

VULCAN

Chassis Dynamometers



EMISSIONS



ELECTRIFICATION



CAV



DATA

HORIBA
Automotive



VULCAN

Chassis Dynamometers

The high-precision chassis dynamometer VULCAN series is suitable for testing light-duty vehicles (LDV), medium-duty vehicles (MDV), heavy-duty vehicles (HDV) as well as 2-3 wheelers and ATVs. Available as either a two-wheel or a four-wheel drive set-up, HORIBA chassis dynamometers are suitable for electrified mobility with an improved energy efficiency of up to 97% efficiency. Equipped with the synchronous motor technology in each individual roller, they also cover technical requirements in high-performance ranges and allow a significantly better torque distribution when it comes to electrified vehicles.

FEATURES

- Axle load from 500 up to 30,000 kg (depending on version)
- Extendable wheelbase for a variety of vehicles
- Extendable temperature range from -40 to +50
- Suitable for current and future drive technologies, including hybrid, battery and fuel cell electric vehicles



SPECIAL APPLICATIONS FOR VEHICLE TESTING

- Durability testing
- Efficiency measurements for electric vehicles
- Reloading system for testing of electric vehicles
- Performance measurement for all vehicle types

KEY BENEFITS

FLEXIBLE

- Integration of additional devices and systems, e.g. driver's aid
- Easy software upgrades for latest legislations

EFFICIENT

- Precise measurements and high repeatability
- Applications for certification and R&D
- Fully automatic tests with STARS automation software
- High efficiency of Synchron Motor technology (approx. 97%)

SERVICEABLE

- Automated quality checks and product diagnostics
- Worldwide service network



TECHNICAL SPECIFICATIONS OF VULCAN SERIES

2 and 3 Wheeler incl. ATVs

By covering speeds up to 350 km/h, HORIBA chasis dynamometers for 2 and 3 wheelers as well as ATVs meet the highest demands for speed testing with 24-inch rollers for low base inertia and best mass simulation results.

Suitable for emission certification in respect of current and upcoming legislations as well as for high powered electrified mobility, such as motorcycles and quads.

