

LAA/AWA/19/13  
2<sup>nd</sup> April 2019

## Rotax 912i & 915i A Series Engines

### Inspection and/or Replacement of Fuel Pump Assembly

On the 13<sup>th</sup> March 2019 Rotax Engines issued an Alert Service Bulletin (ASB-912 i-010iS) affecting 912i and 915i engines within a defined serial number range. The issue relates to a manufacturing error in the fuel pump assembly which could lead to fuel leakage; Rotax consider this issue important enough for it to be a mandatory inspection requirement. After discussions with the UK Rotax agent, LAA Engineering wrote to all LAA members operating the 912i engine asking them to check their engine serial numbers to see if they might have been affected; at the time of writing this Alert, no UK owners are affected.

On the 18<sup>th</sup> March 2019 EASA issued an Emergency Airworthiness Directive (EASA AD 2019-0055-E) effectively mandating the Rotax ASB. On the 1<sup>st</sup> April 2019 the UK CAA issued an MPD (2019-004-E) mandating the requirements of the Rotax ASB on non-certified engines.

In our letter to 912i owners, though not connected with the above, are details of a recent report from a test pilot involving a fuel system failure on a Rotax 912iS engine. The 912iS engine has a rather complicated fuel delivery system which, like many engines operating in the automotive sector, returns unused fuel back to the fuel tank. This closed loop system, by its very nature, uses relatively powerful fuel pumps which are able to create a high level of suction on the inlet side. It is therefore essential, especially on the suction side (fuel tank to pump inlet) of the system, that there are no kinks or 'flats' in the pipe which may cause a local restriction to fuel flow.

ASB-912 i-010iS (Non-Certified) can be downloaded [HERE](#).

ASB-912 i-010iS (Certified) can be downloaded [HERE](#).

EASA AD 2019-0055-E can be downloaded [HERE](#).

MPD 2019-004-E can be downloaded [HERE](#).

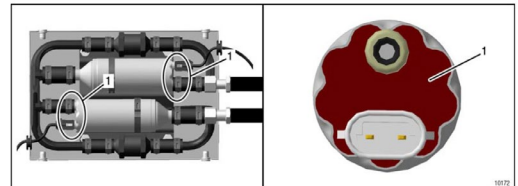
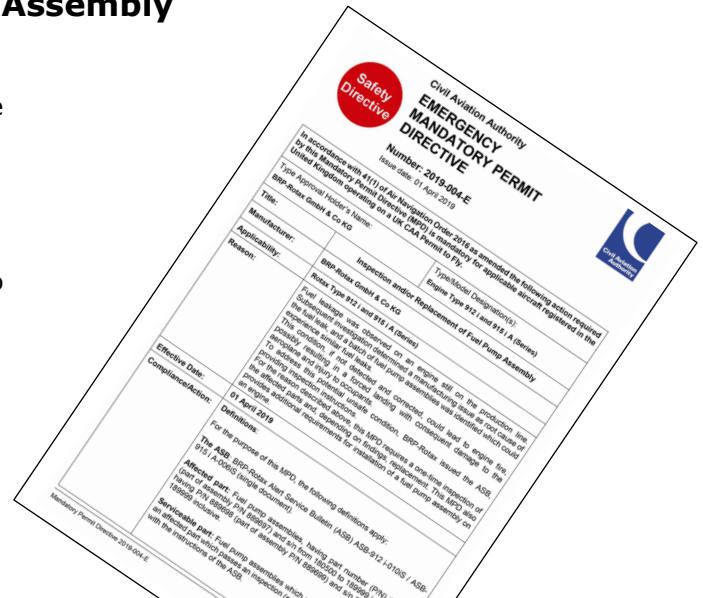


Fig.1 The Rotax 912i engine is not equipped with a mechanical fuel pump and therefore requires two high pressure rotary pumps to ensure appropriate redundancy; because of the very high flow rate, and unusually in aircraft systems, these pumps cannot be operated together. The two individual pumps are mounted in an assembly and operate in parallel. Whilst still at the manufacturer's an engine was found with a leaky pump which was later found to be caused by a manufacturing error (see 1 above for leakage point).

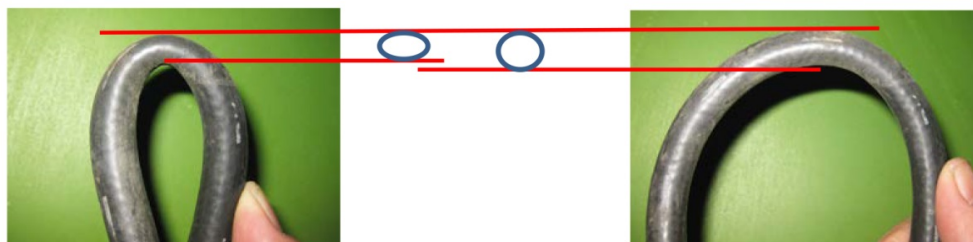


Fig. 2 An example of a pipe with not enough of a radius – note the reduction in the pipe's internal diameter (and therefore area).

This example shows the bare minimum radius necessary to ensure no kinking in this type of rubber fuel pipe – note, different pipes will require a different minimum bend radius.