



Introduction of water drain valves

Classification	Optional
Applicability	All Europa aircraft
Compliance	N/A

Introduction

This modification is introduced to allow the use of fuel tank drain valves (one for each tank side) to check for the presence of water in the fuel. See the schematic diagram of the fuel system at the end of this document.

Action

Note: *These instructions assume that Mandatory Mod No. 31 - Modification to Fuel Level Sight Gauge - and mandatory Mod 40 - Modification to Rotax fuel system, have already been incorporated. All XS models have Mods 31 and 40 incorporated.*

Remove the rear fuselage access panel. Drill 2 holes 15mm (5/8") diameter in the fuselage bottom 30cm (12") aft of the baggage bay rear bulkhead position (or 45cm (18") if the XS baggage bay is fitted), and 570mm (22.5") apart. Note: On Tri-gear aircraft the fuel drain valves may be positioned further forward; under the thigh supports for example. Dig out or push back the foam exposed by the drilling, and apply a bead of flocx between the two glass fibre plies to seal the hole. See figure 1.

Bond the fittings F09D to the **inside** of the fuselage bottom, centred on the holes, with Araldite 420. After full cure screw the spring loaded drain valves CAV-110 into the fittings from the outside of the fuselage - see figure 1.

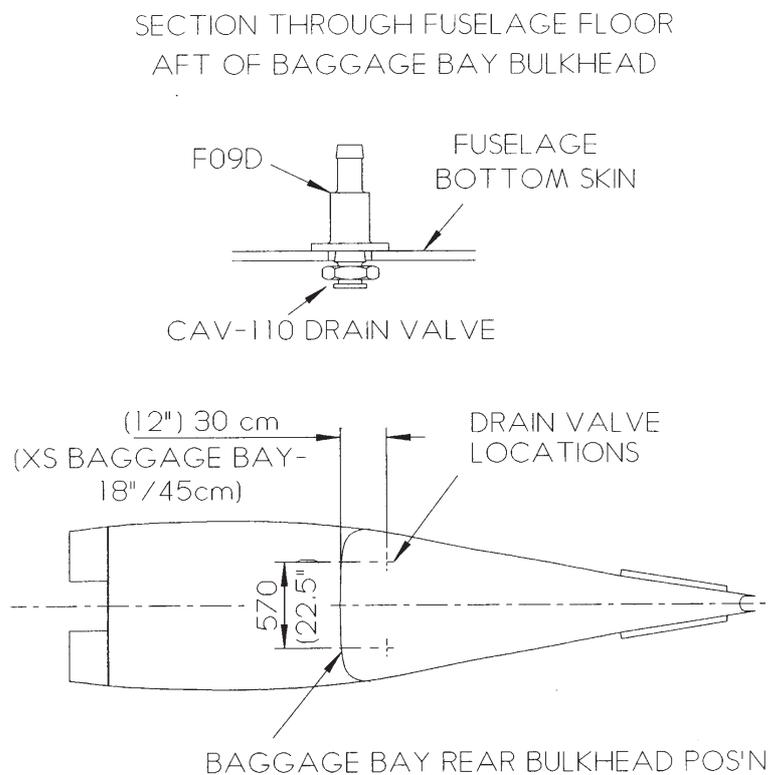


Fig1. Section through floor, and valve locations.



Drain the main tank by any appropriate means - one method is to disconnect the fuel line at the engine mechanical pump, (or the regulator on the Rotax 914 engine) and operate the electric pump with the aircraft tail raised.

Remove the fuel hoses from the fuel tank outlet fittings, and both fittings from the fuel tank. Remove the HFSB 8-2N's (8mm hose fittings) or HFSB 6-2N's (6mm hose fittings) from the F09C outlet fittings and discard the HFSB 6-2N's.

Cut 2 lengths of the supplied copper tube, each 250mm (9.75") long. With a 1/4" drill open out the bore of the threaded end of the union fittings HFSB 8-2N to a depth of approximately 10mm (3/8") to accept the copper tube. Solder or braze the tube into the fitting as shown in figure 2. Pass the tubes through the fittings F09C and screw the union HFSB 8-2N into place. Bend the tube to be parallel with the body of the fuel outlet fitting. Trial fit the assembly into the tank, trim the copper tube to length if necessary, and bend it so that, for the monowheel aircraft, the open end lies at the rear bottom of the tank. For the trigear installation, trim the copper tube shorter and bend it so that the open end is nearer the forward bottom of the tank.

Make up and fit strainers for the fittings as originally done, arranging the gauze to fit snugly round the copper tube - solder the gauze to seal it round the tube. See figure 2.

