
OPTIONAL SERVICE BULLETIN NO. DA20-27-09 REV. 0

I TECHNICAL DETAILS

I.1 Category

Optional.

I.2 Airplanes Affected

All DA 20-A1 aircraft.

I.3 Date of Effectivity

14-Aug-2019

I.4 Time of Compliance

At owner's discretion.

I.5 Subject

Installation of the Diamond Aircraft flap control module unit and microswitch tray.

ATA code: 2700.

I.6 Reason

This change was implemented due to the flap controller module no longer being available; this also requires the replacement of the flap motor assembly.

I.7 Concurrent Documents

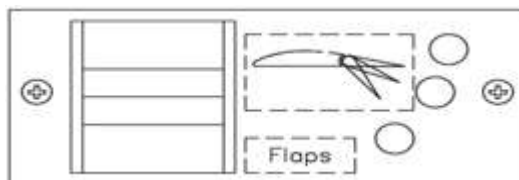
None.

I.8 Approval

Engineering data referenced or contained in this service bulletin is 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. Disconnect the aircraft battery as per AMM Chapter 24-31-00.
3. Remove the instrument panel cover as per AMM Chapter 25-10-00.
4. Remove the flap controller from the instrument panel.



5. Plug the flap controller connector on the instrument panel harness into the Diamond Aircraft flap controller (P/N 22-2753-20-00SB); install into the same location as the previous controller using the supplied hardware.
6. Remove existing flap actuator as per DA201-A1 AMM Chapter 27-50-00.
7. Install the new flap actuator into the aircraft as per DA201-A1 AMM Chapter 27-50-00. Use the new (supplied) hardware (MS21044N4 nut, AN3-4A bolt, NAS1149F0363P washer).
8. If your DA 20-A1 aircraft has a single 6 pin connector (J2750-04) configuration, connected directly to the flaps position switch assembly, reference Figures 1.1, 1.2, and 1.3 for electrical wiring.

If your aircraft does not have this configuration, skip ahead to step 12.

Figure 1.1 shows the original wiring currently in the aircraft, Figure 1.2 shows the original wiring with the proposed fix, and Figure 1.3 shows the wiring after all the work is done.

9. Disconnect all wires from the voltage regulator; reference Figures 1.2 and 1.3.
10. Swap flap motor wires 27502B16 and 27503B16 or RED and BLACK in connector P2750-03 in the aircraft; reference Figures 1.2 and 1.3. Connect the P2750-03 connector into the J3750-03 connector.
11. Connect the J2750-04 connector to the new flaps position switch assembly.

Diamond Aircraft Industries
OPTIONAL SERVICE BULLETIN
 Model DA 20-A1

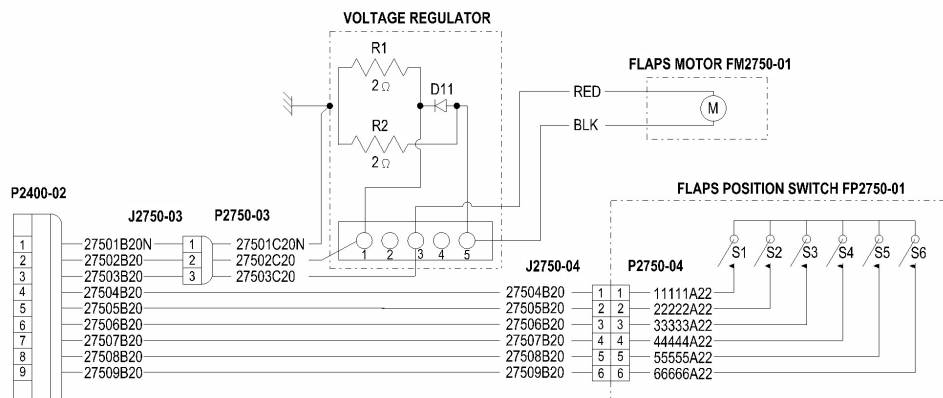


FIGURE 1.1 (SHOWS ORIGINAL WIRING CURRENTLY IN AIRCRAFT)

