

Precision Dynamometer

As part of Currawong's commitment to providing an end-to-end solution for the use of EFI on small engines, it manufactures a high precision AC motoring engine dynamometer. It is essential to use a motoring dynamometer when performing EFI calibration as it allows all load and RPM points of the engine to be reached, including over-run (descent) conditions and low speed heavy load (starting).

Performance development of small single cylinder engines on dynamometers is notoriously difficult due to the very high vibration and highly non-uniform torque characteristics of these engines. Currawong has gone to great effort to design an extremely stiff, zero-friction and tuned resonance mount for the absorber that delivers unprecedented smoothness and resolution to the torque reading. This allows for the easy determination of optimum spark advance and fueling for each mapping point.

The absorber used is a Siemens AC asynchronous servo motor (induction motor) of machine tool spindle quality, rated to 12,000RPM. This high quality motor is very smooth and quiet and is controlled by an advanced closed loop vector drive with optional regeneration to deliver the power back to the mains and thus avoid the use of resistor banks.

Features

- 10.5kW / 12,000RPM AC motoring absorber
- Absorber cooling fan
- RPM control accuracy: +/-10RPM
- Bumpless transition from motoring to absorbing modes
- Torque accuracy: Static +/- 0.01Nm, Dynamic +/- 0.1Nm
- 12,000RPM cardan shaft for connection to the engine.
- Guard for the cardan shaft
- Internal measurement of absorber temperature
- Full control via PC interface including real time display and graphing of torque and power
- Precision load cell and amplifier
- Torque calibration arms

Interface Software

Currawong provides a fully featured interface program for configuring and monitoring dynamometer operation.

