

ALERT SERVICE BULLETIN



Service Bulletin No.: DA20-76-01A, Rev. 5

Date Issued: May 7, 1997

Title: Throttle Cables, Replacement

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- 1. ATA Code:** 7610
- 2. Effectivity:** DA 20 Katana Aircraft S/N 10002 through 10300.
- 3. General:** This service bulletin supersedes S.B. #DA20-76-01A Rev 4. A long life throttle control cable is installed to replace the existing cable type which currently requires replacement every two hundred hours. An improved throttle friction adjustment is incorporated. The friction force is preset by maintenance personnel to a minimum level. Fine adjustment is then made by the pilot using the existing friction control knob.
- 4. Compliance:** At the next 100 hour inspection.
- 5. Approval:** Engineering data referenced or contained in this bulletin is approved as part of the type design.

6. Labor: 2.5 hours.

7. Material:

<u>Item</u>	<u>Qty</u>	<u>Part Number</u>	<u>Description</u>
1	1	MS24665-172	Cotter Pin
2	1	MS14144 L3	Castellated Nut
3	2	20-7600-01-96	Inner Wire
4	2	AN960C10	Washer
5	1	AN3C10	Bolt
6	1	20-7600-01-97	Return Spring, Left
7	1	20-7600-01-98	Return Spring, Right
9	1	AN960C10L	Washer
10	1	DS-50	Spring Washer
11	1	20-7610-01-08	Spacer
12	1	165-061	Nut, Self Locking
13	4	654-014	Washer, Nylon
14	2	W-513	Washer, Brass
15	1	HC 143	Bolt, 2 1/4"
16	2	W-5006	Washer
17	1	HC 144	Bolt, 2 1/2"

The above items may be ordered as kit DA20-76-01MK5.

Parts required for S/N 150 and below see Accomplishment Instructions 10.1

<u>Item</u>	<u>Qty</u>	<u>Part Number</u>	<u>Description</u>
8	2	20-7600-01-13	Conduit, Control Throttle

Aeroshell Grease 5, Loctite 495 (or equivalent instant adhesive) procure locally.

- 8. Special Tools:** Not Applicable.
- 9. References:** Doc #DA201 Maintenance Manual.

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10. Accomplishment Instructions:

- 10.1 Inspect the throttle-control conduit for damage and replace if required before performing this service bulletin. Aircraft S/N 150 and below have longer 41 inch 'Throttle Cable Conduits' installed which need to be replaced with 39 inch conduits to accommodate the new inner wires.
- 10.2 Remove the throttle-quadrant friction-knob and temporarily install a 5/16 - 24 nut to prevent loss of any parts.
- 10.3 Remove the screws holding the throttle quadrant. Pull the throttle quadrant up enough to gain access to the throttle cables and remove the inner-wire retaining-hardware. Discard the bolt, washers and nut. Keep the bushings.
- 10.4 Cut the 90 degree bend off the end of the inner-wire throttle-cable at the throttle quadrant.
- 10.5 Loosen the nut on the swivel on the throttle lever arms and pull the cables forward out of the throttle-control conduit.
- 10.6 Remove the throttle lever arm, spring and stop lever from the left carburetor and install the left return spring as shown in figure 1. The spring is installed so that it aids the existing spring in opening the throttle.
- 10.7 Repeat the procedure of 10.6 for the right carburetor.
- 10.8 Reinstall the stop lever, throttle lever and spring on the left and right carburetor.
- 10.9 Refer to Figure 3. Disassemble the throttle quadrant as shown discarding the parts as indicated. Reassemble the throttle quadrant adding the new parts and orienting the DS-50 washers as shown. Torque the 5/16-24 nut to 5-5.4 ft.lbs (6.8-7.3 Nm). Note: For A/C serial numbers 10002 to 10200 use the 2 1/2" bolt. For A/C serial numbers 10201 to 10300 use the 2 1/4" bolt.
- 10.10 Refer to figure 4. Use Loctite 595 (or equivalent instant adhesive) to bond the existing bushings into the throttle lever.
- 10.11 Insert the new inner cables from the throttle quadrant end.
- 10.12 Install the throttle cable retaining hardware (see 10.12 and 10.13) in the order shown in figure 4, detail 'A'. Lubricate the bolt with Aeroshell Grease 5.
- 10.13 Tighten the throttle cable retaining hardware until the cable eyelets do not rotate independently of each other. Back off the nut by 3/4 of a turn. The Cable eyelets should rotate freely and independently of each other. Check that there is no possibility of interference between the bolt head and the throttle-quadrant center-frame due to excessive side play. If the bolt head interferes with the center frame install the washers as shown in figure 4 'Detail B'.

