

Service Information Letter - Fuel Systems

Small
Reciprocating
Engines
No. 24
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SUBJECT: Replacement of Fuel Diaphragm Assemblies in RSA-5 and RSA-10AD1 Series Injectors Used in Aerobatic Aircraft

In July, 1983 a product improvement was made to the RSA-5 size regulator fuel diaphragm assembly which greatly increased the strength of the stem and improved its resistance to damage from undefined causes. Beginning in July, 1983 only the new P/N 2541801 fuel diaphragm assembly was made available to the field by Bendix.

Although all of the original P/N 2539559 fuel diaphragm assemblies should have been replaced by the new P/N 2541801 fuel diaphragm assemblies at overhaul as of this date, it is possible that certain RSA servo units have not yet been overhauled. It is also possible that the old P/N 2539559 fuel diaphragm assembly may have been used in an overhaul or may still be in stock at certain overhaul/repair locations.

The nature and amount of stress imposed upon the RSA servo units during aerobatic maneuvers is unknown, but certainly exceed the stress observed in normal flight operations. Added stress is imposed by factors such as propeller aerodynamic load, balance, engine overspeed and backfiring.

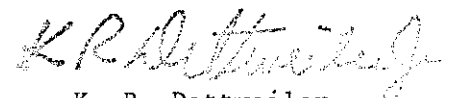
To preclude any possibility of diaphragm assembly P/N 2539559 stem assemblies being overstressed to the point of fracture during aerobatic maneuvers, it is recommended that all RSA-5AB1, RSA-5AD1, and RSA-10AD1 servo units identified in Table 1 that are utilized on any production built, experimentally built, or home built aerobatic aircraft be modified per Bendix Service Bulletin RS-86 (for RSA-5 units) or RS-87 (for RSA-10AD1 units) to incorporate the new P/N 2541801 fuel diaphragm assembly. Any old P/N 2539559 fuel diaphragm assemblies in stock should not be used and should be scrapped.

This recommendation is made regardless of whether the Federal Aviation Regulation maintenance requirements apply to the aircraft and should be accomplished as soon as possible, but before 1 February 1986.

<u>Model</u>	<u>P/L</u>	<u>Issues Requiring Modification</u>	<u>Issues Incorporating New Diaphragms</u>
RSA-5AB1	2524199	-9 thru -12	-13
	2524216	-8 thru -11	-12
	2524254	-7 thru -10	-11
	2524262	-6 thru -9	-10
	2524378	-7 thru -10	-11
	2524712	-3 thru -8	-9
	2524858	-1	-2



<u>Model</u>	<u>P/L</u>	<u>Issues Requiring Modification</u>	<u>Issues Incorporating New Diaphragms</u>	
RSA-5AD1	2524054	-7 thru -9	-10	
	2524145	-8 thru -10	-11	
	2524147	-9 thru -11	-12	
	2524171	-7 thru -9	-10	
	2524189	-7 thru -9	-10	
	2524213	-7 thru -9	-10	
	2524242	-6 thru -8	-9	
	2524243	-7 thru -9	-10	
	2524291	-7 thru -9	-10	
	2524297	-6 thru -8	-9	
	2524307	-6 thru -8	-9	
	2524328	-6 thru -8	-9	
	2524335	-6 thru -8	-9	
	2524341	-6 thru -8	-9	
	2524348	-7 thru -9	-10	
	2524359	-6 thru -9	-10	
	2524450	-5 thru -7	-8	
	2524459	-5 and -6	-7	
	2524475	-4 thru -7	-8	
	2524550	-4 thru -6	-7	
	2524575	-4 thru -6	-7	
	2524590	-4 thru -6	-7	
	2524592	-4 thru -6	-7	
	2524623	-4 thru -6	-7	
	2524634	-4 thru -6	-7	
	2524640	-4 thru -7	-8	
	2524673	-4 thru -6	-7	
	2524682	-4 thru -6	-7	
	2524688	-2 thru -7	-8	
	2524723	-4 thru -6	-7	
	2524742	-4 thru -7	-8	
	2524752	-3 thru -5	-7	
	2524840	-1	-2	
	RSA-10AD1	2524030	-9 thru -10	-11
		2524163	-10 thru -12	-13
		2524152	-6 thru -8	-9
2524175		-6 thru -8	-9	
2524255		-6 thru -9	-10	
2524256		-8 and -9	-10	
2524311		-6 thru -9	-10	
2524757		-3 thru -5	-6	


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