



INSPECTION CHECKS

APPLICABLE TO THE INSPECTION OF LAA AIRCRAFT FITTED WITH VW AND VW BASED ENGINES TO CHECK SUITABILITY FOR USE OF E5 UNLEADED MOGAS

LAA/IC-ULM-VW
Issue 7

A/C Type:

Reg:

Engine Model:

This checklist is to be completed by a suitably approved LAA inspector. LAA inspectors are only acceptable for carrying out this task if their LAA approval includes the ability to carry out LAA Permit renewal inspections on the aircraft concerned.

This checklist should be used in conjunction TL 2.26. Check the website for the latest issue.

Item	Description	Inspector's Signature
1	Check that engine type is one of those listed below: VW, Acro, Aerovee, Ardem, Burden, Hapi, Peacock, Rectimo, Revmaster, Limbach, Great Plains	
2	Check that the engine's fuel system is installed in accordance with normal aviation practice, as follows:	
	Fuel tank is securely mounted	
	Vent is clear	
	Fuel pipes are in good condition	
	Fuel selector is in good condition	
	Fuel filter is clear	
	Fuel filter (finger strainer) situated in each tank.	
	Fuel tank fitted with provisions for draining.	
	Fuel pipe material fire-resistant and correct bore. For fuel flows up to 24 litre/hr 5mm diameter bore fuel pipe may be used. (6mm preferred).	
3	Check that the installation is configured in such a way as to make vapour-lock problems unlikely, in particular:	
	Fuel pipes not routed adjacent to hot components (metal heat shields may help).	
	No 'S bends' (local high-points and low-points) in fuel pipe runs which will tend to trap vapour bubbles.	
4	Check that the engine is fitted with a cylinder / piston / shim combination giving a nominal compression ratio of 8.0:1* or less and is fitted with the later type cylinder heads with hardened valve seats (if the original heads are fitted without hardened valve seats, see TL 2.26 for special operating procedure required). * Note: Due to the difficulty in accurately measuring compression ratio, it is permissible to round the result to the nearest 0.5.	

Item	Description	Inspector's Signature
5	Check that fuel tanks are not treated with a 'sloshing sealant' likely to chemically detach from the tank inner surface and block fuel outlet. If in doubt, test over two-week period and check condition.	
6	Check that fuel system components such as rubber or plastic pipes, seals in fuel cocks, sight gauge tubes, fuel tank floats, filters, fuel pump diaphragm, etc., are not made of a material likely to be chemically attacked by components within unleaded fuel containing 5% ethanol. Any fuel system components manufactured for the automotive industry since around 1990 are likely to have been made compatible with unleaded fuel. If in doubt, test components in a jam jar of fuel and observe results after appropriate period (two weeks).	
7	Check carburettor ice protection provisions, heat muffers, carb heaters etc. If reliance is placed on 'undercowl temperature' for carb ice protection, ensure that under cowl temperatures are not being accidentally reduced due to loose or worn baffles, air seals etc.	
8	Check that fuel level is visible in the fuel tank. Unleaded fuel, being almost clear in colour, may be hard to see if the glass fibre tank has become stained with age, in which case the tank must be replaced or an alternative form of fuel gauge fitted.	
9	Carry out engine ground run using unleaded Mogas fuel to BS EN 228, 95 RON (Min) and check that running and instrument indications are normal. Mixture strength should not need adjusting. Note that it is normal to find a slightly different grey exhaust pipe deposit with unleaded fuel than with leaded fuel which may give a false impression of changed mixture strength. Check fuel system for leaks and filter(s) for contamination	
10	Fit cockpit placard regarding E5 unleaded Mogas fuel use (placards available from LAA).	
11	Fit placard adjacent to each filler specifying: 'E5 Unleaded Mogas BS EN 228, 95 RON (MIN)'.	

After completion, this checklist is to be signed, dated and stapled into the aircraft's airframe logbook, together with a copy of TL 2.26. The inspector is to add declarations in the engine and airframe logbooks stating:

'This aircraft/engine has been checked in accordance with the procedures in TL 2.26 and may be run on may be run on unleaded petrol to BS EN 228, 95 RON (MIN) containing no more than 5% ethanol in accordance with the operating procedures and special operating limitations in TL 2.26.'

DECLARATION BY LAA INSPECTOR

I declare that the aircraft, registration **G-**_____, has been checked against items 1 to 11 listed above and has been found to comply in all respects.

Name:	Signed:	Insp. No.:	Date:
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