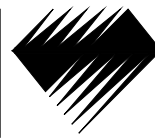


# ALERT SERVICE BULLETIN



**Diamond**  
AIRCRAFT

Service Bulletin No.: DA20-28-02A, Rev. 0

Date Issued: December 11, 1996

Title: Fuel System Indicating and Storage

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1. ATA Code: 2800

## Planning Information

2. Effectivity: **Part 1** DA20 Katanas S/N 10001 through S/N 10030.  
**Parts 2 and 4** DA20 Katanas S/N 10001 through S/N 10250.  
**Part 3** DA20 Katanas S/N 10001 through S/N 10195.

3. General: This bulletin consists of 4 parts, pertaining to the aircraft fuel system.

- Part 1** Addresses fuel quantity gauge markings on affected aircraft. A newer design fuel gauge more accurately depicts the volume of fuel in the tank.
- Part 2** Addresses the need for a wiring check and calibration of the fuel quantity indicating system.
- Part 3** Addresses a Fuel Vent modification. A vent line is retrofitted to some tanks, to prevent excessive air entrapment.
- Part 4** Addresses the total fuel tank capacity. The rated capacity is reduced to reflect actual tank capacity. Existing placards are replaced with ones that indicate the revised tank capacity.

## 4. Compliance:

- Part 1** **10.1.0 Inspection:** Upon receipt of this service bulletin.
- Part 2** Upon receipt of this service bulletin and parts (if required in Part 1 of this bulletin).
- Part 3** **10.3.0 Inspection:** Upon receipt of this service bulletin.
- Part 4** Upon receipt of this service bulletin, placards and flight manual revision.

5. Approval: Engineering data referenced or contained in this bulletin is Transport Canada approved.

6. Labor: **Part 1** Included in part 2.  
**Part 2** 1.5 hrs.  
**Part 3** 0.5 hrs. inspection + 1 hr. if modification required.  
**Part 4** 0.25 hrs.

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## 7. Material:

**Part 1:** Fuel Quantity Gauge P/N 301-035SB if required.

**Part 2:** None.

Part 3:	P/N	Description	QTY
	079-800	Clamp, Hose	2
	M6000-A-00008	Hose	8 in.
	20-2800-91-00	Assy., Vent Tube	1
	1703-4-4	Fitting, 90 degree	1
	A22100-2-4-4	Fitting, Tee	1
	*PR1422B1/2	PRC	as req'd
	*545	Loctite, Thread Seal	as req'd

\*Items not supplied with materials kit . Procure items locally.

Above Material excluding (\* items) may be ordered as Kit P/N DA20-28-02MK.

**Part 4:** Fuel Gauge Placard P/N 20-3910-04-06, Fuel Filler Placard: AVGAS P/N 20-1120-00-01 or AVGAS/MOGAS P/N 20-1120-00-17

**8. Special Tools:** Calibrated OHM Meter.

**9. References:** DA20 Flight Manual Doc. No. DA202. Diamond Aircraft Dwg. 20-2400-00-00 Sheets 1 & 2.

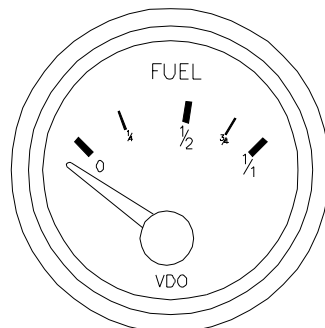
## 10. Accomplishment Instructions:

### 10.1.0 Fuel gauge

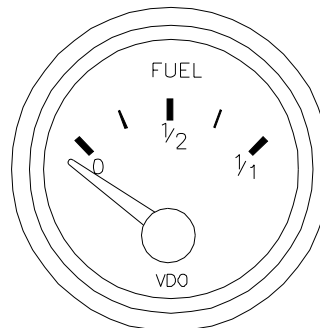
#### Inspection

**10.1.1** Refer to figure 1 to determine the type of fuel gauge installed on the aircraft.

**10.1.2** If the obsolete gauge is installed contact Diamond Aircraft Customer Support to order a replacement gauge.



New Design



Obsolete Design (Equally spaced markings)

Figure 1

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## Replacement

- 10.1.3 Disconnect the battery.
- 10.1.4 Remove the instrument panel cover.
- 10.1.5 Remove the fuel quantity gauge mounting hardware and disconnect the wires.
- 10.1.6 Connect the wires to the new fuel gauge, Ref. Dwg. 20-2400-00-00 Sh. 1.
- 10.1.7 Carry out the fuel quantity calibration procedure described in 10.2.0.

