

OPTIONAL SERVICE BULLETIN NO. DAC1-24-08 REV. 1
SUPERSEDES DAC1-24-08 REV. 0

I TECHNICAL DETAILS

I.1 Category

Optional

I.2 Airplanes Affected

Type: DA 20-C1

S/N: All aircraft with the battery mounted on the firewall, with the blanking plate for the EPU plug located on the pilot's side, forward of the wing.

I.3 Date of Effectivity

23 January 2020

I.4 Time of Compliance

At owner's discretion.

I.5 Subject

Installation of the external power unit (EPU) system.

I.6 Reason

This service bulletin describes the installation of the EPU system on DA 20-C1 aircraft that have their batteries mounted on the firewall, and provisions for an EPU plug on the pilot's side, forward of the wing.

I.7 Concurrent Documents

None.

I.8 Approval

The technical information and instructions contained in this document are approved as part of the type design.

I.9 Accomplishment/Instructions

1. Pull the BATTERY circuit breaker located on the right side of the instrument panel.
2. Remove the cowling. Refer to AMM Chapter 71-10.
3. Disconnect the battery. Refer to AMM Chapter 24-31.
4. Remove the instrument panel cover. Refer to AMM Chapter 25-10.

5. Remove the seats. Refer to AMM Chapter 25-10.
6. Remove the left side interior side panel. Refer to AMM Chapter 25-10.
7. Remove the EPU blanking plate and hardware from the left side of the fuselage. See Figure 1.

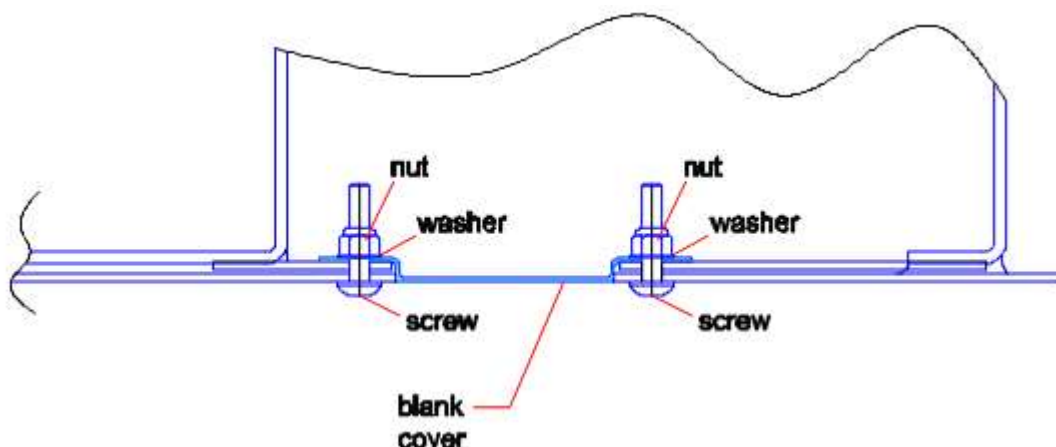


Figure 1. EPU blanking plate (view looking down).

8. Clean the sealant from the blanking plate installation.
9. Remove the hardware holding the ceramic bushings located on the left side of the upper firewall outboard of the engine mount. See Figure 2.
 - A. If the ceramic bushings are secure in position and in good condition, leave the ceramic bushings in place. Otherwise, remove the bushings.

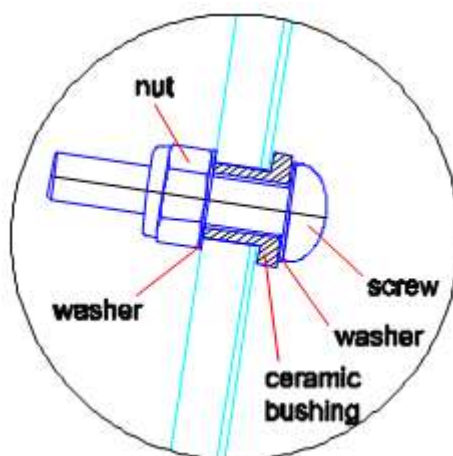


Figure 2. Hardware at the firewall (2 places).

