

SERVICE LETTER

UNIVAIR AIRCRAFT CORPORATION
STINSON DIVISION

SERVICE INFORMATION LETTER NO. 80

February 22, 1999

Subject: Availability of improved fuel valve kits for Stinson 108, 108-1, 108-2 and 108-3

The original fuel valves installed in Stinson 108 series aircraft are brass valves that require repeated inspection, disassembly and lubrication to extend their lives. A new design aluminum valve is now available that provides more positive detents for each position and does not require the repeated lubrication procedures. This valve is supplied in Univair Kit Numbers 9010076-38 and 9010076-12. Installation of one of these kits eliminates the requirements of Service Bulletin No. 250 and Service Letter No. 77.

The Univair fuel valve kits are approved for installation on the following aircraft only:

Model	Engine	Fuel Line Size	Kit No.
108 108-1	Franklin 6A4-150-B31 6A4-150-B3 BA4-150-B4	3/8" O.D.	9010076-38
108 108-1	Franklin 6A4-165-B3 or 6A4-165-B4 installed Per Service Letter 74A	1/2" O.D.	9010076-12
108-2 108-3	Franklin 6A4-165-B3 or 6A4-165-B4	1/2" O.D.	9010076-12

Contact Univair Aircraft Corporation for price and ordering information for the improved fuel valve kits.

Univair Aircraft Corporation
2500 Himalaya Road
Aurora, CO 80011-8156
Toll Free Order Only Phone: 888-433-5433
Phone: 303-375-8882
FAX: 303-375-8888 or 800-457-7811
E-mail: info@univair.com
Web Site: www.univair.com

UNIVAIR AIRCRAFT CORPORATION REPORT 2173 INSTALLATION INSTRUCTIONS FOR STINSON FUEL VALVE

INTRODUCTION

This report supplies the installation instructions for installation of U491-947 fuel valve in Stinson 108-1, 108-2, and 108-3 airplanes. For airplanes with 3/8" diameter fuel lines use Univair Kit No. 9010076-38. For airplanes with 1/2" diameter fuel lines use Kit No. 9010076-12. A certified airframe mechanic should accomplish all work for installation of the new valve.

ELIGIBILITY

The U491-947 fuel selector valve is approved for installation on the following aircraft only:

Model	Engine	Fuel Line Size	Kit No.
108 108-1	Franklin 6A4-150-B31 6A4-150-B3 BA4-150-B4	3/8" O.D.	9010076-38
108 108-1	Franklin 6A4-165-B3 or 6A4-165-B4 installed Per Service Letter 74A	1/2" O.D.	9010076-12
108-2 108-3	Franklin 6A4-165-B3 or 6A4-165-B4	1/2" O.D.	9010076-12

INSTALLATION INSTRUCTIONS

Read all instructions to familiarize yourself with the procedures before making changes. Verify that all parts on Kit List are in the kit and all additional materials needed are in hand before installation.

1. Drain the fuel from both tanks and drain the fuel lines at the strainer on the firewall.
2. Remove the control column center fairing to gain access to the fuel selector valve.
3. Remove the existing brass fuel selector valve and fuel valve shaft assembly.
Destroy and discard old brass fuel selector valve.
4. Loosen B nut on fuel line from selector valve to gascolator at gascolator.
5. Cut existing fuel lines to remove existing compression fittings.
6. Apply pipe thread sealant to pipe threads of flareless fittings supplied in kit. (Do not use Teflon tape for thread sealant.) Torque the fittings until tight.
7. Increase the hole size of the two #6 countersunk washers, A3236-012-24A to 0.194 (#10).
8. Temporarily install the fuel valve on the fuel valve mounting pad with the fuel valve on the forward side of the mounting pad and the countersunk washers then the

