

## **ECM Aluminum Sensor Mounting Block, P/N 12-18**

The aluminum sensor mounting block allows the O<sub>2</sub> (or NO<sub>x</sub>) and pressure sensors to be mounted in the flow path of a sample taken from the intake or exhaust of an engine. Thus, the sensors can be mounted in-line with a sampling line to a gas analysis bench.

It is important to not screw the pressure sensor directly into the aluminum block (i.e. no metal-to-metal contact between the pressure sensor and the block). The connection should be made through a teflon tube. This is to avoid the O<sub>2</sub> sensor from heating the pressure sensor and causing drift.

Five ports in the intake block are tapped for ¼" NPT and one is tapped 18mm x 1.5mm for the O<sub>2</sub> sensor. It does not matter which port is used for "in" and which is used for "out" as long as the gases pass by the O<sub>2</sub> sensor. The unused holes should be plugged.

Due to acoustics in the intake manifold, an O<sub>2</sub> sensor calibrated in free air may read a higher %O<sub>2</sub> (~0.1 to 0.5% O<sub>2</sub> higher) when mounted in the block and connected to the intake of a running engine. To reduce this, the line to and from the block should be attenuated with orifices or metering valves. More attenuation means more damping but a slower response time. Attenuation do not affect the steady-state accuracy of the measurement, it just slows the time it takes the gases to reach the sensors. It is recommended that the attenuation be added until the difference between the %O<sub>2</sub> of the sensor in free air and the %O<sub>2</sub> of the sensor mounted in the block fed by a running engine are within 0.1% O<sub>2</sub>. If this cannot be achieved, the %O<sub>2</sub> sensor should be SPANed in the block, in a running engine with the engine's EGR valve closed (i.e. zero EGR).



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