

Jabiru Service Letter: Valve Spring Washer Wear			JABIRU AIRCRAFT PTY LTD P.O. Box 5792 Bundaberg West Queensland, Australia. Phone:+61 7 4155 1778 Fax:+61 7 4155 2669 Email: info@jabiru.net.au		
JSL 008-2	Release Date: 19th December 2017	Effective Date: 19th December 2017	Affected Models: See Sheet 1	S/No. Range: See Sheet 1	Page 1 of 5

SERVICE LETTER: JSL 008-2

Issue: 2

Subject: Valve Spring Washer Adverse Wear

Release Date: 19th December 2017

Effective Date: 19th December 2017

Affected Engines: All Jabiru Engines up to Serial No. 22A3713, 22B317 & 33A2603 unless fitted with hardened valve spring washers during servicing.

Issue	Reason for Issue	Issue Status
1	Original Issue released 11 th December 2012	Superseded
2	Applicability revised	CURRENT

Changes in red text.

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2 General

- Jabiru Engines use a conventional arrangement of washers and collets to retain the valve spring assemblies (Figure 1).
- By design the valves are normally free to rotate within the valve collets. The valve actuation mechanism applies a small rotational force to the valve, rotating it to maintain valve sealing.
- Two incidents, one year apart, have been reported to Jabiru Aircraft: in each a valve jammed in the collet, causing the top spring washer to rotate with the valve and wear against the valve spring, eventually causing a failure of the washer and engine stoppage.
- In both cases the parts in question had completed 600 – 800 hours in service.
- In both cases the engines were operated in dusty conditions and dirt contamination was found within the carburettor and intake plenum. It is likely that dirt contamination caused the valve to jam in its collets.

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- Jabiru Aircraft are releasing this document to alert owners and maintainers to the potential issue. The next revision of Jabiru engine service documentation will also incorporate the inspections detailed herein.
- This Service Letter is equivalent to a Manufacturer's Special Airworthiness Information Bulletin (SAIB) for engines operating in Light Sport Aircraft categories.
- This letter has not been mandated (as an AD or similar) by any National Airworthiness Authority at the time of writing.
- **Since the initial issue of this Service Letter, Jabiru has released hardened top spring washers. These are incorporated in all new engines and spare parts.**