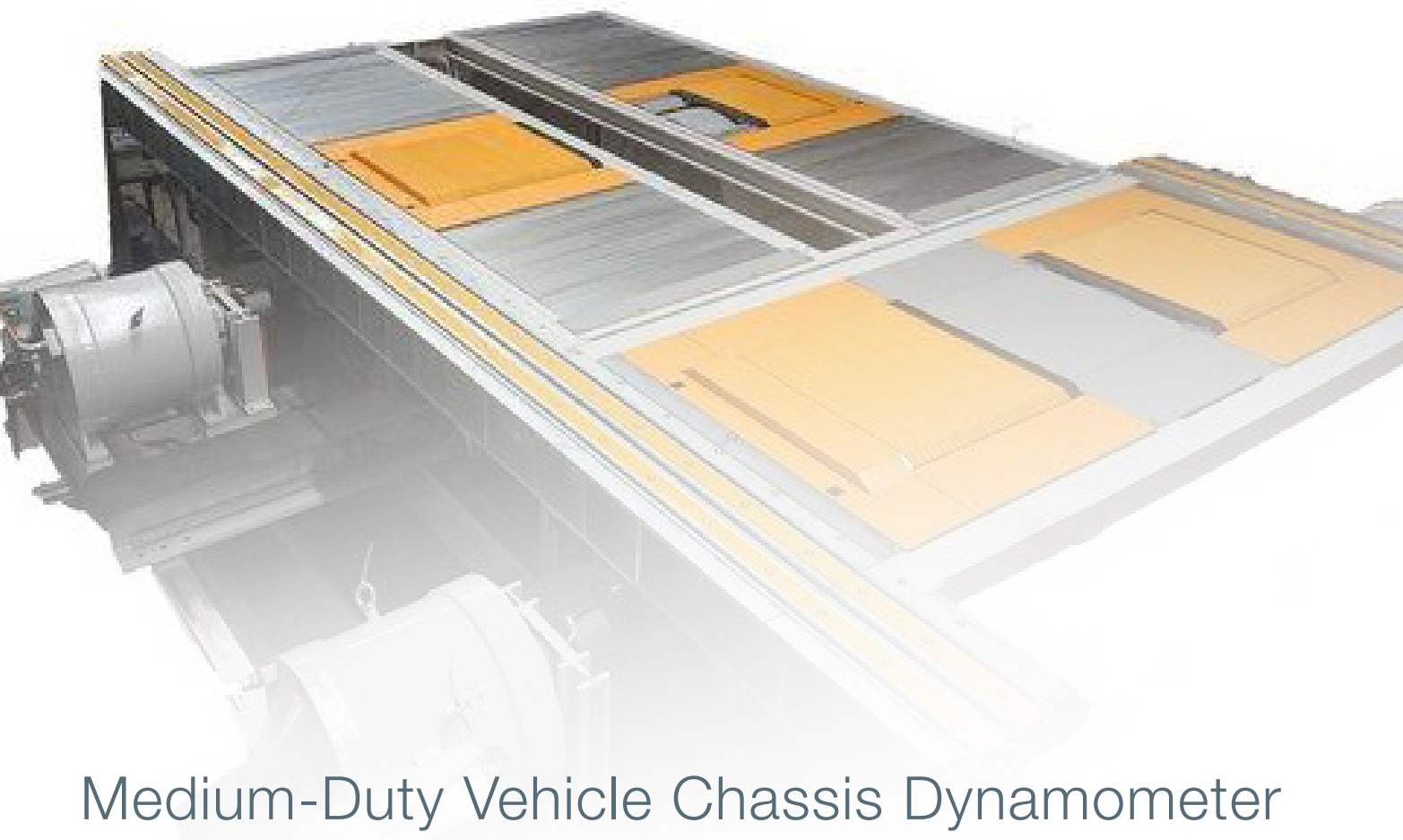
	VULCAN Motorcycle	VULCAN Compact Motorcycle	VULCAN ATV
APPLICATION	Emission/ Performance/ Electrification	Emission/ Performance/ Electrification	Emission/ Performance/ Electrification
POWER PER AXLE NOMINAL (OVERLOAD) (KW)	80 (100)	90 / 250 (110 / 285)	170 (250)
FORCE PER AXLE NOMINAL (OVERLOAD) (N)	2800 (4000)	2500 / 7000 (3000 / 8000)	6400 (8900)
AXLE LOAD (kg)	500	500	1500
DIAMETER (in)	24	38	24
MAXIMUM SPEED (km/h)	350	350	250
WHEELBASE (mm)	-	1200 - 2000	1300 - 1800



Light-Duty Vehicle Chassis Dynamometers

Light-duty vehicles (LDV) are characterized by a variety of established technologies. Therefore, chassis dynamometers need to cover a wide range of technical requirements. HORIBA's continuous optimization and improvement of tried-and-tested designs have led to the latest generation of chassis dynamometers capable of high performances. Suitable for two-wheel or four-wheel drive set-ups, compliant with existing and forthcoming emission standards or optimized for electric vehicles, HORIBA covers a wide range of test applications including NVH and fuel economy testing, State of Charge (SoC) testing, mileage accumulation, emission certification and climatic testing.

	VULCAN II LDV	VULCAN Evo LDV	VULCAN Compact 4x4	VULCAN Evo LDV 4x4
APPLICATION	Emission / Performance / Endurance	Emission / Performance / Electrification	Performance / Electrification / Wind Tunnel	Performance / Electrification / NVH
POWER PER AXLE NOMINAL (OVERLOAD) (KW)	155 / 202 / 230 (260 / 285 / 450)	155 / 230 / 350 (260 / 450 / 700)	230 / 320 / 500 (300 / 390 / 640)	340/ 500 (480/ 700)
FORCE PER AXLE NOMINAL (OVERLOAD) (N)	5400 / 9700 / 6400 (9050 / 13700 / 12500)	5400 / 6400 / 9800 (9050 / 12500 / 19500)	6400 / 14400 / 18000 (11800 / 17600 / 24000)	12400 / 18000 (17000 / 25000)
AXLE LOAD (kg)	2500 / 3000	2500 / 3000	3000	3000
DIAMETER (in)	48	48	48 / 63	75
MAXIMUM SPEED (km/h)	260	300	260 / 260 / 350	260
WHEELBASE (mm)	1800 - 5200	1800 - 5200	1800 / 2000 - 5200	1800 / 2200 - 5200