10. Install ceramic bushings on the firewall (if not already installed) using DP110. Install with a rotating motion. Clean the excess adhesive. Cure for 2 hours at room temperature.
11. Install the EPU receptacle from the inside of the fuselage with a bead of Marine 4000 all around the flange. See Figure 3. Tighten the aft screw only. Clean the excess sealant.

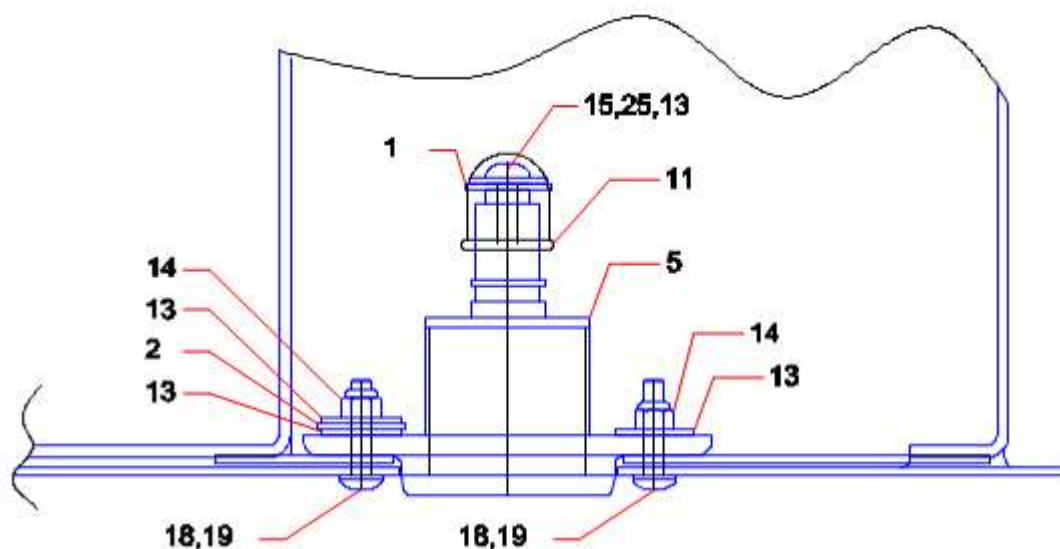


Figure 3. EPU receptacle.

12. Install the bus bars (items 1 and 2). Use double sided tape to hold the bus bars against the fuselage shell. See Figures 4 and 5.
 - A. Items 1 and 2 may be bent or twisted as required to fit.
 - B. At the firewall, install the hardware finger tight only, then torque the jam nuts to 40-50 in. lbs.
 - C. Tighten the forward screw on the receptacle.
 - D. Coat all the connections on items 1 and 2 with Nycote 7-11.

