

# 31

**INDICATING/  
RECORDING  
SYSTEMS**



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## INDICATING / RECORDING SYSTEMS

### DESCRIPTION AND OPERATION

#### 1. GENERAL

This chapter describes the instrument and control panels which contain instruments and indicators.

It also includes the systems which provide aural and / or visual warnings according to installation condition.

This chapter comprises :

- control and indicating panels - refer to 31-10-00.
- independent instruments - refer to 31-20-00.
- central warning systems - refer to 31-50-00.

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## CONTROL AND INDICATING PANELS

### DESCRIPTION AND OPERATION

#### 1. GENERAL

The control and indicating panels contain essentially :

- instrument panel,
- central console,
- engine monitoring cluster.

#### 2. LOCATION

COMPONENT	QTY	AREA	ACCESS DOOR	REFERENCE
Instrument panel	1	250	251L, 251R	31-10-01
Central console	1	250	251C	31-10-02
Engine monitoring cluster	1	250	251C	31-10-03

#### 3. DESCRIPTION

##### A. Instrument panel (Figures 1, 2 and 2A)

###### 1) L.H. instrument panel

The L.H. instrument panel is designed around the basic "T" configuration.

The gyros (if installed) are located in front of the pilot and arranged vertically.

The airspeed indicator or the true airspeed indicator and the altimeter are to the left and to the right of the gyros, respectively. The other flight instruments, the manifold pressure indicator (constant speed propeller) and the tachometer, are located around the basic "T".

The upper edge of the instrument panel contains the advisory panel.

The left side of the panel contains lighting controls (if installed), emergency beacon switch (if installed) and registration (for aircraft radio identification).

###### 2) L.H. panel strip

The L.H. panel strip contains from left to right :

- the L.H. vent,
- the magneto / start selector,
- the parking brake knob,

Option Pre-MOD. 151, Standard Post-MOD. 151

- the alternate static source valve,
- the vacuum system pressure gage.

3) R.H. instrument panel

There are two types of instrument panels :

- the small instrument panel (Option Pre-MOD. 151, Standard Post-MOD. 151),
- the large instrument panel (Option).

The R.H. instrument panel includes locations for additional equipment such as :

- 2nd altimeter,
- VOR / LOC indicator,
- outside air temperature,
- cylinder head temperature,
- exhaust gas temperature, etc...

4) R.H. panel strip

The R.H. panel strip contains :

- a location for radio equipment or another one,
- air conditioning control,
- R.H. vent.

**B. Central console (Figures 2 and 2A)**

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The central console contains in the lower edge, the engine monitoring cluster then the radio-navigation equipment vertically mounted to the console upper edge.

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The central console contains in the upper edge, the engine monitoring cluster then the radio-navigation equipment vertically mounted to the console lower edge.

**C. Engine monitoring cluster (Figures 2, 2A, 3, 3A, 3B and 3C)**

**NOTE : No repairs are allowed inside the engine monitoring cluster. In case of failure, carry out a standard replacement.**

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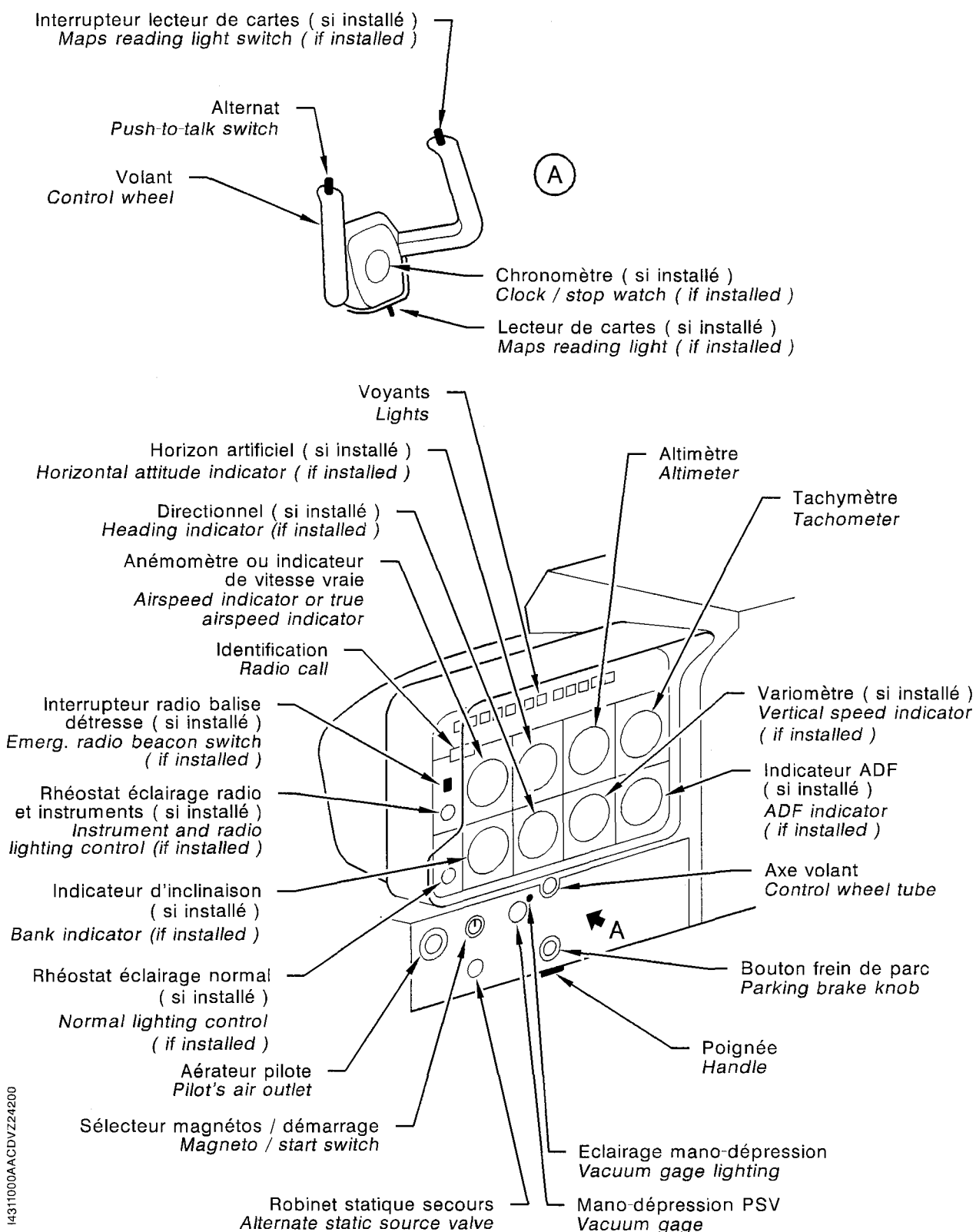
The engine monitoring cluster is located in the lower part of the central console.

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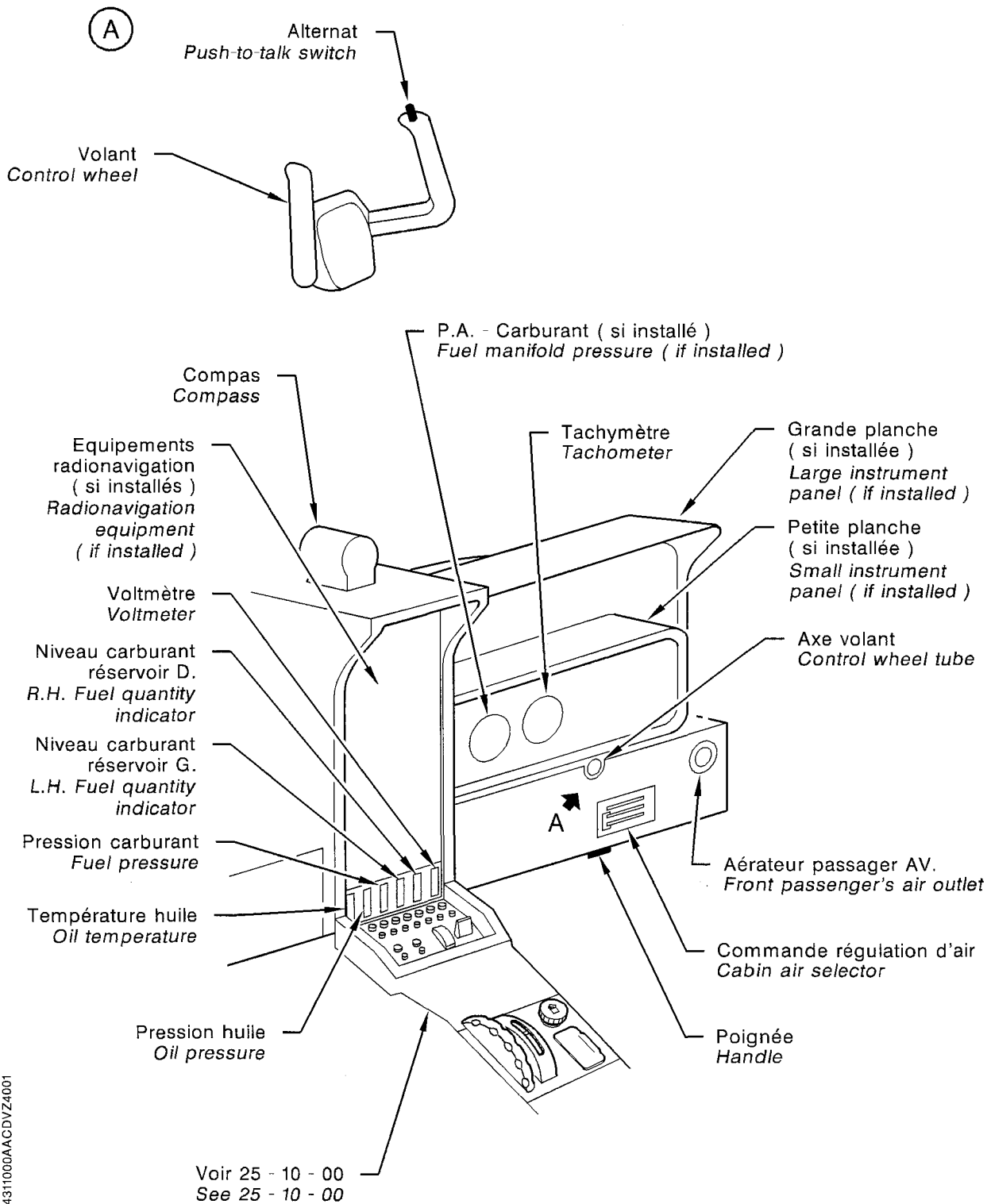
The engine monitoring cluster is located in the upper part of the central console.

It contains, from left to right, the following indicators :

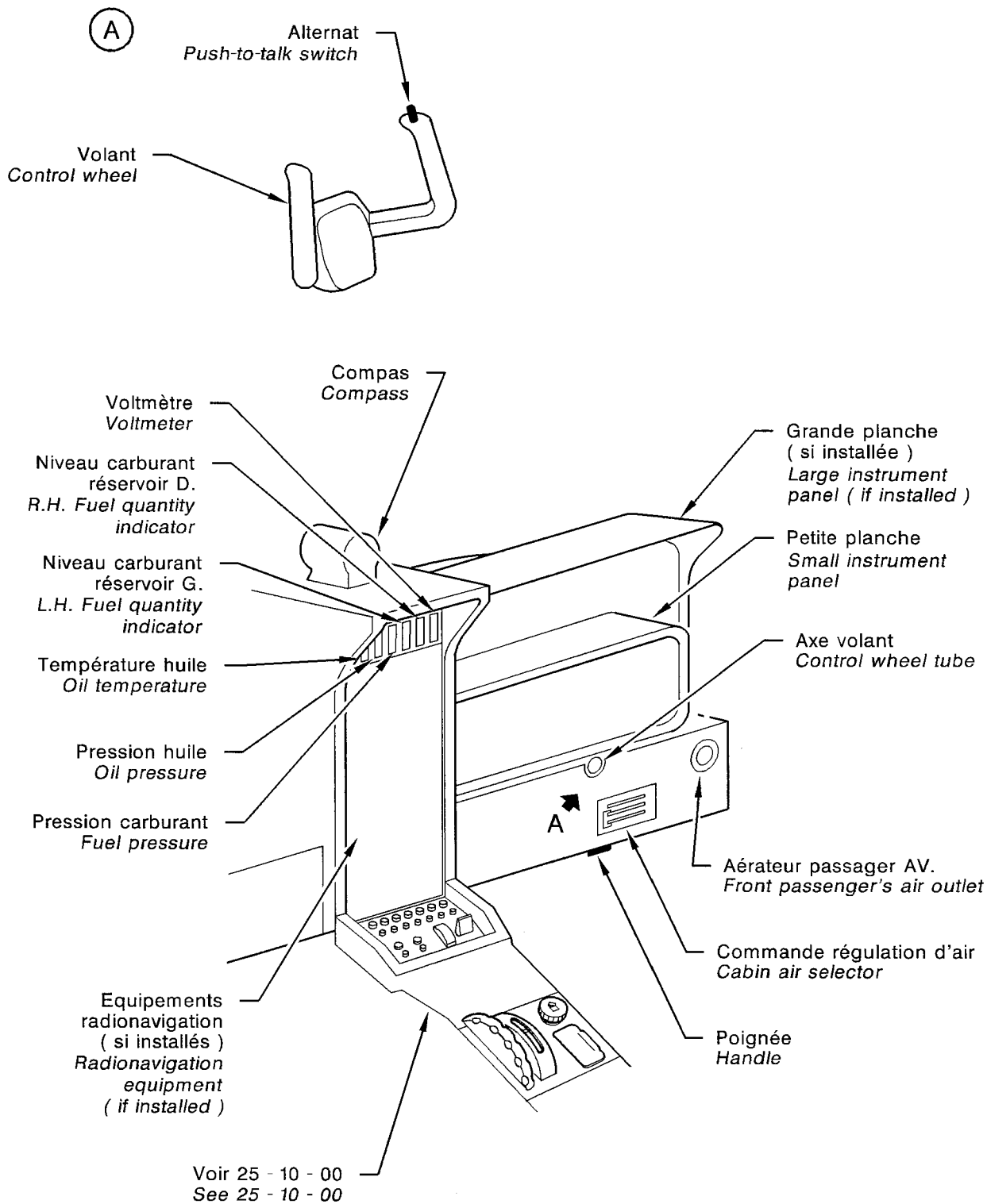
- oil temperature,
- oil pressure,
- fuel pressure,
- L.H. tank fuel gage,
- R.H. tank fuel gage,
- voltmeter.



Example of instrument panel and L.H. panel strip  
Figure 1

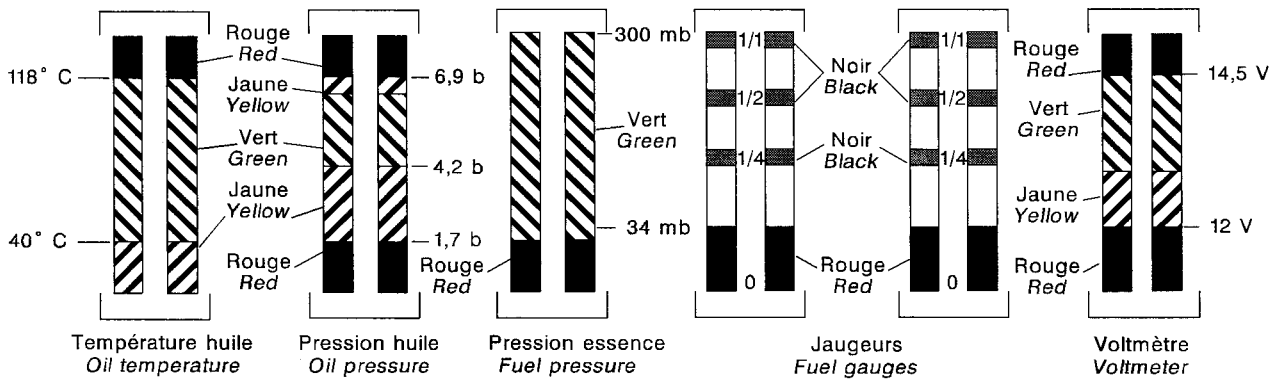
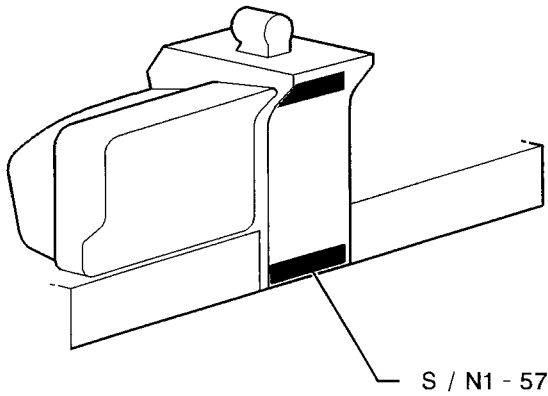


Example of R.H. instrument panel, R.H. panel strip and central console  
Figure 2 - S / N 1 - 57



14311000AACDVZ4201

Example of R.H. instrument panel, R.H. panel strip and central console  
Figure 2A - S / N 58 - 9999



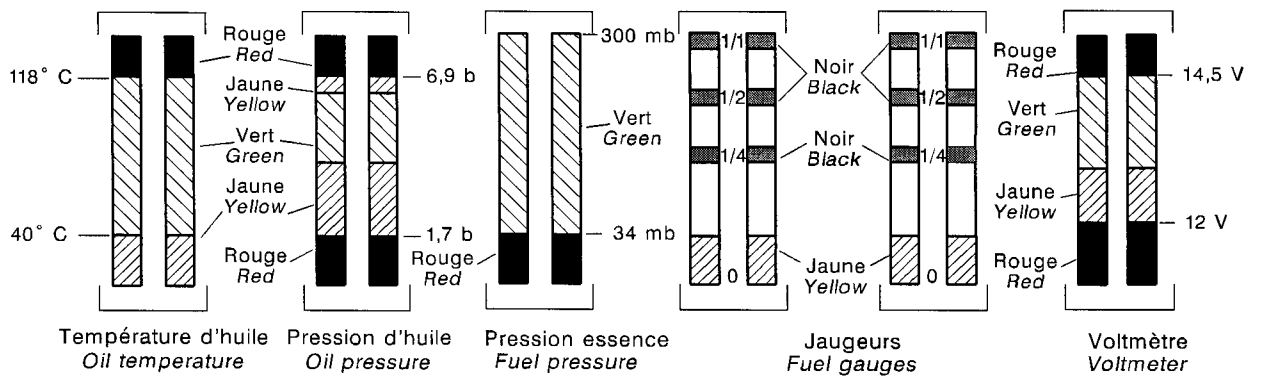
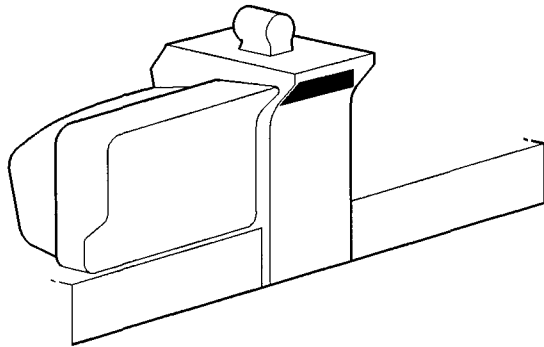
Engine monitoring cluster marking  
Figure 3 - S / N 1 - 274

I4284000AAAAWZ4200

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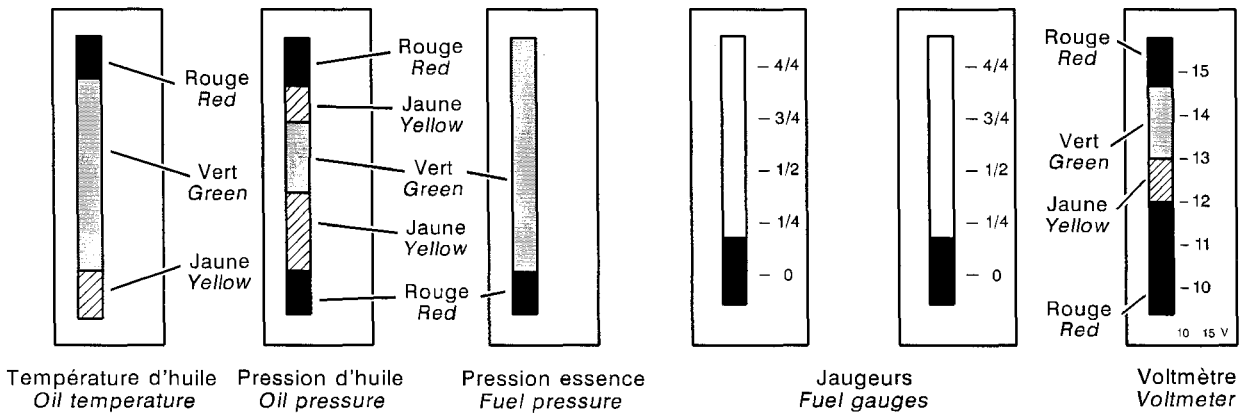
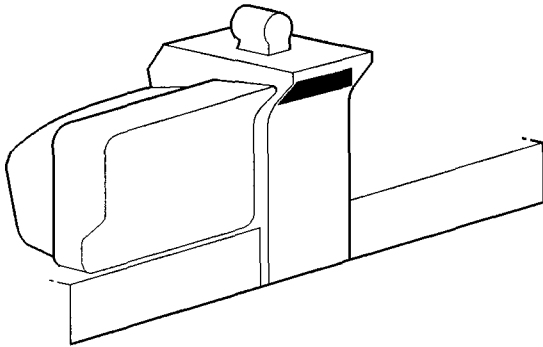
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14311000AAAUVZ24100

Engine monitoring cluster marking  
Figure 3A - S / N 275 - 528, 530 - 560, Pre-Kit OPT10 911200 (MOD. 67)

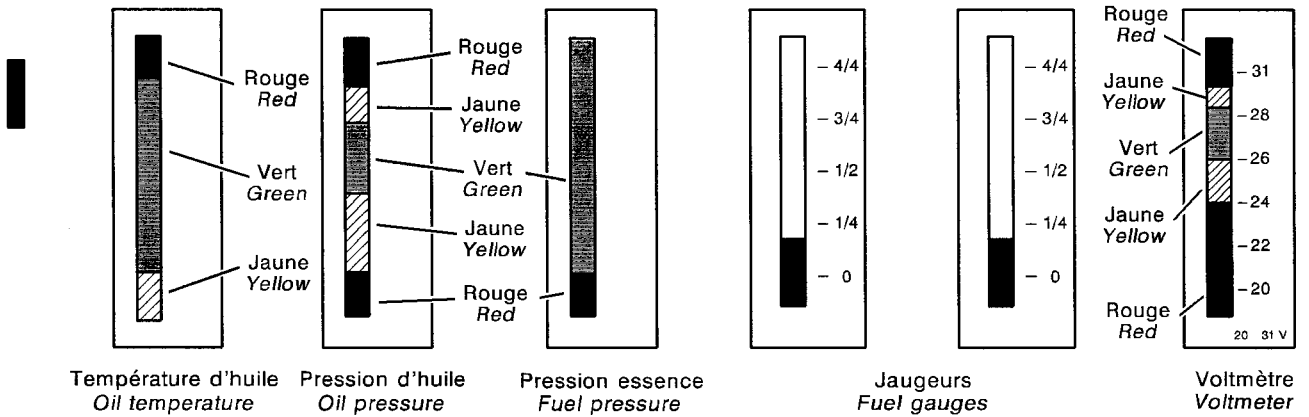
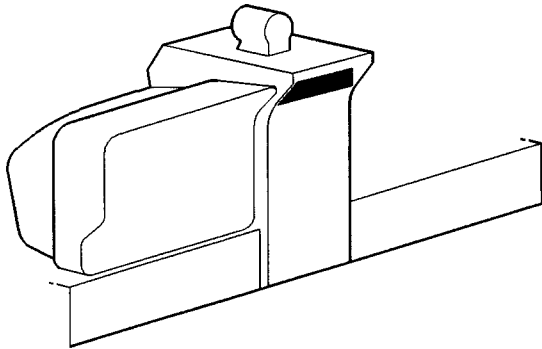
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14311000AAAJVZ14200

Engine monitoring cluster marking  
Figure 3B - S / N 529, 561 - 822, 850 - 887, 889 - 947 and 275 - 528, 530 - 560,  
Post-Kit OPT10 911200 (MOD. 67)

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I4311000AAA JVZ14101

Engine monitoring cluster marking  
Figure 3C - S / N 823 - 849, 888, 948 - 9999

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## INSTRUMENT PANEL REMOVAL / INSTALLATION

**NOTE** : This procedure is applicable to L.H. and R.H. installations. Information specific to R.H. installation are given in square brackets.

