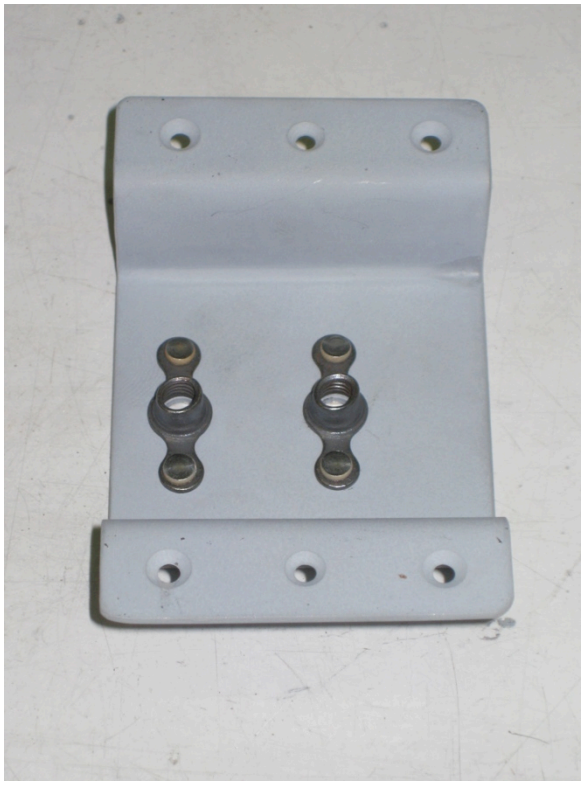
Brake System

I chose to replace all soft aluminium tubing with stainless braided teflon hoses, simply to avoid flaring. As an amateur I was sure I was not competent to flare tubing correctly, and know it has caused a number of incidents.

The following pictures show how I approached the brake and fuel systems.

