CHASSIS DYNAMOMETER SYSTEM FOR MOTORCYCLE TESTS

Overview

Onosokki's chassis dynamometer system has been upgraded to meet the needs of a wide range of motorcycle tests, such as emission performance, horsepower performance, environmental performance and strength analysis tests. It is supported by superior technology and a full line of peripheral equipment. We can also provide technical support for the design of the testing room.

Performance & durability testing system

◆Test examples

・Performance testing: horsepower performance, environmental performance, noise
・Durability testing: for catalyser evaluation, for various components

◆Features

・A variety of performance and durability tests for motorcycles can be performed, with a high degree of reliability and accuracy.
・You can choose the roller's diameter, width, material, surface texture, etc.
・Unmanned operation using a driving robot is available.
・Equipped with applications such as road load setter software, drivers aid and rear wheel output data processing software, necessary for performance and durability testing.

Emission testing system

◆Test examples

・Conforms to the following compliance tests: USA, UN, and TRIAS.

◆Features

・Consists of a roller of φ 530.5 mm, an AC dynamometer and a flywheel section.
・Uses a highly accurate strain-gauge torque measurement apparatus.
・Equipped with components necessary for emission tests, such as front wheel holding unit, engine cooling fan and drivers display.
・ Applications necessary for emission tests are installed, such as road load setter software, drivers aid and gas emission data processing software.

Emission test system

Chassis dynamometer system for ATV

・A chassis dynamometer system for ATV (2WD, 4WD)
・Supports various performance tests including emission performance test.

Chassis for ATV

Example of specifications (for motorcycle system)

Applicable vehicle	Allowable load	300 kg	Power absorption unit	Cradle method	Roller bearing
	Maximum speed	160 km/h		Torque detector	High accuracy load cell
Roller	Diameter (*1)	530.5 mm	Inertia compensation	Method	Mechanical and electrical inertia compensation
	Width	250 mm		Vehicle weight setting range	100 to 250 kg
	Material	Steel		Mechanical stationary inertia	100 kg
	Surface	Flat and smooth (grooved surface: option)		Mechanical variable inertia	4 flywheels (10, 20, 40, 80 kg)
Power absorption unit	Type	AC dynamometer (synchronous system)		Electrical inertia range	0 to +100 kg
	Continuous rated power (*2)	Absorption: 37 kW / 120 to 160 km/h	Others	Miscellaneous equipment	Roller lock device
		Driver: 30 kW / 120 to 160 km/h			Front wheel holding unit
	Overload rated power (1 min.)	110 %			Automatic torque calibrator (option)

We can provide following options. *1 Roller diameter: 530 mm,1061 mm *2 Dynamometer capacity: 18kW, 22kW, 30kW, 37kW, 55kW, 75kW, etc.
Also available high speed type, etc. for various test purposes.

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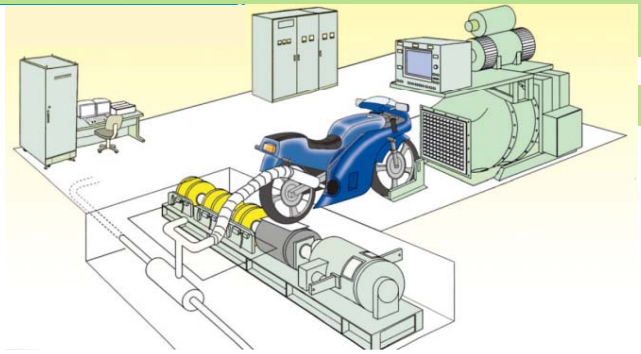
System configuration

- Emission test
- Durability test
- Output performance test
- Environment test
- Sound & vibration test
- Safety & reliability test

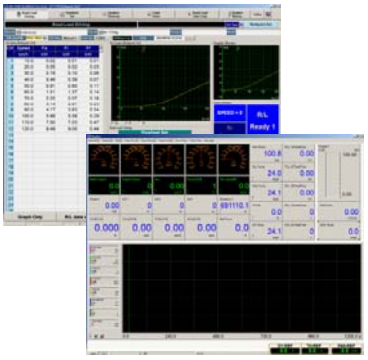
→ Measurement control unit → Dynamo control unit (Chassis dynamometer main unit) → Automatic driving device (TC-7000 Riding System) → On-site operation display unit (Drivers Aid)



Measurement / control panel

◆FAMS-8000 Flexible Automatic Measuring System

・Since FAMS-8000 Flexible Automatic Measuring System has a wide range of optional software provided in module basis, it can easily be applied to various purposes from basic to high level testing such as emission testing and ECU optimization.
・A variety of optional software enables it to build up easily the advanced testing system.



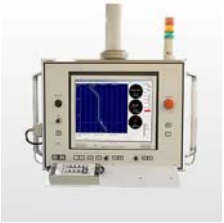
Measurement monitor screen (above)
Setting screen (below)

Peripherals

◆Drivers Display

Drivers Display
・Screen switching function: measurement screen or Drivers Aid screen.
・Assists a driver by letting him/her know various measurement data in checking the driving conditions.

Drivers Aid
・Drivers Aid assists driving operations graphically through displaying target speed patterns and target gear shift timing.



◆TC-7000 Riding System

・Airflow and temperature distribution around the engine and driver's body are get closer to the real driving state because of mannequin like integrated type actuator.
・The accuracy of simulation on chassis dynamometer for real road test was improved by using predictive control compared with usual PID control.

◆Engine Cooling Fan

・Vehicle speed following engine cooling system.
・Applicable fan type: centrifugal fan, axial flow fan, etc.
・Can be adjusted easily when setting the wheel base since it is connected to the front wheel holding unit.

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