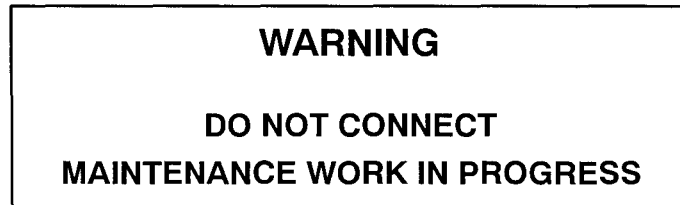
### 1. REMOVAL OF INSTRUMENT PANEL (Figure 401)

#### A. Tools and consumable materials

None

#### B. Procedure

- 1) Disconnect the battery - refer to 24-30-02.
- 2) Install the warning sign prohibiting battery connection.



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- 3) Push on spring flap (9) to unlock instrument panel (3).
- 4) Tilt instrument panel (3) [7].

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- 3) Unlock studs (1) or remove the screws.
- 4) Push on spring flap (9) to unlock instrument panel (3).
- 5) Tilt instrument panel (3) [7].
- 6) Remove screws (6), cup washers (5) and upper cover (2) [4].

#### S / N 1 - 9999

- 7) Disconnect all the instruments and all the electrical connectors of instrument panel (3) [7].
- 8) Remove hinge pins (8).
- 9) Remove instrument panel (3) [7].
- 10) If necessary, remove instrument panel (3) [7] equipment.

### 2. INSTALLATION OF INSTRUMENT PANEL (Figure 401)

#### A. Tools and consumable materials

None

#### B. Procedure

- 1) Check the silent-blocks for condition, replace if necessary.

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- 2) If necessary, install instrument panel (3) [7] equipment.
- 3) Install instrument panel (3) [7] and insert hinge pins (8) in the hinges
- 4) Connect the instruments and the electrical connectors.
- 5) Make sure all the tools and materials are removed and the work area is clean and free from debris.

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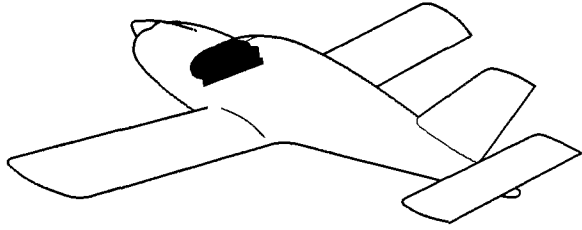
- 6) Tilt instrument panel (3) [7].
- 7) Make sure instrument panel (3) is correctly locked.

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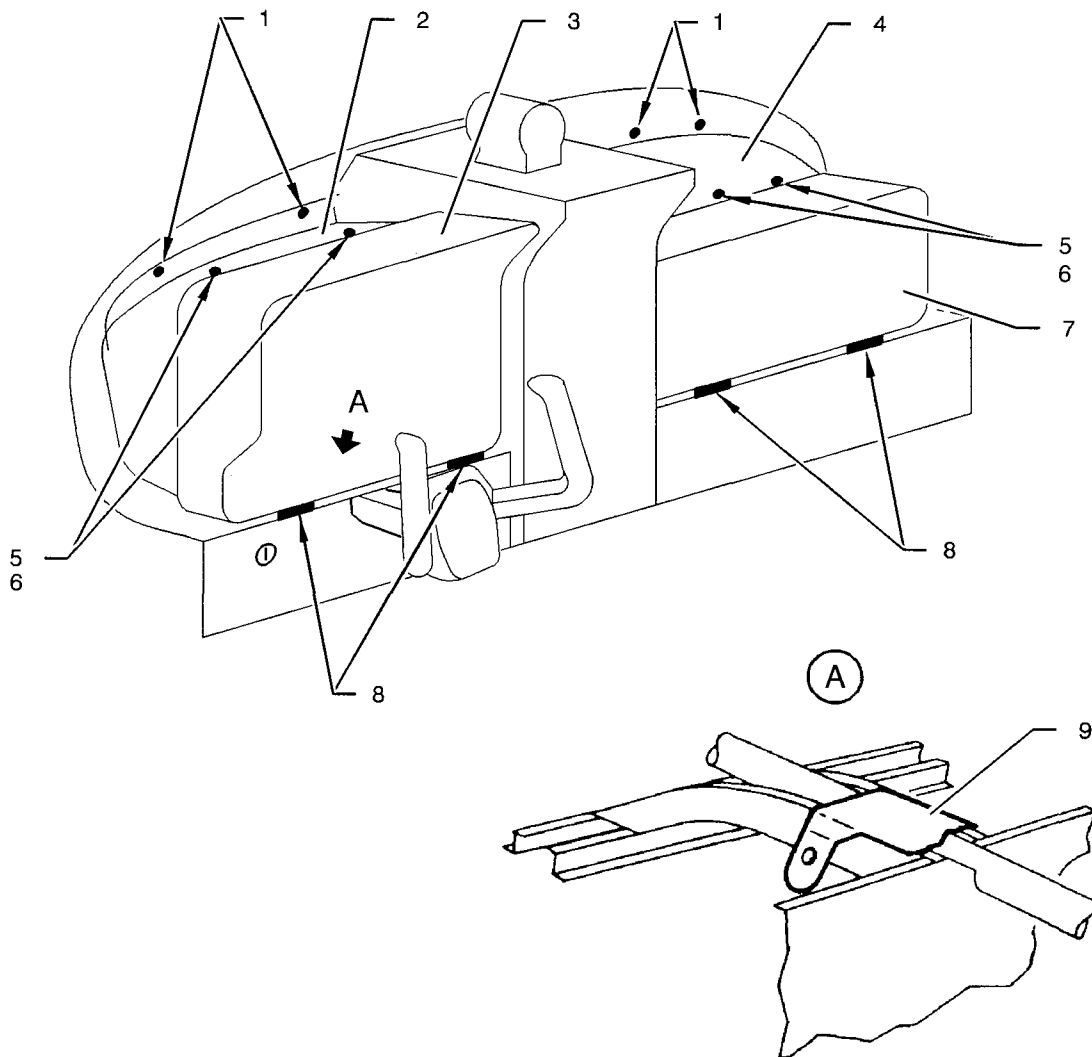
- 6) Install and secure upper cover (2) [4] with cup washers (5) and screws (6).
- 7) Tilt instrument panel (3) [7].
- 8) Make sure instrument panel (3) is correctly locked.
- 9) Lock studs (1) or install the screws.

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- 10) Connect the battery - refer to 24-30-02.
- 11) Remove the warning sign prohibiting battery connection.
- 12) Do a test of the different electric systems and instruments.



- 1 - Stud
- 2 - L.H. upper cover
- 3 - L.H. instrument panel
- 4 - R.H. upper cover
- 5 - Cup washer
- 6 - Screw
- 7 - R.H. instrument panel
- 8 - Hinge pin
- 9 - Spring flap



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Instrument panel - Removal / Installation  
Figure 401

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## CENTRAL CONSOLE

### REMOVAL / INSTALLATION

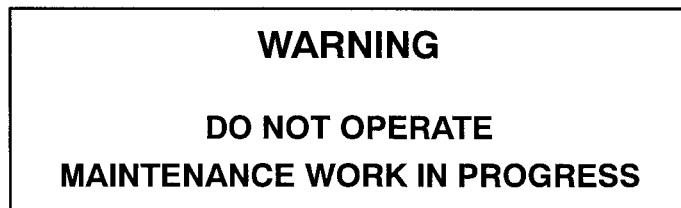
#### 1. REMOVAL OF CENTRAL CONSOLE (Figures 401, 401A and 401B)

##### A. Tools and consumable materials

- Blanking caps

##### B. Procedure

- 1) Make sure that the main switch-breaker is open.
- 2) Install the warning sign prohibiting main switch-breaker operation.



- 3) Disconnect the battery - refer to 24-30-02.
- 4) Remove console upholstery (1) :
  - a) Remove screws (8) and washers (9).
  - b) At the console base, clear the upholstery from L.H. and R.H. strips and unclip the upholstery from pins (4), if installed.
  - c) Clear the upholstery upwards and, in the case of raised consoles, disconnect compass (13).
  - d) Disconnect console lighting wires and remove upholstery (1).
- 5) Remove compass (13).
- 6) Remove engine monitoring cluster (14) - refer to 31-10-03.
- 7) Remove upholstery panels (10) and (15) behind the instrument panels
- 8) Unlock and tilt L.H. instrument panel (11) - refer to 31-10-01.
- 9) Tilt R.H. instrument panel (16) - refer to 31-10-01.
- 10) If installed, disconnect central console and autopilot cooling hose(s) (7) ; blank off.
- 11) If installed, disconnect and blank off the autopilot static system hose.
- 12) Disconnect all the radio connectors and the coaxial cables (if installed) of the central console.
- 13) Cut off and discard the tie-wraps securing the wiring, hoses and other items necessary for the removal of the console.
- 14) Remove the different radio instruments by pulling them out of their racks from the rear - refer to each instrument handbook for attachment on racks.
- 15) Remove screws (3) and washers (2) ensuring lower attachment [4 screws if 2 pins (4) not installed].
- 16) Remove the 2 pins (4) (if installed).

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**CAUTION : BEFORE CLEARING THE CONSOLE, MAKE SURE NO AIRCRAFT WIRING, HOSE OR OTHER ITEM CLOSE TO THE CONSOLE IS SECURED ON IT.**

17) Clear the central console equipped with its racks from centering pin (5) while avoiding the windshield.

## 2. INSTALLATION OF CENTRAL CONSOLE (Figures 401, 401A and 401B)

### A. Tools and consumable materials

- Cleaner (TB 05-920)
- Cleaning agent (TB 11-003)
- Tie-wraps
- Clean, lint-free cloths

### B. Procedure

1) Check cooling hose(s) (7) for condition, replace if necessary.

**NOTE : If a new hose is installed, no traces of release grease (silicone) must remain inside the hose. Any traces must be removed with a dry cloth.**

2) Check central console condition, inspect for possible cracks and deformation.

3) Check the bonding areas, clean the surfaces with a clean cloth moistened with cleaning agent (TB 11-003).

4) Position the central console equipped with its racks while paying attention to the windshield.

**NOTE : Be sure to correctly insert centering pin (5) in the hole provided in cross beam (6).**

5) Secure the central console using screws (3), washers (2) and pins (4) (if installed).

6) Connect all the connectors ; if necessary, spray the connections with cleaner (TB 05-920).

7) Install the radio instruments.

**CAUTION : INSTALL TIE-WRAPPS (WIRINGS, HOSES AND OTHER ITEMS ATTACHMENTS) IN SUFFICIENT QUANTITIES IN ORDER TO AVOID ANY BLOCKAGE OF FLIGHT CONTROLS.**

8) Remove the blanking caps and connect cooling hose(s) (7) (if installed).

9) If installed, reconnect the static system hose of the autopilot.

10) Make sure all the tools and materials are removed and the work area is clean and free from debris.

11) Tilt R.H. instrument panel (16) - refer to 31-10-01.

12) Tilt and lock L.H. instrument panel (11) - refer to 31-10-01.

13) Install upholstery panels (10) and (15) behind the instrument panels.

14) In the case of non-raised consoles, connect and install compass (13).

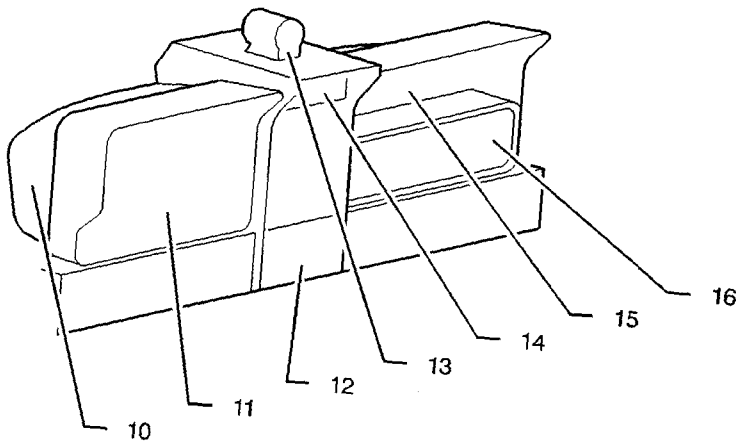
15) Install engine monitoring cluster (14) - refer to 31-10-03.

16) Install central console upholstery (1).

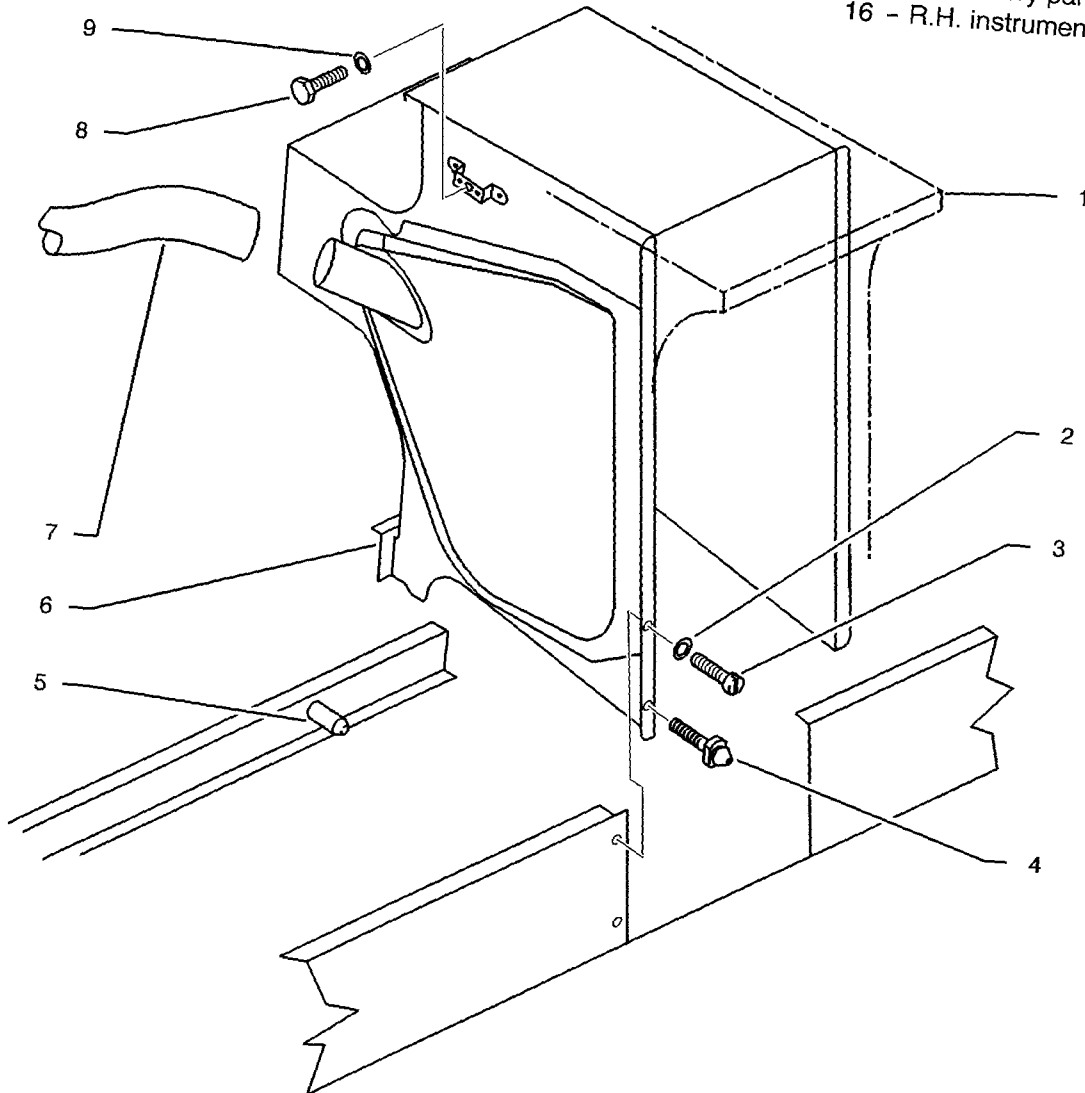
a) In the case of raised consoles, secure compass (13) on upholstery (1).

b) Engage the upholstery from the top while paying attention to compass (13).

- c) Connect the lighting wires of the central console and, in the case of raised consoles, compass (13).
  - d) Clip upholstery (1) to pins (4) (if installed) and fix in place using screws (8) and washers (9).
- 17) Remove the warning sign prohibiting main switch-breaker operation.
  - 18) Connect the battery - refer to 24-30-02.
  - 19) Close main switch-breaker.
  - 20) Using the test units, perform a functional test of the navigation systems.
  - 21) Perform a radio test - refer to 23-10-00.
  - 22) If necessary, perform a leakage test of the static system - refer to 34-11-00.
  - 23) Perform an autopilot test - refer to 22-12-00.
  - 24) Position the aircraft on a compensating area.
  - 25) Perform a test run-up - refer to 05-30-02.
  - 26) Check the parameters of the engine monitoring cluster.
  - 27) Check the compass and, if necessary, perform a compensation - refer to 34-20-01.



