

**1. Goal of this process**

Detect leaks in the induction system that lead to wrong mixture settings and therefore to higher than necessary fuel consumption

**2. Preparations**

- I. Ensure engine monitor recording interval is between 1 and 2 seconds (see specific instructions if necessary)

**3. Execution**

Nr.	Step	Details
1	Take-off and climb	<p>(For best data quality you should perform this flight test profile in an altitude of approx. 5000 ft. As the profile is performed with full rich mixture, this altitude ensures that the mixture is definitely on the rich side of peak. At the same time, ambient pressure will still be high enough to have a significant difference to induction pressure at low power settings.)</p> <ol style="list-style-type: none"> <li>1. Normal take-off and climb to an altitude of approx. 5000 ft</li> <li>2. Establish straight and level flight</li> </ol>
2	Engine settings	<ol style="list-style-type: none"> <li>1. Set mixture to full rich</li> <li>2. Set throttle to at least 22" MAP (ideally full throttle), respectively highest cruise RPM for fixed propeller aircraft</li> </ol>
3	Test cycles	<p>(The core of the flight test profile consists of multiple cycles with significantly different power settings at full rich mixture.)</p> <ol style="list-style-type: none"> <li>1. Maintain the setting from step 2.2 for at least 30 seconds</li> <li>2. Quickly reduce power to 12-13" MAP / approach RPM (for fixed props)</li> <li>3. Maintain this setting for at least 30 seconds</li> <li>4. Quickly increase power to the initial setting (&gt;22" MAP/max cruise RPM)</li> <li>5. Repeat steps 1- 4 two more times</li> </ol>
5	Continue normal flight	<ol style="list-style-type: none"> <li>1. Set mixture for normal cruise flight</li> <li>2. Continue normal flight</li> </ol>

**4. Emergency procedures**

**Follow the instructions of the aircraft flight manual!**

**5. Post-processing**

- I. Download data from digital engine monitor
- II. Set recording interval of digital engine monitor to desired value (see instructions on our website for help with your unit type, our recommendation: 1-2 seconds)
- III. Upload data to [www.engilytics.eu](http://www.engilytics.eu) for review
- IV. To evaluate the test results you check the change of EGTs with the power setting change, especially the change from high to low power. You should expect all temperatures to slightly drop evenly across all cylinders. Leaks are indicated by a smaller temperature drop or even temperature increase for one cylinder or one cylinder bank.