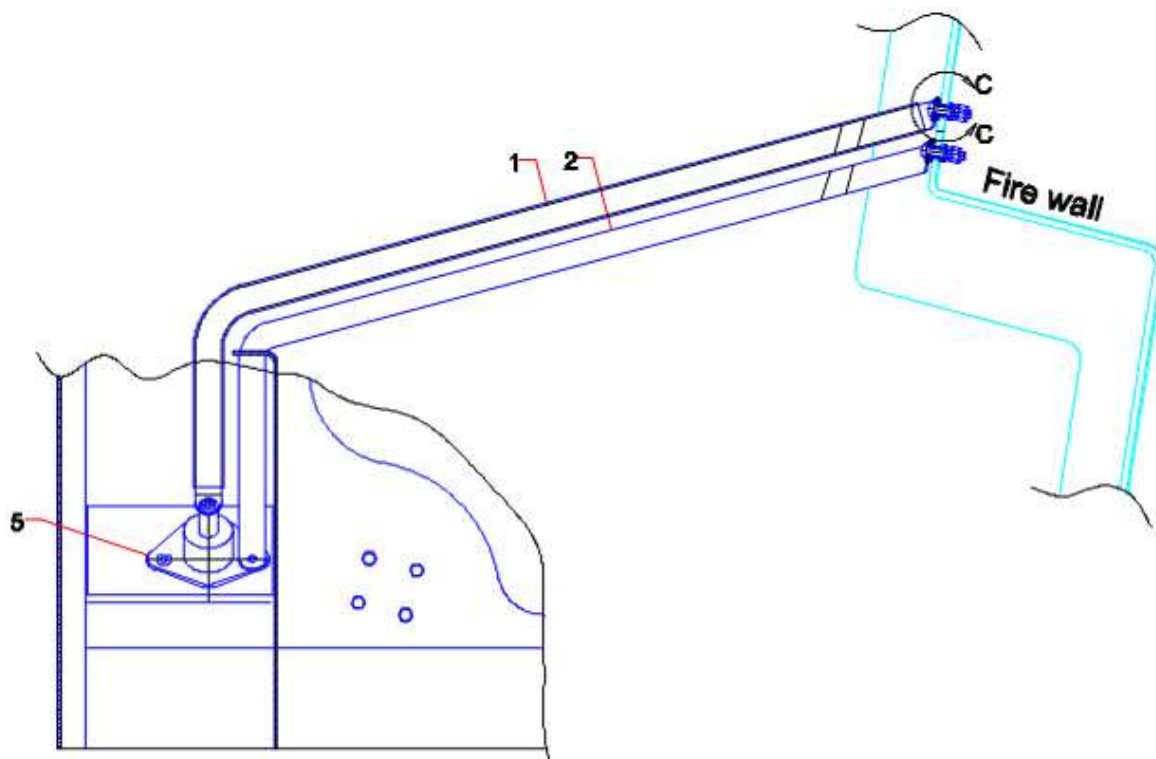


Figure 4. Looking outboard on the left hand side of the cockpit.

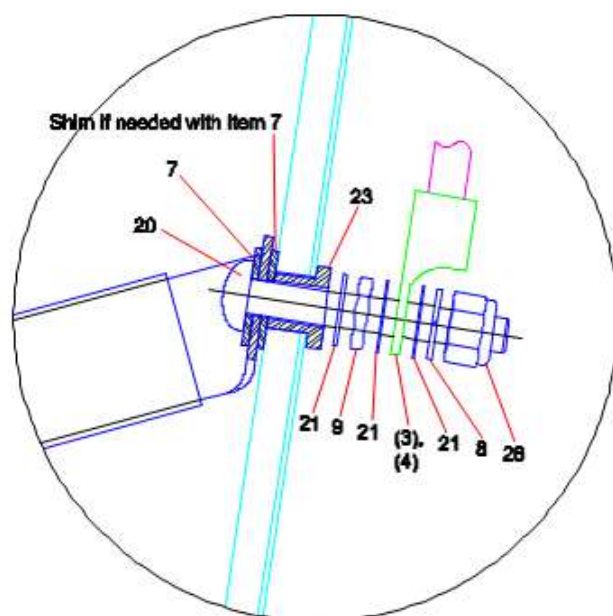


Figure 5. Section C-C, firewall.

13. Remove the heat shrink from the capped and stowed wire 24404B22, and install the fuse jumper (item 25). See Figure 6.