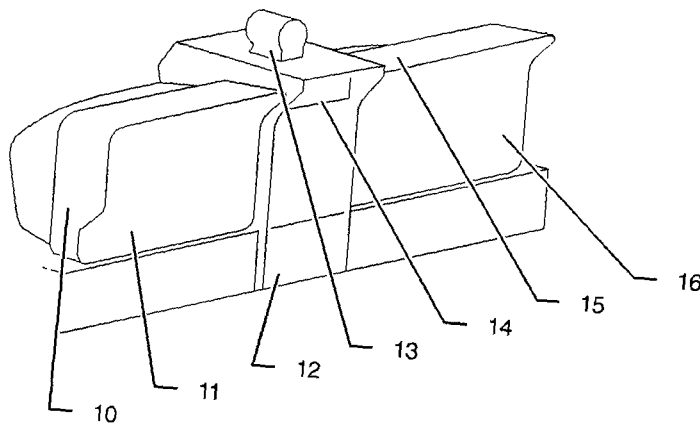
- 1 - Upholstering
- 2 - Washer
- 3 - Screw
- 4 - Pin
- 5 - Centering pin
- 6 - Cross beam
- 7 - Hose
- 8 - Screw
- 9 - Washer
- 10 - Upholstery panel
- 11 - L.H. instrument panel
- 12 - Lower side panel
- 13 - Compass
- 14 - Engine monitoring cluster
- 15 - Upholstery panel
- 16 - R.H. instrument panel



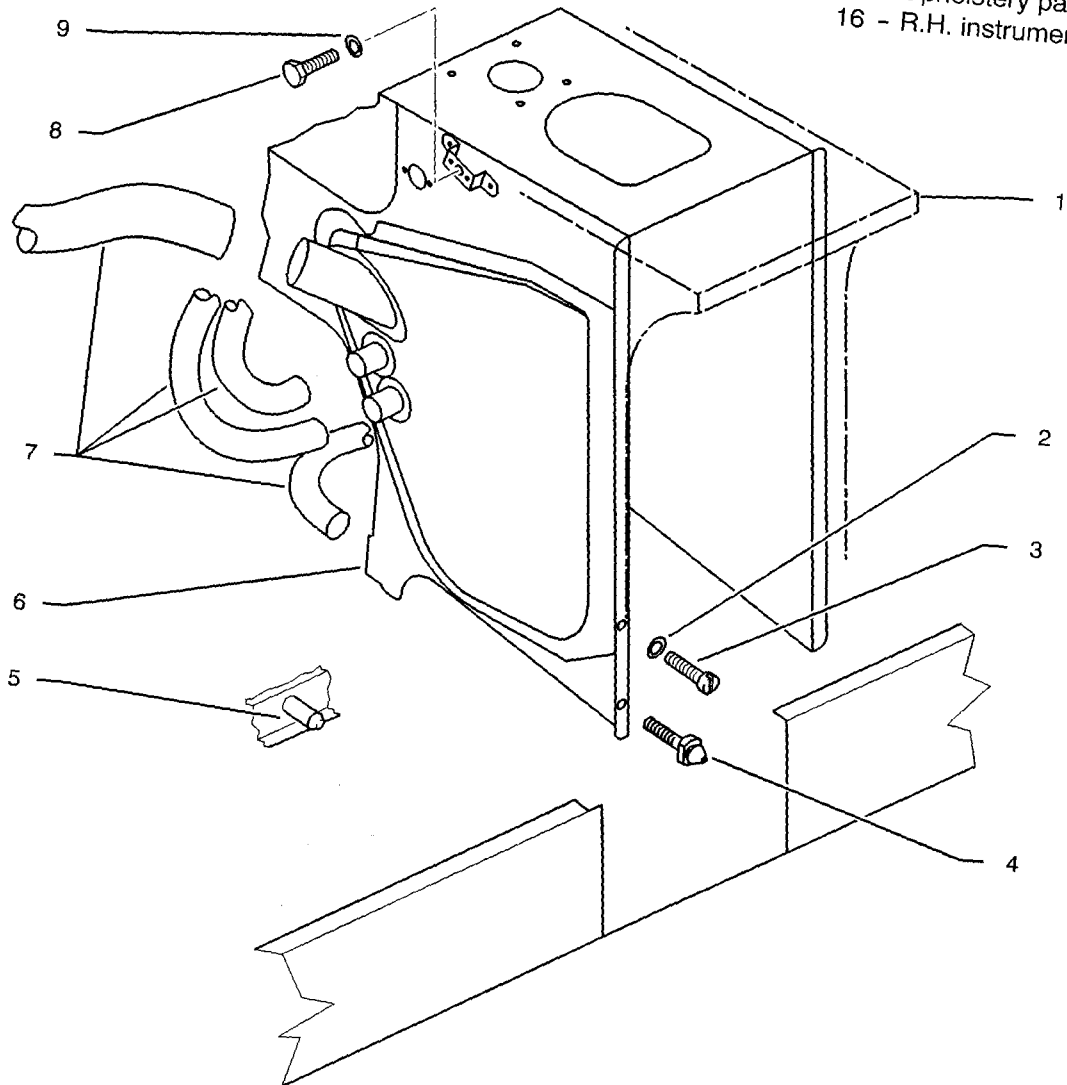
Central console  
Figure 401

I4311002AAACWZ4100

AAAA  
Validity : Pre-MOD. 151



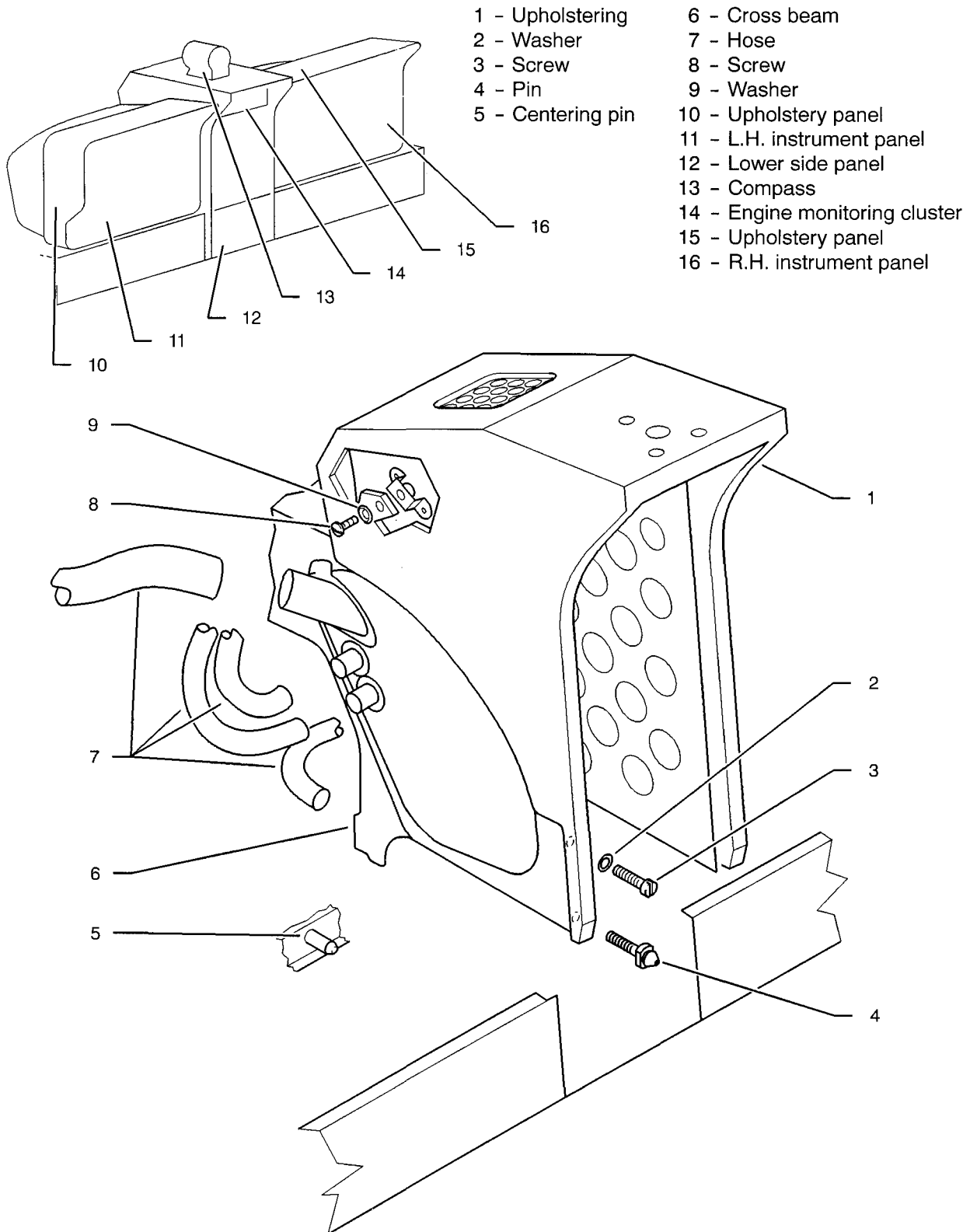
- 1 - Upholstering
- 2 - Washer
- 3 - Screw
- 4 - Pin
- 5 - Centering pin
- 6 - Cross beam
- 7 - Hose
- 8 - Screw
- 9 - Washer
- 10 - Upholstery panel
- 11 - L.H. instrument panel
- 12 - Lower side panel
- 13 - Compass
- 14 - Engine monitoring cluster
- 15 - Upholstery panel
- 16 - R.H. instrument panel



Central console  
Figure 401A - With radio cooling

14311002AAACWZ4001

AAAA  
Validity : Pre-MOD. 151



Central console  
 Figure 401B - With raised central console and radio cooling

14311002AAAACWZ4200

## CENTRAL CONSOLE REMOVAL / INSTALLATION

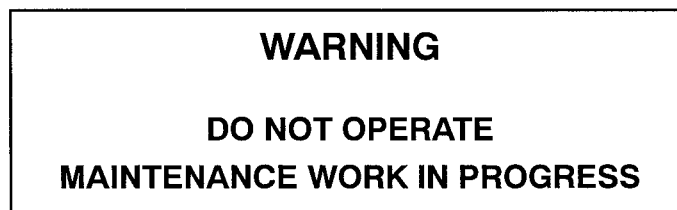
### 1. REMOVAL OF CENTRAL CONSOLE (Figures 401 and 401A)

#### A. Tools and consumable materials

- Blanking caps

#### B. Procedure

- 1) Make sure that the main switch-breaker is open.
- 2) Install the warning sign prohibiting main switch-breaker operation.



- 3) Disconnect the battery - refer to 24-30-02.
- 4) Remove console upholstery (1) :
  - a) Remove screws (8) and washers (9).
  - b) At the console base, clear the upholstery from L.H. and R.H. strips and unclip the upholstery from pins (4).
  - c) Clear the upholstery upwards and, in the case of raised consoles, disconnect compass (13).
  - d) Disconnect console lighting wires and remove upholstery (1).
- 5) Remove compass (13).
- 6) Remove engine monitoring cluster (14) - refer to 31-10-03.
- 7) Remove upholstery panels (10) and (15) behind the instrument panels
- 8) Unlock and tilt L.H. instrument panel (11) - refer to 31-10-01.
- 9) Tilt R.H. instrument panel (16) - refer to 31-10-01.
- 10) Disconnect, on blower side, hoses (7) ensuring the cooling of the central console and the autopilot (if installed) ; blank off.

**NOTE : This operation is not essential but it reduces the central console volume.**

- 11) If installed, disconnect and blank off the autopilot static system hose.
- 12) Disconnect all the radio connectors and the coaxial cables of the central console.
- 13) Cut off and discard the tie-wraps securing the wiring, hoses and other items necessary for the removal of the console.
- 14) Remove the different radio instruments by pulling them out of their racks from the rear - refer to each instrument handbook for attachment on racks.
- 15) Remove screws (3) and washers (2) ensuring lower attachment.

ACAB

Validity : Post-MOD. 151

16) Remove the 2 pins (4).

**CAUTION : BEFORE CLEARING THE CONSOLE, MAKE SURE NO AIRCRAFT WIRING, HOSE OR OTHER ITEM CLOSE TO THE CONSOLE IS SECURED ON IT.**

17) Clear the central console equipped with its racks from centering pin (5) while avoiding the windshield.

## 2. INSTALLATION OF CENTRAL CONSOLE (Figures 401 and 401A)

### A. Tools and consumable materials

- Cleaner (TB 05-920)
- Cleaning agent (TB 11-003)
- Tie-wraps
- Clean, lint-free cloths

### B. Procedure

1) Check cooling hose(s) (7) for condition, replace if necessary.

**NOTE : If a new hose is installed, no traces of release grease (silicone) must remain inside the hose. Any traces must be removed with a dry cloth.**

2) Check central console condition, inspect for possible cracks and deformation.

3) Check the bonding areas, clean the surfaces with a clean cloth moistened with cleaning agent (TB 11-003).

4) Position the central console equipped with its racks while paying attention to the windshield.

**NOTE : Be sure to correctly insert centering pin (5) in the hole provided in cross beam (6).**

5) Secure the central console using screws (3), washers (2) and pins (4) (if installed).

6) Connect all the connectors ; if necessary, spray the connections with cleaner (TB 05-920).

7) Install the radio instruments.

**CAUTION : INSTALL TIE-WRAPS (WIRINGS, HOSES AND OTHER ITEMS ATTACHMENTS) IN SUFFICIENT QUANTITIES IN ORDER TO AVOID ANY BLOCKAGE OF FLIGHT CONTROLS.**

8) Remove the blanking caps and connect cooling hoses (7).

9) If installed, reconnect the static system hose of the autopilot.

10) Make sure all the tools and materials are removed and the work area is clean and free from debris.

11) Tilt R.H. instrument panel (16) - refer to 31-10-01.

12) Tilt and lock L.H. instrument panel (11) - refer to 31-10-01.

13) Install upholstery panels (10) and (15) behind the instrument panels.

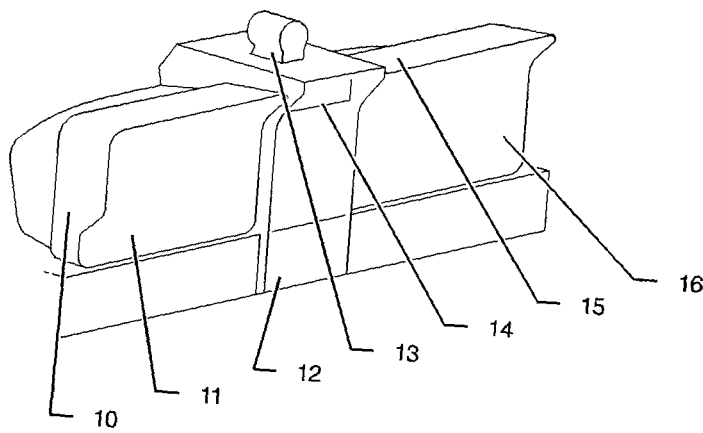
14) In the case of non-raised consoles, connect and install compass (13).

15) Install engine monitoring cluster (14) - refer to 31-10-03.

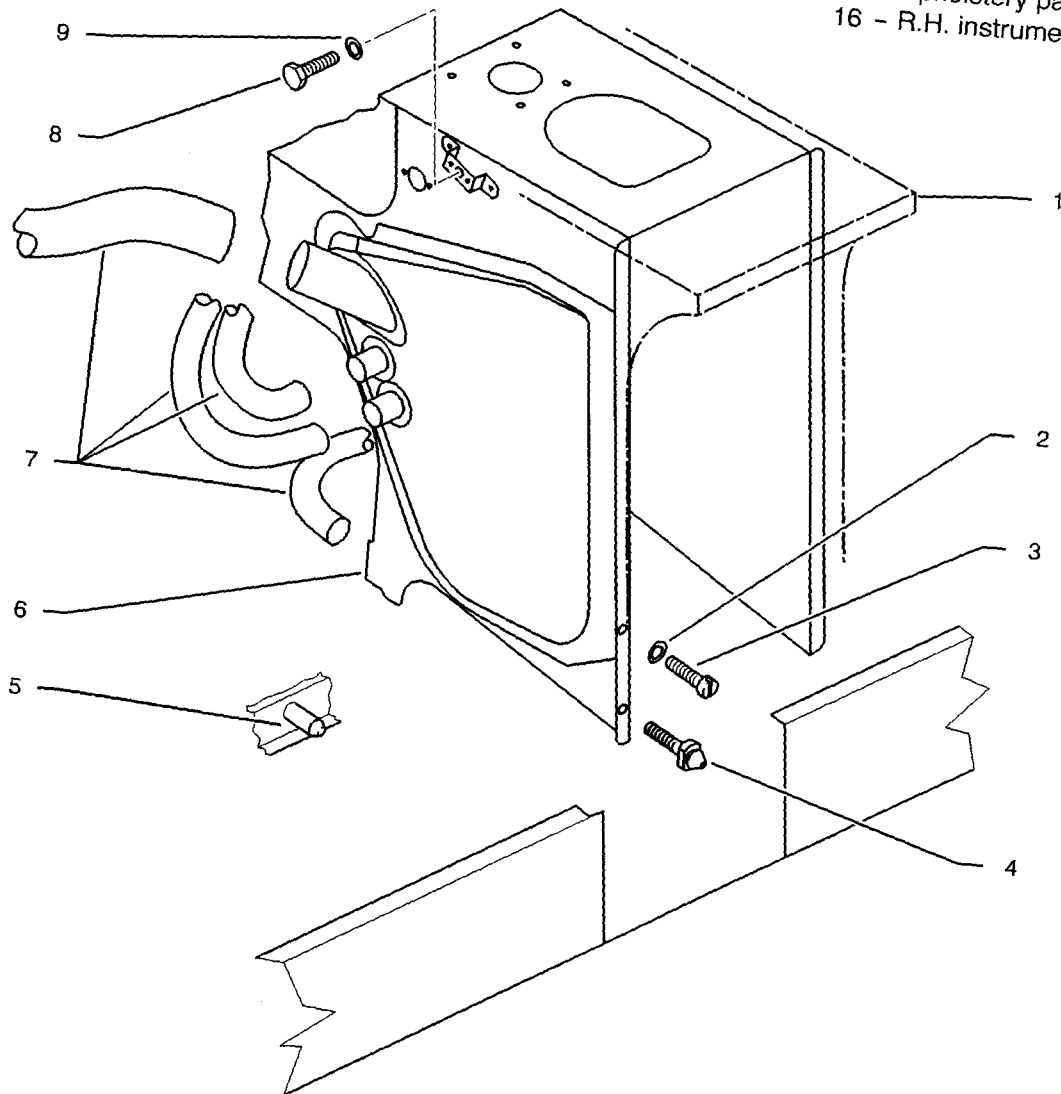
16) Install central console upholstery (1).

a) In the case of raised consoles, secure compass (13) on upholstery (1).

- b) Engage the upholstery from the top while paying attention to compass (13).
  - c) Connect the lighting wires of the central console and, in the case of raised consoles, compass (13).
  - d) Clip upholstery (1) to pins (4) and fix in place using screws (8) and washers (9).
- 17) Remove the warning sign prohibiting main switch-breaker operation.
  - 18) Connect the battery - refer to 24-30-02.
  - 19) Close main switch-breaker.
  - 20) Using the test units, perform a functional test of the navigation systems.
  - 21) Perform a radio test - refer to 23-10-00.
  - 22) If necessary, perform a leakage test of the static system - refer to 34-11-00.
  - 23) Perform an autopilot test - refer to 22-12-00.
  - 24) Position the aircraft on a compensating area.
  - 25) Perform a test run-up - refer to 05-30-02.
  - 26) Check the parameters of the engine monitoring cluster.
  - 27) Check the compass and, if necessary, perform a compensation - refer to 34-20-01.



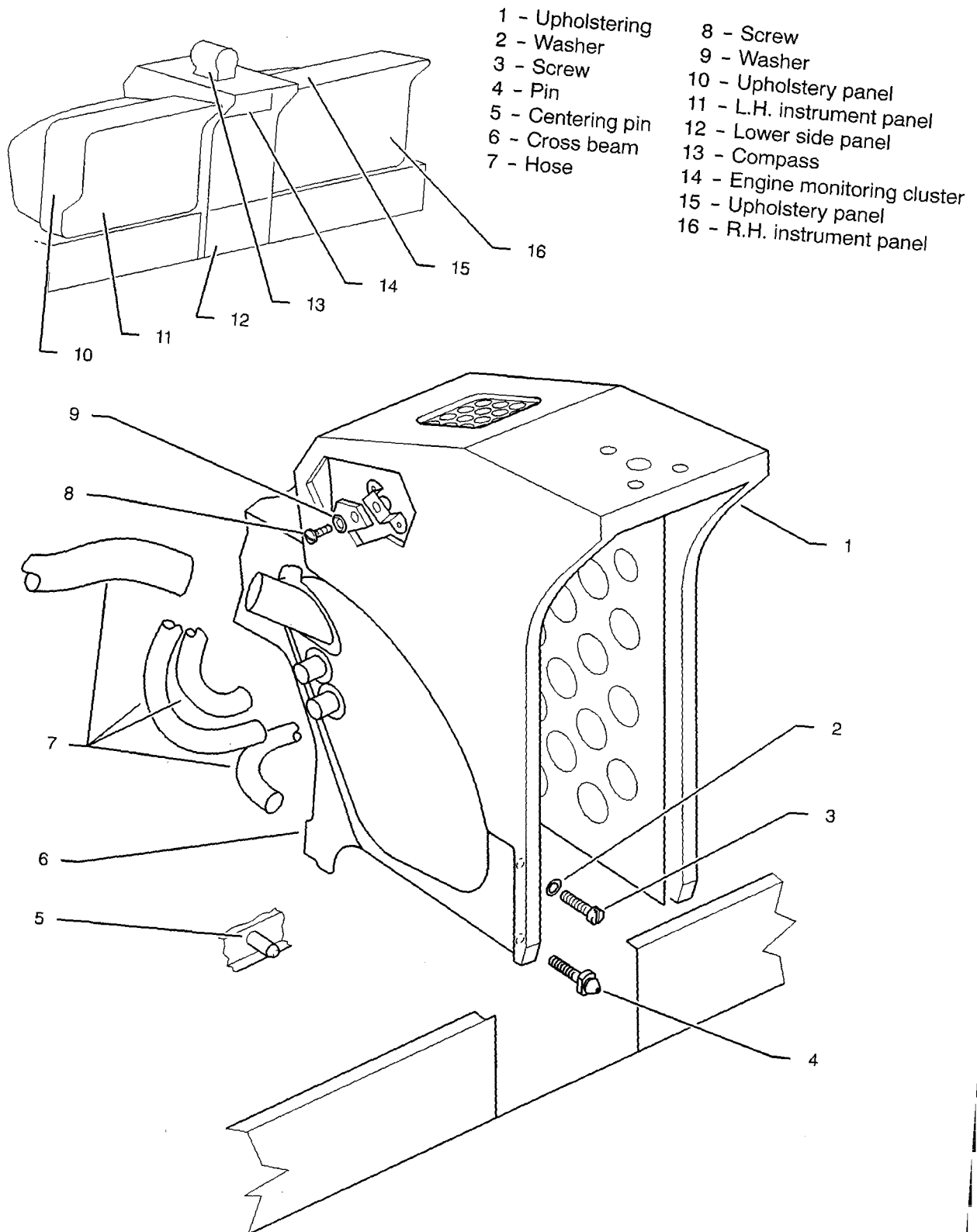
- 1 - Upholstering
- 2 - Washer
- 3 - Screw
- 4 - Pin
- 5 - Centering pin
- 6 - Cross beam
- 7 - Hose
- 8 - Screw
- 9 - Washer
- 10 - Upholstery panel
- 11 - L.H. instrument panel
- 12 - Lower side panel
- 13 - Compass
- 14 - Engine monitoring cluster
- 15 - Upholstery panel
- 16 - R.H. instrument panel



Centrale console  
Figure 401

I4311002AAA/CWZ4001

ACAB  
Validity : Post-MOD. 151



Central console  
 Figure 401A - With raised central console

14311002AAAACWZ4200

ACAB  
 Validity : Post-MOD. 151

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## ENGINE MONITORING CLUSTER

### REMOVAL / INSTALLATION

#### 1. REMOVAL OF THE ENGINE MONITORING CLUSTER (Figures 401, 401A and 401B)

##### A. Tools and consumable materials

None

##### B. Procedure

- 1) Make sure that the main switch-breaker is open.
- 2) Remove central console upholstery - refer to 31-10-02.
- 3) Remove screws (2).
- 4) Disengage engine monitoring cluster (1) from central console.
- 5) Disconnect electrical connector (3).
- 6) Remove engine monitoring cluster (1).

##### Post-MOD. 186

- 7) If engine monitoring cluster (1) has to be replaced :
  - a) Remove extension screws (4) and washers (5) and then, disconnect filtering adapter (6) from engine monitoring cluster.
  - b) Connect filtering adapter (6) to the new engine monitoring cluster and install washers (5) and extension screws (4).

#### 2. INSTALLATION OF THE ENGINE MONITORING CLUSTER (Figures 401, 401A and 401B)

##### A. Tools and consumable materials

None

##### B. Procedure

##### Post-MOD. 186

- 1) Make sure engine monitoring cluster (1) is fitted with filtering adapter (6).

