

# SERVICE BULLETIN



**Service Bulletin No.:** DAC1-28-02 Rev 3

**Date Issued:** October 27, 1999

**Title:** 2-Speed Electric Prime Fuel Pump

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- 1. ATA Code:** 2820
- 2. Effectivity:** DA20-C1 Aircraft from S/N C0001 up to and including S/N C0089
- 3. General:** This service bulletin addresses the installation of a two speed electric fuel pump system. Installation of this system is required to ensure compliance with Teledyne Continental Motors' revision of the fuel system pressure specifications.
- 4. Compliance:** Compliance with this service bulletin is mandatory and is administered by a Diamond Aircraft field service campaign.
- 5. Approval:** Engineering data referenced or contained in this service bulletin is approved as part of the type design.
- 6. Labor:** Approximately 6 hours will be required to accomplish this service bulletin.  
*This estimate is for direct labor performed by a technician and it does not include setup, planning, familiarization, cure time, part fabrication or tool acquisition.*

**7. Material:**

Part Number	Description	Qty
22-2820-21-00	Prime Indicator LED Assembly	1
22-2820-22-00	Prime Indicator LED Assembly (Alternative)	
22-2820-23-00	Fuel Prime Harness Assembly	1
22-2820-24-00	Current Limiting Resistor Assembly	1
22-2820-25-00	Wire # 28205A16 Assembly	1
22-2820-26-00	Wire # 28202A16 Assembly	1
22-2820-27-00	Wire # 28206A16 Assembly	1
22-2820-28-00	Wire # 28200B16 Assembly	1
22-2820-29-00	Wire # 28206B16 Assembly	1
22-2824-02-00-WIP	Fuel Pump, 2 Speed Sub-Assembly	1
22-3911-00-03	Label, Switch/LED	1
MS24524-23	Toggle Switch	1
2TLI-3	Toggle Switch (Alternative)	
2NTI-3	Toggle Switch (Alternative)	
MS3367-5-9	Tie, Cable	8
60619-1	Sockets, Crimp 20-14 AWG	3
1-480303-0	Connector, 3 Socket	1
DA202-C1 Rev 7	Revision 7, Insert only	1
The above material may be ordered as kit DAC1-28-02-AMK1.		

- 8. Special Tools:** Crimping tool AMP P/N 90124-2 or equivalent.  
Extraction tool AMP P/N 305183 or equivalent.

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- 9. References:** DA20 Maintenance Manual, Document number DA201-C1.  
DA20 Aircraft Flight Manual, Document number DA202-C1, Rev 7.

## **10. Accomplishment Instructions:**

- 10.1** Referring to the applicable sections in the Maintenance Manual:
  - 10.1.1** Remove the electric fuel pump (MM Chap. 28-20-00).
  - 10.1.2** Remove both seats (MM Chap. 25-10-00).
  - 10.1.3** Remove the instrument panel cover (MM Chap. 25-10-00).
- 10.2** Remove the altimeter and vertical speed indicator from the instrument panel to allow access to work area.
- 10.3** Remove cable ties from wire harness between fuel pump and fuel pump switch.
- 10.4** Drill 3 holes in the upper left corner of the instrument panel as shown in Figure 4. Use the label as a template as necessary.
- 10.5** Install prime pump switch/LED label onto cleaned instrument panel surface.
- 10.6** Install the prime switch as shown in Figure 2.
- 10.7** Disconnect wire # 28203A16 from the fuel pump switch.
- 10.8** Connect wire # 28203A16 to wire # 28205A16 (P/N 22-2820-25-00).
- 10.9** Connect the other end of wire # 28205A16 (P/N 22-2820-25-00) and one end of the current limiting resistor assembly (P/N 22-2820-24-00) to terminal 2 on the prime switch. Refer to wiring diagram Figure 5.
- 10.10** Connect the other end of the current limiting resistor assembly to terminal 5 on the prime switch.
- 10.11** Connect wire # 28202A16 (P/N 22-2820-26-00) to the terminal on the fuel pump switch and to terminal 1 on the prime switch.
- 10.12** Connect wire # 28206A16 (P/N 22-2820-27-00) to terminal 3 on the prime switch and to position 10 on connector J2400-02.
- 10.13** Install the LED indicator assembly (P/N 22-2820-21-00) as shown in Figure 3.
- 10.14** Install the LED red wire into position 1 of the 2 pin connector and the LED black wire into position 2 of the 2 pin connector as shown in Figure 5.
- 10.15** Install the fuel prime harness (P/N 22-2820-23-00).
  - 10.15.1** Connect the LED 2 pin connector to the fuel prime indicator harness 2 pin connector.

