



Guidelines for maintaining your exhaust system

For 912 UL, 912 ULS and 912 iSC Sport

The exhaust system for Rotax powered aircraft can be the cause of several problems, depending on its design. Rotax does make a complete exhaust system, but most systems only use a few Rotax parts and design their own system, including the muffler and connecting pipes.

Most systems are designed to slightly float, being held together by springs and the tubes having flared ends that sort of act like ball joints. These tubes are made of very thin steel and expand and contract at different rates depending on temperatures.

Once the system is designed by the airframer, there is not much information on how to maintain the system. Hunting through Rotax information yields a recommendation, not very often put on the various airframe checklists, to take the system apart every annual or 100 hour and maintain it.

Here at Texas Rotax and Light Sport Aircraft, LLC, we have found that this maintenance is best done by a complete removal of the system, a thorough cleaning of the ball joints and receptacles, cleaning of the exhaust ports and flanges that fit those ports and a proper lubrication with an anti-seize that withstands up to 2600 degrees of temperature. At this time, we look into every port, usually 4 plus up the tailpipe, with a borescope and check for loose baffles. In the last few months, we have found several bad mufflers that were causing operational problems. In addition to the look, we shake, rattle and roll the mufflers to check for noises that indicate loose baffles.

We'll talk about the problems below, but the re-installation is critical. Everything is put back using all new cylinder nuts and springs where needed. There are three different lengths of springs available and these are properly installed. The entire system is floated, slowly tightened and settled into its final resting place. This helps eliminate those pesky grey exhaust leak areas, common with this type of exhaust system.

All this takes time and is not included in the flat rate pricing as every exhaust system is different. Some are just better than others.

In the last month, we have found two partially collapsed baffles and one totally trashed muffler. The trashed muffler caused all the EGTs to rise and threw fault codes on the #3 and #4 cylinder spark plugs. As the EGTs rose, the rpms went down. Air in, air out. If the exhaust is restricted, the temps will rise and the flow will decrease causing marked lack of performance rpms and high EGT temps. And it may be intermittent. We now check these exhaust mufflers before we start replacing sensors on the iS engines as they run hotter than the carbureted engines and are more prone to burn baffles.

It pays to maintain your exhaust system as a whole. The above should not be considered an instruction manual and should not be thought of as a do-it-yourself primer. We take no responsibility for final results done by others. Some rather important details have been omitted as we like making money, too.

Texas Rotax and Light Sport Aircraft, LLC

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