VACUUM INDICATING - MAINTENANCE PRACTICES

1. General

A. This section provides a brief description of the components and instruments used to indicate vacuum; and removal/installation instructions for the various components.

2. Description and Operation

- A. The required components that provide an indication for operation of the vacuum system include Vacuum-Low warning switch, suction gage, Vacuum-Low warning annunciator light, horizon gyro indicator and directional gyro indicator.
 - (1) The Vacuum-Low warning switch provides electrical activation for the annunciator light when suction is less than approximately 2.5 to 3.5 in. Hg.
 - (2) The suction gage indicates in inches of mercury for the vacuum system.
 - (3) The Vacuum-Low warning annunciator light may illuminate, warning the pilot of a possible Vacuum-Low condition. For annunciator lamp replacement, refer to Chapter 31, Master Warning and Annunciator Panel Maintenance Practices.
 - (4) The horizon indicator gyro indicates the pitch and roll flight attitude of the airplane in relationship to the earth.

NOTE: The horizon and directional gyro indicators represented in this chapter are standard equipment.

(5) The directional gyro indicator displays the airplane heading when properly set to agree with the magnetic compass.

3. Vacuum-Low Warning Switch Removal/Installation (Model 208)

- A. Remove Vacuum-Low Warning Switch (Refer to Figure 201).
 - (1) Remove electrical leads (3) and tag for reinstallation.
 - (2) Loosen clamp (2) and slide hose (1) from Vacuum-Low warning switch (4).
- B. Install Vacuum-Low Warning Switch (Refer to Figure 201).
 - (1) Slip hose (1) over switch (4) and tighten clamp (2).
 - (2) Install electrical leads (3) and remove tags.

4. Vacuum-Low Warning Switch Removal/Installation (Model 208B)

- A. Remove Vacuum-Low Warning Switch (Refer to Figure 201).
 - (1) Remove electrical leads (3) and tag for reinstallation.
 - (2) Loosen clamp (2) and slide hose (1) from Vacuum-Low warning switch (4).
- B. Install Vacuum-Low Warning Switch (Refer to Figure 201).
 - (1) Replace electrical leads (3) and remove tags.
 - (2) Slip hose (1) over switch (4) and tighten clamp (2).

5. Suction Gage Removal/Installation

- A. Remove Suction Gage (Refer to Figure 201).
 - (1) Remove screws securing removable panel and slide the panel forward to gain access to the back of the suction gage.
 - (2) Reach through opening and loosen clamps (6) and slide hoses (5) off gage (7). Loosen clamps (2) and remove Vacuum-Low warning switch (4).
 - (3) Remove screws (8) and carefully remove suction gage through opening.
- B. Install Suction Gage (Refer to Figure 201).
 - (1) Position suction gage through opening and secure to instrument panel using screws (8).
 - (2) Slide hoses (5) over gage (7) and tighten clamps (6). Slide hose (1) over gage (7) and tighten clamps (2).
 - (3) Slide removable flight panel back against instrument panel and tighten screws.

6. Horizon Gyro Removal/Installation

- A. Remove Horizon Gyro (Refer to Figure 201).
 - (1) Remove screws securing removable panel and slide panel forward to gain access to back of gyro (11).
 - (2) Loosen clamps (10) and slide hoses (9) off gyro (11).
 - (3) Remove screws (12) securing gyro to instrument panel and lift gyro from panel.

- B. Install Horizon Gyro (Refer to Figure 201).
 - (1) Position gyro (11) in instrument panel and secure using screws (12).
 - (2) Slide hoses (9) onto gyro (11) and tighten clamps (10).
 - (3) Slide removable panel back against instrument panel and tighten screws.
 - (4) (For airplanes equipped with KFC-225 autopilot.) If a new unit is installed or the unit is calibrated, do a system alignment. Refer to Introduction, the List of Manufacturers Technical Publications for the manufacturer's installation manual.

7. Directional Gyro Removal/Installation

- A. Remove Directional Gyro (Refer to Figure 201).
 - (1) Remove screws securing removable panel and slide panel forward to gain access to back of gyro (14).
 - (2) Loosen clamps (15) and slide hoses (16) off gyro (14).
 - (3) Remove screws (13) securing gyro to instrument panel and lift gyro from panel.
- B. Install Directional Gyro (Refer to Figure 201).
 - (1) Position gyro (14) in instrument panel and secure using screws (13).
 - (2) Slide hoses (16) onto gyro (14) and tighten clamps (15).
 - (3) Slide removable panel back against instrument panel and tighten screws.

