HIGH PERFORMANCE DRIVELINE TEST RIG

Description

CSAs' high performance driveline test rig allows vehicle based driveline tests to be run on a test rig in repeatable conditions, giving a reduced test duration for durability work – typically >30% quicker than track based testing. Testing can be conducted using proving ground road load data (RLD), which can be collected by CSA or provided by OEMs. The test rig has been constructed using a central cradle holding the complete driveline, drive taken from the wheel hubs to two independent 400 kW dynamometers and an inertia wheel to represent the vehicle inertia. Electro-hydraulic actuators also provide displacement and vibration inputs to the central cradle to simulate roll and pitch angles together with road induced vibrations; combined with a fully CAN enabled control system to automatically replicate drive cycles (including changing gear) and RLD.

Typical Applications

- General driveline durability: The rig is configured to suit mid/rear engine installations and supports vehicles with maximum speed up to 300 km/hr
- Driveline development: With complete control of load and driveshaft speed, together with extensive instrumentation opportunities the rig is an ideal tool for development work including:
  - Misfire calibration
  - Driveline damper development
  - Transmission calibration
  - Engine mount development
  - Intake and exhaust development

Specification

Test Cell Size:	9m x 7m x 4m
Dynamometers:	2 x 400 kW eddy current absorption dynamometers
Fuel:	Diesel, Petrol, Special/Reference Fuels
Speed/torque:	Max drive shaft speed: 2,900 rpm – approx 300 km/hr Max continuous torque: 2 x 2000 Nm Max instantaneous torque: 2 x 4000 Nm
Exhaust:	Forced exhaust extract system Open or closed exhaust collectors
Control:	Fully automated control – output speed control in response to throttle demand and gear selection. Fully CAN enabled including emulation of vehicle CAN inputs to engine and gearbox ECUs. Digital, analogue and CAN data capture.

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