##### All

- 2) Position engine monitoring cluster (1) and connect electrical connector (3).
- 3) Close main switch-breaker.

##### Pre-MOD. 182

- 4) Check engine monitoring cluster (1) for correct operation. Adjust if necessary - refer to Page 501.

##### Post-MOD. 182

- 4) Check engine monitoring cluster (1) for correct operation.

##### All

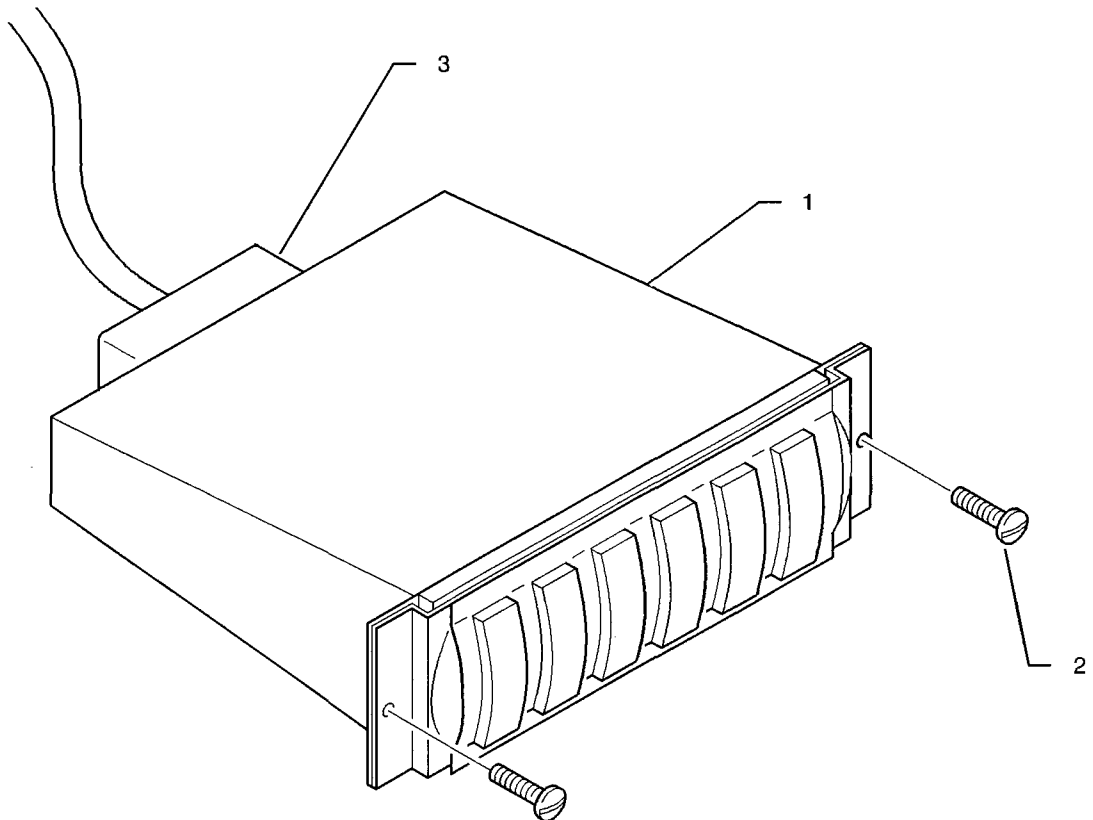
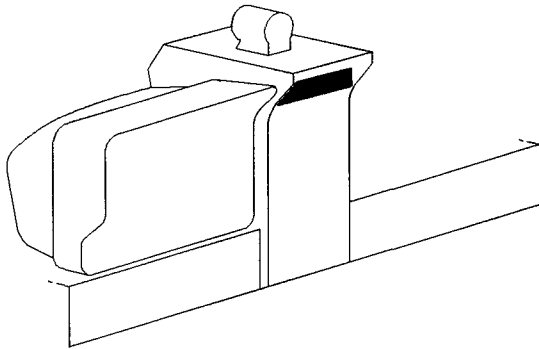
- 5) Open main switch-breaker.

AAAA

Validity : S / N 1 - 9999

- 6) Make sure all the tools and materials are removed and the work area is clean and free from debris.
- 7) Secure engine monitoring cluster (1) with screws (2).
- 8) Install central console upholstery - refer to 31-10-02.
- 9) Perform a test run-up - refer to 05-30-02.

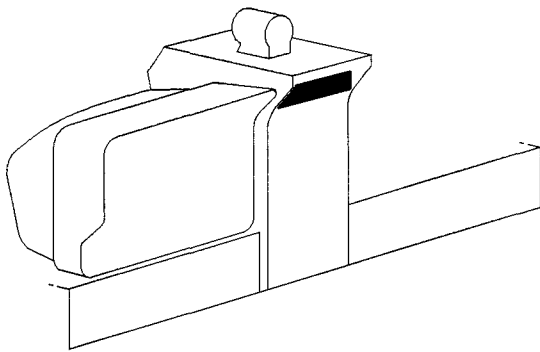
- 1 - Engine monitoring cluster
- 2 - Screw
- 3 - Electrical connector



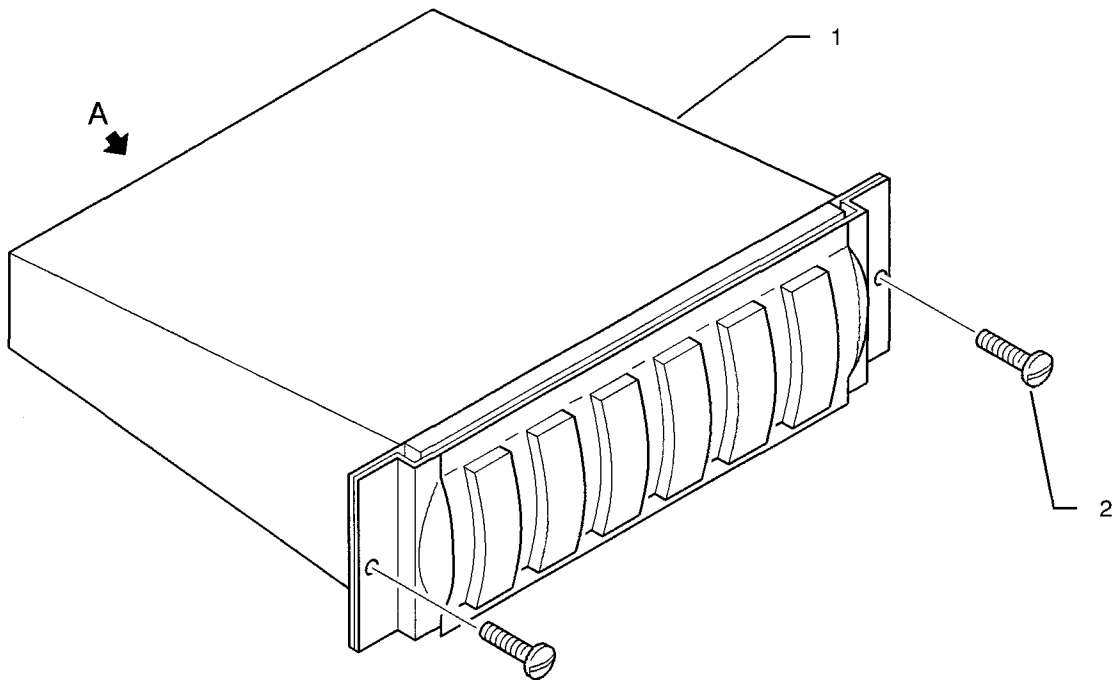
1431003AAADWZ4000

Engine monitoring cluster - Removal / Installation  
Figure 401 - Pre-MOD. 186

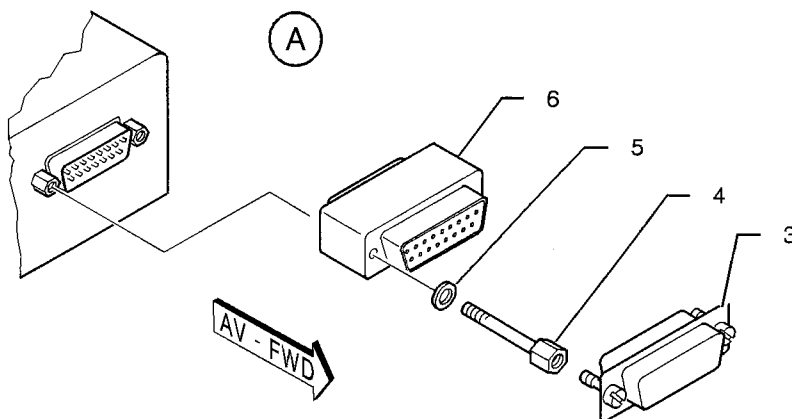
AAAA  
Validity : S / N 1 - 9999



- 1 - Engine monitoring cluster
- 2 - Screw
- 3 - Electrical connector
- 4 - Extension screw
- 5 - Washer
- 6 - Filtering adapter



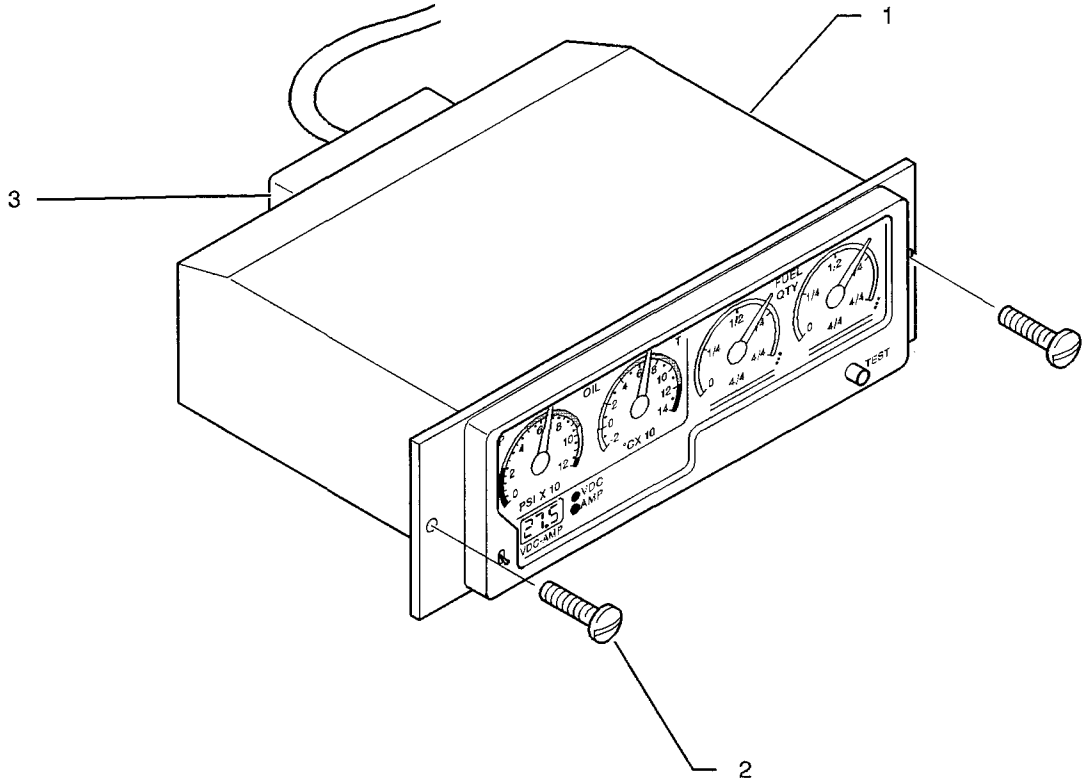
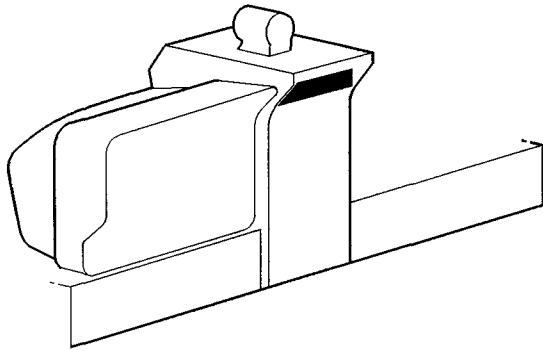
I4311003AAA DWZ4100



Engine monitoring cluster - Removal / Installation  
Figure 401A - Post-MOD. 186

AAAA  
Validity : S / N 1 - 9999

- 1 - Engine monitoring cluster
- 2 - Screw
- 3 - Electrical connector



14311000AAA.FWZ4200

Engine monitoring cluster - Removal / Installation  
Figure 401B - Post-MOD. 182 (TB 200, TB 20, TB 21)

AAAA  
Validity : S / N 1 - 9999

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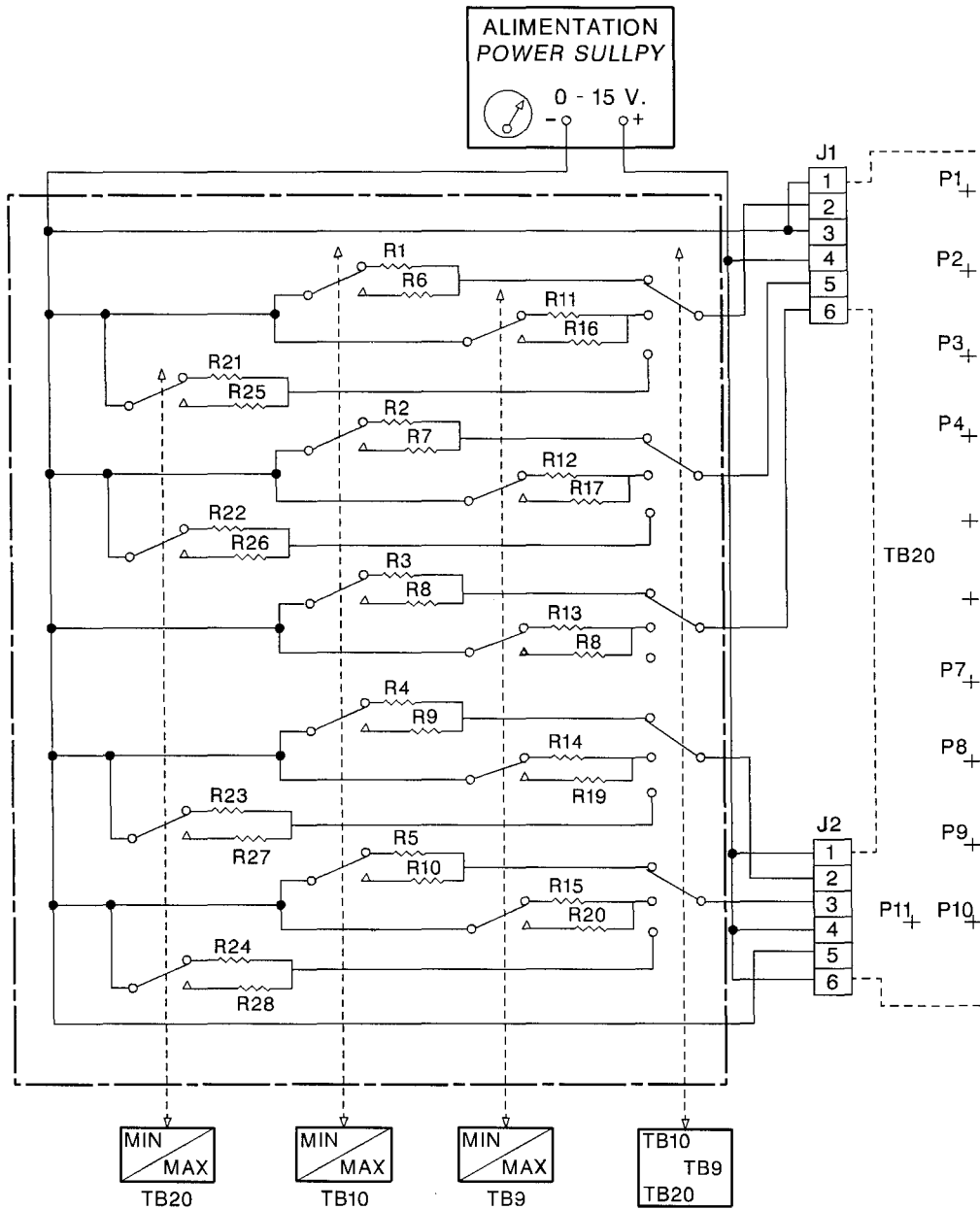
## ENGINE MONITORING CLUSTER

### ADJUSTMENT / TEST

#### 1. ADJUSTMENT OF ENGINE MONITORING CLUSTER (Figure 501)

##### A. Tools and consumable materials

- Voltmeter
- Direct current 0 to 15 V (or more) - 500 mA
- Varnish (TB 07-901)
- Test box, to be fabricated, including :
  - . 28 resistors with 1 % accuracy.
  - . 3 keyboard selector switches, each one equipped with 5 reverse switches, which allow to select after the pre-setting of the rotating knob (5 circuits, 3 positions), the setting value corresponding to the bottom or upper part of each indicator range.
  - . the rotating knob allows selection of TB 9, TB 10 or TB 20 and determines the switch to be used ; the two others have no purpose.
  - . 2 electrical connectors (J1 - J2) "LABINAL" 57-06 CIZ (P/N Z00.N7075530003) and their clips 59-331.1 (Z00.N7136801603).
  - . a box, approximately 5.9 in x 3.94 in (150 x 100 mm).
  - . electrical wire, section 0.6 mm<sup>2</sup> (AWG 20), for the 2 connectors.
  - . an output terminal to connect negative pole of generator 0 - 15 VDC to test box.
  - . a green sleeve to identify electrical connector J1.
  - . a red sleeve to identify electrical connector J2.



Test box - Adjustment / Test  
Figure 501

I431102AAA4EVZ4100

AAAA  
Validity : S / N 1 - 274

**B. Procedure**

**NOTE :** The adjustments will be performed referring to the gage labels and their sectors - refer to 31-10-00.

Oil temperature	{	R <sub>11</sub> = 1200 Ω → Set by P <sub>2</sub> to 40°C
		R <sub>16</sub> = 80 Ω → Set by P <sub>1</sub> to 118°C
Oil pressure	{	R <sub>12</sub> = 190 Ω → Set by P <sub>4</sub> to 1.7 bar
		R <sub>17</sub> = 50 Ω → Set by P <sub>3</sub> to 6.9 bars
L.H. level gage	{	R <sub>14</sub> = see NOTE 2 → Set by P <sub>8</sub> to 0
		R <sub>19</sub> = see NOTE 3 → Set by P <sub>7</sub> to 1 / 1
R.H. level gage	{	R <sub>15</sub> = see NOTE 2 → Set by P <sub>10</sub> to 0
		R <sub>20</sub> = see NOTE 3 → Set by P <sub>9</sub> to 1 / 1
Fuel pressure	{	R <sub>13</sub> = 246 Ω → Set by P <sub>6</sub> to 34 mb
		R <sub>18</sub> = 0 Ω → Set by P <sub>5</sub> to 300 mb

- Voltmeter :

. Vary the supply voltage between 12 volts and 14.4 volts.

. Select 14.5 volts and set by P<sub>11</sub> the pointer on the upper limit of the green and red sectors.

**NOTE 1 :** General tolerance of used resistors will be 1 %.

**During settings, adjust potentiometers to obtain a correct indication at both ends of the scale (except for the voltmeter).**

**After settings, safety potentiometers with a light coat of varnish (TB 07-901).**

**For settings other than those of the voltmeter, the nominal voltage to be used is + 14 VDC.**

**NOTE 2 :** Only one gage per wing = 235 Ω ; two gages per wing = 185 Ω.

**NOTE 3 :** Only one gage per wing = 73 Ω ; two gages per wing = 40 Ω.

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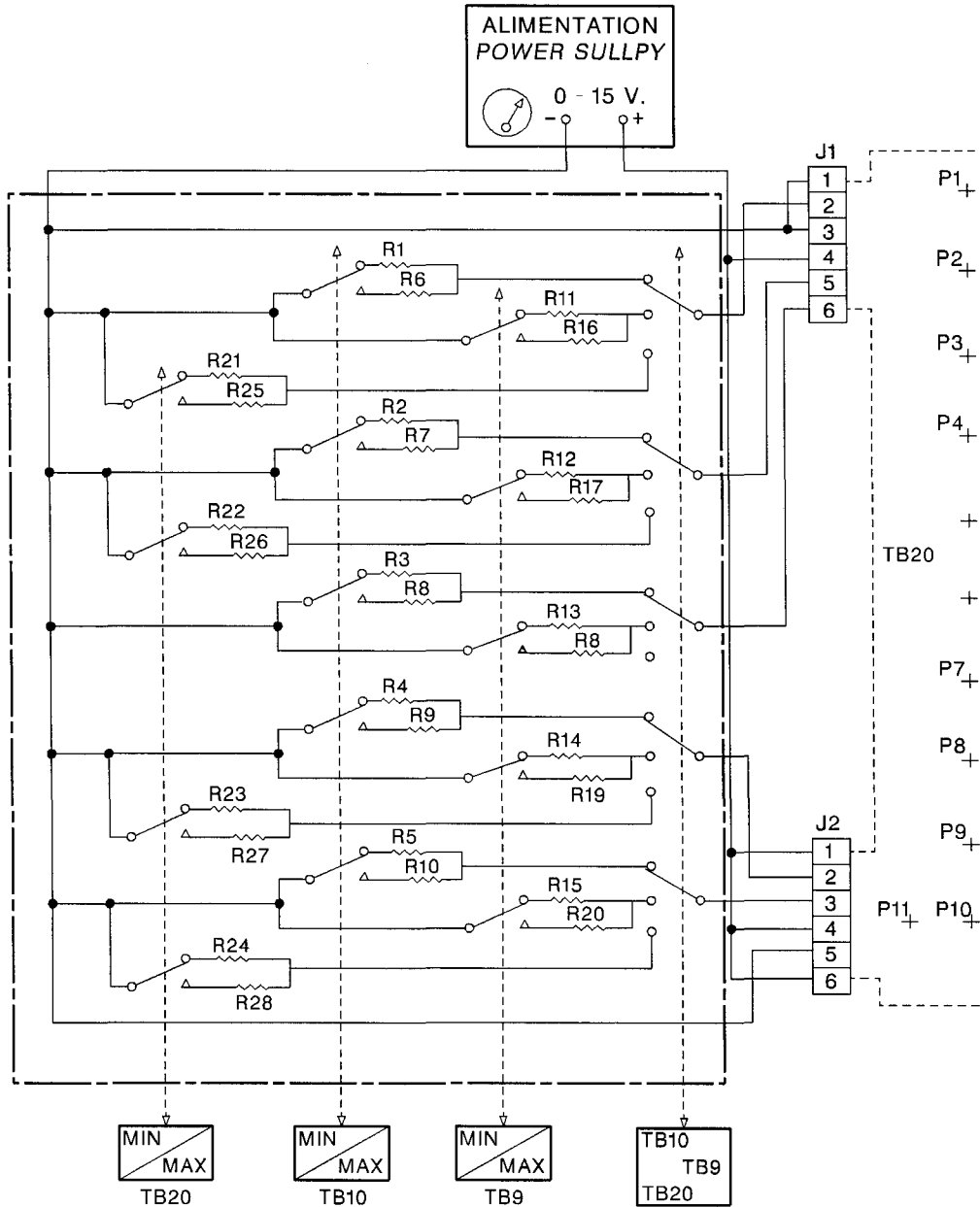
## ENGINE MONITORING CLUSTER

### ADJUSTMENT / TEST

#### 1. ADJUSTMENT OF ENGINE MONITORING CLUSTER (Figure 501)

##### A. Tools and consumable materials

- Voltmeter
- Direct current 0 to 15 V (or more) - 500 mA
- Varnish (TB 07-901)
- Test box, to be fabricated, including :
  - . 28 resistors with 1 % accuracy.
  - . 3 keyboard selector switches, each one equipped with 5 reverse switches, which allow to select after the pre-setting of the rotating knob (5 circuits, 3 positions), the setting value corresponding to the bottom or upper part of each indicator range.
  - . the rotating knob allows selection of TB 9, TB 10 or TB 20 and determines the switch to be used ; the two others have no purpose.
  - . 2 electrical connectors (J1 - J2) "LABINAL" 57-06 CIZ (P/N Z00.N7075530003) and their clips 59-331.1 (Z00.N7136801603).
  - . a box, approximately 5.9 in x 3.94 in (150 x 100 mm).
  - . electrical wire, section 0.6 mm<sup>2</sup> (AWG 20), for the 2 connectors.
  - . an output terminal to connect negative pole of generator 0 - 15 VDC to test box.
  - . a green sleeve to identify electrical connector J1.
  - . a red sleeve to identify electrical connector J2.