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- 10.15.2** Connect the new wire # 28207A18N to ground stud GS-IP-18. Refer to Figure 6.
- 10.15.3** Connect the new wire # 28208A18 to terminal 6 on the prime switch.
- 10.16** Extract old wire # 28200B16 from fuselage harness connector P2400-02. Cut off the pin and strip the end.
- 10.17** Solder the end of wire # 28200B16 (P/N 22-2820-28-00) and wire # 28206B16 (P/N 22-2820-29-00) to the end of old wire # 28200B16.
- 10.18** Pull old wire # 28200B16 through belly access hole, making sure the 2 new wires are pulled through smoothly. Refer to Figure 1.
- 10.19** Connect wire # 28200B16 (P/N 22-2820-28-00) to position 16 on connector P2400-02.
- 10.20** Connect wire # 28206B16 (P/N 22-2820-29) to position 10 on connector P2400-02.
- 10.21** Extract wire # 28201B16N from the fuel pump connector on the fuselage harness.
- 10.22** Trim wire # 28200B16 and wire # 28206B16 to the same length as wire # 28201B16N
- 10.23** Strip the wires and crimp the sockets to the ends.
- 10.24** Connect wire #28200B16 into position 1 of the 3 pin connector.
- 10.25** Connect wire # 28201B16N into position 2 of the 3 pin connector.
- 10.26** Connect wire # 28206B16 into position 3 of the 3 pin connector.
- 10.27** Install new electric fuel pump P/N 22-2824-02-00 (MM Chap. 28-20-00).
- 10.28** Connect the fuel pump electrical connector to the fuselage harness connector.
- 10.29** Replace all removed cable ties with new ones.
- 10.30** Reinstall the altimeter and the vertical speed indicator.
- 10.31** Do a low range pitot static leak check if the static line was opened. (MM Chap. 34-10-00).
- 10.32** Flush the fuel system (MM Chap. 28-10-00)
- 10.33** Test the installation:
  - 10.33.1** Make sure the fuel pump switch and the fuel prime switch is set to OFF.
  - 10.33.2** Set GEN/BAT master switch to ON.

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- 10.33.3** Set fuel pump switch to ON.
- 10.33.4** Audible sound should be heard from fuel pump.
- 10.33.5** Set fuel prime switch to PRIME.
- 10.33.6** Fuel prime LED should be on and an increase in the audible sound of the fuel pump should be heard.
- 10.33.7** Set fuel prime switch to OFF.
- 10.33.8** Fuel prime LED should be off and a decrease in the audible sound of the fuel pump should be heard.
- 10.33.9** Set the fuel pump switch to OFF.
- 10.33.10** Audible sound from fuel pump should stop.
- 10.33.11** Set GEN/BAT master switch to off.
- 10.34** Reinstall the instrument panel cover.
- 10.35** Reinstall the seats.
- 10.36** Reinstall the access hole covers.
- 10.35** Return the old fuel pump with attached fittings and mounting bracket to Diamond Aircraft.
- 10.37** Insert revision 7 into the aircraft flight manual in accordance with the change instructions included with the revision.
- 10.38** Make a log book entry stating that this service bulletin has been incorporated.

## **11. Weight and Balance:**

The weight and balance is not affected by this Service Bulletin.

## **12. Availability:**

Contact Diamond Aircraft.

*To obtain satisfactory results, procedures specified in this service bulletin must be accomplished in accordance with accepted methods and current government regulations. Diamond Aircraft Industries Inc. 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 Industries Inc. at the address below.*