A22272 **INSTRUMENT PANEL** 11 10 10 8 16 15 VACUUM RELIEF VALVE В 17 AIR FILTER **FIREWALL EJECTOR** DETAIL A AIRPLANES 20800001 THRU 20800143 AND 208B0001 THRU 208B0143 AIRPLANES 20800144 AND ON AND 20800001 THRU 20800143 **INCORPORATING CAB90-14** HOSE 1. DETAIL B AIRPLANES 208B0144 AND ON CLAMP AND 208B0001 THRU 208B0143 LATER MODELS 3. ELECTRICAL LEADS **INCORPORATING CAB90-14** LOW-VACUUM WARNING SWITCH 4. 5. HOSE **CLAMP** 6. **SUCTION GAGE** 7. 8. **SCREW** 9. HOSE 10. **CLAMP** HORIZON GYRO 11. 12. **SCREW** AIRPLANES 20800222 AND ON 13. **SCREW** AND 20800001 THRU 20800221 **DIRECTIONAL GYRO** 14. **INCORPORATING CAB93-2 CLAMPS** 15. 16. HOSE AIRPLANES 208B0317 AND ON 17. TEE-FITTING 208B0001 THRU 208B0316 26107002 **CROSS FITTING** 18. A26183011 **INCORPORATING CAB93-2** B26183012 19. UNION 20. CROSS ASSEMBLY C26181101A

Figure 201 : Sheet 1 : Vacuum System Components Installation

A22273 **INSTRUMENT PANEL** 12 13 14 **DETAIL** VACUUM RELIEF VALVE AIPLANES 20800144 AND ON AND 20800001 THRU 20800143 **FIREWAL INCORPORATING CAB90-14** AIRPLANES 208B0144 AND ON AND 208B0001 THRU 208B0143 **INCORPORATING CAB90-14** AIR FILTER 19 **EJECTOR** DETAIL A HOSE AIRPLANES 20800007 THRU 20800083 **CLAMP** DETAIL C 3. **ELECTRICAL LEADS** 12 AIRPLANES 20800222 AND ON LOW-VACUUM WARNING SWITCH 4. **HOSE** AND 20800001 THRU 20800221 5. **CLAMP INCORPORATING CAB93-2** 6. 7. **SUCTION GAGE** 8. **SCREW** AIRPLANES 208B0317 AND ON 9. HOSE AND 208B0001 THRU 208B0316 **CLAMP INCORPORATING CAB93-2** 10. HORIZON GYRO 11. 12. **SCREW** 13. **SCREW DIRECTIONAL GYRO** 14. **CLAMPS** 15. DETAIL B 16. HOSE 17. TEE-FITTING LATER MODELS 26107002 **CROSS FITTING** 18. A26183011 B26183010 19. UNION C26181101

CROSS ASSEMBLY

Figure 201 : Sheet 2 : Vacuum System Components Installation

20.

C26181101A

A22274 6 -13 14 **NSTRUMENT PANEL** 15 12 11 DETAIL B ON EARLY MODELS 16 VACUUM RELIEF VALVE DETAIL B ON LATER MODELS 17 **HOSE** 1. **CLAMP** 2. **ELECTRICAL LEADS** AIR FILTER 3. **FIREWALL** LOW-VACUUM 4. WARNING SWITCH 5. **EJECTOR** HOSE **CLAMP** 6. **SUCTION GAGE** 7. DETAIL A **SCREW** 8. AIRPLANES 20800084 AND ON HOSE 9. AND 208B0001 AND ON **CLAMP** 10. 20 **HORIZON GYRO** 11. **SCREW** 12. **SCREW** 13. 14. **DIRECTIONAL GYRO** DETAIL 15. **CLAMPS HOSE** AIRPLANES 20800144 AND ON 16. 17. TEE-FITTING AND 20800001 THRU 20800143 **DETAIL** 18. **CROSS FITTING INCORPORATING CAB90-14** UNION AIRPLANES 20800222 AND ON 19. **CROSS ASSEMBLY** AND 20800001 THRU 20800221 20. AIRPLANES 208B0144 AND ON **INCORPORATING CAB93-2** AND 208B0001 THRU 208B0143 **INCORPORATING CAB90-14** AIRPLANES 208B0317 AND ON A26183009 B26183011 AND 208B0001 THRU 208B0316 B26183012 **INCORPORATING CAB93-2** C26181101A

Figure 201 : Sheet 3 : Vacuum System Components Installation