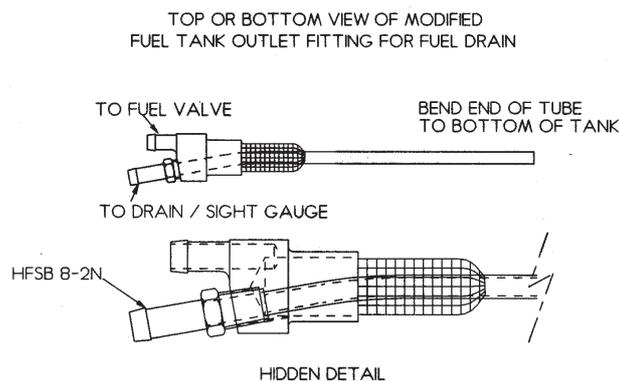


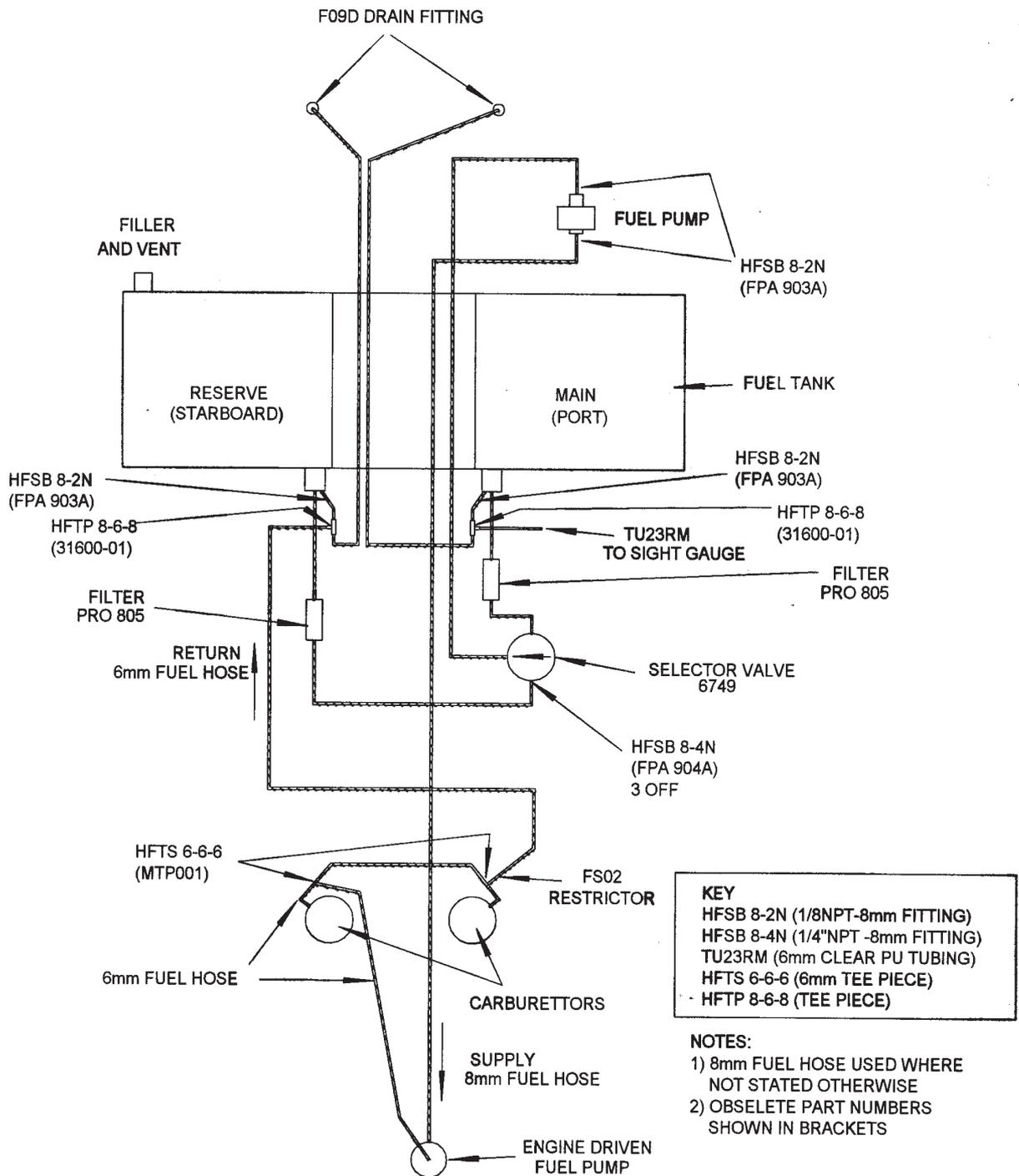
Fig 2. Fuel tank outlet fitting detail.