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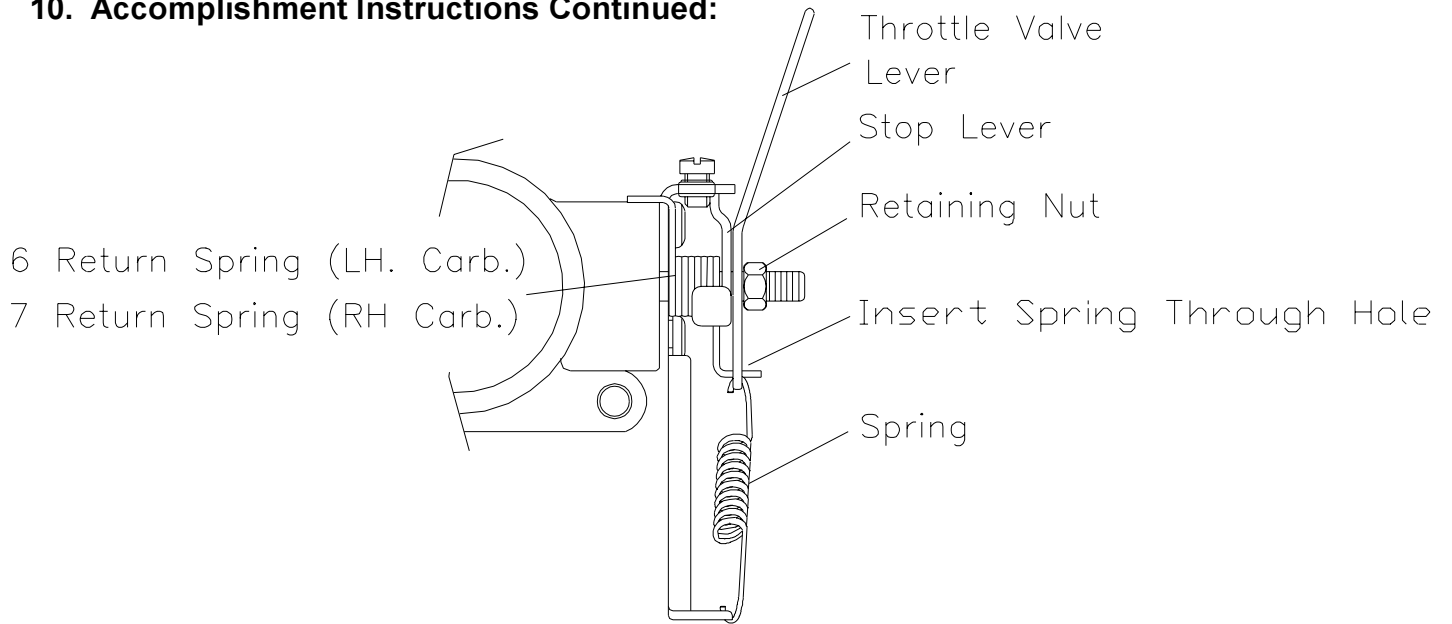
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10. Accomplishment Instructions Continued:



-Looking AFT-

LH Shown-RH Opposite

Figure 1

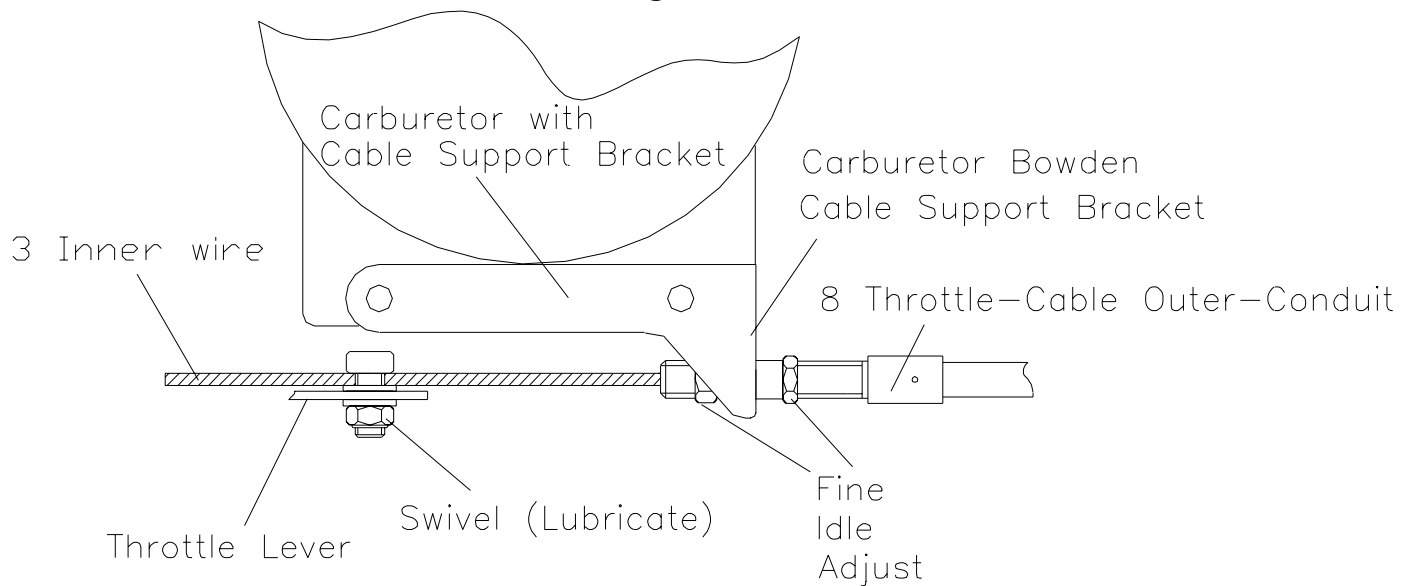


Figure 2

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10. Accomplishment Instructions Continued:

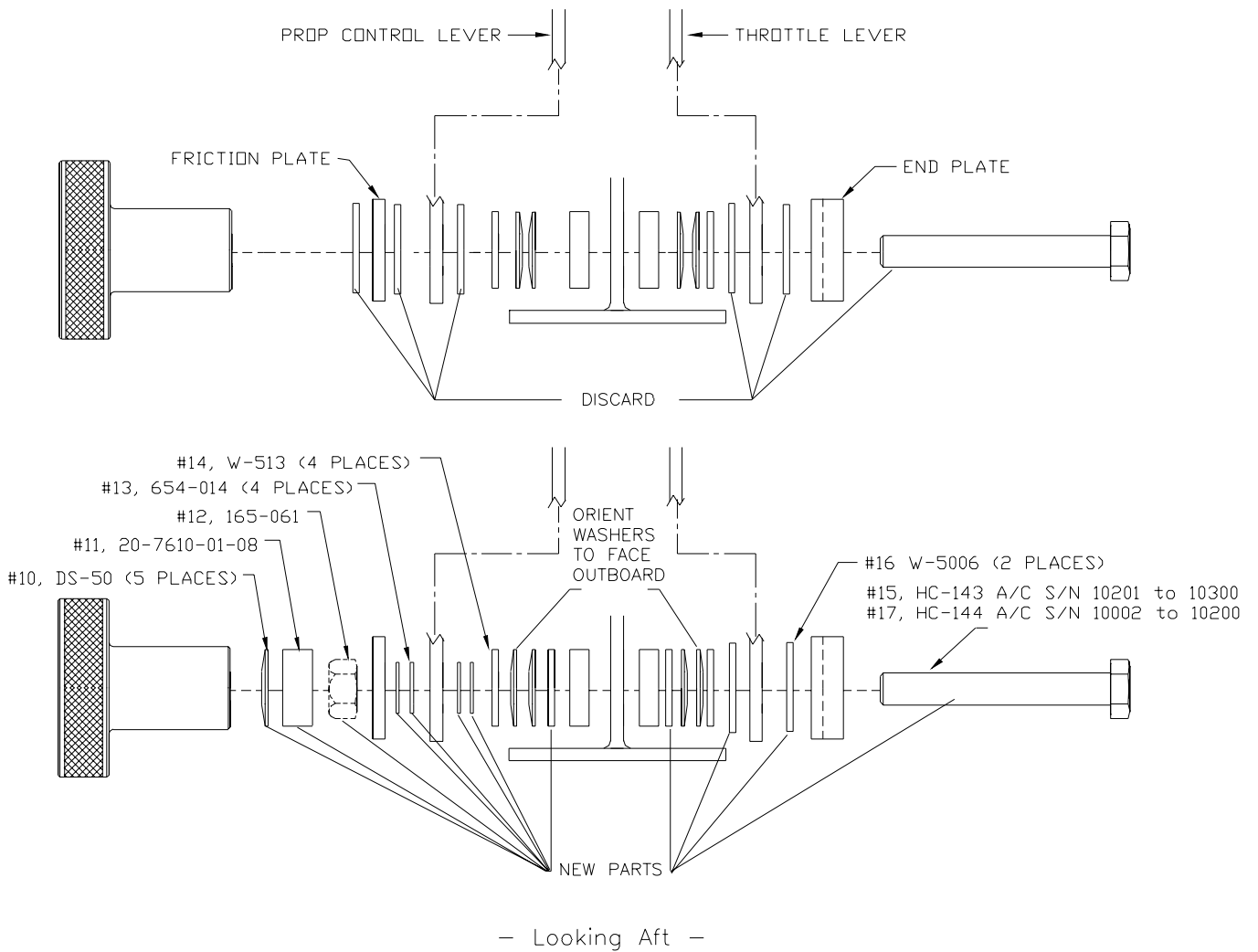


Figure 3

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10. Accomplishment Instructions Continued:

Do Not Over Tighten
Refer to 10.11

NOTE: The bushings are
Oversize for the AN3 bolt

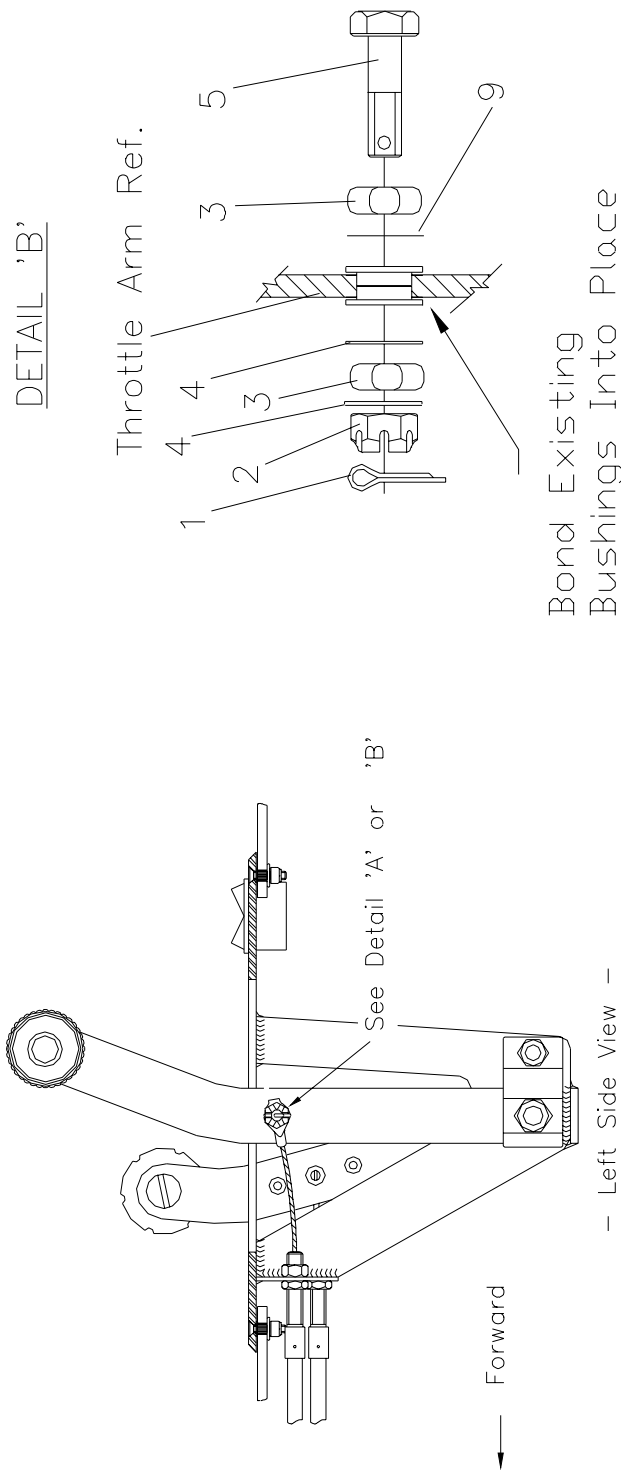
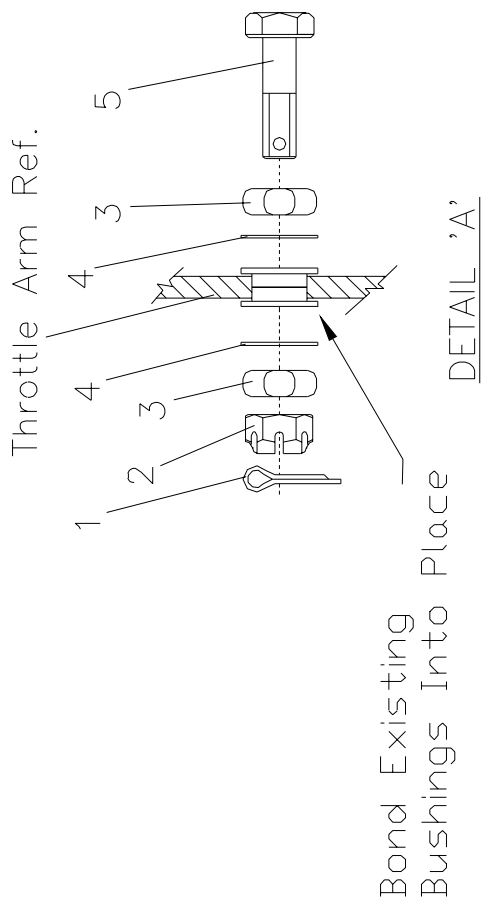


Figure 4

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10. Accomplishment Instructions Continued:

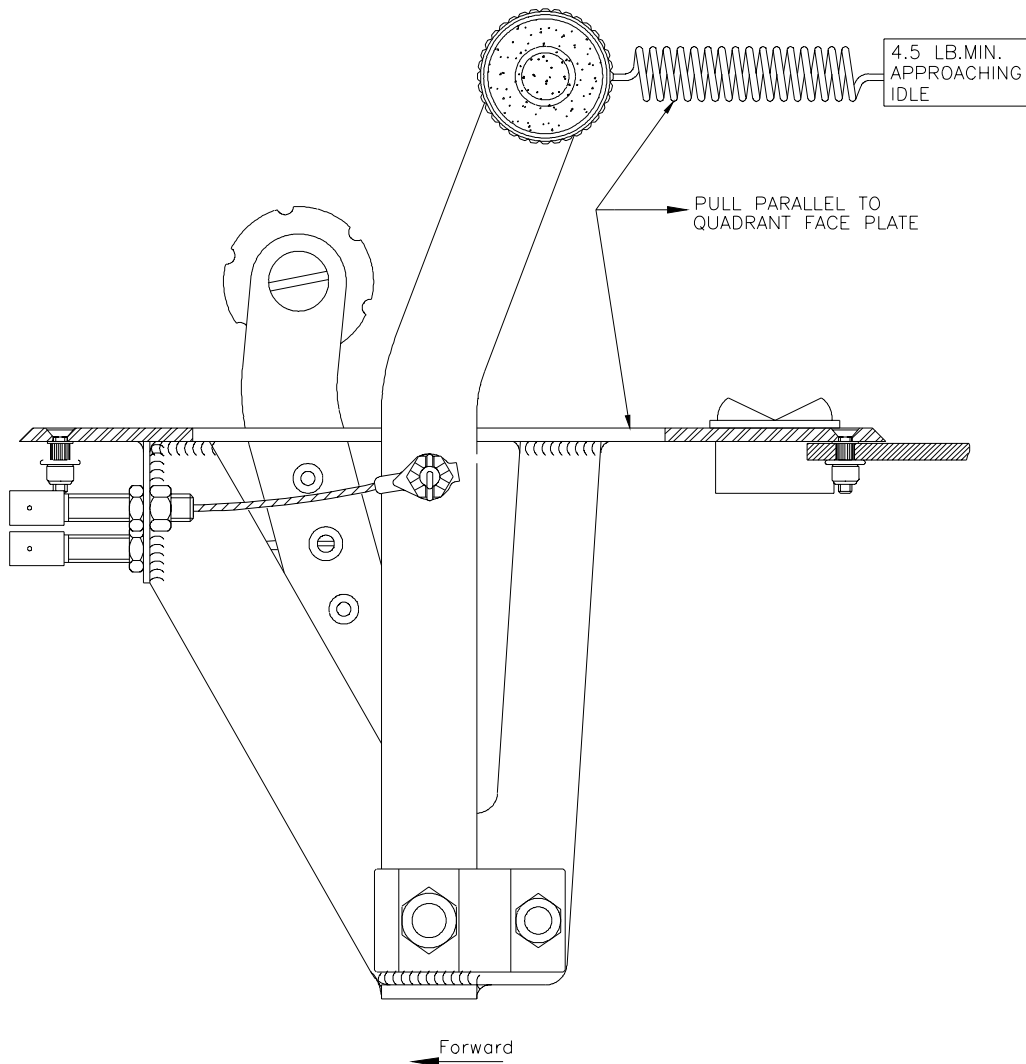


Figure 5

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10. Accomplishment Instructions Continued:

- 10.14 Insert the cotter pin and bend it to obtain the lowest possible profile. Check for interference between the cotter pin and the structure through the full travel of the throttle lever. Check for interference between the cotter pin and the throttle-quadrant top-plate through the full travel of the throttle lever.
- 10.15 If necessary remove a small amount of FRP to maintain adequate bolt clearance from the structure.
- 10.16 Reinstall the throttle quadrant leaving the friction knob, spacer and DS-50 washer off.
- 10.17 Pull throttle lever to idle stop.
- 10.18 Thread the inner wire through the hole in the swivel. Check that the position of the washers is correct (Figure 2).
- 10.19 Move the throttle arm on the carburetor to the idle stop (it may be easier to remove the spring on the throttle arm). While gently pulling the inner throttle cable forward and holding the throttle lever to idle stop, tighten the throttle arm swivel. Lubricate the swivel with Aeroshell Grease 5. Ensure that the swivel can rotate freely.
- 10.20 Refer to figure 5. With throttles rigged (ie. all springs installed) adjust the self locking nut so that a preload force of 4.5 lbs min (2 Kg) is required to pull the throttle lever aft when it is a point 0.25" (6mm) before the end of travel.
- 10.21 Install the spacer, DS-50 washer and friction knob.
- 10.22 Conduct a test run. If idle to 1500 rpm is rough, carburetor synchronization must be carried out as per Maintenance Manual Chapter 71-00 Page 16.

11. Weight and Balance: Negligible

12. Electrical Load Data: Not Applicable

13. Credit: A full parts credit and labor credit of will be issued upon receipt of a completed warranty claim form when received within 90 days from the issue date of this service bulletin.

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 Industries Inc. 1560 Crumlin Sideroad, London, Ontario, Canada N5V 1S2
Phone: (519) 457-4041 Fax: (519) 457-4045

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