



EFI Hardware H-MAPCOL4 Installation Instructions

Drawing Revision 2 - 5/3/2014



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Overview:

When running individual throttle bodies, a problem arises as to whether to derive Engine Load from a Throttle Position Sensor or a MAP Sensor. Throttle position is great for throttle response, but lack atmospheric compensation (on some ECU's) and cannot cope with altitude changes. **The best solution is to use both – that is Throttle Position with MAP compensation for load sensing.**

Vacuum Rail Problem - Using a vacuum rail to collect your engine's vacuum signal can cause 2 problems.

- 1) The Air Volume in the rail is very large, and dampens (slows down) the vacuum signal going to the MAP sensor causing a delay in changes in the vacuum signal.
- 2) If the MAP sensor is connected to one end of the rail, the signals from different cylinders take different lengths of time to reach the MAP sensor, and can cause tuning issues.

Solution:

The very best way of achieving manifold vacuum / pressure data from an engine with individual throttles is to **use a collector with equal length hoses**. This plumbing must use minimal air volume in its operation to ensure fast response times. It is also important that the hoses connecting the individual throttle runners to the collector are exactly equal in length. Just like a tuned set of exhaust headers (extractors) this will ensure that each vacuum pressure pulse arrives at the correct timed interval for the MAP sensor to provide accurate information to the ECU (Engine Control Unit). This kit is designed to do just that.

Fitting:

Fitting the M6 nipple to manifold or throttle bodies. This kit includes 4 x M6, stainless steel vacuum nipples to be fitted to each intake runner or throttle body at exactly the same location on each runner or throttle body. These nipples must be fitted between the butterfly and the cylinder head, and be further than 25mm behind the throttle butterfly plate.

The manifold or throttle bodies must be removed from the engine to be drilled and tapped to Metric M6, preferably with a flat spot face for the rubber sealing ring on the under side of the nipple to seal against. Once this is completed fit the M6 stainless steel nipples to the tapped holes.