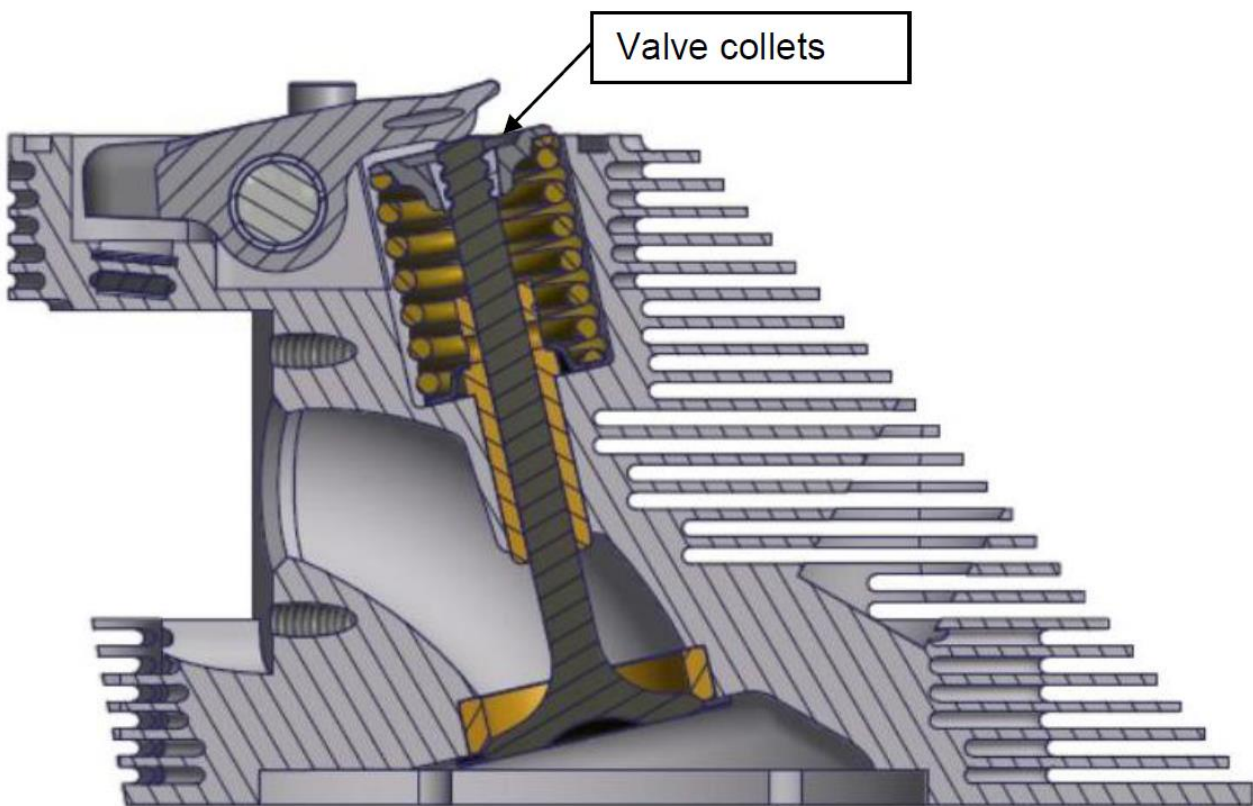


Figure 1: Valve & Spring Cross Section

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Figure 2: Valve Spring Washers



Figure 3: Carburettor Contamination & Slide Wear

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3 Requirements:

3.1 Operation in Dusty Conditions:

- The aircraft operating manuals, aircraft technical manuals and the engine maintenance manuals provide guidance for operating in dusty conditions. More frequent inspection and replacement of the air filter is recommended. Maintainers must be pro-active and carry out appropriate preventative maintenance in these conditions.

3.2 Whenever Cylinder Head / Valve Assemblies are Disassembled:

- Thoroughly inspect all valve washers and replace any which show signs of wear.
- Trial fit all valves to their collets and assess the fit before assembly; the valve should be free to rotate within the collet. While some friction is normal, binding or jamming is not acceptable. If friction is judged excessive the over-hauler should try the valve in other collets and, if necessary, source replacement parts.

3.3 During Normal Maintenance:

- Visually inspect the top spring washer. A washer which is being worn may show burrs on the outer edge and the reduced thickness may be evident.
- The thickness of the top valve spring washer may be measured (Figure 4). Older washers should measure 1.5mm, newer parts 2.0mm (2mm thickness was introduced from S/No. 332486, 22A3514 and 22B263 and spare parts from June 2011). Any measurement below 1.3mm must be investigated; failure typically occurs at around 1.0mm.
- Thickness of washer can be measured, without head disassembly, by using a depth vernier. See JSL014 Cylinder Head Inspections for additional information.