I431102AAA EVZ4100

Test box - Adjustment / Test  
Figure 501

ABAB

Validity : S / N 1 - 274 with fuel tanks -  
26.9 US Gal

31-10-03 (BD)

Page 502  
SEP 02

**B. Procedure**

**NOTE :** The adjustments will be performed referring to the gage labels and their sectors - refer to 31-10-00.

Oil temperature	{	R <sub>1</sub> = 1200 Ω → Set by P <sub>2</sub> to 40°C
		R <sub>6</sub> = 80 Ω → Set by P <sub>1</sub> to 118°C
Oil pressure	{	R <sub>2</sub> = 190 Ω → Set by P <sub>4</sub> to 1.7 bar
		R <sub>7</sub> = 50 Ω → Set by P <sub>3</sub> to 6.9 bars
L.H. level gage	{	R <sub>4</sub> = see NOTE 2 → Set by P <sub>8</sub> to 0
		R <sub>9</sub> = 40 Ω → Set by P <sub>7</sub> to 1 / 1
R.H. level gage	{	R <sub>5</sub> = see NOTE 2 → Set by P <sub>10</sub> to 0
		R <sub>10</sub> = 40 Ω → Set by P <sub>9</sub> to 1 / 1
Fuel pressure	{	R <sub>3</sub> = 246 Ω → Set by P <sub>6</sub> to 34 mb
		R <sub>8</sub> = 0 Ω → Set by P <sub>5</sub> to 300 mb

- Voltmeter :

- . Vary the supply voltage between 12 volts and 14.4 volts.
- . Select 14.5 volts and set by P<sub>11</sub> the pointer on the upper limit of the green and red sectors.

**NOTE 1 :** General tolerance of used resistors will be 1 %.

**During settings, adjust potentiometers to obtain a correct indication at both ends of the scale (except for the voltmeter).**

**After settings, safety potentiometers with a light coat of varnish (TB 07-901).**

**For settings other than those of the voltmeter, the nominal voltage to be used is + 14 VDC.**

**NOTE 2 :** Only one gage per wing = 235 Ω ; two gages per wing = 185 Ω.

ABAB

Validity : S / N 1 - 274 with fuel tanks -  
26.9 US Gal

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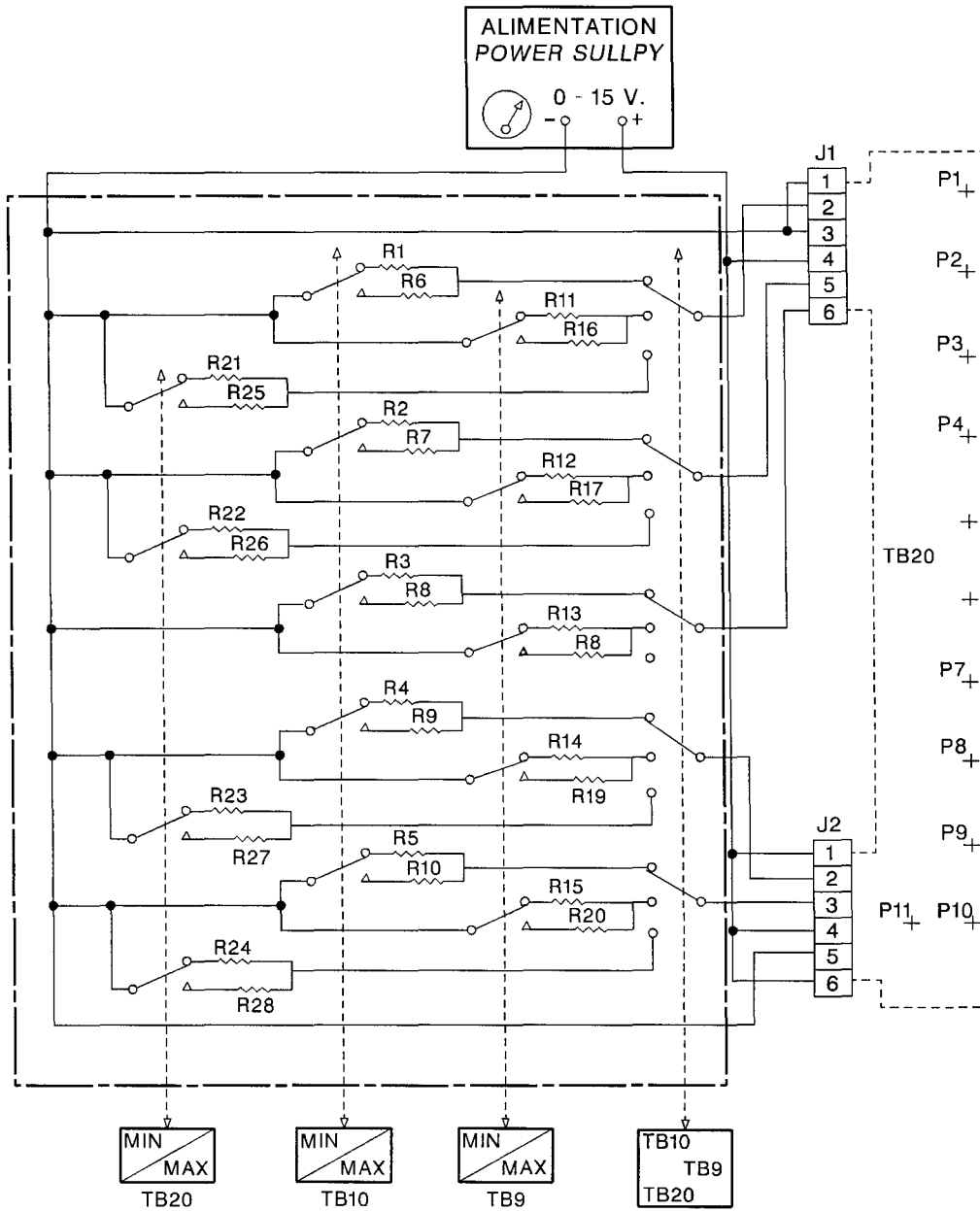
## ENGINE MONITORING CLUSTER

### ADJUSTMENT / TEST

#### 1. ADJUSTMENT OF ENGINE MONITORING CLUSTER (Figure 501)

##### A. Tools and consumable materials

- Voltmeter
- Direct current 0 to 15 V (or more) – 500 mA
- Varnish (TB 07-901)
- Test box, to be fabricated, including :
  - . 28 resistors with 1 % accuracy.
  - . 3 keyboard selector switches, each one equipped with 5 reverse switches, which allow to select after the pre-setting of the rotating knob (5 circuits, 3 positions), the setting value corresponding to bottom or upper part of each indicator range.
  - . the rotating knob allows selection of TB 9, TB 10 or TB 20 and determines the switch to be used ; the two others have no purpose.
  - . 2 electrical connectors (J1 - J2) "LABINAL" 57-06 CIZ (P/N Z00.N7075530003) and their clips 59-331.1 (Z00.N7136801603).
  - . a box, approximately 5.9 in x 3.94 in (150 x 100 mm).
  - . electrical wire, section 0.6 mm<sup>2</sup> (AWG 20), for the 2 connectors.
  - . an output terminal to connect negative pole of generator 0 - 15 VDC to test box.
  - . a green sleeve to identify electrical connector J1.
  - . a red sleeve to identify electrical connector J2.



1431102AAAEVZ4100

Test box - Adjustment / Test  
Figure 501

ACAC

Validity : S / N 275 - 528, 530 - 560  
Pre-Kit OPT10 911200 (MOD. 67)

31-10-03 (BG)

Page 502  
SEP 02

**B. Procedure**

**NOTE : The adjustments will be performed referring to the gage labels and their sectors - refer to 31-10-00.**

Oil temperature	{	R <sub>11</sub> = 1200 Ω	→ Set by P <sub>2</sub>	to 40°C
		R <sub>16</sub> = 80 Ω	→ Set by P <sub>1</sub>	to 118°C
Oil pressure	{	R <sub>12</sub> = 190 Ω	→ Set by P <sub>4</sub>	to 1.7 bar
		R <sub>17</sub> = 50 Ω	→ Set by P <sub>3</sub>	to 6.9 bar
L.H. level gage (*)	{	R <sub>14</sub> = 185 Ω	→ Set by P <sub>8</sub>	to 0
		R <sub>19</sub> = 40 Ω	→ Set by P <sub>7</sub>	to 1 / 1
R.H. level gage (*)	{	R <sub>15</sub> = 185 Ω	→ Set by P <sub>10</sub>	to 0
		R <sub>20</sub> = 40 Ω	→ Set by P <sub>9</sub>	to 1 / 1
Fuel pressure	{	R <sub>13</sub> = 246 Ω	→ Set by P <sub>6</sub>	to 34 mb
		R <sub>18</sub> = 0 Ω	→ Set by P <sub>5</sub>	to 300 mb

(\*) Check that the pointer reaches 117 Ω (± 5 Ω) when indicating 1 / 2

(\*) Check that the pointer reaches 159 Ω (± 5 Ω) when indicating 1 / 4

Voltmeter :

- Vary the supply voltage between 12 volts and 14.5 volts.
- Select 14.5 volts and set by P<sub>11</sub> the pointer on the upper limit of the green and red sectors.

**NOTE : General tolerance of used resistors will be 1 %.**

**During settings, adjust potentiometers to obtain a correct indication at both ends of the scale (except for the voltmeter).**

**After settings, safety potentiometers with a light coat of varnish (TB 07-901).**

**For settings other than those of the voltmeter, the nominal voltage to be used is + 14 VDC.**

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ACAC

Validity : S / N 275 - 528, 530 - 560  
Pre-Kit OPT10 911200 (MOD. 67)

**31-10-03** (BG) Page 504  
SEP 02

## ENGINE MONITORING CLUSTER

### ADJUSTMENT / TEST

#### 1. ADJUSTMENT OF ENGINE MONITORING CLUSTER (Figure 501)

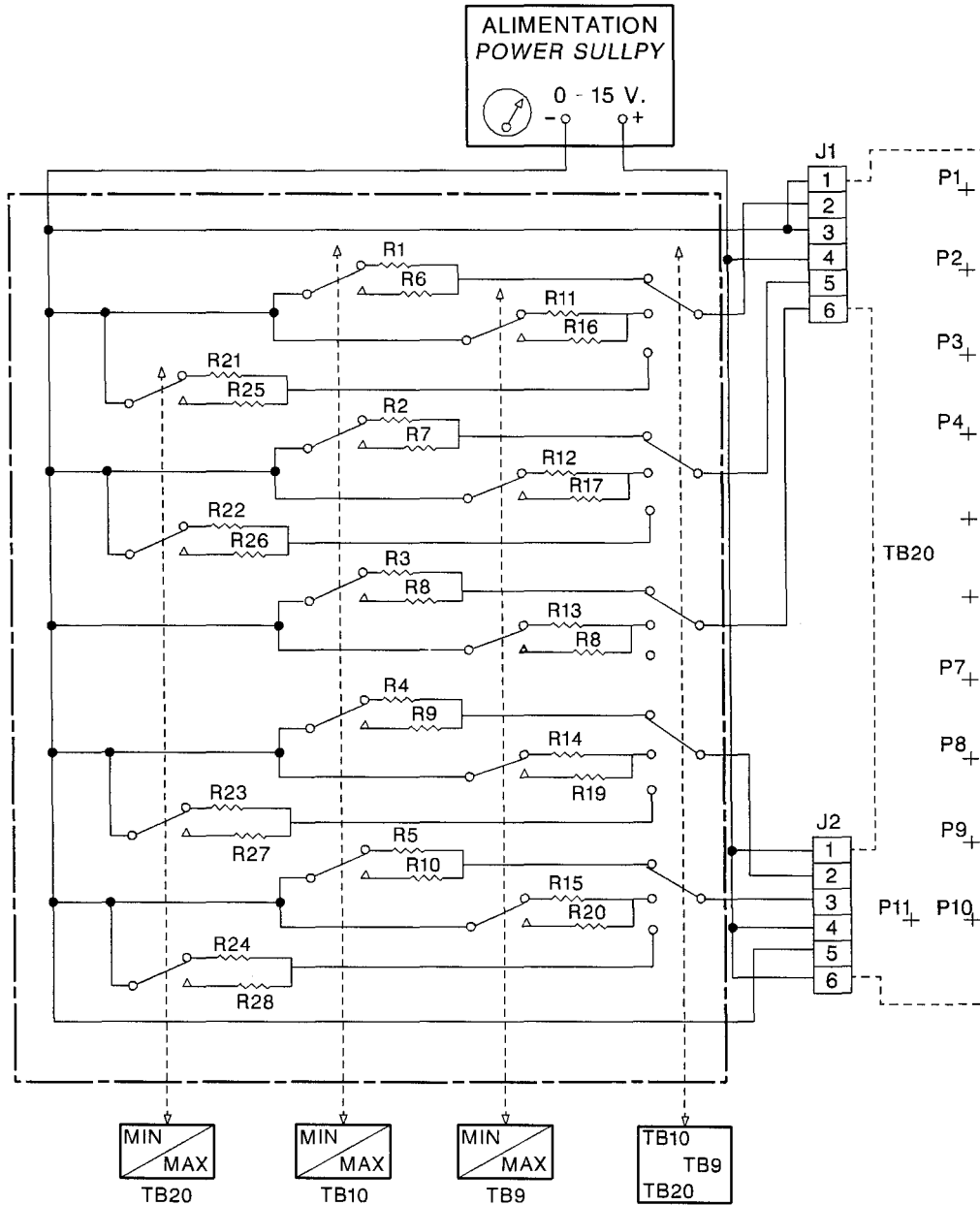
##### A. Tools and consumable materials

- Voltmeter
- Direct current 0 to 15 V (or more) - 500 mA
- Varnish (TB 07-901)
- Test box, to be fabricated, including :
  - . 28 resistors with 1 % accuracy.
  - . 3 keyboard selector switches, each one equipped with 5 reverse switches, which allow to select after the pre-setting of the rotating knob (5 circuits, 3 positions), the setting value corresponding to bottom or upper part of each indicator range.
  - . the rotating knob allows selection of TB 9, TB 10 or TB 20 and determines the switch to be used ; the two others have no purpose.
  - . 2 electrical connectors (J1 - J2) "LABINAL" 57-06 CIZ (P/N Z00.N7075530003) and their clips 59-331.1 (Z00.N7136801603).
  - . a box, approximately 5.9 in x 3.94 in (150 x 100 mm).
  - . electrical wire, section 0.6 mm<sup>2</sup> (AWG 20), for the 2 connectors.
  - . an output terminal to connect negative pole of generator 0 - 15 VDC to test box.
  - . a green sleeve to identify electrical connector J1.
  - . a red sleeve to identify electrical connector J2.

ADAD

Validity : S / N 275 - 528, 530 - 560  
Pre-Kit OPT10 911200 (MOD. 67)  
with fuel tanks 26.9 US Gal

**31-10-03** (BJ) Page 501  
SEP 02



Test box - Adjustment / Test  
Figure 501

I431102AAAEEVZ4100

ADAD  
Validity : S / N 275 - 528, 530 - 560  
Pre-Kit OPT10 911200 (MOD. 67)  
with fuel tanks 26.9 US Gal

31-10-03 (BJ)

Page 502  
SEP 02

**B. Procedure**

**NOTE : The adjustments will be performed referring to the gage labels and their sectors - refer to 31-10-00.**

Oil temperature	{	$R_1 = 1200 \Omega$	→ Set by $P_2$	to $40^\circ\text{C}$
		$R_6 = 80 \Omega$	→ Set by $P_1$	to $118^\circ\text{C}$
Oil pressure	{	$R_2 = 190 \Omega$	→ Set by $P_4$	to 1.7 bar
		$R_7 = 50 \Omega$	→ Set by $P_3$	to 6.9 bar
L.H. level gage (*)	{	$R_4 = 185 \Omega$	→ Set by $P_8$	to 0
		$R_9 = 40 \Omega$	→ Set by $P_7$	to 1 / 1
R.H. level gage (*)	{	$R_5 = 185 \Omega$	→ Set by $P_{10}$	to 0
		$R_{10} = 40 \Omega$	→ Set by $P_9$	to 1 / 1
Fuel pressure	{	$R_3 = 246 \Omega$	→ Set by $P_6$	to 34 mb
		$R_8 = 0 \Omega$	→ Set by $P_5$	to 300 mb

(\*) Check that the pointer reaches  $108 \Omega (\pm 5 \Omega)$  when indicating 1 / 2

(\*) Check that the pointer reaches  $150 \Omega (\pm 5 \Omega)$  when indicating 1 / 4

Voltmeter :

- Vary the supply voltage between 12 volts and 14.5 volts.
- Select 14.5 volts and set by  $P_{11}$  the pointer on the upper limit of the green and red sectors.

**NOTE : General tolerance of used resistors will be 1 %.**

**During settings, adjust potentiometers to obtain a correct indication at both ends of the scale (except for the voltmeter).**

**After settings, safety potentiometers with a light coat of varnish DUROUX.**

**For settings other than those of the voltmeter, the nominal voltage to be used is + 14 VDC.**

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## ENGINE MONITORING CLUSTER

### ADJUSTMENT / TEST

#### 1. ADJUSTMENT OF OIL PRESSURE INDICATOR (Figures 501 and 502)

##### A. Tools and consumable materials

- 1 Voltmeter or 1 test set P/N 8270TB10 00200000
- Ground power unit
- Varnish (TB 07-906)
- Round sticker P/N Z00.N4815371035

##### B. Procedure

**CAUTION : DURING THE OIL PRESSURE INDICATOR ADJUSTMENT OPERATION, THE ENGINE MUST BE SHUT DOWN AND THE OIL PRESSURE EQUAL TO ZERO.**

- 1) Remove the engine monitoring cluster without disconnecting it - refer to Page 401.
- 2) For aircraft equipped with a ground power receptacle, connect the ground power unit - refer to 24-40-00.
- 3) Close main switch-breaker.

##### Adjustment without a test set

- 4) Connect the voltmeter to contacts (3) and (4) of the engine monitoring cluster test connector.

##### Adjustment with a test set

- 4) Connect the test set connector to the engine monitoring cluster test connector. Set the test set selector to "Oil pressure" and turn on the test set.

##### All

- 5) For a zero oil pressure, adjust the output voltage with P5 potentiometer (1) to obtain a voltage of  $0.055 \text{ V} \pm 0.01 \text{ V}$ .

**NOTE 1 : The electronic circuit ensures a time-delay of the indicator pointer, this can be annoying during the adjustment operations. This time-delay can temporarily be disabled during the adjustment operations by tripping the switch marked JP2 (8) on the printed circuit.**

**NOTE 2 : If tripped, once the adjustment operations completed, trip JP2 switch (8) back to its initial position.**

- 6) Wait for about 20 seconds and check that the pointer is positioned one pointer thickness above the R.H. lower line within the red sector.

##### Adjustment without a test set

- 7) Disconnect the voltmeter.

##### Adjustment with a test set

- 7) Switch off the test set and disconnect the test set connector from the engine monitoring cluster.

All

- 8) Open main switch-breaker.
- 9) If connected, disconnect the ground power unit - refer to 24-40-00.
- 10) Lock P5 adjustment potentiometer (1) with varnish (TB 07-906).
- 11) Stick a new round sticker on the access hole of P5 potentiometer (1).
- 12) Make sure all the tools and materials are removed and the work area is clean and free from debris.
- 13) Install the engine monitoring cluster - refer to Page 401.
- 14) Perform a test run-up - refer to 05-30-02. Check the oil pressure indicating circuit for correct operation.