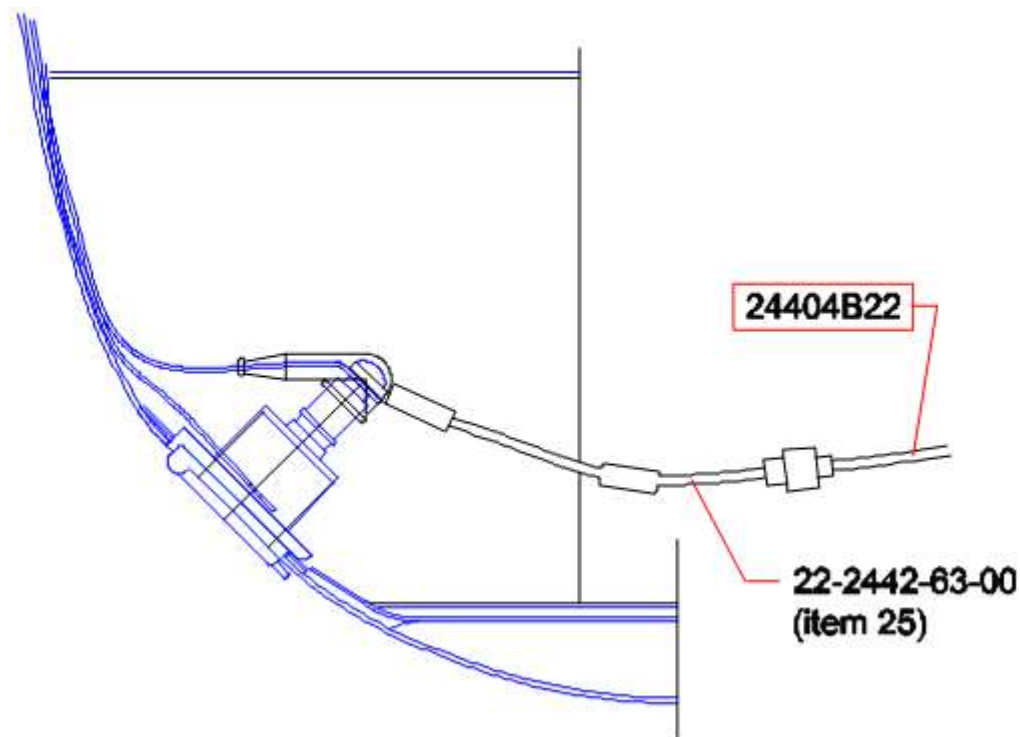


Figure 6. Cross section of fuselage.

14. Install the placard on the outside of the fuselage, above the EPU receptacle.

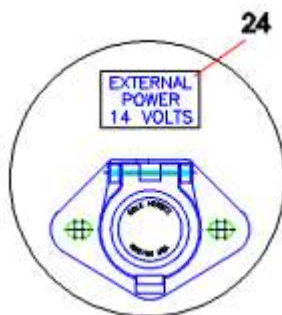


Figure 7. EPU placard.

15. Remove the heat shrink from the capped and stowed wire 24403A20, and rework the EPU relay wire as shown in Figure 8.

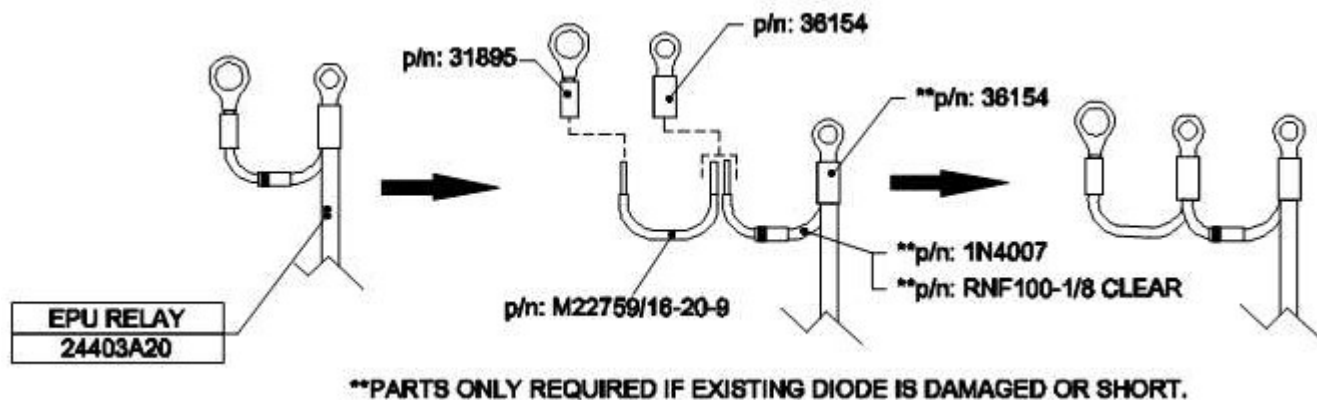


Figure 8. EPU relay wire modification.

