

# MSR 500/2

## PERFORMANCE MEASUREMENT TECHNOLOGY



## POWERDYNO

VP 230041

Single Roller Dynamometer

### DESCRIPTION:

Four-wheel drive single roller dynamometer for cars with axle load of up to 2400 kg, includes an eddy-current brake and an electric motor per roller set, pre-configured for 3rd/4th eddy-current brake, ideally suited for performance measurements, tuning and diagnostic work in 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

## DESCRIPTION:

- ◆ 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)

### MSR 500/2 CAR 4WD Roller Set pre-configured for 3./4. eddy-current brake

#### Description:

- ◆ Electronically-controlled synchronisation of the speed of the front and rear roller set
- ◆ Electric motor in the centre of the roller set
- ◆ Eddy-current brake on the right for each roller set
- ◆ Cover and sliding plates, gentian blue RAL 5010
- ◆ Hydraulic power unit with self-locking cylinder
- ◆ 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
- ◆ Coating: powder coating, gentian blue, RAL 5010

## STANDARD DELIVERY:

### MCD 2000

- ◆ MCD 2000 Communication Desk
- ◆ 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

### Roller Set

- ◆ Self-supporting closed roller set with an eddy-current brake for the front axle and electric motor
- ◆ Self-supporting closed roller set with an eddy-current brake for the rear axle and electric motor
- ◆ Front and rear roller set with second eddy-current brake encasement in preparation for retrofitting of the 3rd and/or 4th eddy-current brake
- ◆ Hydraulic roller set adjustment with sliding plate set for 4WD floor unit with four eddy-current brake encasements
- ◆ Converter cabinet for electric motor control

## TECHNICAL DATA:

Axle load	2500 kg
Compressed air max.	7 bar
Track width	700 mm - 2200 mm
Roller set rotating mass	280 kg
Roller diameter	504 mm
Test speed max.	300 km/h
Wheel power, rear axle (static) max.	260 kW
Wheel power, rear axle (dynamic) peak >	1000 kW
Wheel power, front axle (static) max.	260 kW
Wheel power, front axle (dynamic) peak >	1000 kW
Tractive force Rear axle max.	7000 N
Tractive force Front axle max.	7000 N
Two electric motors each with a drive power rating of	22 kW
Trailing axle: maximum speed approx.	210 km/h
Trailing axle: maximum acceleration.	0,8 m/s <sup>2</sup>
Two electric motors each with a drive power rating of (optional)	30 kW
Trailing axle: maximum speed approx. (optional)	240 km/h
Trailing axle: maximum acceleration (optional)	1,5 m/s <sup>2</sup>
Measurement accuracy wheel power measurement (from measured value) +/-	2 %
Wheelbase min.	2200 mm
Wheelbase max.	3200 mm
Adjustment track	1000 mm
Fuse gG	63 A
Power supply	3/N/PE 400 V 50 Hz
Dimensions communication desk (H x W x D)	1560 mm x 860 mm x 420 mm
Converter cabinet dimensions (H x W x D)	1000 mm x 800 mm x 400 mm
Dimensions roller set (L x W x H)	1095 mm x 3324 mm x 512 mm
Dynamometer dimensions (L x W x H)	4300 mm - 5400 mm x 4100 mm x 512 mm
Weight roller set	1300 kg
Communication desk weight incl. packaging	150 kg

## ACCESSORIES:

VZ 910176	Industrial PC All-in-One
VZ 910177	Industrial PC Compact
VZ 955275	PC-Holder for placement inside MCD 2000
VZ 910052	PC-Keyboard and Mouse
VZ 910091	DIN A4 Ink Jet Colour Printer
VZ 910165	PC Flat Screen 22 inch (TFT Standard)
VZ 910192	Simultaneous Display Unit 40"
VZ 955244	Rotatable & Folding Wall Holder for TFT
VZ 910179	HDMI Cable 15 m
VZ 910180	HDMI Cable
VZ 910181	HDMI-Splitter 4-Port
VZ 955274	Side Shelf for MCD 2000
VZ 955277	External PC Storage Shelf for MCD 2000
VZ 990275	Interface Box 2
VZ 911145	Pressure temp. module (CAN P2T2 Module)
VZ 911146	OBD Module (CAN OBD Module)
VZ 911240	Analogue Input Module (CAN-AIN4 Module)
VZ 990438	Analog Outputs LPS 3000/MSR
VZ 990221	RPM Light Signal Sensor w. reflective spots
VZ 990211	Trigger Clamp for MGT 5
VZ 990225	Oil temperature sensor for cars
VZ 990276	Exhaust Temperature Sensor TEMP
VZ 911150	Software Module Emission 1 driving cycle,
VZ 911151	Software Module Emission 2 lug-down
VZ 990278	Board (DT Module)
VP 994013	AIC-1204 HR 2000
VZ 975498	Conn. kit for petrol cars, pressure control valve
VZ 975499	Connecting Kit for Diesel Powered Cars, Adapter
VZ 994014	Carrying Case for AIC-1204 and Accessories
VZ 990427	Wideband Lambda/AFR kit
VZ 911152	Connection Package Petrol Emissions
VZ 911153	Conn. pack. diesel emiss. f. conn. of
VZ 911154	Conn. pack. diesel emiss. hand terminal MDO 2
VZ 911155	Conn. pack. ext. measurm. station emissions
VZ 935266	Set of Anchor Rails for MSR
VZ 935268	Set of Ground Sleeves 140 mm for MSR
VZ 935267	Set of Ground Sleeves 190 mm for MSR
VZ 935191	Vehicle Restraint System rear side
VZ 935230	Attachment Points for Anchor Rails (4 pieces)
VZ 935215	Ni/Cr Coating for Running Rollers
VZ 935216	Add. Eddy current brake for MSR
VZ 935270	Stronger Motor 30 kW for MSR
VZ 975652	Calibration Device LPS R50 universal
W 997561	Packing MSR 500/1000/1050 -Europe-
W 997562	Packing MSR 500/1000/1050 -overseas-



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