Refit the fittings to the tank, using the existing 1" bore hose and hose clips, arranging them so that the outlet tubes are horizontal. Connect the fuel lines to the fuel selector valve from the straight ports. Referring to the appropriate schematic diagram, connect the supplied 8mm fuel hoses with the tee pieces between the screw in ports (HFSB 8-2N) and the floor mounted F09D's, routing the line along the floor of the fuselage, and fastening it as required with the ty-raps and ty-rap bases supplied.

Connect the fuel level sight gauge to the reducing tee HFTP 8-6-8

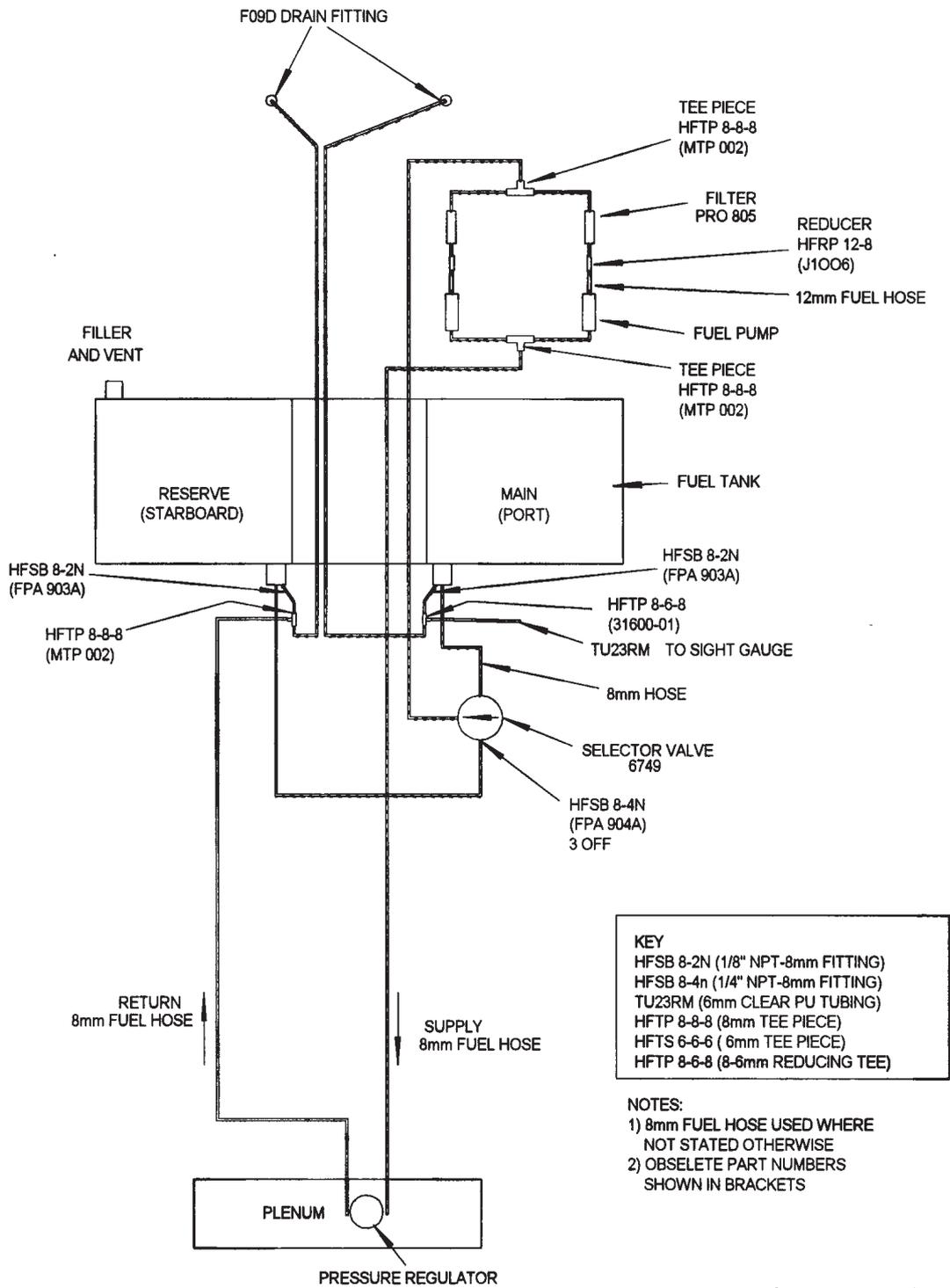
Connect the return line to the appropriate tee fitting (depending on engine type).

Refuel the aircraft and check for leaks. Annotate the aircraft records - Mod 33 incorporated.



ROTAX 912/912ULS FUEL SYSTEM WITH WATER DRAINS

Fig 3. Fuel system schematic - Rotax 912/912S



**ROTAX 914 FUEL SYSTEM WITH WATER DRAINS
(PARALLEL PUMP SYSTEM SHOWN)**

Fig 4. Fuel system schematic - Rotax 914.