

PERFORMANCE MEASUREMENT TECHNOLOGY DYNAMOMETERS

MSR 500/3 CAR 4WD
VP 230037



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The MSR 500/3 CAR 4WD single roller dynamometer is used in workshops for designers and tuners as well as in educational institutions. It is especially suitable for performance measurements, tuning and diagnostic work on particularly powerful vehicles. With test speeds of up to 300 km/h, it is used for dynamic and static power measurement. The MSR 500/3 CAR 4WD guarantees optimum measurement accuracy and reproducibility through the active measurement of the towing power.

The rolling behaviour of the tyre is the same as on the road. Operating methods such as load simulation, including optional modules for the measurement of external data, e.g. driving cycles, are possible.

PRODUCT DETAILS/ACCESSORIES

Four-wheel drive single roller dynamometer for cars with axle load of 2.4 t, includes two eddy-current brakes on the rear axle with an electric motor and an eddy-current brake on the front axle with an electric motor, ideally suited for performance measurements, tuning and diagnostic work on very powerful vehicles

- Test speeds of up to 300 km/h
- Tyre rolling action as it would be on the road
- Tyres are preserved as a result of limited flexing action
- Simple restraining mechanism for quick vehicle fixation
- Electronically-controlled synchronisation of the speed of the front and rear roller set for current and future drive concepts with active power distribution

High level of flexibility in use due to extensive variety of operating modes, covering all fields of application:

- Static power measurement at constant RPM
- Static power measurement at constant speed
- Static power measurement at constant tractive force
- Dynamic power measurement with adjustable acceleration
- MAHA towing power measurement guarantees the highest degree of accuracy when measuring power: Precision calculation of the parasitic losses of the dynamometer, of the vehicle's drive train and the tyre to roller friction and flex losses
- Tachometer testing with up to ten freely selectable test points
- Distance measurement included
- Stopwatch function for measurement of acceleration between optional speed markers as standard
- Optional load simulation with freely programmable load profile
- Optional driving simulation with freely programmable speed profile
- Option of storing programmed profiles in database

Professional, intuitive-use software for the highest expert standards with:

- continuous graphic display and recording of up to 16 freely selectable parameters per performance measurement cycle on one measurement screen.
- In addition to the current performance measurement cycle, fade-in of up to three stored cycles on the measurement screen for optimum comparability during calibration work
- Two circular dial displays for RPM and speed as well as current oil temperature display, ensuring constant control of key parameters during performance measurement

- Determination of wheel power, power dissipation, engine power and torque
- Standardised extrapolation of motor power in line with DIN 70020, EEC 80/1269, ISO 1585, JIS D 1001 and SAE J 1349 (configuration-dependent)
- Circular dial display of motor power, RPM, speed and tractive force during simulation cycles
- Colour-highlighted user prompts integrated within the circular dial facilitate the accurate reproduction of simulation cycles
- With radio remote control as standard for complete control of the dynamometer from within the vehicle.
- Radio remote control with long-life battery and charging station
- Cooling fan switched on and off either at the control console or with the radio remote control
- With interface box including stand and long connection cable as standard for optimum placement at the dynamometer with MAHA plug-in CAN-DRZ module card for connecting RPM sensor.
- Interface box optionally upgradeable with MAHA plug-in card for comprehensive recording of external Ambient data such as air temperature, air pressure, rel. humidity and intake temperature
- Interface box optionally upgradeable with MAHA plug-in analogue input module card with 4 sensor inputs for temperature and pressure sensors or lambda sensors.
- Optional connection of MAHA MGT 5, MDO 2 LON and MET SERIES emission testers
- Optional connection of Krupp/AIC fuel consumption measuring instruments for petrol- and diesel engines

MCD 2000 Communication Desk Description

- Robust and multifunctional metal encasement
- Integrated switch cabinet for housing electronic components
- Lockable drawer for keypad and PC mouse and storage compartment for small items of equipment
- VESA standard bracket for holding the all-in-one PC or PC monitor
- Can be extended with optional PC storage compartment or side shelves
- Varnished with high-quality powder coating: window grey, RAL 7040 (switch cabinet) anthracite grey, RAL 7016, (side faces)

MCD 2000 Standard Delivery

- MCD 2000 Communication Desk

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- interface box 1 including stand and connection cable with plug-in environment module (CAN-PTH module) card for recording air temperature, air pressure, humidity with plug-in RPM module (CAN-DRZ module) card for RPM recording via trigger clamp, light signal sensor, piezo clamp, clamp W and TDC sensor (insertion of max. 4 modules per box possible)
- Radio remote control for dynamometer operation with battery and charging station
- Cooling fan control
- Measuring program

MSR 500/3 CAR 4WD Roller Set

Description:

- Electronically-controlled synchronisation of the speed of the front and rear roller set
- Second eddy-current brake on the rear roller set for measurements on powerful vehicles

- Electric motor in the centre of the roller set
- Hydraulic power unit with self-locking cylinder
- Cover and sliding plates, gentian blue RAL 5010
- Axle distance adjustment via radio remote control (Standard version: rear roller is movable)
- Optional 30 kW electric motors instead of 22 kW for synchronisation of front and rear roller set speed
- Varnished with high-quality powder coating: Anthracite Grey, RAL 7016

Roller Set Standard Delivery:

- Self-supporting closed roller set with an eddy-current brake for the front axle and electric motor
- Self-supporting closed roller set with two eddy-current brakes for the rear axle and electric motor
- Hydraulic roller set adjustment with sliding plate set for 4WD floor unit
- Converter cabinet for electric motor control

COMMUNICATION DESK TECHNICAL DATA

Desk dimensions (H x B x T)	1560 x 860 x 420 mm
Power supply	3/N/PE 400 V 50 Hz
gG fuse	63 A
Weight including packaging	approx. 150 kg
Converter cabinet	
dimensions (H x W x D)	1000 x 800 x 400 mm
Axle load	2500 kg
Weight	approx. 1300 kg
Rotating mass per roller set	approx. 280/330 kg
Min. track	700 mm
Max. track	2200 mm
Roller diameter	504 mm
Roller set dimensions (L x W x H)	1095 x 4100 x 512 mm
Dynamometer	
dimensions (L x W x H)	4300 - 5400 x 4100 x 512 mm
Max. air pressure	7 bar
Max. test speed	300 km/h
Max. (static) rear axle wheel power	520 kW
(dynamic) peak	> 2000 kW
Max. (static) front axle wheel power	260 kW
(dynamic) peak	> 1000 kW
Max. rear axle tractive force	12 kN
Max. front axle tractive force	6 kN
Measurement accuracy	
Wheel power measurement	+/- 2% from measured value