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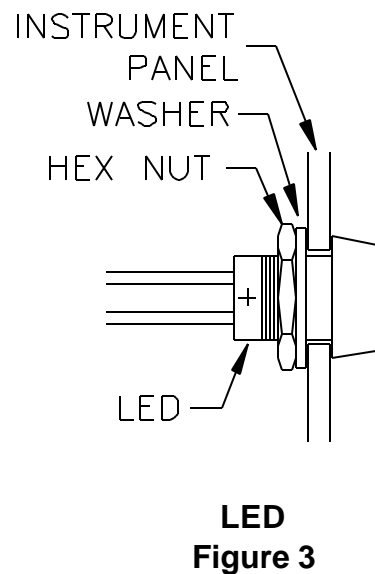
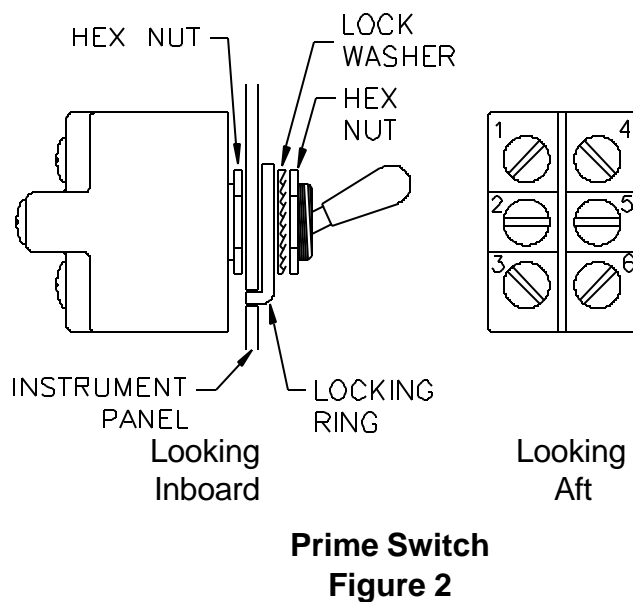
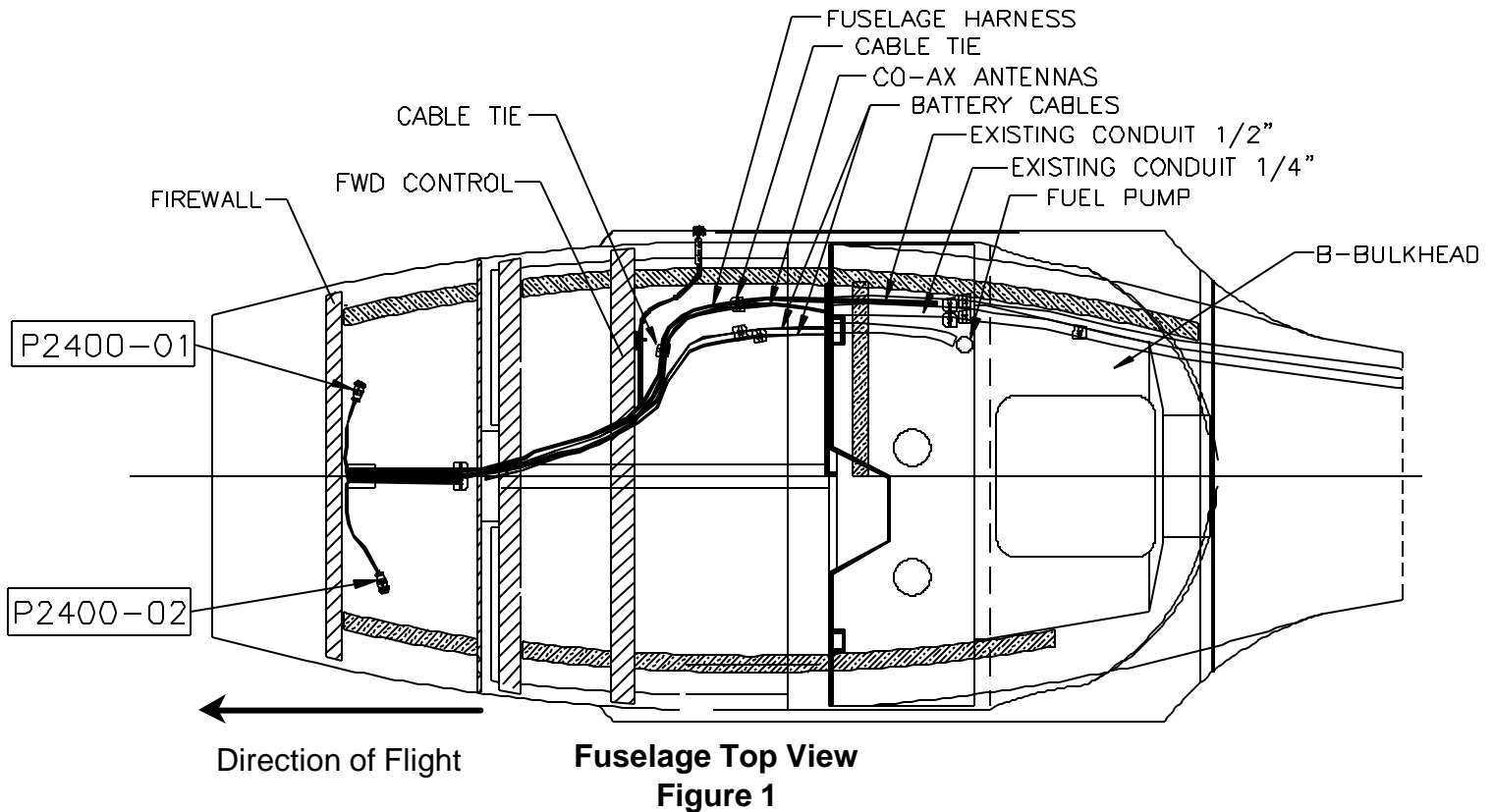