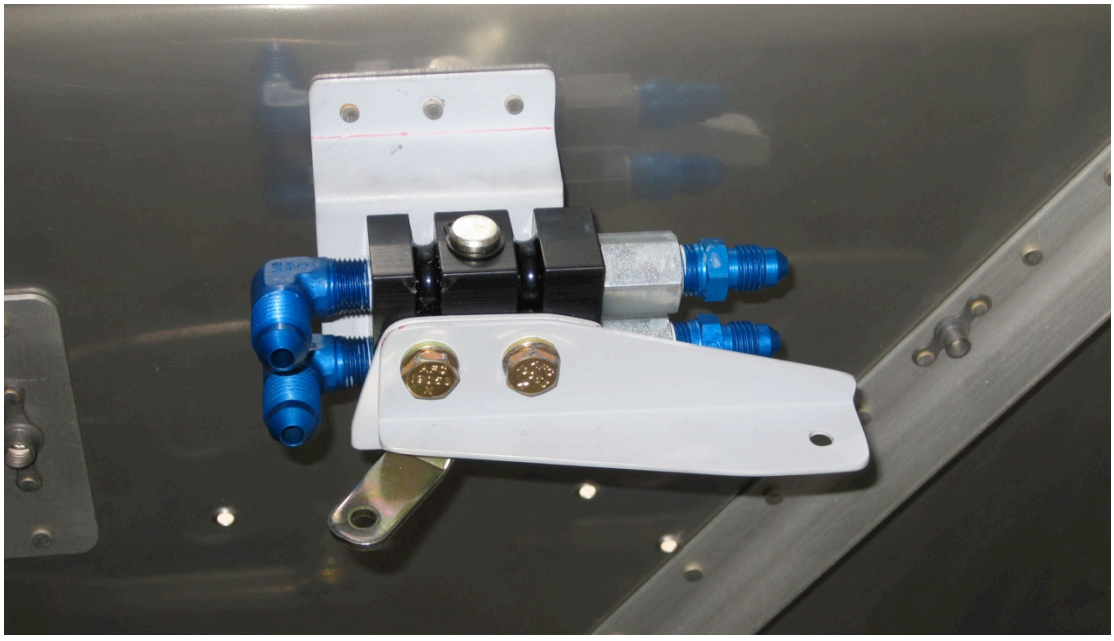


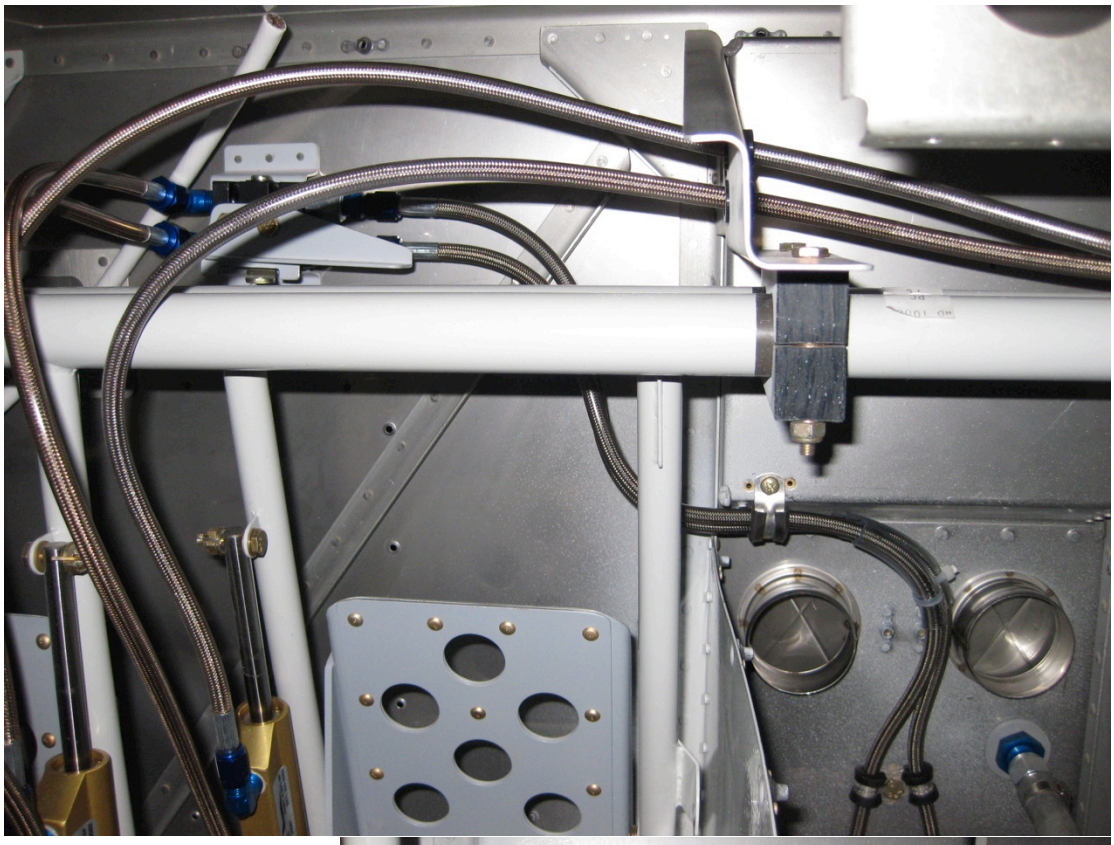
I removed the bulkhead fittings bracket from the firewall, made a new bracket to support the Matco parking brake valve and riveted this in the same holes as the original bracket. I made a bracket to hold the cable end. Sandwiched between the cable bracket and the valve is a notched plate which limits the lever movement, as well as the Matco-supplied rubber washers to prevent overtightening the bolts on the valve bodies.

With the brackets as illustrated, the valve lever needs to be reversed.

I used the standard Bonaco RV-10 brake hose kit, with two additional hoses for the tunnel similar to Phil Perry's installation.

Details for ordering the hoses are in the table at the end of the document.