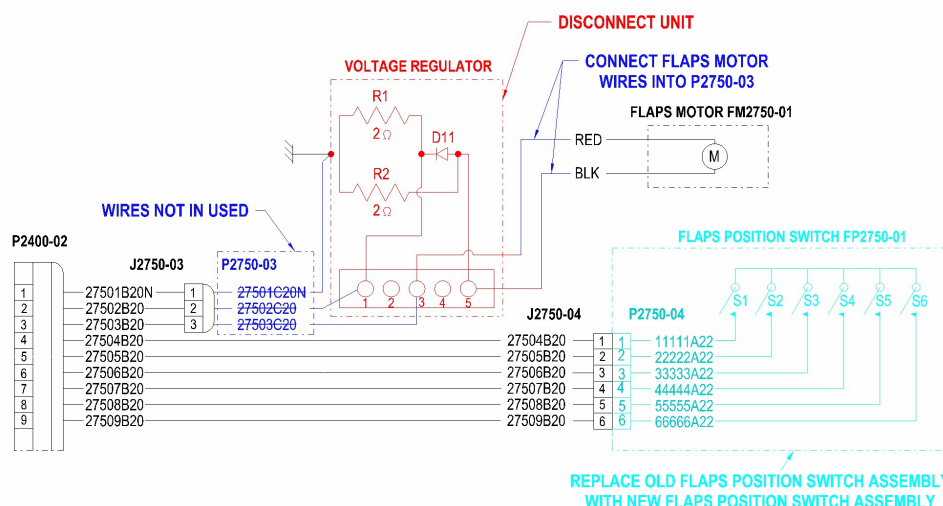


FIGURE 1.2 (SHOWS ORIGINAL WIRING WITH PROPOSED FIX)

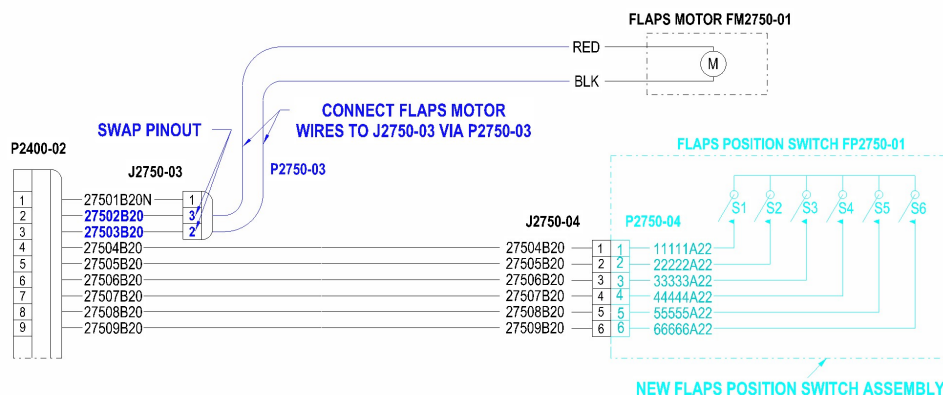
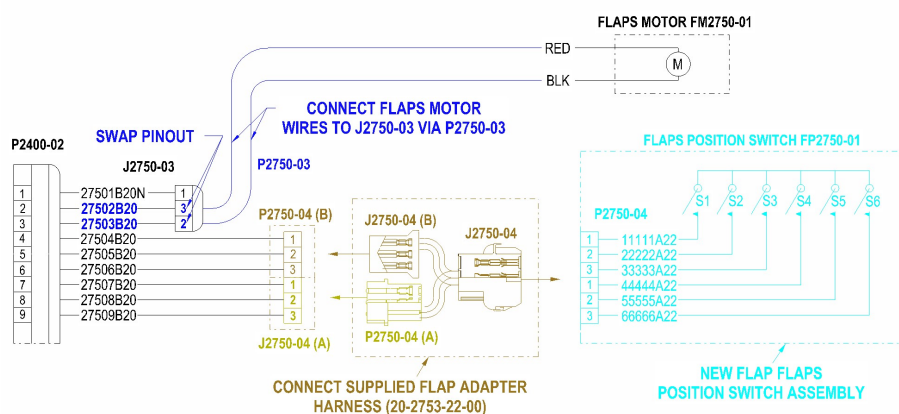
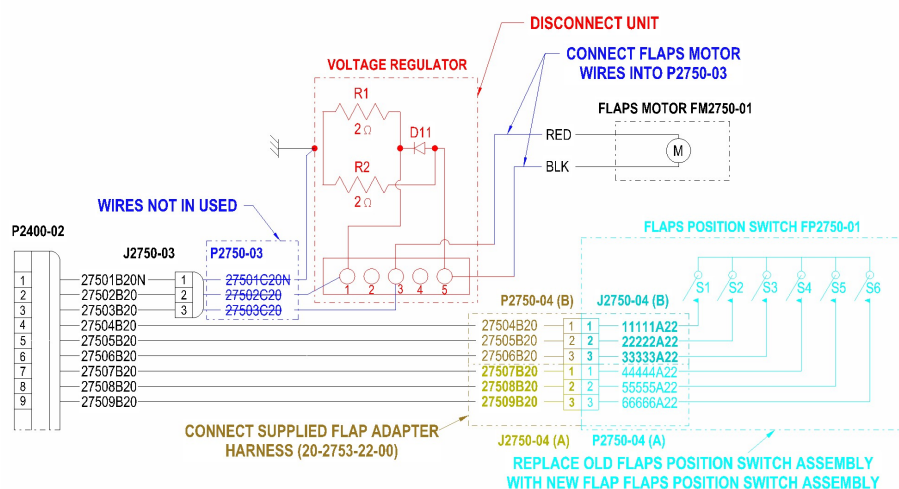
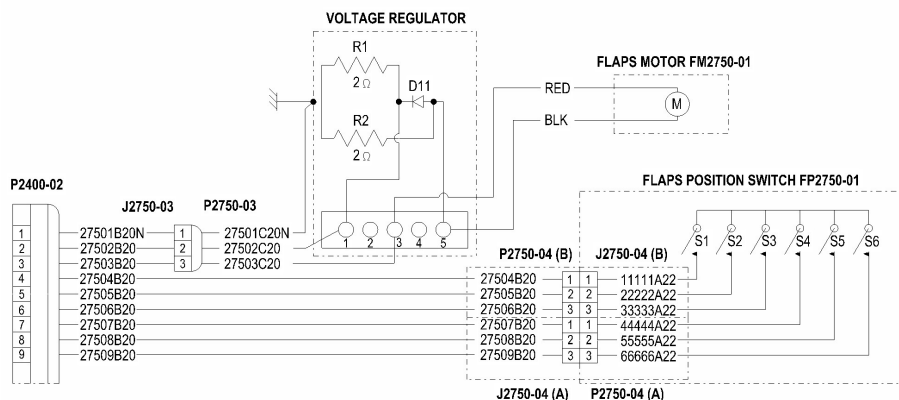


