Service Kit

DECEMBER 14, 1984

SK210-112

TITLE: LOW VACUUM WARNING LIGHT INSTALLATION - 24 VOLT

MODELS AFFECTED

P210

SERIALS AFFECTED

P21000001 thru P21000811

PARTS LIST:

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CHANGE IN WEIGHT AND BALANCE:

- WEIGHT INCREASE: 0.1 pound
- ARM: 9.6 inches
- RESULTANT MOMENT: 1.0 pound-inches
- INDEX: .001

1 of 9
1. DESCRIPTION OF INSTALLATION.
   a. Installation of this kit consists of:
      (1) Removing upper LH portion of headliner, LH doorpost cover and access panel to
           air filter. Locating and installing vacuum switch on flap track assembly bulkhead.
      (2) Installing tee in spliced vacuum hose under panel and routing hose to root rib and
           vacuum switch.
      (3) Installing light assembly in suitable location on the instrument panel.
      (4) Fabricating wiring from items supplied in kit, locating and installing wiring as
           described.
      (5) Installing placard on instrument panel and running a functional check of the system.

2. INSTALLATION INSTRUCTIONS.
   a. (Refer to figure 1. - Sheets 1, 2, 3, 4 & 5) Low Vacuum Light Installation.
      (1) Be sure master switch is in the "OFF" position and disconnect (negative) ground
           wire from battery.
      (2) Refer to VIEW B-B, Sheet 2 of 5. Locate existing vacuum hose (3) from suction
           gage (6) to gyro system. Determine a best location along the hose to install the
           tee (5). Cut the hose at this location and install the tee, use tie wraps (5) to
           secure the tee to existing hose (3).

**CAUTION**

Assure that no hose trimmings and/or foreign matter
is allowed to contaminate the system.

**NOTE**

Several extra S2209-1 tie wraps are furnished in this
kit to secure hoses and wires as needed.

(3) Determine a suitable location on the instrument panel to install light assembly (2),
in clear view of the pilot.

**NOTE**

Light must be located in clear view of the pilot.

(4) After location has been determined, drill .688 hole (2) thru panel cover (8).
    VIEW A-A, Sheet 3 of 5, allowing drill bit to mark hole location on metal
    stationary panel (1), behind ABS panel cover (8).

(5) Remove panel cover (8), VIEW A-A, from previously marked center, drill .469
    diameter hole (2) thru metal stationary panel (1), deburr hole.

**NOTE**

If for any reason the airplane is not equipped
with a panel cover, drill .469 diameter hole
thru metal panel. the light assembly (12) will
mount to metal panel in this situation.

(6) (Refer to VIEW A-A & B-B). Install light assembly (2) in the .469 diameter hole
    previously drilled in the metal panel (1), secure light assembly with component
    lockwasher and nut. Install lamp (12) in light assembly (12). Reinstall panel
    cover (8).

(7) Install placard (7), centered above light assembly (12).
(8) Remove upper LH doorpost cover, retain cover and hardware, loosen upper fwd LH portion of the headliner to gain access to root rib. Remove access panel located just outboard of the root rib near the aft spar under the LH wing, accessing gyro filter, retain panel and hardware. Remove the lower LH wing to fuselage fairing, retain fairing and hardware.

(9) Refer to VIEW D-D, Sheet 4 of 5, at the cabin LH root rib (16), locate and drill hole (15) thru cabin root rib, 1.55 inches directly below existing air supply hardware (13). Install connector (22) thru the hole using a washer (21) on each side of root rib. Install elbow (14) onto the connector on the inboard side of the root rib. This hardware installation is to be sealed with RTV-102 sealant, furnished in kit.

(10) Using supplied S1071-1 hose (4), determine a length required to route from tee (5), VIEW D-B, up the fwd LH doorpost to the hardware just installed in the root rib, VIEW D-D. Secure the hose (4) to the tee (5) under instrument panel with tie wrap (5). Install S1131-1 insert and S1130-1 nut (13a) to S1071-1 hose and affix to elbow (14) at root rib. VIEW D-D.

(11) Refer to VIEW G-G, Sheet 5 of 5. At the LH wing root rib (28), locate existing grommet and hose (26) directly inbd from air filter. Per dimension shown drill hole (27) thru wing root rib (28). Debur hole and install grommet (27).

(12) Refer to VIEW F-F, per dimensions shown, mark and drill hole (24) thru flap track assembly bulkhead (30). Use gyro-filter (29) bracket, fwd hole, as a reference. Using nutplate (24) as template, mark and drill #40 holes to secure nutplate, countersink #40 holes on the inbd side of bulkhead. Secure nutplate (24) to the outboard side of flap track (30) with rivets (24).

(13) Install vacuum switch (23) and bracket (23) to the flap track (30) secure with screw (24).

(14) Using S1071-1 hose supplied in kit, determine a length required to route from the vacuum switch (23), VIEW F-F, to the cabin root rib attach hardware, VIEW D-D, thru the grommet (27), VIEW G-G, in the LH wing inboard root rib. Secure the hose to the vacuum switch (23) VIEW F-F with tie wrap (23). Install S1130-1 nut and S1131-1 insert (23a) on the other end of the S1071-1 hose and affix to the connector (22), VIEW D-D, Sheet 4 of 5.

(15) Using wiring diagram in figure 2, and illustrations in figure 1, Sheets 2, 3, 4, and 5, determine wire lengths and connections. Fabricate wiring as required with parts furnished in kit. Connect wire per wiring diagram, make sure of ground connections.

(16) After all plumbing and electrical connections have been accomplished, reconnect battery ground cable.

(17) Functional check: When master switch is put in the "ON" position, the low vacuum lamp will light. Start engine and the vacuum switch points will open at approximately 3.0 inches of mercury vacuum and the lamp will go out. Check the press-to-test function of the light assembly with engine running and the light out. Push the assembly lens and the light should illuminate while pressed in, when released the light should go out. After tests have been completed satisfactorily, reinstall all items removed for this installation and return airplane to service.
Figure 1. Low Vacuum Light Installation - Sheet 1 of 5.
Figure 1. Low Vacuum Light Installation - Sheet 2 of 5.
Figure 1. Low Vacuum Light Installation - Sheet 3 of 5.
Figure 1. Low Vacuum Light Installation - Sheet 4 of 5.
VIEW F-F
LOOKING OUTBD AT LH INBD FLAP TRACK RIB ASSY - (WING STA 40.00)

VIEW G-G
LOOKING INBD AT LH WING ROOT RIB - (WING STA 26.00)

Figure 1. Low Vacuum Light Installation - Sheet 5 of 5.
Figure 2. Wiring Diagram.