**2. ADJUSTMENT OF FUEL PRESSURE INDICATOR (Figures 501 and 502)**

**A. Tools and consumable materials**

- 1 voltmeter or 1 test set P/N 8270TB10 00200000
- Ground power unit
- Drain receptacle 0.5 US Gal (2 litres)
- Blanking caps
- Varnish (TB 07-906)
- Round sticker P/N Z00.N4815371035

**B. Procedure**

**WARNING : APPLY THE FUEL SYSTEM SERVICING PROCEDURE - REFER TO 28-00-00.**

**CAUTION : THE PRESSURE INSIDE THE FUEL SYSTEM MUST BE EQUAL TO ZERO DURING THE ADJUSTMENT OPERATION OF THE FUEL PRESSURE INDICATOR.**

- 1) Open main switch-breaker.
- 2) Set the fuel selector to "CLOSED".
- 3) Remove the engine cowlings - refer to 71-10-01.
- 4) Drain the fuel system in fuselage - refer to 12-11-02.
- 5) Position the drain receptacle under the engine pump.
- 6) Disconnect the fuel supply hose on engine pump side to drop the fuel system residual pressure. Blank off.
- 7) Remove the engine monitoring cluster without disconnecting it - refer to Page 401.
- 8) For aircraft equipped with a ground power receptacle, connect the ground power unit - refer to 24-40-00.
- 9) Close main switch-breaker.

Adjustment without a test set

- 10) Connect the voltmeter to contacts (5) and (6) of the the engine monitoring cluster test connector.

Adjustment with a test set

- 10) Connect the test set connector to the engine monitoring cluster test connector. Set the test set selector to "Fuel pressure" and turn on the test set.

All

- 11) For a zero fuel pressure, adjust the output voltage with P3 potentiometer (2) to obtain a voltage of  $0.77\text{ V} \pm 0.01\text{ V}$ .

**NOTE 1 : The electronic circuit ensures a time-delay of the indicator pointer, this can be annoying during the adjustment operations. This time-delay can temporarily be disabled during the adjustment operations by tripping the switch marked JP1 (7) on the printed circuit.**

**NOTE 2 : If tripped, once the adjustment operations completed, trip JP1 switch (7) back to its initial position.**

Adjustment without a test set

- 12) Disconnect the voltmeter.

Adjustment with a test set

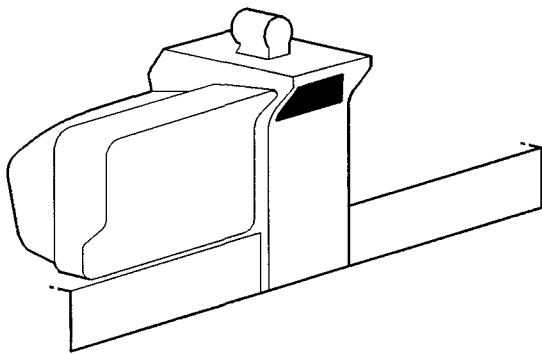
- 12) Switch off the test set and disconnect the test set connector from the engine monitoring cluster.

All

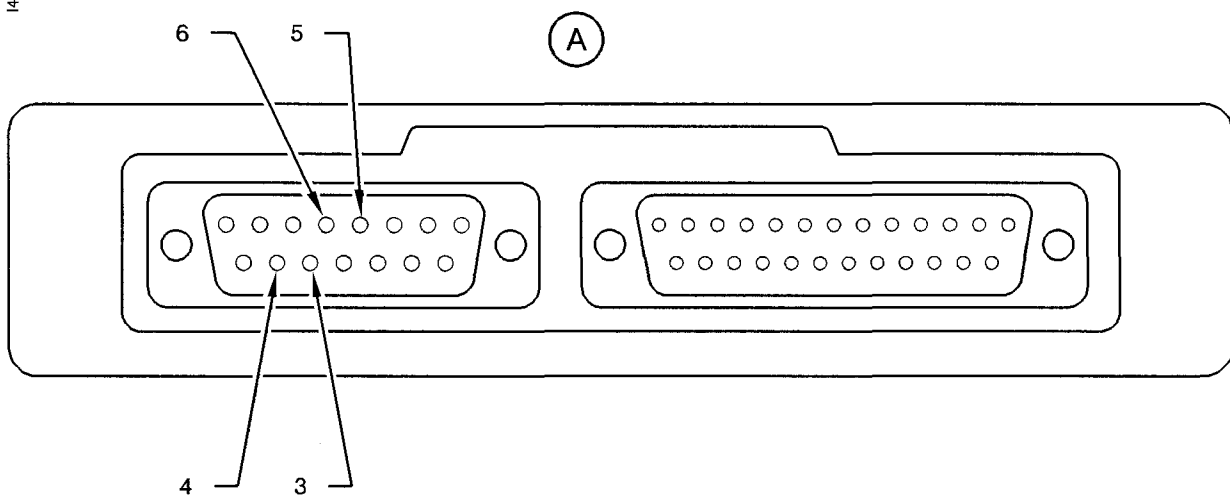
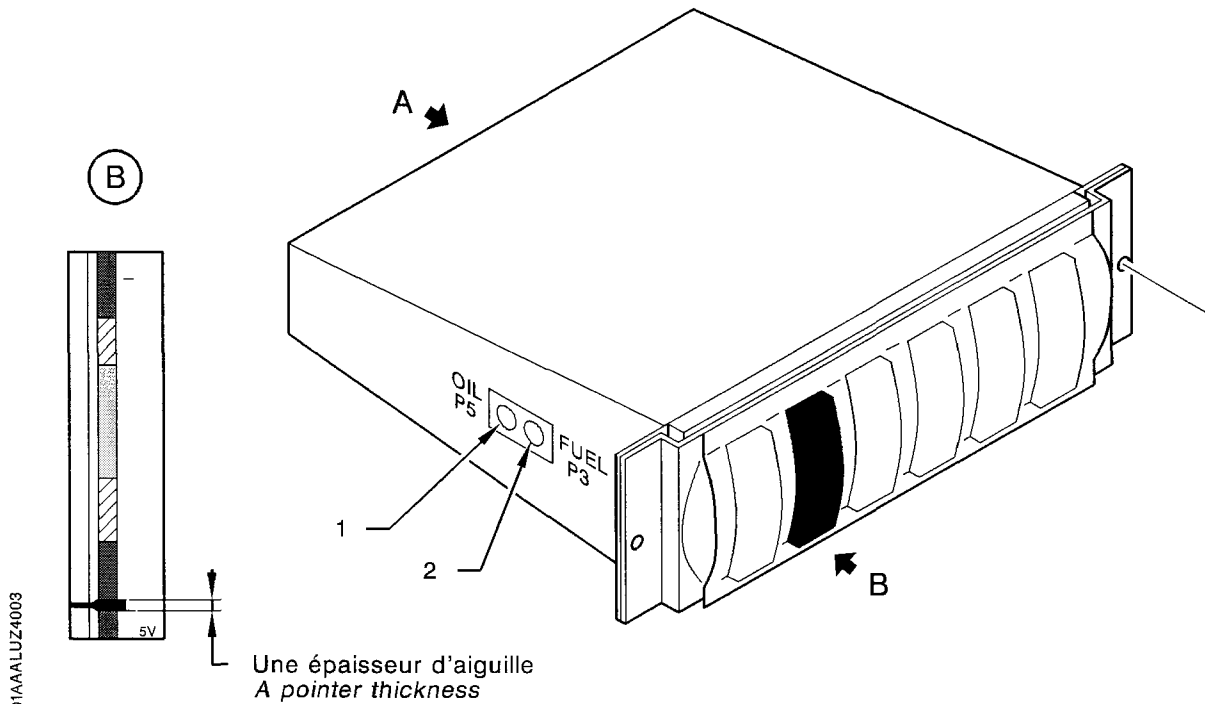
- 13) Lock P3 adjustment potentiometer (2) with varnish (TB 07-906).
- 14) Stick a new round sticker on the access hole of P3 potentiometer (2).
- 15) Remove the blanking caps, connect the fuel hose to the engine pump and remove the drain receptacle.
- 16) Set the fuel selector to "LEFT" or "RIGHT".
- 17) Bleed the fuel system - refer to 12-11-02.

**CAUTION : MAKE SURE THE SELECTED FUEL TANK CONTAINS FUEL BEFORE OPERATING THE ELECTRIC PUMP.**

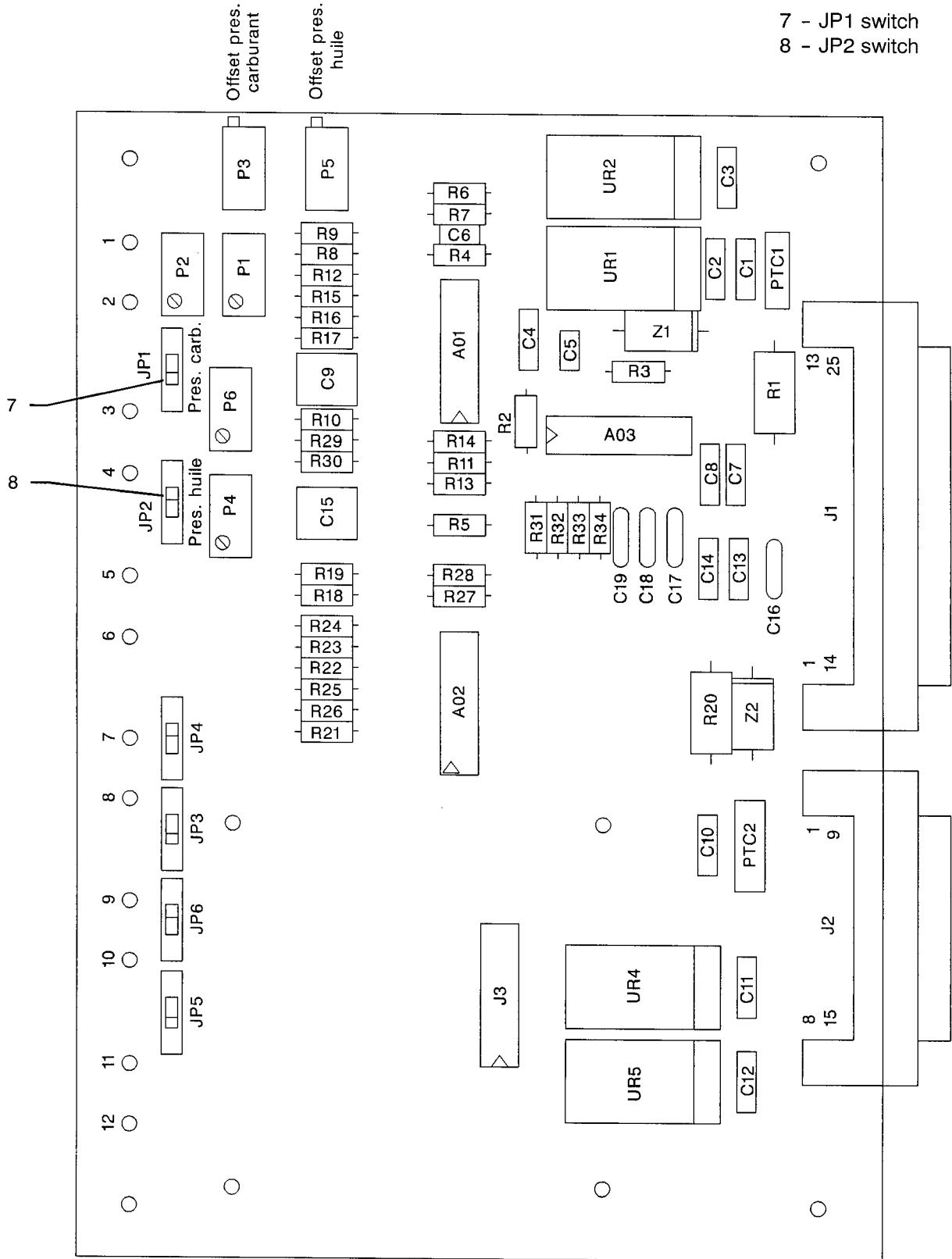
- 18) Perform a leakage test with the system under pressure - refer to 28-00-00.
- 19) Check for leaks.
- 20) Mark the fuel hose on engine pump with a red paint line.
- 21) Open main switch-breaker.
- 22) If connected, disconnect the ground power unit - refer to 24-40-00.
- 23) Make sure all the tools and materials are removed and the work area is clean and free from debris.
- 24) Install the engine monitoring cluster - refer to Page 401.
- 25) Install the engine cowlings - refer to 71-10-01.
- 26) Perform a test run-up - refer to 05-30-02. Check the fuel pressure indicating system for correct operation.



- 1 - P5 potentiometer
- 2 - P3 potentiometer
- 3 - Contact 13, - oil pressure indicator
- 4 - Contact 14, + oil pressure indicator
- 5 - Contact 4, - fuel pressure indicator
- 6 - Contact 5, + fuel pressure indicator



Engine monitoring cluster - Adjustment / Test  
Figure 501



Engine monitoring cluster - Adjustment / Test  
Figure 502

I431102AAA4EVZ4201

AEAF  
Validity : S/N 823 - 849, 888, 948 - 9999

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## INDEPENDENT INSTRUMENTS

### DESCRIPTION AND OPERATION

#### 1. GENERAL

The independent instruments are intended to monitor or to log flight times and engine operation times.

The independent instruments include :

- M50 stop watch (option),
- M50 clock (option),
- M51 hourmeter for the flight time (option),

Option Pre-MOD. 151, Standard Post-MOD. 151

- E024 or M51 hourmeter for engine operation time.

#### 2. LOCATION

COMPONENT	QTY	AREA	ACCESS DOOR	REFERENCE
M50 stop watch (option)	1	250	/	31-20-00
M50 clock (option)	1	250	251R	31-20-00
E024 or M51 hourmeter	1 or 2	250	/	31-20-00

#### 3. DESCRIPTION

##### A. M50 mechanical stop watch (Figure 1) or electric stop watch (Figure 2)

Located on the pilot's control wheel and, according to the type, lit either with a postlight or a built-in lighting, this stop watch allows the pilot to fly in IFR conditions.

**NOTE : The lighting can be modulated using the instrument lighting control located on the L.H. side of the L.H. instrument panel.**

The stop watch is electrically supplied by the battery and protected by a fuse located on PL3 fuse panel.

A second M53 stop watch (option) can be installed on the R.H. control wheel.

##### B. M50 clock (Figure 3)

The digital readout-type clock is located on the R.H. instrument panel or R.H. panel strip. It indicates the time, but is not approved in IFR condition flight.

The clock is electrically supplied by the the battery and protected by a fuse located on PL3 fuse panel.

##### C. M51 hourmeter (Figure 4)

The hourmeter is located either on the R.H. or L.H. instrument panel or on the R.H. or L.H. strip, depending on the space available.

The hourmeter counts either the flight time or the engine operation time according to the option chosen.

Flight time :

- In flight time version, the hourmeter is controlled by S56 microswitch, secured under the L.H. wing, at rib N11. When the aircraft reaches  $40 \text{ Kt} \pm 10 \text{ Kt}$ , the microswitch, equipped with a tab, applies a ground which triggers the counting. The operation time is given in hours and tenths of hours.

Engine operation time with hourmeter indicator :

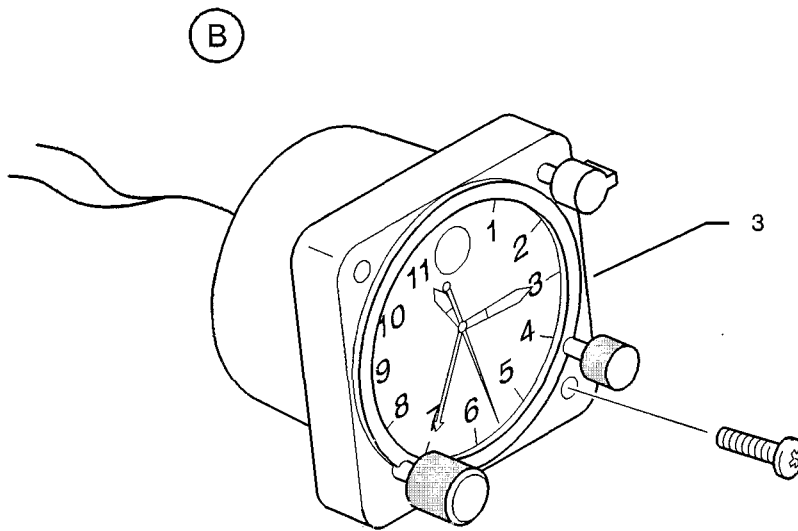
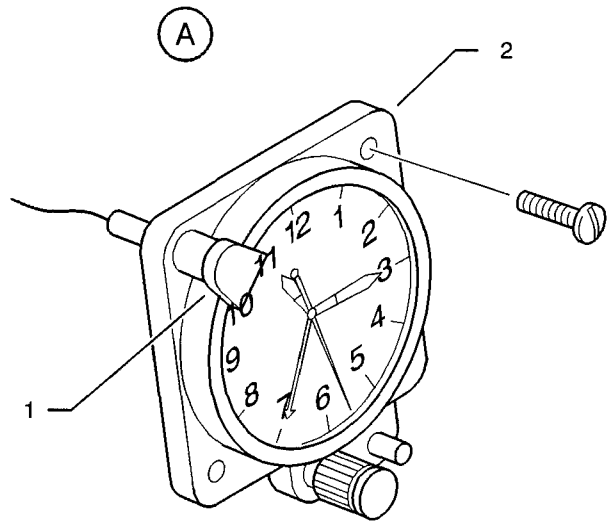
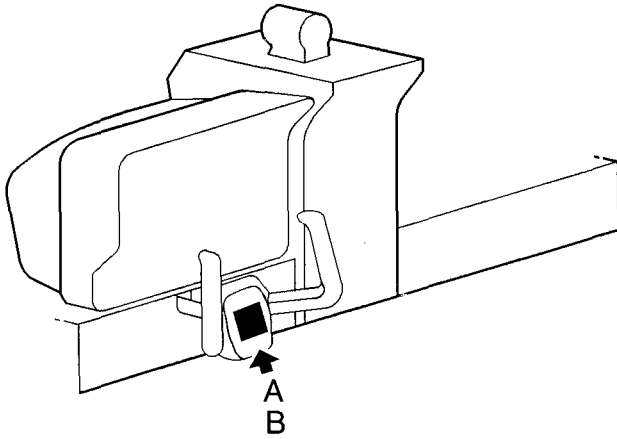
- In engine operation time version, the hourmeter is controlled by MT14 pressure switch. When the engine oil pressure reaches its nominal value, MT14 pressure switch applies a ground which triggers the counting. The operation time is given in hours and tenths of hours.

Engine operation time with hourmeter integrated in M12 tachometer :

- The hourmeter integrated into the tachometer records the engine operation time as soon as the engine reaches 1000 rpm. A non-volatile memory stores the cumulated engine operation time on an LCD counter. The operation time is given in hours and minutes.

The hourmeter is electrically supplied by "BUS 3" bar and protected by a fuse located on PL3 fuse panel.

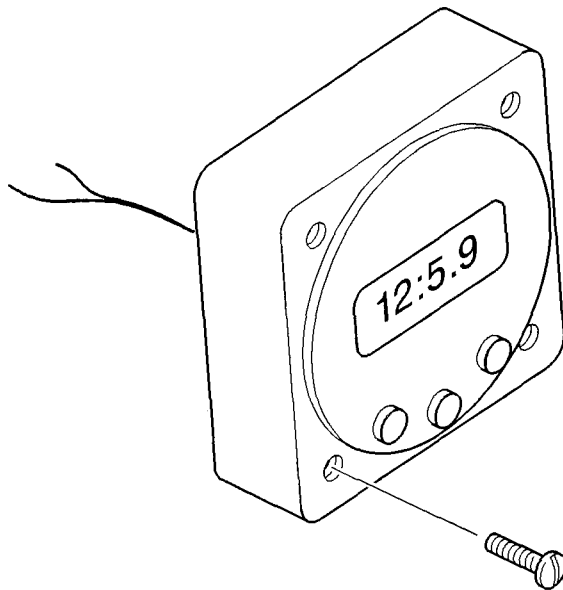
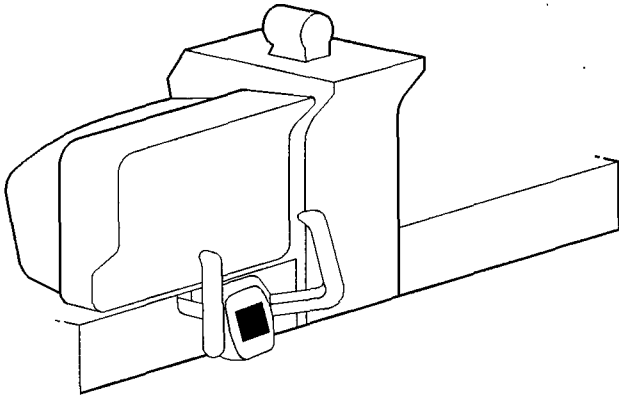
- 1 - Postlight
- 2 - Stop watch
- 3 - Stop watch with built-in lighting



I4312001AAAADVZ4200

Independent instruments - M50 mechanical stop watch  
Figure 1

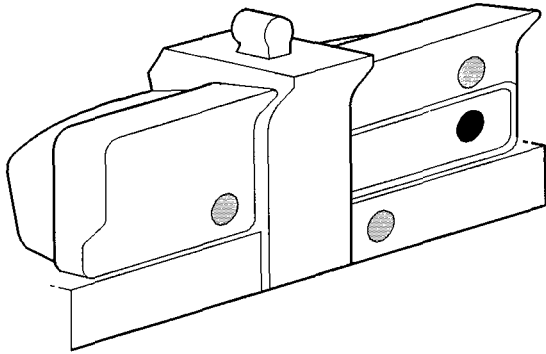
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Validity : S / N 1 - 9999