FIGURE 1.3 (SHOWS WIRING AFTER ALL WORK IS DONE)

12. If your DA 20-A1 aircraft has two 3-pin connectors (J2750-04 A and P2750-04 B) configuration connected directly to the flaps position switch assembly, reference Figures 2.1, 2.2, and 2.3 for electrical wiring.

Figure 2.1 shows the original wiring currently in the aircraft, Figure 2.2 shows the original wiring with the proposed fix, and Figure 2.3 shows the wiring after all the work is done.

13. Disconnect all wires from the voltage regulator; reference Figures 2.2 and 2.3.
14. Swap flap motor wires 27502B16 and 27503B16 or RED and BLACK in connector P2750-03 in the aircraft; reference Figures 2.2 and 2.3. Connect the P2750-03 connector into the J3750-03 connector.
15. Connect the two 3-pin connectors (J2750-04 A and P2750-04 B) into the supplied adaptor harness (20-2753-22-00). Connect the other end (J2750-04 connector) of the supplied adaptor harness (20-2753-22-00) new flaps position switch assembly.



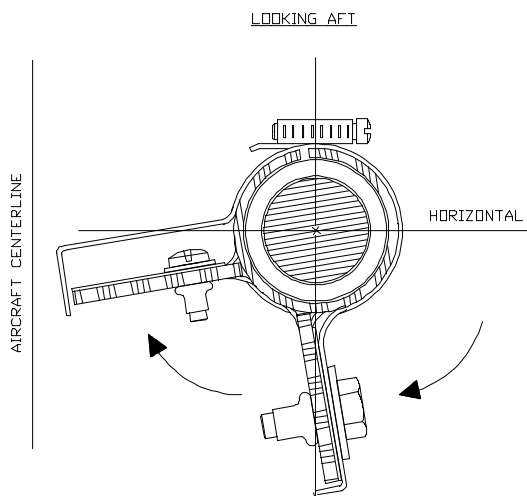
Diamond Aircraft Industries
OPTIONAL SERVICE BULLETIN
Model DA 20-A1



