIS COMPONENTS MUST DO BY TECHNICIAN PERSONELL

   A. Procedure

      (1) Remove the screws (1) that secure the cover to the Integrated Avionics Processor System.
      (2) Remove the cover (2)
      (3) Press the levers (3) to facilitate the Electronic Board slide out.
      (4) Remove the Electronic Board .

3. IAPS Electronic Board- Installation (Typical) (Ref. Fig. 201)

   A. Procedure

      (1) Insert the Electronic Board in its own position.
      (2) Insert the cover
      (3) Insert the screw and tightening.
      (4) Do a IAPS test.

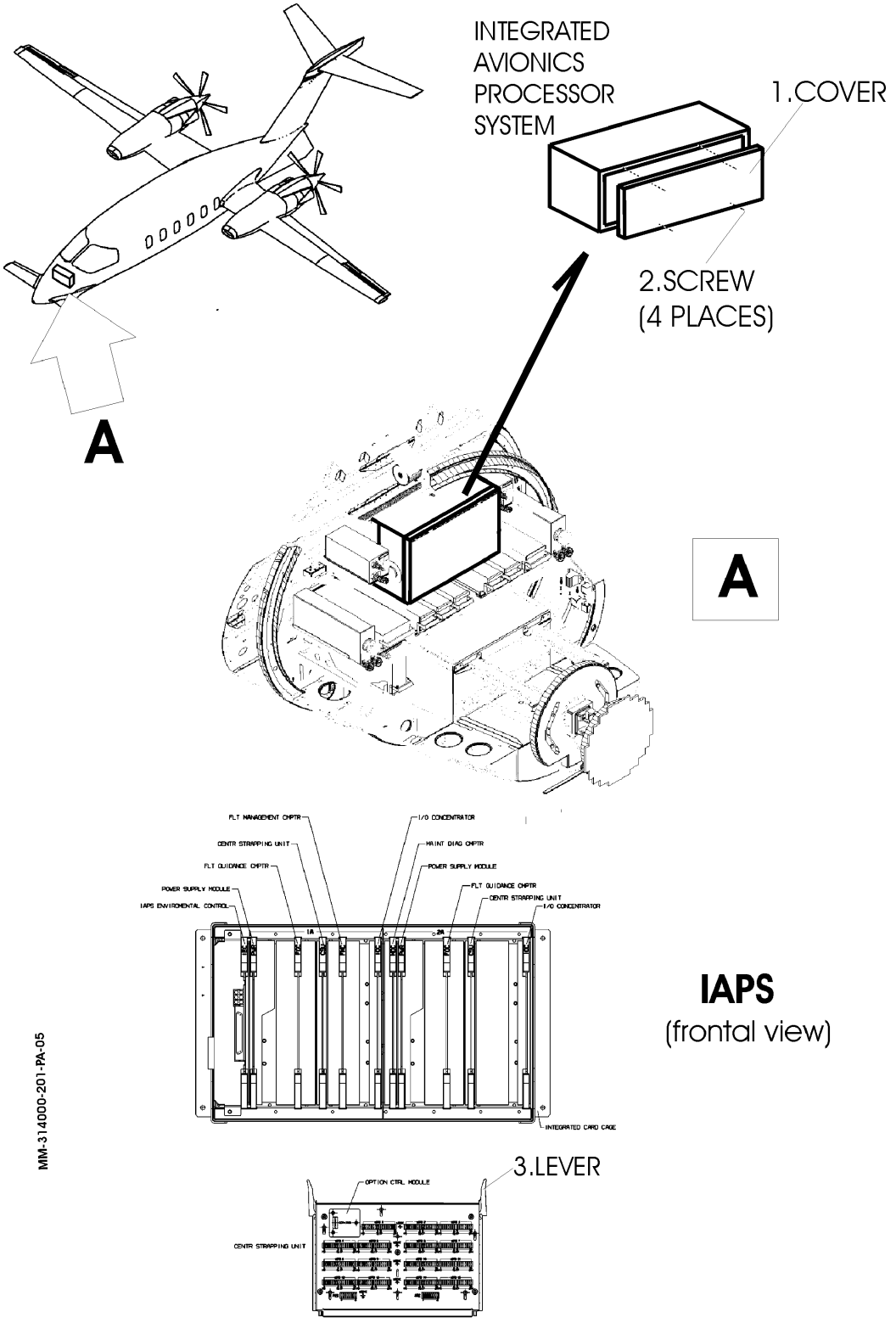

Fig. 201 - IAPS Electronic Boards- Removal/Installation (Typical)