
Getting the best out of your JJ1400.

Posted by smithy - 2008/04/03 10:12

Hey All,

Every now and then we see 1400 engines that just don't perform or are running hot, Although each engine looks the same as the next, there can be small differences in the build tolerances which may adversely affect the way it runs.

A poor performing and/or hot running engine is an indication that all is not well, possible causes could be, 1) poor clearances between the turbine wheel and the NGV,(Nozzle guide vane) 2) a similar problem at the compressor end of the engine with excessive clearance between the impeller and it's matching inlet housing, 3) an excessive amount of bearing pre-load causing drag on the rotating shaft assembly, 4) too small an exhaust nozzle which can restrict the flow of hot gases, all these things can and do occur, but all is not lost. It can be rectified.

Please understand that we need a certain amount of heat to produce adequate thrust, however, too much heat will only lead to excess stress of the hot section components and possibly the failure of your turbine wheel and bearings. Admittedly the FADEC system should control and all but eliminate the over-temping of your engine but there is a certain amount of thermal "hysteresis" within the thermocouple system which may allow quick over-temps to occur.

Essentially, if the engine is inefficient, it will tend to run hot, the FADEC will ask the pump to supply enough fuel to reach a predetermined or required RPM, if the drag or losses through high clearances are too much, the engine will require more fuel to reach a nominal RPM, and hence higher temps.

We here at AusJets will endeavor to supply as much information as possible to our customers and help as best we can. I'm certain we can help with all your Jet-Joe related problems.

Cheers,
Smithy.