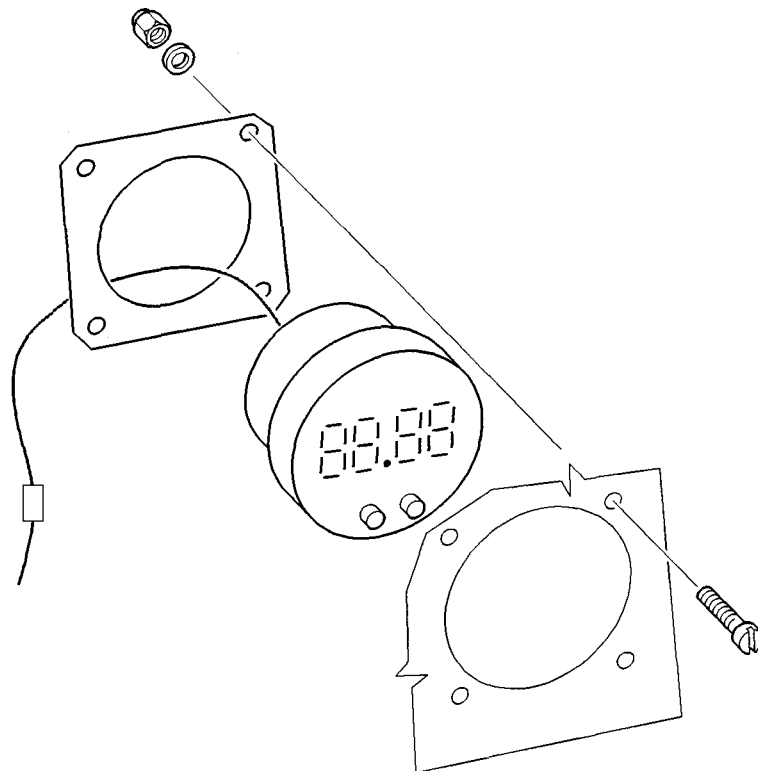
14312001AAAADVZ4100

Independent instruments - M50 electric stop watch (built-in lighting)  
Figure 2

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Validity : S / N 1 - 9999



 Variante de localisation  
Alternate location

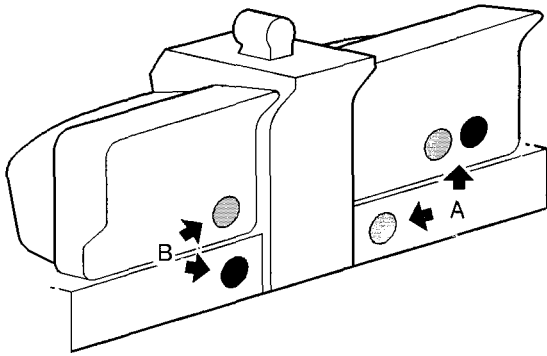



I4312001AAAADVZ4000

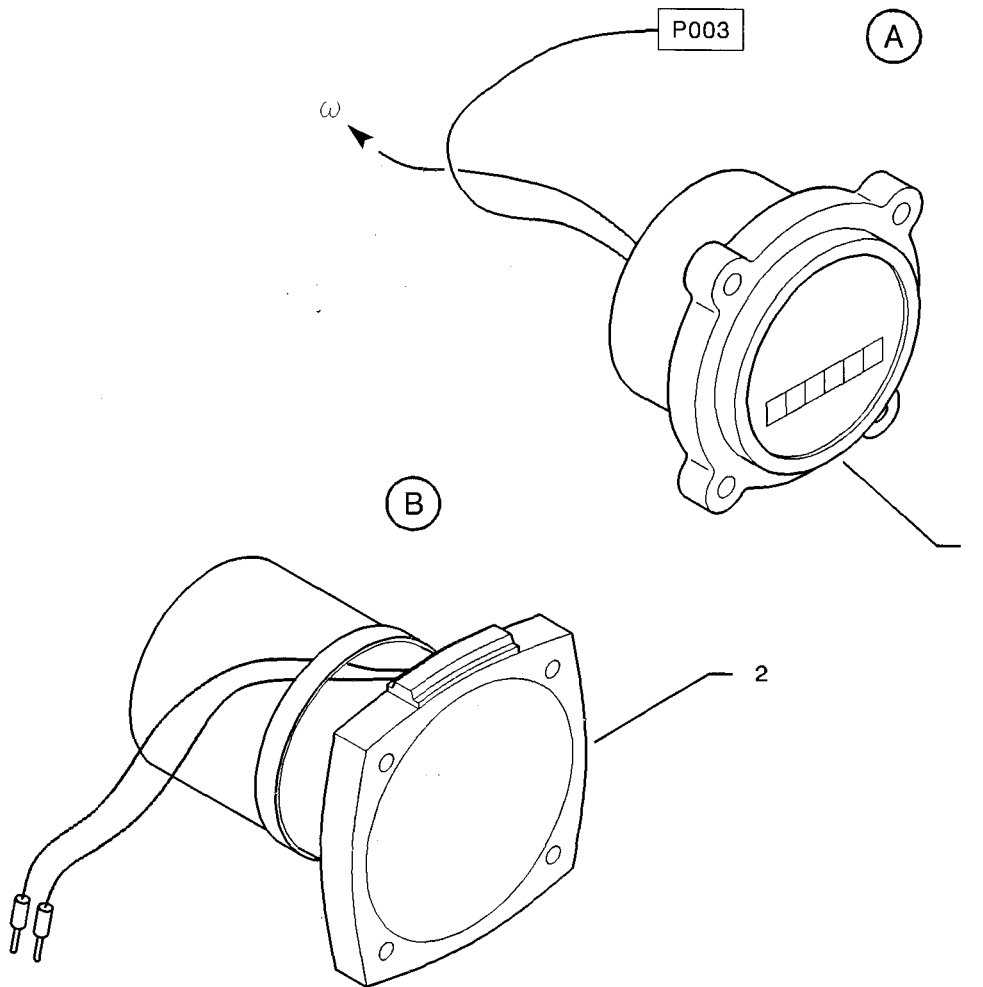
Independent instruments - M50 clock  
Figure 3

AAAA  
Validity : S / N 1 - 9999

- 1 - E024 or M51 hourmeter
- 2 - M12 tachometer with built-in hourmeter



 Variante de localisation  
Alternate location



Independent instruments - M51 hourmeter  
Figure 4

14312000AACBYZ4000

AAAA  
Validity : S / N 1 - 9999

31-20-00 (BA)

Page 6  
SEP 02

## CENTRAL WARNING SYSTEMS

### DESCRIPTION AND OPERATION

#### 1. GENERAL

There are two kinds of warning systems :

- visual warnings using indicator lights of various colours,
- aural warnings using a buzzer installed under the L.H. instrument panel.

#### 2. LOCATION (Figure 1)

COMPONENT	QTY	AREA	ACCESS DOOR	REFERENCE
Advisory panel	1	251L	/	31-50-01
Aural warnings	1	254L	/	31-50-00

#### 3. DESCRIPTION

##### A. Advisory panel

The advisory panel is located in the upper part of the L.H. instrument panel, directly in front of the pilot.

The panel contains separate indicator lights which illuminate green, amber or red when a specific condition occurs in the associated aircraft system :

- a green light is illuminated to indicate a normal condition,
- an illuminated amber light indicates that a cautionary condition exists, but which may not require immediate corrective action,
- when a hazardous condition exists requiring immediate corrective action, a red light illuminates.

To control the intensity of the advisory panel lights, a day / night toggle switch is installed.

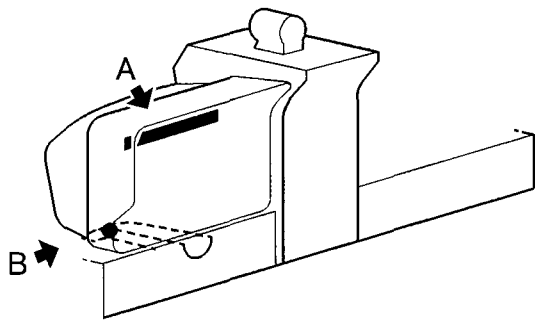
An indicator light test switch allows the testing of all indicator lights to ensure bulb operation.

##### B. Aural warnings

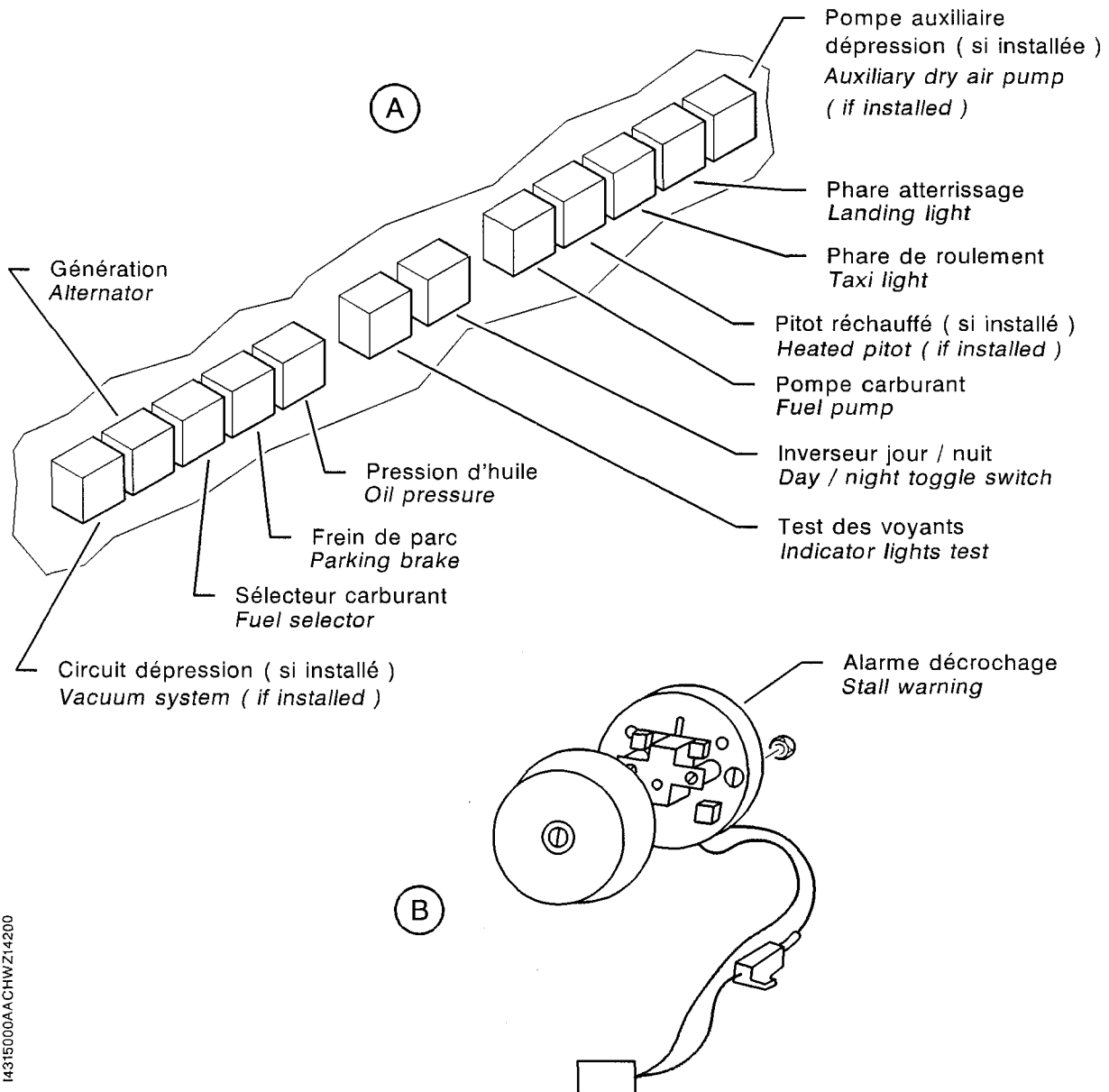
The airplane is equipped with a vane-type stall warning unit in the leading edge of the left wing. The vane is electrically connected to a buzzer.

The vane in the wing senses any changes in airflow over the wing and triggers off the buzzer which produces a discontinuous tone.

This warning tone begins between 5 and 10 knots (9 and 19 km/hr) before the stall in all configurations.



- A - Advisory panel
- B - Aural warning



Central warning systems - Identification and location of components  
Figure 1

I4315000AAC HWZ14200

## CENTRAL WARNING SYSTEMS

### DESCRIPTION AND OPERATION

#### 1. GENERAL

There are two kinds of warning systems :

- visual warnings using indicator lights of various colours,
- aural warnings using a buzzer installed on overhead panel.

#### 2. LOCATION (Figures 1, 1A, 1B and 1C)

COMPONENT	QTY	AREA	ACCESS DOOR	REFERENCE
Advisory panel	1	251L	/	31-50-01
Aural warnings	1	241	/	31-50-00

#### 3. DESCRIPTION

##### A. Advisory panel

The advisory panel is located in the upper part of the L.H. instrument panel, directly in front of the pilot.

The panel contains separate indicator lights which illuminate green, amber or red when a specific condition occurs in the associated aircraft system :

- a green light is illuminated to indicate a normal condition,
- an illuminated amber light indicates that a cautionary condition exists, but which may not require immediate corrective action,
- when a hazardous condition exists requiring immediate corrective action, a red light illuminates.

To control the intensity of the advisory panel lights, a day / night toggle switch is installed.

An indicator light test switch allows the testing of all indicator lights to ensure bulb operation.

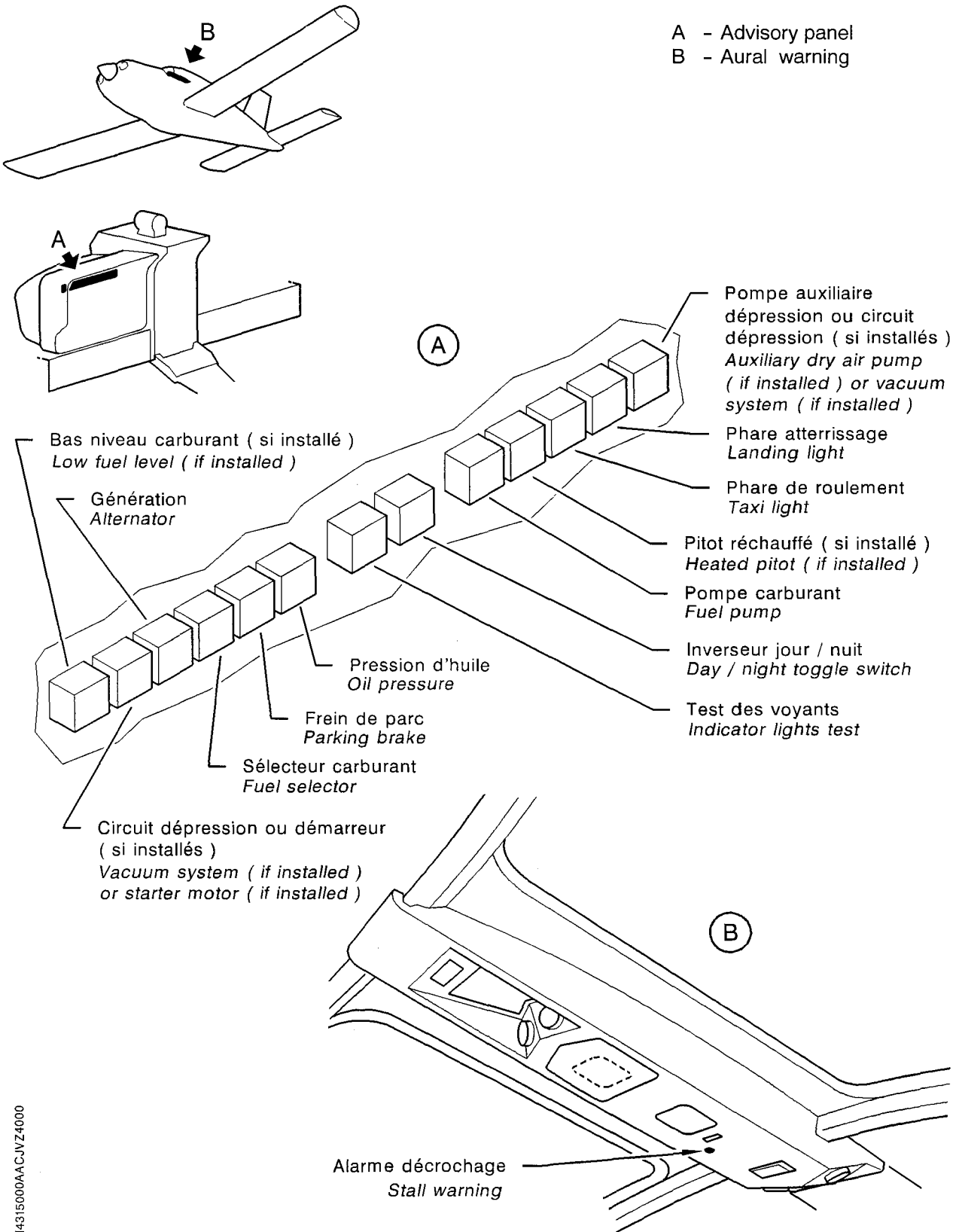
As an option, additional indicator lights, associated to the GPS, are installed in the central portion of the advisory panel.

##### B. Aural warnings

The airplane is equipped with a vane-type stall warning unit in the leading edge of the left wing. The vane is electrically connected to a buzzer.

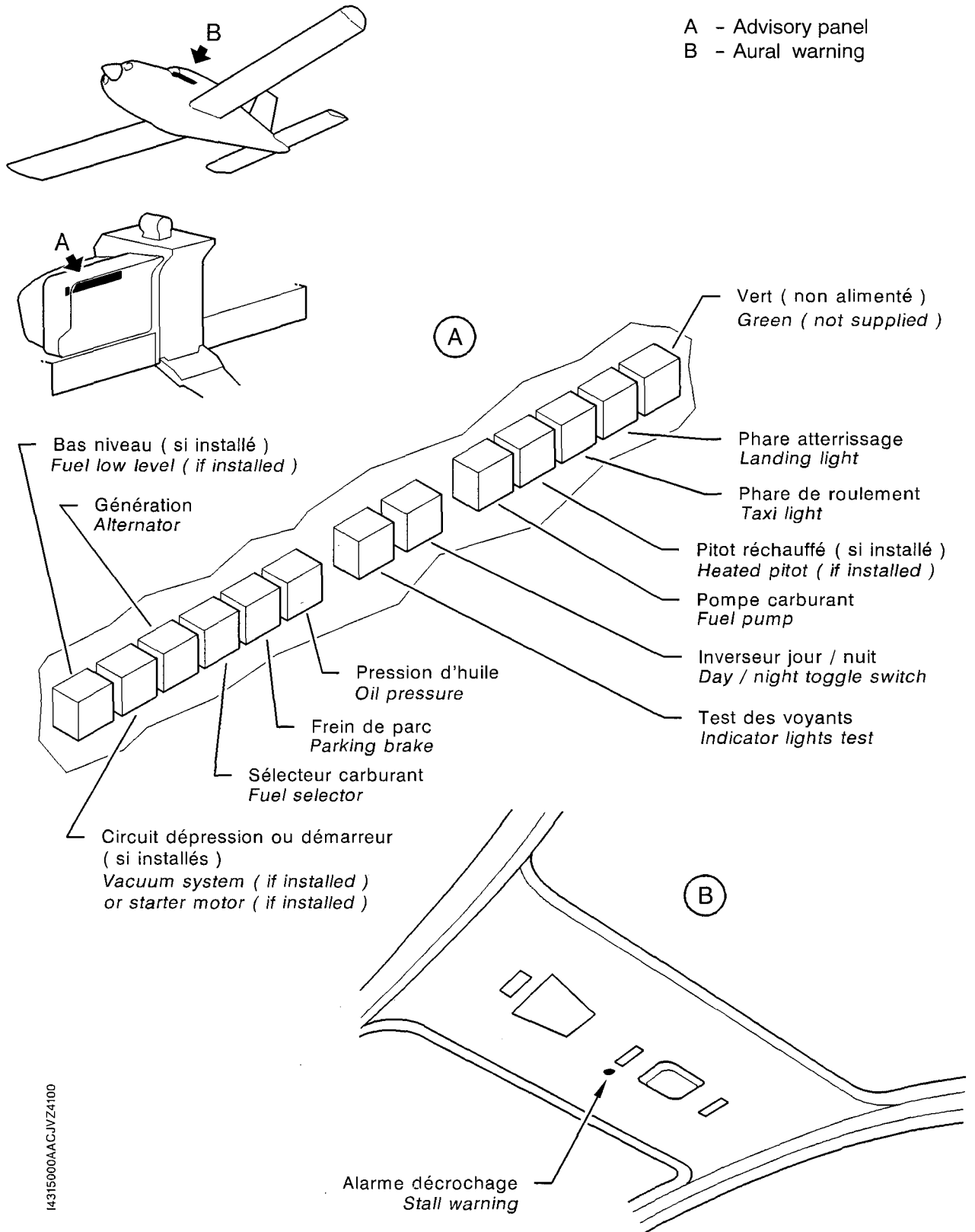
The vane in the wing senses any changes in airflow over the wing and triggers off the buzzer which produces a discontinuous tone.

This warning tone begins between 5 and 10 knots (9 and 19 km/hr) before the stall in all configurations.