## 10.2.0 Fuel Quantity Calibration/Wiring Check

### WARNING

**Extinguish any source of heat or open flame before working on fuel system.**

- 10.2.1 Disconnect the battery.
- 10.2.2 Completely drain the fuel tank. Residual fuel is drained via the quick drain.
- 10.2.3 Remove the instrument panel cover.
- 10.2.4 Refer to wiring diagram 20-2400-00-00 sh. 1 & 2.
- 10.2.5 Disconnect J2400-02 from P2400-02 and inspect the connector contacts for cleanliness and condition. Examine the fuel sender signal wire contacts #12 and #13. Clean or replace contacts as necessary.
- 10.2.6 Reconnect J2400-02 and P2400-02.
- 10.2.7 Remove ground wire #28402A20N from Ground Bus TB2400-03 Terminal #8 (Ref. Figure2.).

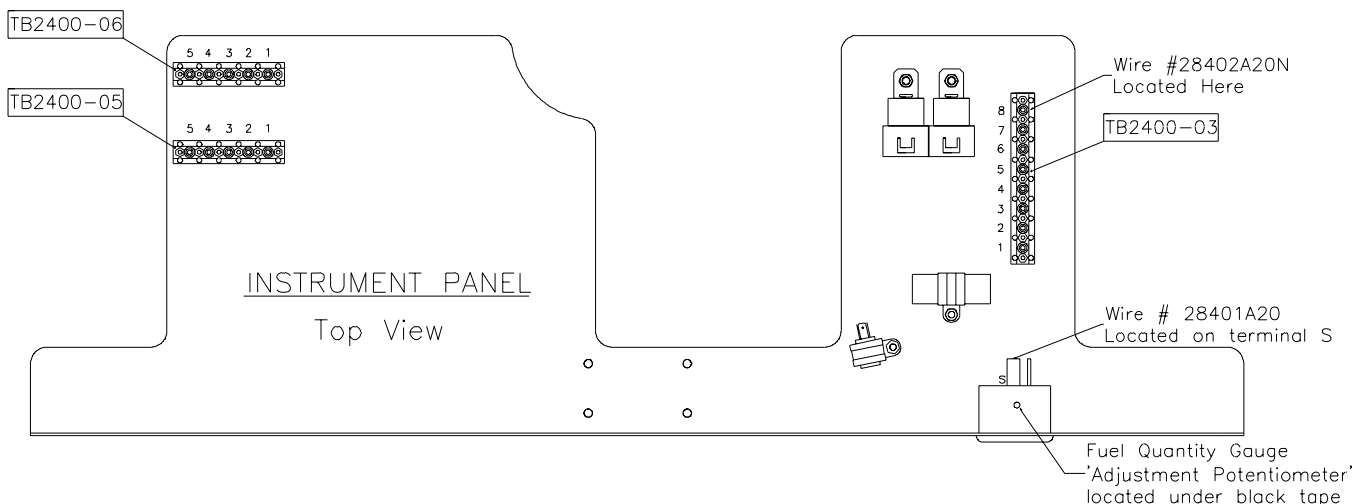


Figure 2.

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**10.2.8** Disconnect the signal wire #28401A20 from the fuel quantity gauge. Using a calibrated Ohm Meter, measure the resistance between the fuel signal wire # 28401B20 and the ground wire #28402A20N. See figure 2.

**10.2.9** The resistance measured in 10.2.6 must be between 70-73 ohms. If the resistance is not between 70-73 ohms troubleshoot the wiring and fuel sender to correct the problem.

**10.2.10** Reconnect the signal wire #28401A20 and ground wire #28402A20N.

**10.2.11** Remove the fuel quantity gauge mounting hardware. Leaving the wiring connected, pull the fuel quantity gauge out of the panel to gain access to the adjustment hole.

**10.2.12** Important: Make sure the battery is fully charged and that the battery voltage remains between 12.25 volts and 12.70 volts during the calibration procedure.

**10.2.13** Connect the battery and select the battery switch to on.

**10.2.14** Adjust the fuel quantity gauge calibration potentiometer, shown in figure 2, so that the needle edge is one needle width below the 0 index mark as shown in figure 3a. Tap the fuel quantity gauge lightly, while adjusting, to remove any friction error.

**10.2.15** Disconnect the battery, install the fuel quantity gauge and instrument panel cover.

**10.2.16** Connect the battery.

**10.2.17** Add 4 liters (1.06 US gallons) of fuel to the tank.

**10.2.18** Run the engine (or connect a 14 volt power supply to the aircraft electrical system). With the generator on line the needle point must be inside the 0 fuel mark on the fuel quantity gauge as shown in figure 3b. Continue tapping the indicator lightly if necessary.