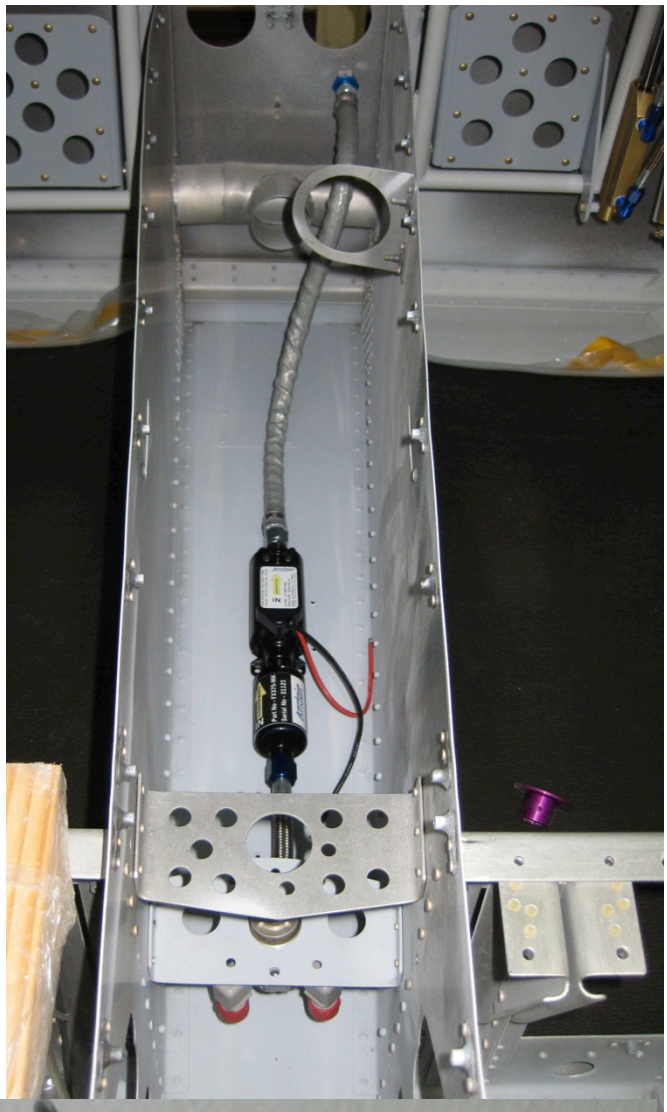
I slightly enlarged the tunnel cover opening at the front to increase clearance around the flexible lines, added the Adel clamp for support on the back of the firewall recess, and used plastic sleeving to protect the hoses where they are close to the cover, and where they cross lower down.

