

CAE Engine Modifications; Issues Addressed.

Note: The issues listed are only evident on some installations. Small variations in the installation, maintenance or operation of previous engines can initiate problems. All changes are designed to eliminate or significantly reduce the chances of these issues occurring. The changes can all be justified on the basis of “nil adverse effect”

Overview of issues addressed;

CAE engines are solid-lifter only engines. This removes potential valve timing issues caused by the hydraulic lifters. The on-going mechanical serviceability of the engine can be easily and accurately checked by oil pressure, head bolt tension, valve clearances and compression/leak-down checks. The changes have been made to optimise the relationship between all components.

1. Crankcase.

- Broken through-bolts/studs
- Crankcase fretting
- Variable/low oil pressure
- Excessive oil loss
- Slow oil filling
- Dipstick un-readable with hot oil
- Cylinder face wear

2. Barrels.

- Cracked/broken barrels
- Out of roundness
- Lost bolt/stud tension
- Excessive/variable ring wear
- Excessive blow-by
- Tight, hot engine
- Ring sticking/seizure
- Leaking cylinders at base
- No engine lifting points

3. Pistons

- Loose/lost circlips
- Overheating pistons
- Excessive skirt wear
- Stuck piston rings

4. Heads

- Head distortion
- Loss of head-bolt tension
- Low compression

Loose seats
Poor valve seating
Excessive valve guide wear
Carbon build-up on intake valve
Excessive rocker bush wear
Excessive valve spring and seat wear
Sticking/broken exhaust valve

5. Coils, Distributors and Starter.

Failed ignition coils
Excessive radio noise
Failed starter clutches
Premature distributor shaft seal wear.

CAMit Aero Engine kits:

- 1. Alternator.** (Standard on new engines)
Engine smoothness (no crankshaft damping)
Flywheel bolt loss of tension
Nil charging at idle

- 2. Inhibitor/dipstick**
Bore, ring and head corrosion during layup
Excessive ring wear
Dry start-up
Dipstick un-readable with hot oil
Oil cap too small

- 3. Muffler Seals.**
Exhaust leaks at muffler
Excessive heat in cowls
Potential CO in cockpit

- 4. Hydraulic Lifter to Solid Lifter Conversion Kit**
Poor valve timing
Excessive cam wear
Soot in intake manifold
Exhaust valve overheating
Poor running/loss of power