Revision: None Date: 02-22-99	UNIVAIR AIRCRAFT CORPORATION Page 1	Report 2173
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- AN960-10 washers on the aft side of the mounting pad. Use the MS24678-11 screws. Tighten until snug, allowing some minor repositioning of valve if required.
9. Trim each fuel line by cutting it off squarely to a length where it will bottom on the seat within its fitting body.
 10. Remove the fuel valve. Deburr fuel line ends and clean **all** metal shavings and contaminants from the fuel lines.
 11. Make sure the fuel selector valve shaft $\frac{1}{4}$ round is pointing toward the valve outlet line (opposite the mounting screws). This is the OFF position.
 12. Reattach fuel selector valve as in step 8. Tighten screws until snug.
 13. Temporarily attach the 108-9010076-1 fuel valve collar to the valve stem using the MS24693-51 100° countersunk machine screw.
 14. Cut the existing fuel selector torque tube at the weld to remove the washer.
 15. Insert the torque tube through the instrument panel and into the 108-9010076-1 collar. Check torque tube length (trim end of torque tube as required) and align selector handle in the off position. Mark the location of the hole in the collar on the torque tube.
 16. Remove both the fuel selector collar and torque tube to drill the connector pin hole through the collar and torque tube using a 1/8 or #30 drill. Check the clevis pin MS20392-1C21 for proper fit.
 17. Remount the collar on the fuel selector valve shaft. It is recommended that you apply Loctite #242 to the screw threads to prevent the screw from working loose. Tighten screw.
 18. Insert torque tube into the 108-9010076-1 fuel valve collar and insert the MS20392-1C21 clevis pin with its head on the right side of the collar so that it will not face down in any fuel selector position. Secure the clevis pin with an MS24655-130 cotter pin. The fuel selector handle should be pointing to the OFF position.
 19. Place the flareless tube nuts and ferrules on the fuel lines. Screw the nuts down onto their fittings finger tight.
 20. Tighten the fuel selector valve attachment screws and secure them with MS20995C32 safety wire.
 21. Tighten the fuel line tube nuts 1 to 1 $\frac{1}{4}$ turns past finger tight. NOTE: The wedging action of the nut when tightened causes the ferrule to "bite" into the outer surface of the tube wall for a leak proof connection. The cutting edge of the ferrule is visible when the joint is disconnected to make sure the "bite" is complete. When retightening the nut, the nut should be wrenched down until a sudden resistance to wrench force is evident. From this point wrench the nut 1/6 turn more to cause the ferrule to spring into its seat against the tube and fitting body.
 22. Tighten the B nut at the gascolator fitting.
 23. Place a few gallons of fuel into each fuel tank. Check all lines for leaks. Check fuel valve operation.
 24. Reinstall control column fairing.
 25. Make appropriate log book entries. (No change to weight and balance.)

Revision: None
Date: 02-22-99

UNIVAIR AIRCRAFT CORPORATION
Page 2

Report 2173

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

There are no changes to the basic maintenance procedures for the Stinson 108 Series airplanes with the Univair 9010076-38 or 9010076-12 fuel valve kit installed. Continue to maintain the fuel system in accordance with the General Service Manual for the Stinson Model 108 Series Airplanes (Univair Part No. SSM). Service Bulletin No. 250 and Service Letter No. 77 do not apply after installation of the Univair 9010076-38 or 9010076-12 fuel valve kit.

DO NOT DISASSEMBLE THE U491-947 VALVE. There are no field serviceable parts inside the valve.

Keep these instructions and the kit list in the aircraft logs for future reference if needed for maintenance purposes.

COMPATIBILITY WITH ENGINE MODIFICATIONS

The Univair 9010076-38 or 9010076-12 fuel valve kits are approved for the models listed above only. The Univair 9010076-38 or 9010076-12 fuel valve kits have not been tested to prove that their flow rates are adequate for other engine installations that may be TC or STC approved for the Stinson 108 series aircraft. If your airplane will be or has been modified for a different engine than listed in the eligibility section of these instructions, a valve that is approved for that modification must be employed.

Revision: None
Date: 02-22-99

UNIVAIR AIRCRAFT CORPORATION
Page 3

Report 2173

**UNIVAIR AIRCRAFT CORPORATION REPORT 2173k
KIT LIST FOR STINSON FUEL VALVE**

For Kit 9010076-38 (3/8" fuel lines)

Quantity	Part Number	Description
1 each	Report 2173	Installation Instructions for Stinson Fuel Valve
1 each	U491-947	Fuel selector valve
2 each	MS24678-11	Allen head cap screw
1 each	108-9010076-1	Collar
3 each	68x6	Flareless fitting
2 each	A3236-012-24A	Countersunk washer
2 each	AN960-10	Washer
1 each	MS24693-50	#8 100° machine screw (AN507-832R8)
1 each	MS20392-1C21	Clevis pin (AN392-21)
1 each	MS24665-130	Cotter Pin (AN380-2-1)

For Kit 9010076-12 (1/2" fuel lines)

Quantity	Part Number	Description
1 each	Report 2173	Installation Instructions for Stinson Fuel Valve
1 each	U491-947	Fuel selector valve
2 each	MS24678-11	Allen head cap screw
1 each	108-9010076-1	Collar
3 each	68x8x4	Flareless fitting
2 each	A3236-012-24A	Countersunk washer
2 each	AN960-10	Washer
1 each	MS24693-50	#8 100° machine screw (AN507-832R8)
1 each	MS20392-1C21	Clevis pin (AN392-21)
1 each	MS24665-130	Cotter Pin (AN380-2-1)

Additional materials needed not supplied in either kit:

Quantity	Part Number	Description
A/R	MS20995C32	Safety wire
A/R	#242	Loctite threadlocker
A/R	Permatex Form-A-Gasket No. 2 Or other fuel-proof thread sealing compound	Thread sealing compound (Do not use Teflon tape.)

Revision: None
Date: 02-22-99

UNIVAIR AIRCRAFT CORPORATION
Page 1

Report 2173k