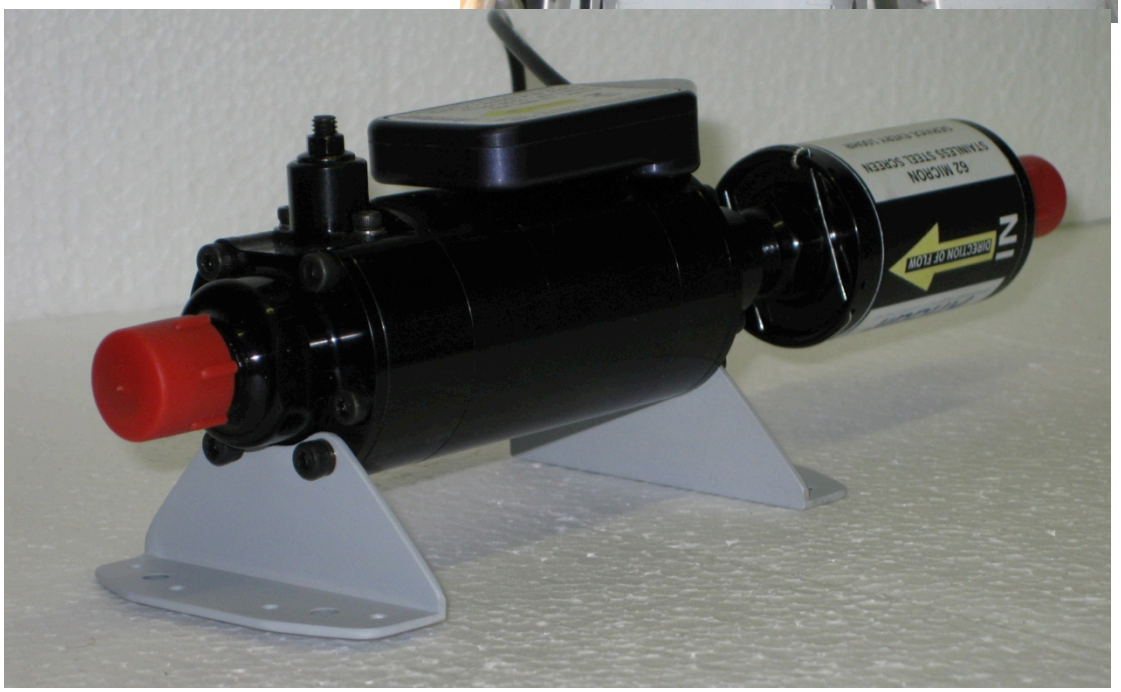
Fuel System

For the fuel system I chose the Andair pump, filter, and fuel valve.

I drilled out the two existing support brackets for the Van's supplied pump and filter.

The Andair fuel pump sits approximately above the right hand of the two brackets. I made new feet with nutplates (not shown) for the pump to raise it above the tunnel floor and allow it to be fixed using four no 8 screws through the lower skin. The original intention was to mount it on an inspection hatch with vent, but I don't have the guts to cut a hole in the tunnel floor (or do the paperwork to justify it).