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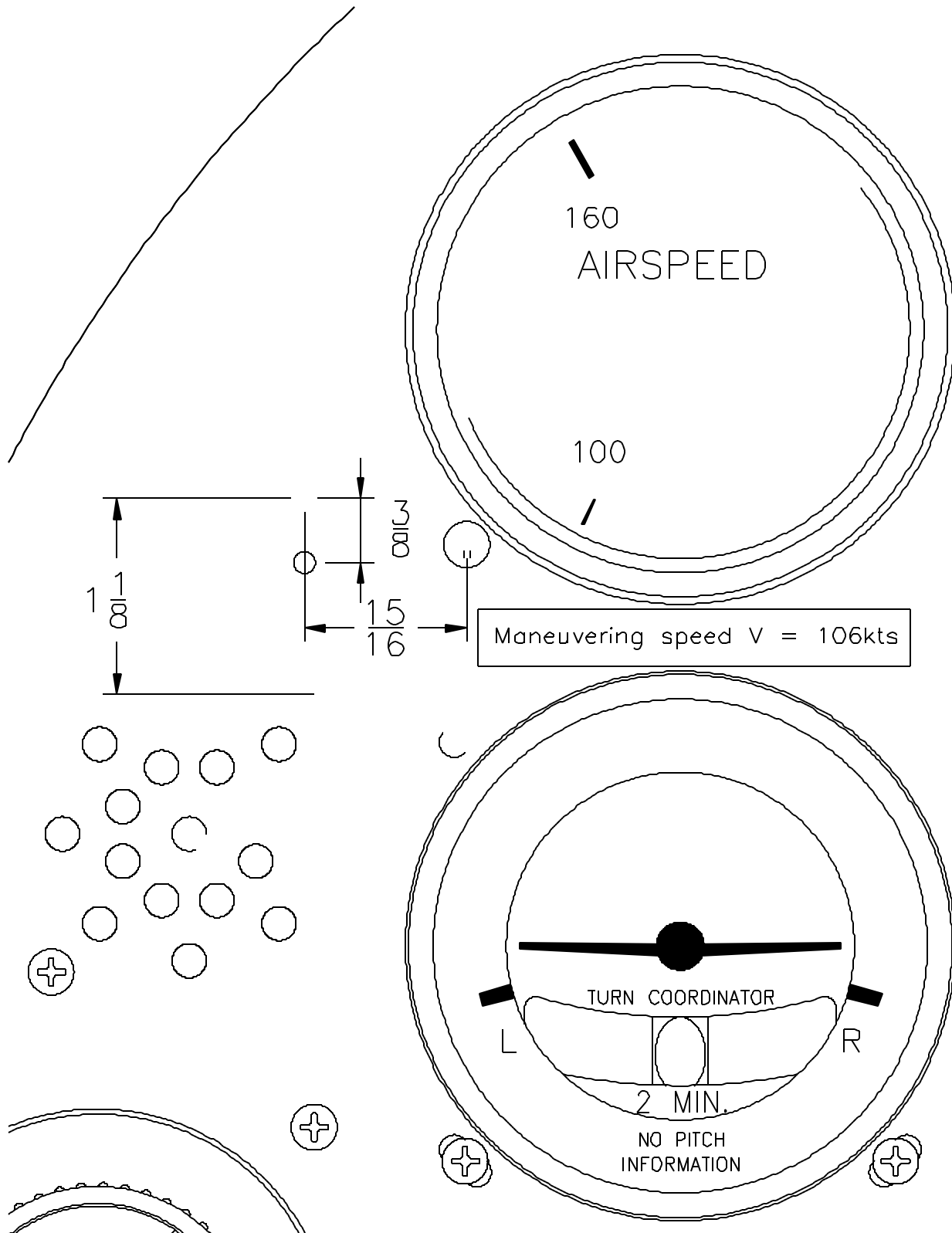