16. Install the EPU relay upside down on the firewall below the battery relay. See Figures 9 and 10.

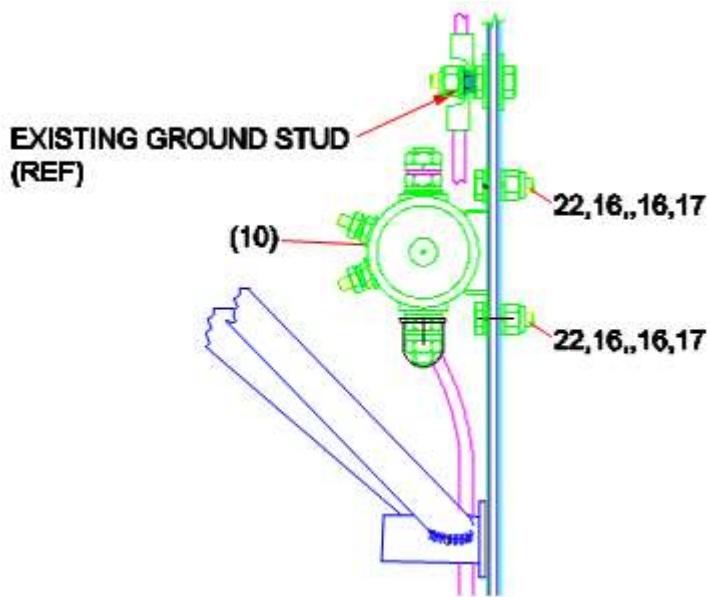


Figure 9. EPU relay attachment.

NOTE: the relay mounting tabs may need to be filed for proper fit. If filing was required, apply Nycote 7-11 to all the areas that were filed.