16. Connect the aircraft battery as per AMM Chapter 24-31-00.
17. Push in the battery circuit breaker, and turn the Electrical Master switch to ON.
18. Confirm that each flap position is within the range stated in AMM chapter 27-50-00. If not, adjust the appropriate microswitch(es) accordingly.
19. While flaps are in the T/O or Landing configuration, apply a load on the flap by pulling up to simulate wind drag on the flap. Check the flap position indicator. If dual lights are observed, adjust the microswitches as required. It is permissible to increase the size of slot for the microswitches if required.

TESTING:

20. Confirm on the aircraft's ammeter that the load drops when the flap actuator comes to rest after each cycle of the flap positions. If the load remains high, check the following:
 - A. If in the landing position, adjust the LDFG limit microswitch.
 - B. If in the cruise position, adjust the microswitch tray. This may also require adjustment of the other switches after.
21. Install the flap actuator shield (P/N 22-2750-06-02) using the supplied hardware (AN3-4A bolt, and NAS1149F0363P washer). Install and secure hardware with Loctite 222.
22. Loosen hose clamps and rotate the microswitch tray until the short side of the cam can only be engaged by the plate with three microswitches. Tighten clamp.



23. Clean working area and inspect for foreign objects.
24. Make a logbook entry that this service bulletin has been incorporated.

Diamond Aircraft Industries
OPTIONAL SERVICE BULLETIN
Model DA 20-A1



I.10 Mass (Weight) and CG

Make the following adjustments to the weight and balance:

Items Removed		Items Installed	
Description	Weight kg (lbs)	Description	Weight kg (lbs)
Flap controller	0.23 (0.51)	Diamond Aircraft flap controller	0.215 (0.47)

I.11 Electrical Load Data

No change.

II PLANNING INFORMATION

II.1 Material and Availability

Contact Diamond Aircraft Industries Inc. for availability.

Material		
Part Number	Description	Qty
22-2750-10-00	Flap motor assembly	1
22-2753-20-00SB	Flap control module	1
20-2753-22-00	Flap adapter harness	1
22-3914-10-00	Flap controller, retrofit harness	1
MS21044N4	Nut, hex, self-locking	2
22-2750-06-02	Shield, limit switch, flap actuator	1
AN3-4A	Bolt, hex	3
NAS1149F0363P	Washer, flat	5

II.2 Special Tools

None.

II.3 Labour Effort

Approximately 3 hours will be required to install and set up the flap actuator.

II.4 Credit

None.

Diamond Aircraft Industries
OPTIONAL SERVICE BULLETIN
Model DA 20-A1



II.5 Reference Documents

DA 20-A1 Aircraft Maintenance Manual, document # DA201-A1.

DA 20-A1 Aircraft Flight Manual, document # DA202-A1.

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 that 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.

To obtain satisfactory results, procedures specified in this service bulletin must be accomplished in accordance with accepted methods and current government regulations. Diamond Aircraft cannot be responsible for the quality of work performed in accomplishing the requirements of this service bulletin. Diamond Aircraft reserves the right to void continued warranty coverage in the area affected by this service bulletin if it is not incorporated.

If you no longer own the aircraft to which this service bulletin applies, please forward it to the current owner, and send the name of the current owner to Diamond Aircraft at the address below.

Diamond Aircraft Industries Inc. 1560 Crumlin Sideroad, London, Ontario, Canada N5V 1S2

Customer Support: Phone: (519) 457-4041 Fax: (519) 457-4045 E-mail: custsupp@diamondair.com
Technical Publications: E-mail: Techpubs@diamondair.com

**EXECUTION REPORT TO
SERVICE BULLETIN
DA20-27-09 REV. 0**

AIRPLANE DATA

Airplane Serial Number _____
Airplane Registration _____
Airplane Operator _____
Hours of Operation Airplane (TSN) _____
Typical operation of airplane private, club, training, other: _____

MAINTENANCE DATA:

Inspection carried out on _____
Inspection carried out by _____
Date _____

Name Signature

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