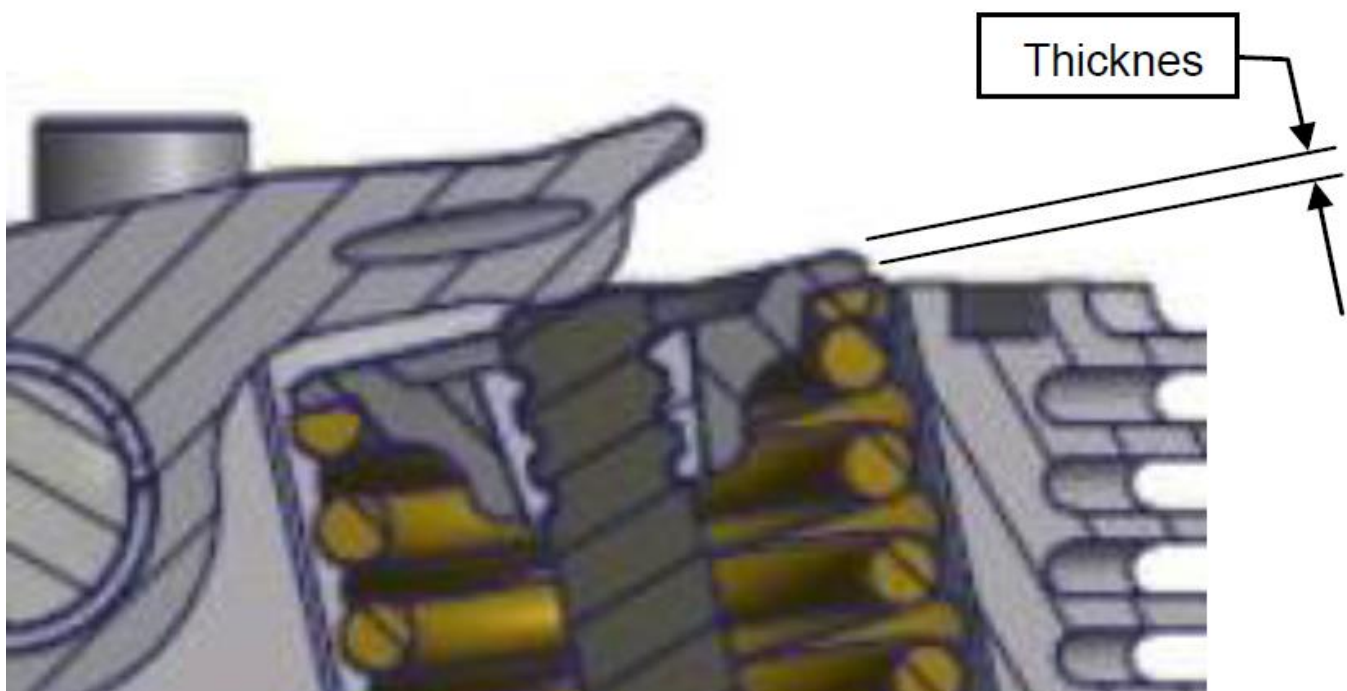


Figure 4: Washer Thickness Measurement

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4 Compliance – Implementation Schedule:

- Inspections per Section 3.3 are recommended during 50-hourly, 100-hourly or Annual inspections.

5 Excluded Engines.

5.1 New Production.

All new Jabiru Engines from Serial numbers 22A2713 and 33A2603 were fitted with hardened top spring washers. This includes all Gen 4 engines.

5.2 Overhauled or replacement parts.

Engines overhauled by Jabiru are fitted with hardened top spring washers.

All valve kits are now also sent out with hardened top spring washers. To determine if your engine has hardened top spring washers the applicable Part Numbers are :

1. Double valve spring top spring washer – 4A716C0D – all issues. (Introduced October 2015.)
2. Single valve spring top spring washer – 4A086A0D-5 and on. (introduced June 2013)

Jabiru SAIB: Valve Spring Washer Adverse Wear		JABIRU AIRCRAFT PTY LTD P.O. Box 5186 Bundaberg West Queensland, Australia. Phone:+61 7 4155 177 Fax:+61 7 4155 266 Email: info@jabiru.net.a			
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SPECIAL AIRWORTHINESS INFORMATION BULLETIN: JSAIB008

Issue: 2

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Recommendations:

- Operators within Light Sport Aircraft categories should comply with the recommendations of Jabiru Service Letter 19th December 2017.

Compliance:

- The compliance details (section 4) given in 19th December 2017 must be met.

Background:

- This Service Notification has been prepared to make applicable the recommendations of 19th December 2017 for engines and aircraft operating within Light Sport Aircraft Categories.