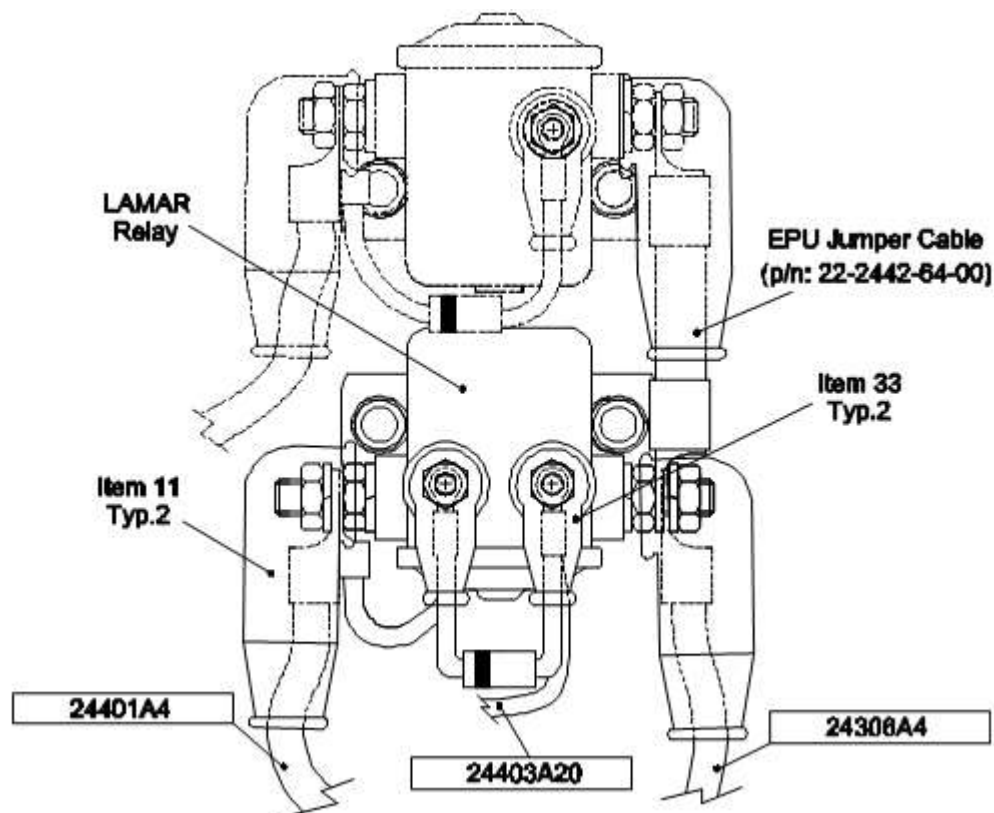


Figure 10. EPU relay wiring.

NOTE: the EPU relay is to be oriented downwards.

17. Cut away the placard around the EPU switch. See Figure 11.

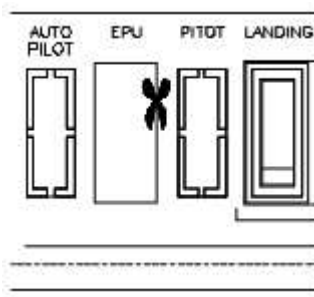


Figure 11. Instrument panel (step 17).

18. File out the sheet metal on the instrument panel to allow for the installation of the rocker switch.
See Figure 12.

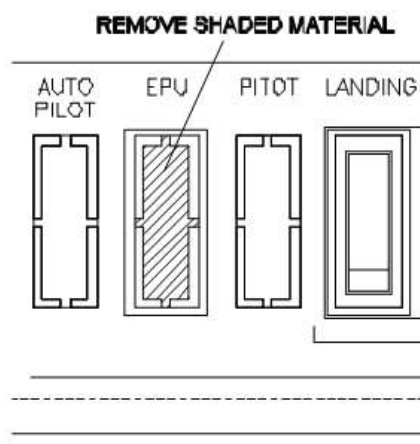


Figure 12. Instrument panel (step 18).

19. Install item 34 (rocker switch P/N CA02-J1-1-2-07-Q) into the EPU switch location.
20. Remove the heat shrink from the capped and stowed wires 24406A20N and 24403A20, and plug into the EPU switch. See Figure 13.

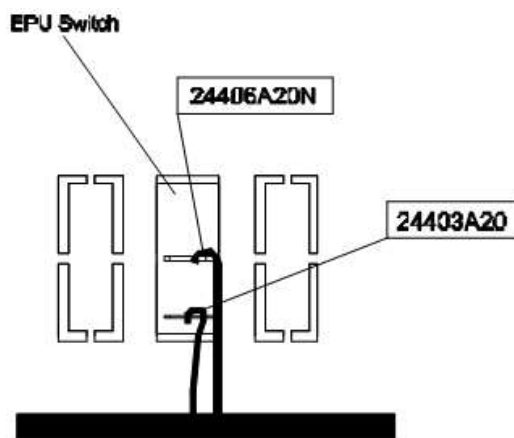


Figure 13. Instrument panel (step 20).

21. Clean all work areas and inspect for foreign objects.
22. Connect the aircraft battery. Refer to AMM Chapter 24-31.
23. Perform an EPU relay function test. Refer to AMM Chapter 24-40.
24. Install the left hand interior side panel. Refer to AMM Chapter 25-10.
25. Install the seats. Refer to AMM Chapter 25-10.

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26. Install the instrument panel cover. Refer to AMM Chapter 25-10.
27. Install the engine cowling. Refer to AMM Chapter 71-10.
28. Reset the BATTERY circuit breaker located on the right side of the instrument panel.
29. Make all necessary entries in the airplane logs.
30. Submit the execution report to Techpubs@diamondair.com.