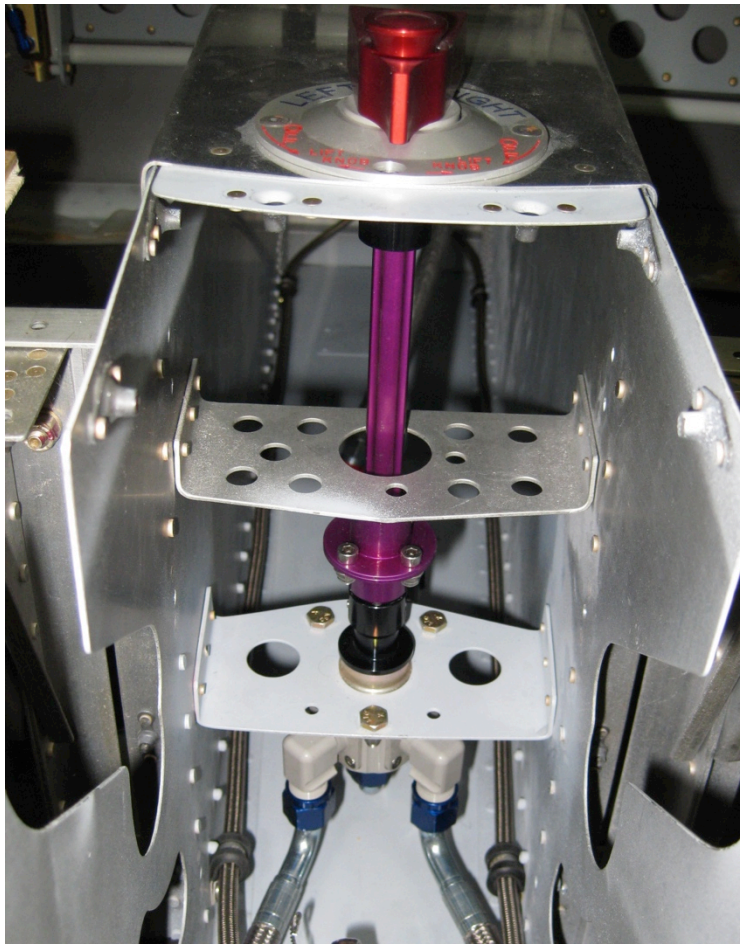


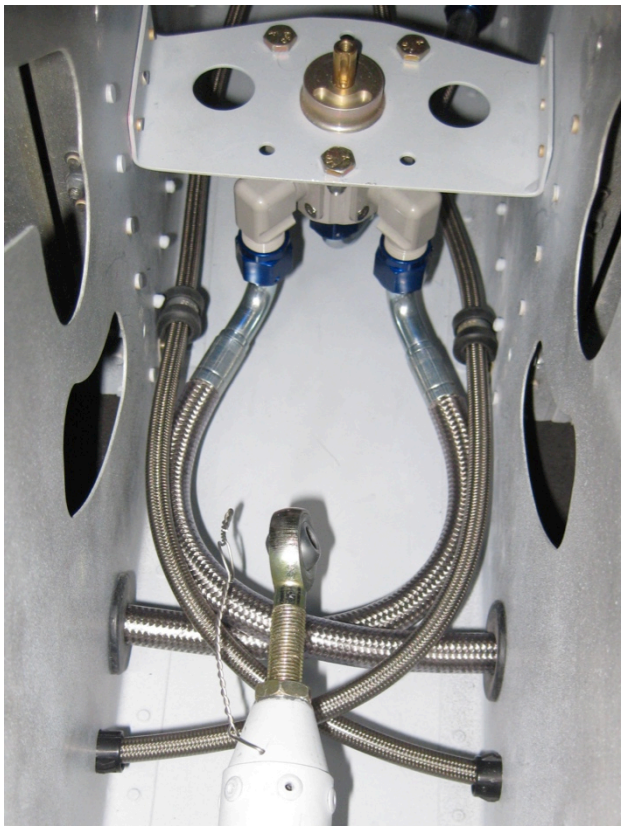


The valve is mounted on a new bracket below the original one, which remains in place.

A single flexible hose connects each tank to the fuel valve, without the intermediate bulkhead fittings.

This required the valve to be mounted the “wrong way around” so that the -6 hoses can be installed with acceptable bend radius. Hence I used the Andair 6 inch extension and the 180° extension coupler to correctly re-orient the selector handle with the reversed valve.





The bulkhead fitting holes were enlarged to accomodate a rubber grommet which can be pushed over the fuel hose ends before hose installation.

For the brake hoses I used snap bushings, split to allow installation.

A caveat remains with the fuel lines from the tanks to the valve: I have not yet had the wings on the plane and am FAIRLY sure that the hose length and clocking is OK, but have not been able to check this!

Gordon Anderson
No. 41015

Purpose	Quant	Designation	Fitting 1	Fitting 2	Length
1 Standard RV10DBL kit	2	-3 Hose assy w/Clear	-3 St	-3 St	42-1/2”
	1	-3 Hose assy w/Clear	-3 St	-3 St	18-1/4”
	1	-3 Hose assy w/Clear	-3 St	-3 90°	18-1/2”
	2	-3 Hose assy w/Clear	-3 St	-4 St	19-1/8”
	2	-3 Hose assy w/Clear	-4 St	-4 St	31-1/2”
	8	822-3D 1/8NPT Male to -3 Male 90°			
	1	826-3D			
Tunnel brake lines	2	-3 Hose Teflon W/Clear	-3 St	-4 90°	83" End to Center
Left fuel tank to valve	1	-6 Teflon W/Clear clocking 90°	-6 90°	-6 90°	38" End to Center
Rght fuel tank to valve	1	-6 Teflon W/Clear clocking 270°	-6 90°	-6 90°	38" End to Center
Fuel valve to filter	1	-6 Teflon W/Clear	-6 St	-6 90°	6" End to Center
Fuel pump to firewall bulkhead	1	-6 Teflon W/Clear firesleeved	-6 St	-6 90°	19.5" End to Center

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