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**Figure 4**  
All dimensions in inches

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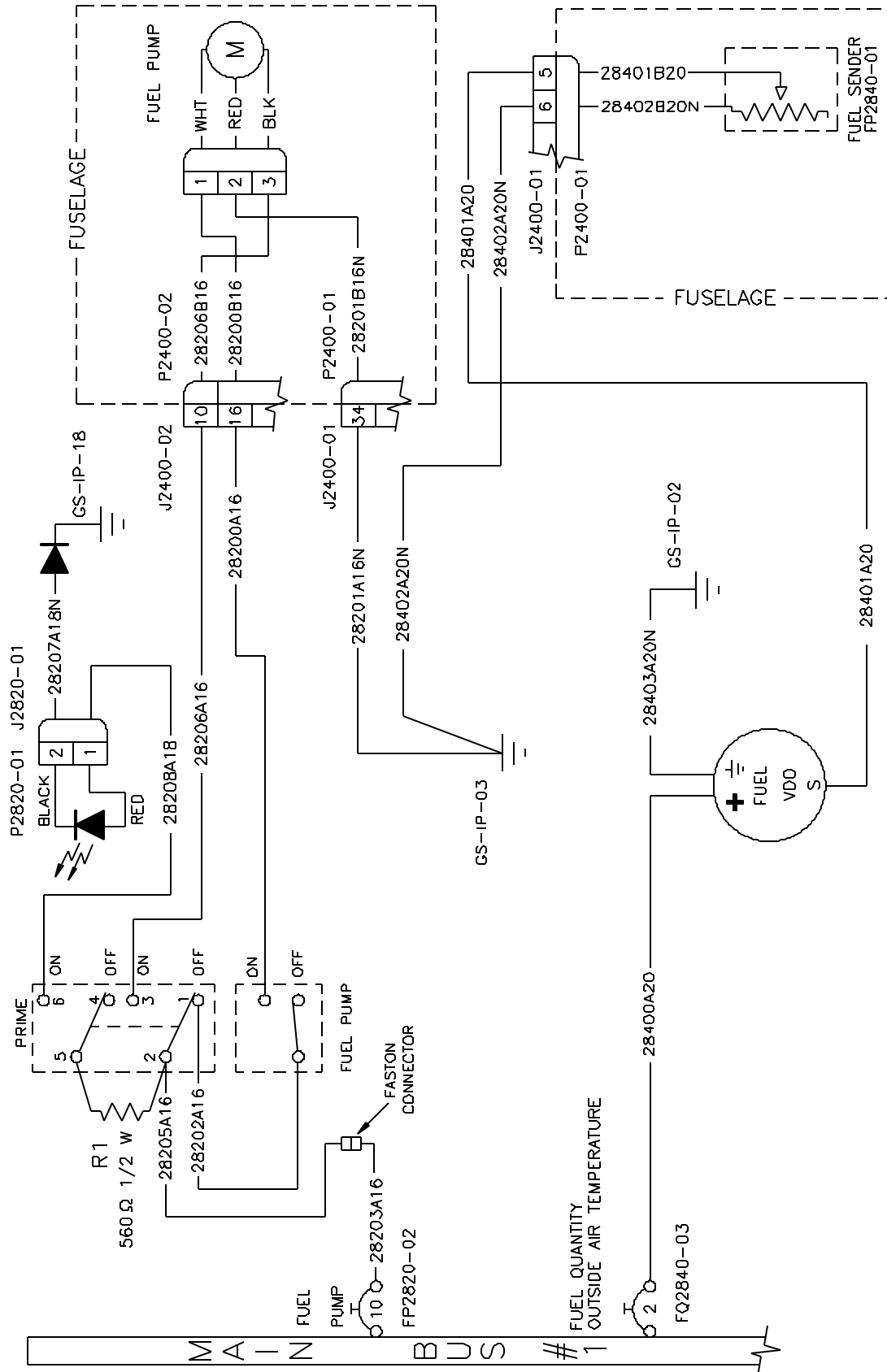


Figure 5

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