I.10 Mass (Weight) and CG

Make the following adjustments to weight and balance:

Description	Part Number	Mass kg (lbs)	Arm m (in)
Lamar EPU relay	X61-0028	+0.45 (+0.99)	-0.8 (-31.5)
EPU relay cables	22-2442-10-00 22-2442-11-00	+0.25 (+0.56)	-0.8 (-31.5)
Bus bar, EPU, positive Bus bar, EPU, negative	22-2442-60-00 22-2442-61-01	+0.22 (+0.48)	-0.4 (-15.7)
EPU receptacle	22-2440-05-01	+0.28 (+0.63)	-0.1 (-3.9)

I.11 Electrical Load Data

No change.

II PLANNING INFORMATION

II.1 Material and Availability

Item No.	Qty.	Part Number	Description
1	1	22-2442-60-00	Bus bar, EPU, positive
2	1	22-2442-61-01	Bus bar, EPU, negative
3	1	22-2442-10-00	Cable EPU, positive
4	1	22-2442-11-00	Cable EPU, negative
5	1	22-2440-05-01	Receptacle assy, EPU
6	1	22-2442-64-00	Jumper relay, EPU installation
7	2	W-3001	Washer, large
8	2	MS35338-44	Lock washer

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Item No.	Qty.	Part Number	Description
9	2	AN316-4R	Nut, jam, hexagon, steel
10	1	X61-0028	Solenoid, 12 volt, 100 a, Lamar
11	1	MS25171-4S	Boot, insulating
12	-	-	INTENTIONALLY LEFT BLANK
13	4	W-189	Washer, large
14	2	MS21044N3	Nut, self-locking
15	1	AN526-1032R8	Screw
16	4	NAS1149F0463P	Washer, flat
17	2	MS21044N4	Locknut
18	2	AN526-1032R14	Screw, machine, Phillips
19	2	NAS1149F0332P	Washer, flat
20	2	MS35207-284	Screw
21	6	NAS1149F0432P	Washer
22	2	AN4-5A	Bolt-machine steel, undrilled
23	2	210023	Bushing, ceramic
24	1	20-2440-03-02	Placard, EPU, 14V
25	1	22-2442-63-00	Fuse assembly, relay, EPU
26	2	MS21042-4	Nut, self-locking, ring base
27	1	31895	Ring terminal
28	2	36154	Ring terminal
29	100 mm	M22759/16-20-9	Wire, 20 AWG
30	1	1N4007	Diode
31	50 mm	RNF100-1/8 CLEAR	Heat shrink
32	10	MS3367-5-9	Cable ties
33	2	MS25171-1S	Boot, insulating
34	1	CA02-J1-1-2-07-Q	Rocker switch

The materials above may be ordered as kit **DAC1-24-08-AMK0**.

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The following consumables are also required, but are not included as part of the kit:

Qty.	Part Number	Description
As required	06586	Adhesive, sealant 4000, Marine
As required	DP110	Adhesive, clear
As required	7-11 BLUE	Nycote 7-11
As required	-	Double sided tape

II.2 Special Tools

None.

II.3 Labour Effort

Approximately 6 hours will be required to accomplish this service bulletin.

This estimate is for direct labour performed by a technician, and it does not include setup, planning, familiarization, cure time, part fabrication, or tool acquisition.

II.4 Credit

None.

II.5 Reference Documents

DA 20-C1 Aircraft Maintenance Manual Doc. No. DA201-C1, latest effective issue.

III REMARKS

1. All work must be done by a certified aircraft service station or a certified aircraft maintenance mechanic.
2. All work, in particular which is not especially described in this service bulletin, must be done in accordance with the referenced maintenance manual.
3. Completion of all work must be recorded in the logbook.
4. In case of doubt, contact Diamond Aircraft Industries Inc.

**EXECUTION REPORT TO
SERVICE BULLETIN
DAC1-24-08 REV. 1**

AIRPLANE INFORMATION

Airplane Serial Number	_____
Airplane Registration	_____
Airplane Operator	_____
Hours of Operation of Airplane	_____
No. of Landings	_____
Hours of Operation of Engine	_____
Typical Operation of Airplane	_____
	(private, club, training, other)

Date, Name, Signature

Please e-mail the completed form to Techpubs@diamondair.com.