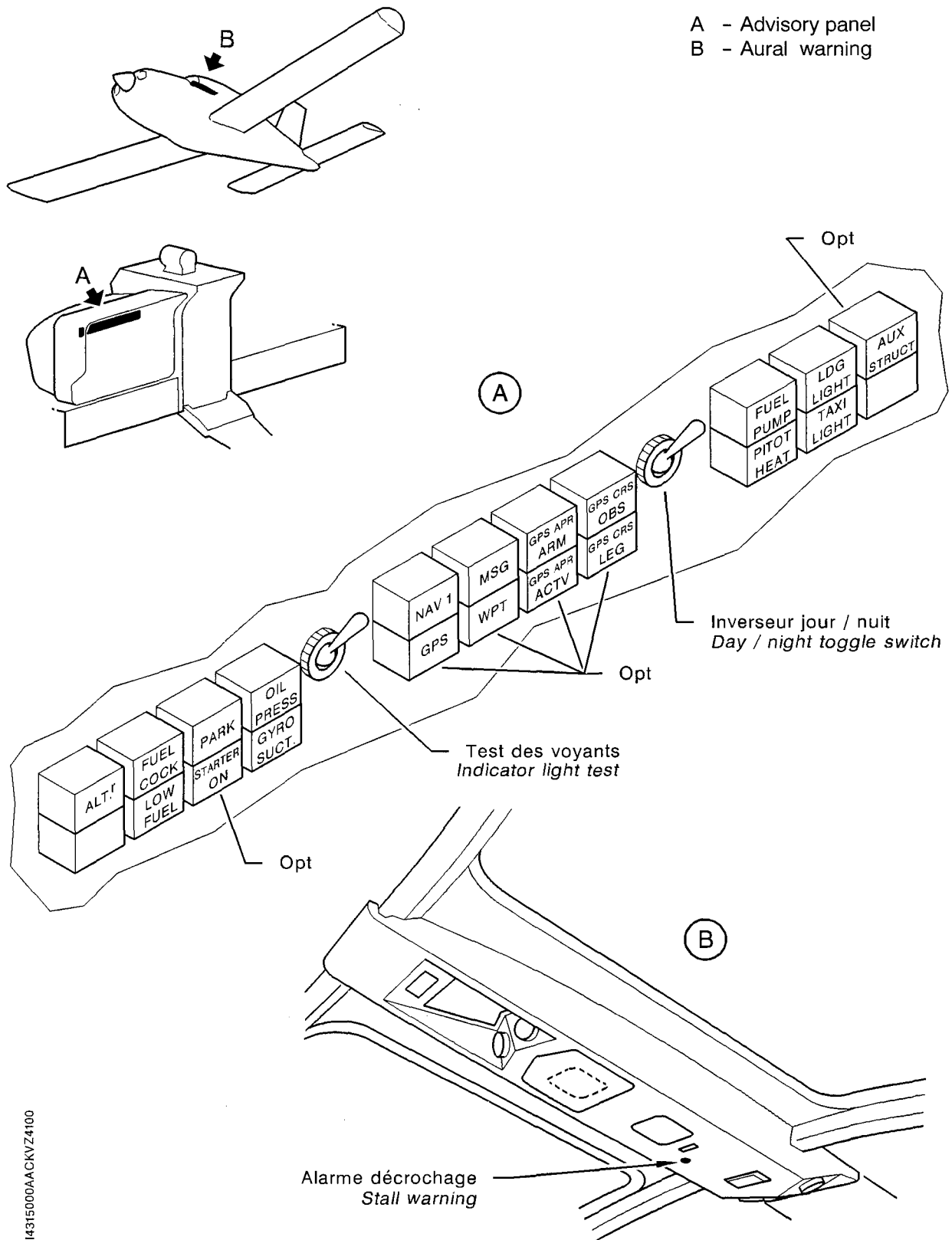
Central warning systems - Identification and location of components  
Figure 1 - S/ N 823 - 878

14315000AACJWZ4000



Central warning systems - Identification and location of components  
Figure 1A - S / N 879 - 9999 Standard Pre-MOD. 151





I4315000AAKVZ4100

Central warning systems - Identification and location of components  
Figure 1C - Standard Post-MOD. 151

ABAB  
Validity : S / N 823 - 9999

31-50-00 (BM)

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SEP 02

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## ADVISORY PANEL

### SERVICING

#### 1. REPLACEMENT OF AN INDICATOR LIGHT PLACARD OR BULB ON THE ADVISORY PANEL

##### A. Tools and consumable materials

- Cap extractor ARNOULD 02-905
- Bulb extractor ARNOULD 02-906

##### B. Procedure

- 1) Make sure that the main switch-breaker is open.
- 2) If installed, remove the instrument panel cover :
  - a) Remove the lighting rheostat knobs.
  - b) Remove the cover attachment clips.
  - c) Remove the instrument panel cover.
- 3) Remove the cap with the extractor ARNOULD 02-905.
- 4) If necessary, remove the bulb with the extractor ARNOULD 02-906.

**NOTE : The installation operations do not require special procedures.**

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## ADVISORY PANEL REMOVAL / INSTALLATION

### 1. REMOVAL OF ADVISORY PANEL (Figure 401)

#### A. Tools and consumable materials

None

#### B. Procedure

- 1) Make sure that the main switch-breaker is open.

S / N 1 - 274 - see Detail A

- 2) Unlock and tilt instrument panel (1) - refer to 31-10-01.
- 3) Remove the instruments located on the upper section of the instrument panel.
- 4) Remove screw (5).

S / N 275 - 587 - see Detail B

- 2) Remove screws (10) and (14) and washers (11) and (13). Clear upholstery panel (12).
- 3) Unlock and tilt instrument panel (1) - refer to 31-10-01.
- 4) Remove the instruments located on the upper section of the instrument panel.
- 5) Remove nut (7), washer (6) and bolt (5).

S / N 1 - 587

- 6) If installed, remove locking assembly (9).
- 7) Pull (according to the arrow) printed circuit (4) to disengage it from support (3).
- 8) Disconnect electrical connectors (8).

### 2. INSTALLATION OF ADVISORY PANEL (Figure 401)

#### A. Tools and consumable materials

None

#### B. Procedure

- 1) Connect electrical connectors (8) (red sleeve to L.H. connector, green sleeve to R.H. connector).
- 2) Engage printed circuit (4) into support (3).
- 3) If removed, install locking assembly (9).

S / N 1 - 274 - see Detail A

- 4) Install screw (5)
- 5) Install the instruments located on the upper section of the instrument panel.
- 6) Tilt instrument panel (1) - refer to 31-10-01, and check for correct locking.

S / N 275 - 587 - see Detail B

- 4) Install nut (7), washer (6) and bolt (5).

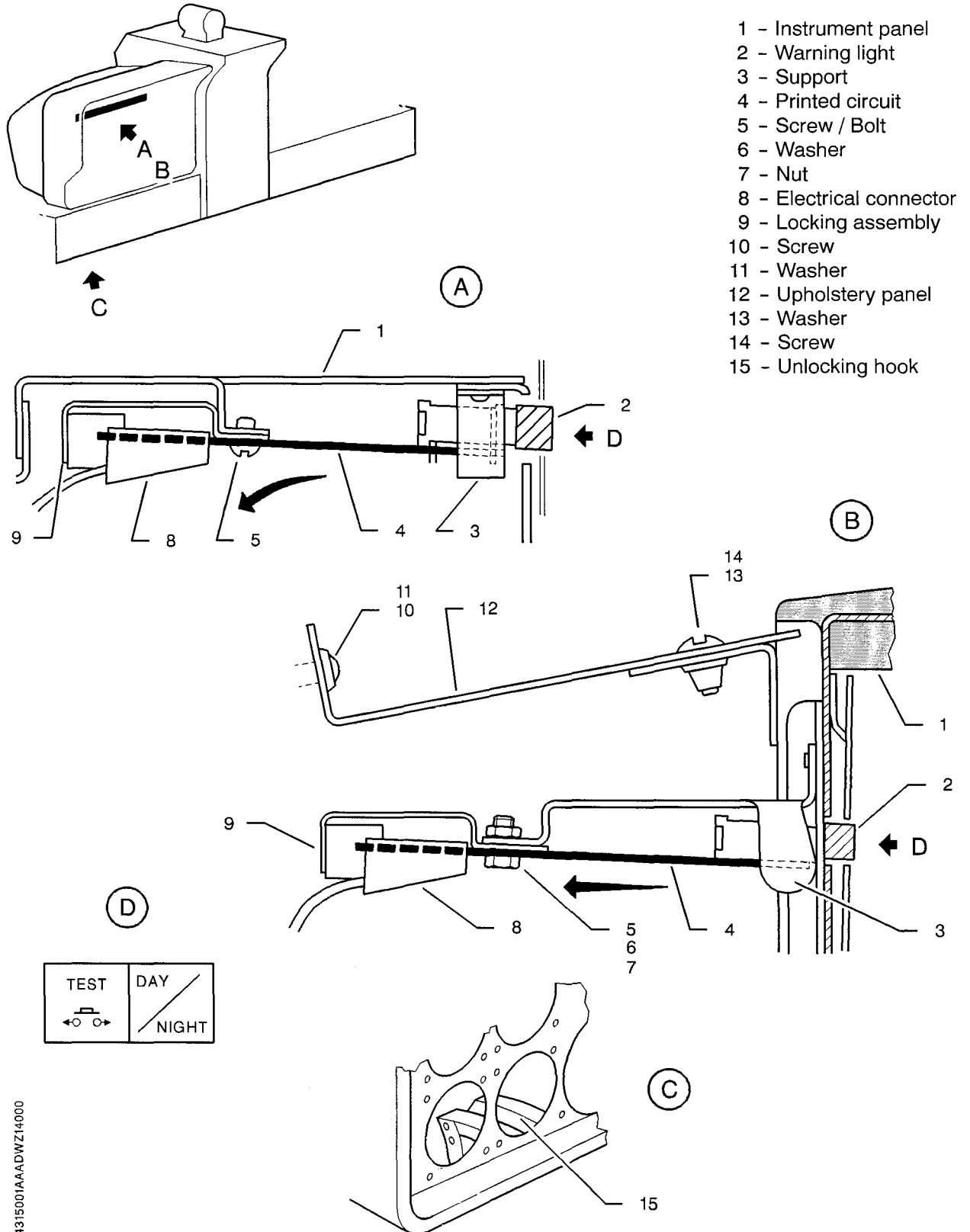
AAAA

Validity : S / N 1 - 587

- 5) Install the instruments located on the upper section of the instrument panel.
- 6) Tilt instrument panel (1) - refer to 31-10-01, and check for correct locking.
- 7) Install and secure upholstery panel (12) with screws (10) and (14) and washers (11) and (13).

S / N 1 - 587

- 8) Make sure all the tools and materials are removed and the work area is clean and free from debris.
- 9) Close main switch-breaker.
- 10) Perform a test of the advisory panel with the "TEST" pushbutton.
- 11) Open main switch-breaker.



14315001AAADWZ14000

Advisory panel - Removal / Installation  
Figure 401

AAAA  
Validity : S / N 1 - 587

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## ADVISORY PANEL

### REMOVAL / INSTALLATION

#### 1. REMOVAL OF ADVISORY PANEL (Figure 401)

##### A. Tools and consumable materials

- Wrench ARNOULD 01-907

##### B. Procedure

- 1) Make sure that the main switch-breaker is open.
- 2) If installed, remove instrument panel cover (5) :
  - a) Remove the lighting rheostat knobs.
  - b) Remove clips (2).
  - c) Remove instrument panel cover (5).
- 3) Remove screws (8) and (14) and washers (9) and (15). Clear upholstery panel (11).
- 4) Unlock and tilt instrument panel (1) - refer to 31-10-01.
- 5) If installed, remove both nuts (6) and clear locking assembly (7).
- 6) Disconnect electrical connectors (10).
- 7) Hold support (13) and remove the 3 bolts (3). Retain the nut and the washer of the L.H. attachment bolt.
- 8) Clear and remove support (13).
- 9) If necessary, disassemble warning lights (4) with the wrench ARNOULD 01-907.

#### 2. INSTALLATION OF ADVISORY PANEL (Figure 401)

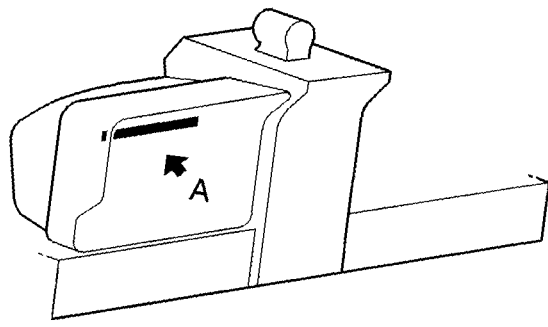
##### A. Tools and consumable materials

None

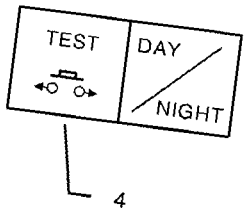
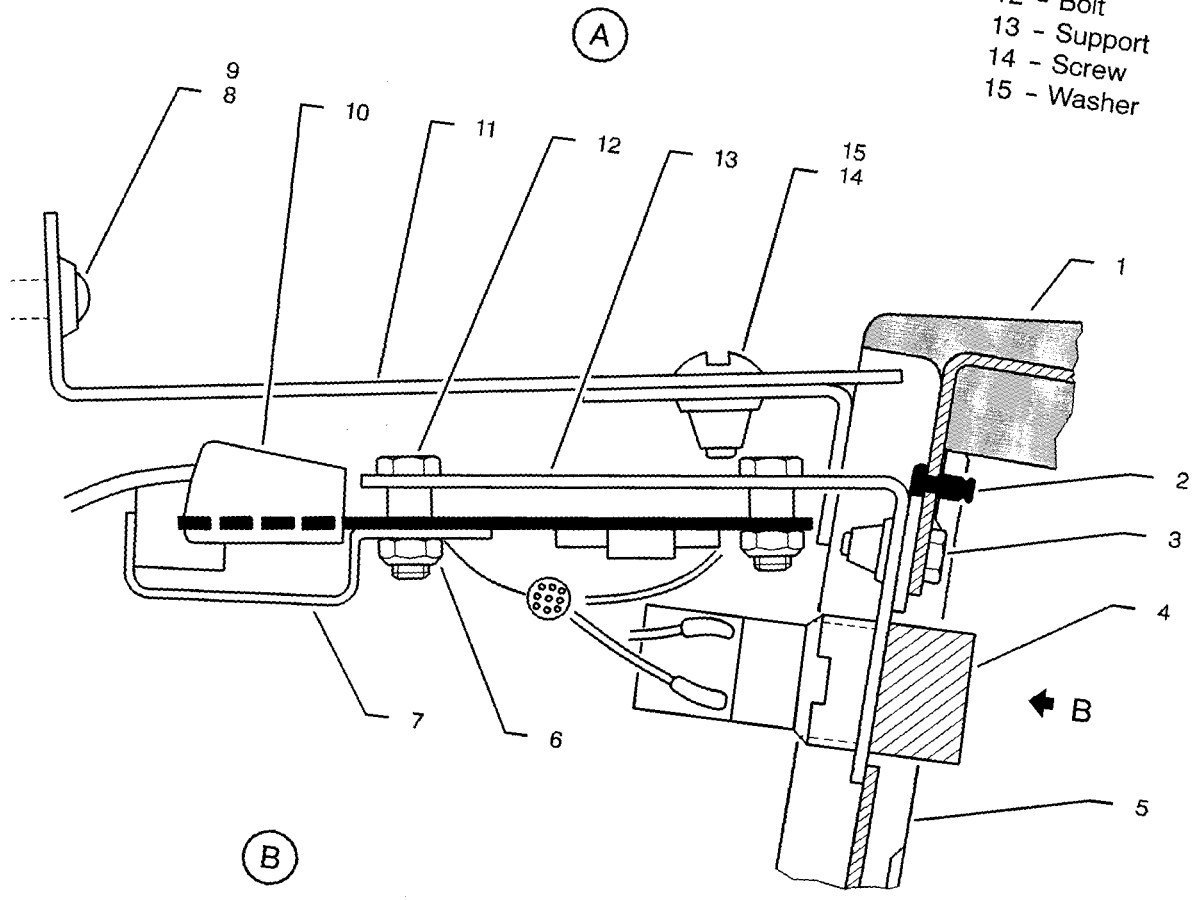
##### B. Procedure

- 1) If removed, install warning lights (4) (with their cheeks in vertical position - see Detail B).
- 2) Install and secure support (13) with the 3 bolts (3), the washer and the nut of the L.H. attachment bolt.
- 3) Connect electrical connectors (10) (red sleeve to L.H. connector, green sleeve to R.H. connector).
- 4) If removed, install and secure locking assembly (7) with nuts (6).
- 5) Tilt instrument panel (1) - refer to 31-10-01, and check for correct locking.
- 6) Make sure all the tools and materials are removed and the work area is clean and free from debris.
- 7) Install and secure upholstery panel (11) with screws (8) and (14) and washers (9) and (15).
- 8) If removed, install and secure instrument panel cover (5) with clips (2) and install the lighting rheostat knobs.

- 9) Close main switch-breaker.
- 10) Perform a test of the advisory panel with the "TEST" pushbutton.
- 11) Open main switch-breaker.



- 1 - Instrument panel
- 2 - Clip
- 3 - Bolt
- 4 - Warning light
- 5 - Instrument panel cover
- 6 - Nut
- 7 - Locking assembly
- 8 - Screw
- 9 - Washer
- 10 - Electrical connector
- 11 - Upholstery panel
- 12 - Bolt
- 13 - Support
- 14 - Screw
- 15 - Washer



Advisory panel - Removal / Installation  
Figure 401

ABAC  
Validity : S/N 588 - 822, 850 - 887, 889 - 947

31-50-01

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**ADVISORY PANEL**  
**REMOVAL / INSTALLATION**

**1. REMOVAL OF ADVISORY PANEL (Figure 401)**

**A. Tools and consumable materials**

- Wrench ARNOULD 01-907 or ARNOULD 41-939

**B. Procedure**

- 1) Make sure that the main switch-breaker is open.
- 2) If installed, remove instrument panel cover (5) :
  - a) Remove the lighting rheostat knobs.
  - b) Remove clips (2).
  - c) Remove instrument panel cover (5).
- 3) Remove screws (7) and (12) and washers (6) and (11). Clear upholstery panel (9).
- 4) Unlock and tilt instrument panel (1) - refer to 31-10-01.
- 5) Disconnect electrical connectors (8).
- 6) Hold support (10) and remove the 3 bolts (3). Retain the nut and the washer of the L.H. attachment bolt.
- 7) Clear and remove support (10).
- 8) If necessary, disassemble warning lights (4) with the wrench ARNOULD 01-907 in the case of Detail A, or the wrench ARNOULD 41-939 in the case of Detail B.

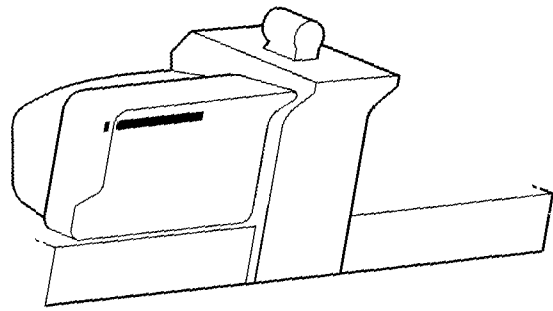
**2. INSTALLATION OF ADVISORY PANEL (Figure 401)**

**A. Tools and consumable materials**

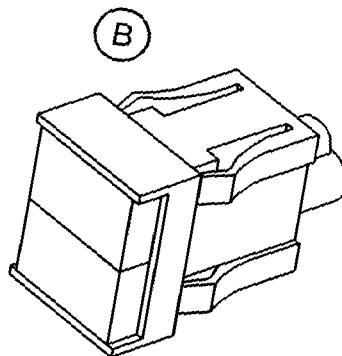
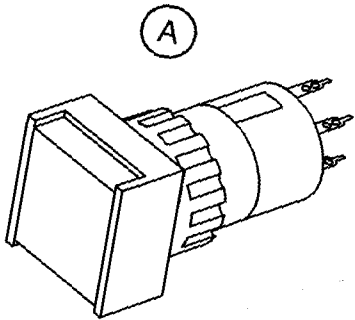
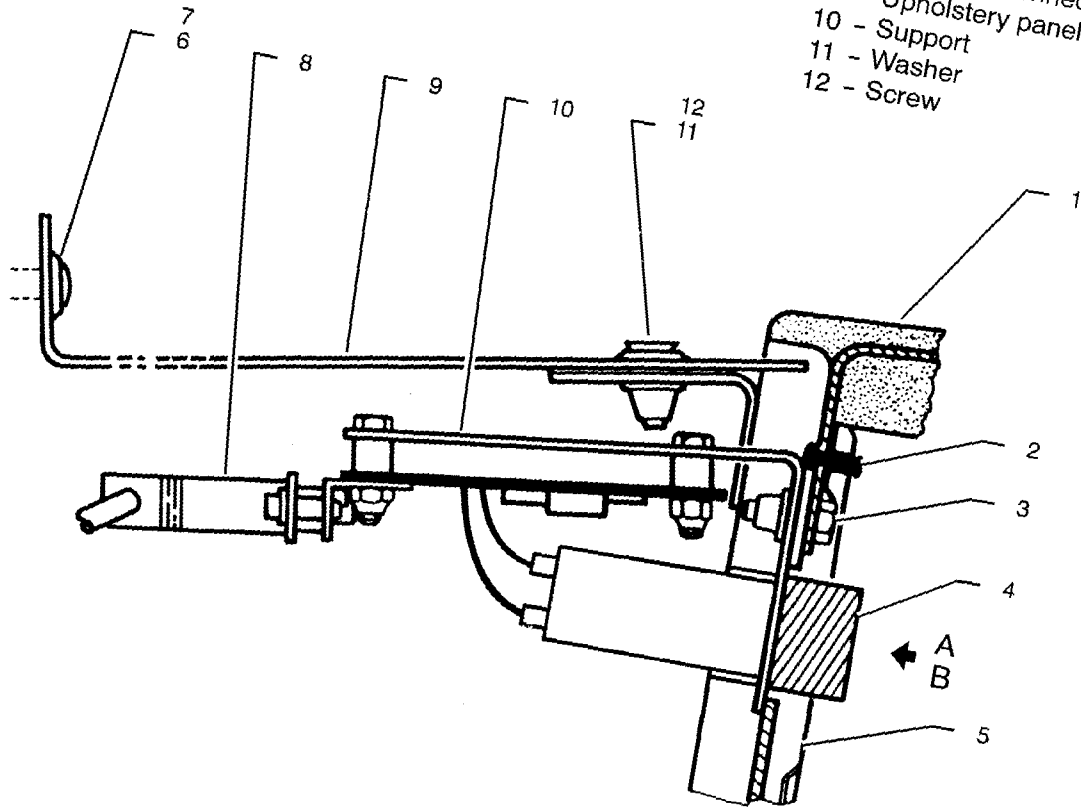
None

**B. Procedure**

- 1) If removed, install warning lights (4) (with their cheeks in vertical position).
- 2) Connect electrical connectors (8) (red sleeve to L.H. connector, green sleeve to R.H. connector).
- 3) Install and secure support (10) with the 3 bolts (3), the washer and the nut of the L.H. attachment bolt.
- 4) Tilt instrument panel (1) - refer to 31-10-01, and check for correct locking.
- 5) Make sure all the tools and materials are removed and the work area is clean and free from debris.
- 6) Install and secure upholstery panel (9) with screws (7) and (12) and washers (6) and (11).
- 7) Install and secure instrument panel cover (5) with clips (2) and install the lighting rheostat knobs.
- 8) Close main switch-breaker.
- 9) Perform a test of the advisory panel with the "TEST" pushbutton.
- 10) Open main switch-breaker.



- 1 - Instrument panel
- 2 - Clip
- 3 - Bolt
- 4 - Warning light
- 5 - Instrument panel cover
- 6 - Washer
- 7 - Screw
- 8 - Electrical connector
- 9 - Upholstery panel
- 10 - Support
- 11 - Washer
- 12 - Screw



Advisory panel - Removal / Installation  
Figure 401

S/N 823 - 849, 888, 948 - 9999

ADWZ4000