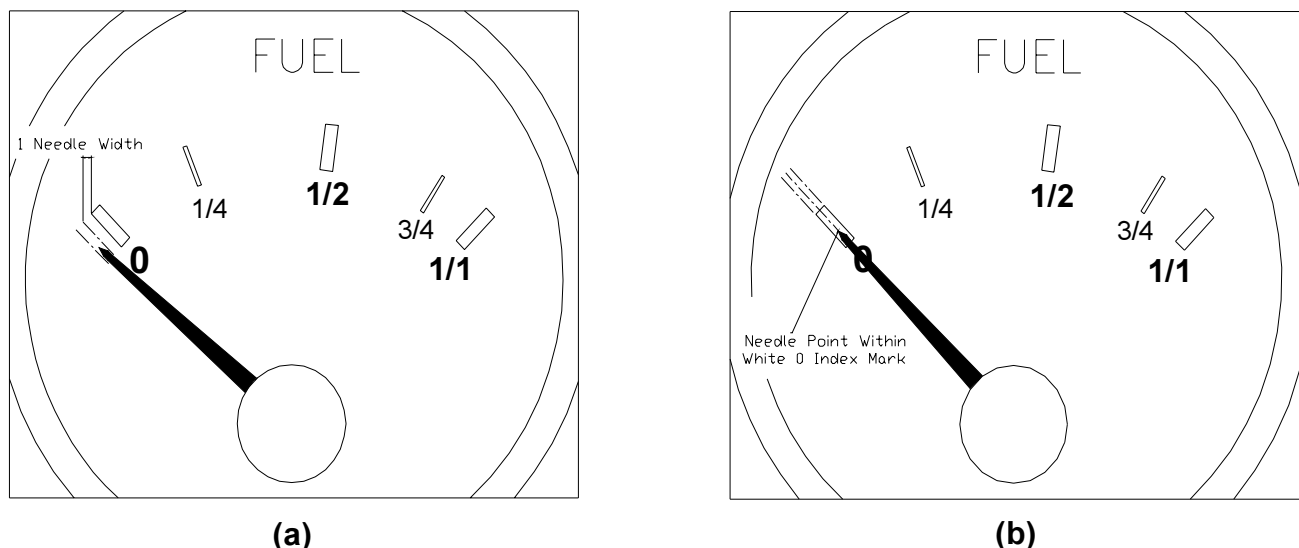
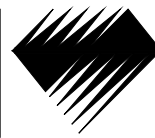


Figure 3

# ALERT SERVICE BULLETIN



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## 10.3.0 Fuel Tank Venting Modification

### Inspection

#### WARNING

**Extinguish any source of heat or open flame  
before working on fuel system.**

**10.3.1** Remove the baggage compartment floor.

**10.3.2** Use an inspection mirror to view the tank S/N, located below the tank filler , stamped onto the tank grounding tab.

**10.3.3** If the serial number of the tank is between HF 001 and HF 205 the fuel vent modification is required. Contact Diamond Aircraft Customer Support to order the service bulletin materials kit. See; 7. Material, part 3. of this service bulletin.

**10.3.4** If the fuel venting modification is not required. Reinstall the baggage compartment floor.

### Modification

**10.3.5** Loosen the filler neck clamps and remove the rubber filler neck. Seal the tank opening to ensure that no debris enters the tank.

**10.3.6** Disconnect the fuel return line.

**10.3.7** Remove the fuel return fitting from the tank.

**10.3.8** Drill a 1/4" hole in the rubber filler neck, located as shown in figure 4. Open up the hole with a oversize drill bit as described in figure 4, note 2.

**10.3.9** Clean out any debris from the rubber filler neck.

**10.3.10** Apply a small bead of PRC 1422B1/2, or equivalent sealant, around the 1/4" hole drilled in the rubber filler neck.

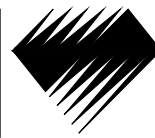
**10.3.11** Install the fuel vent tube assembly to the rubber filler neck. Do not distort the filler neck by over tightening.

**10.3.12** Assemble the fittings, hoses and clamps as shown in figure 4.

**10.3.13** Reinstall the baggage compartment floor.



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## 10.4.0 Revision of Fuel Tank Capacity

10.4.1 Remove Existing fuel placards from fuel quantity indicator and area above fuel cap.

10.4.2 Clean surfaces with mild detergent.

10.4.3 Install new placards.

10.4.4 Insert Flight Manual Revision 10 into Flight Manual.

11. Weight and Balance: Negligible

12. Electrical Load Data: None

13. Credit. A full parts credit and labour allowance of 2.25 hours (plus 1 additional hour for fuel vent modification if required) will be issued upon receipt of a completed warranty application form returned together with the old parts providing they are received no later than February 28, 1997.

*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.*

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