Medium-Duty Vehicle Chassis Dynamometer

Medium-duty vehicles (MDV) demand for averagely higher torque test procedures compared to light-duty vehicles (LDV) when it comes to chassis dynamometer testing. HORIBA chassis dynamometers for MDV provide high torque set ups for an axle load up to 4.5 tons and simulate a realistic driving profile, which allows data from road tests to be reproduced in the laboratory. The digital force and speed measurement designs are characterized by their high accuracy and repeatability. Automated quality checks and product diagnostics additionally contribute to the performance of the overall system.

A standard calibration device using a two-arm design for full force calibration through the zero point assures easy and reliable calibration.

	VULCAN Evo MDV	VULCAN Evo MDV 4x4
APPLICATION	Emission / Performance / Electrification / Endurance	Performance / Electrification
POWER PER AXLE NOMINAL (OVERLOAD) (KW)	200 / 300 / 350 (500 / 600 / 870)	500 (700)
FORCE PER AXLE NOMINAL (OVERLOAD) (N)	7200 / 9800 / 9800 (18000/ 19500/24000)	19400 (27000)
AXLE LOAD (kg)	4500	4500
DIAMETER (in)	48	48
MAXIMUM SPEED (km/h)	260	260
WHEELBASE (mm)	1800 - 5900	1800 - 5900



Heavy-Duty Vehicle Chassis Dynamometers

Capable of axle loads up to 30,000 kg and 72-inch rollers, HORIBA chassis dynamometers for heavy-duty vehicles (HDV) are made for tests requiring high torque. Steadily providing repeatable and reliable tests results with a realistic tire rolling performance and suitable for vehicles with dual and single rear tires.

VULCAN HDV chassis dynamometers additionally provide axle load management with a pull-down unit.

		VULCAN HDV
APPLICATION		Emission / Performance / Electrification / Endurance
POWER PER AXLE NOMINAL (OVERLOAD)	(kW)	800 (1000)
FORCE PER AXLE NOMINAL (OVERLOAD)	(N)	36000 (42000)
AXLE LOAD	(kg)	30000
DIAMETER	(in)	72
MAXIMUM SPEED	(km/h)	160
WHEELBASE	(mm)	2400 - 8600

Automation and Data Management Solutions for Optimized Lab Efficiency

STARS Automation is a comprehensive set of solutions to automate a wide range of test stand types including chassis dynamometers. All STARS applications are built on the STARS Automation platform, providing an optimal blend of performance, robustness, flexibility and security. Different applications are available, covering specific testing options, including performance testing, emissions measurement, testing of electrified vehicles and mileage accumulation tests.

STARS EV

for R&D tests as well as tests and analysis not requiring emissions measurement, including testing electrified vehicles as well as performance tests on various vehicle types.

STARS VETS

for emissions tests and analysis, providing compliance with the different legislative standards throughout the global regions.

STARS MATS

for endurance tests (mileage accumulation) to be performed on a chassis dynamometer to check for vehicle durability, validation and aging. Integrates drive robot operation and automatic refueling/recharging.

The **STARS Enterprise** platform offers a modular, flexible, extensible and secure solution for data management and workflow automation on the lab management level. It is designed to significantly increase productivity, efficiency and quality of test operations by automating day to day management activities and processes. Built using web technologies, STARS Enterprise delivers maximum reach to users via browser and mobile device support, whilst maintaining the highest levels of security and ease of administration.

HORIBA Automotive, a business segment within the HORIBA Group, provides advanced mobility leadership and comprehensive engineering and measurement expertise to support the gradual shift from traditional propulsion, to fully electrified solutions.

horiba.com/automotive

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