

# MATURO DYNAMOMETER

## Technical Description

### Dynamometer FR-DYN- 3t-F

| Customer | Project |
|----------|---------|
|          |         |



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## 2 DYNAMOMETER FREESTANDING (FR-DYN-F)

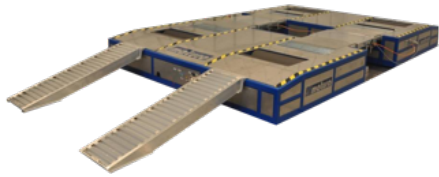
### 2.1 Technical Data of the Dynamometer FR-DYN- 3t - F

| Example technical data, other specifications upon request |  |
|---|--|
| Axis distance   | 1400 mm – 3200 mm  |
| Vehicle weight / axis load                                | 3000 kg / 1500 kg  |
| Dimensions in mm (L x W x H)                              | approx. 4000 x 2500 x 270  |
| Total weight  | approx. 2000 kg  |
| Roller diameter   | 240 mm   |
| Roller properties   | Flame coated surface (road-like)<br>static heaved up to 2000 rpm<br>Balance quality: Q 2.5 according to VDI 2060 |
| Track width   | 1000 mm to 2300 mm   |
| Maximum speed   | 100 km/h   |
| Temperature range   | 5° C – 45° C   |

The Dynamometer FR-DYN-F is constructed as a freestanding stand-alone dynamometer, which can optionally be fixed onto a turntable. Two passive axes are used for vehicles with rear/front or four-wheel drive. The four independent roller pairs are free-running and operated by the vehicle engine.

## 2.2 EMC/EMI suitability

The FR-DYN-F is especially designed not to influence EMC and EMI measurements. Furthermore, it is tested based on CISPR 12/15, SAE J551-5, ECE R10, GBT18387.



## 2.3 Brief description

### Preserving the surroundings

Due to minimize the dynamic energy to the surrounding of the F-DYN-4WD, the four independent roller pairs are integrated into a "self-contained" frame.

### Twin rollers

- compact design of complete system
- quick test setup
- simple vehicle fixing

### Loading and unloading

- two free adjustable ramps for driving the vehicle on the dynamometer
- removable for the tests

### Tire safety cover

- Non-metal material
- Adjustable for different wheel tracks



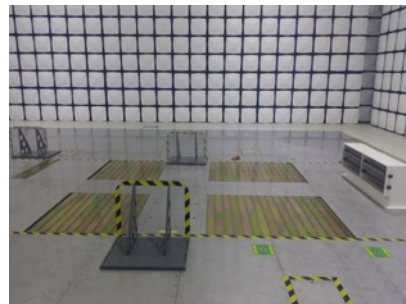
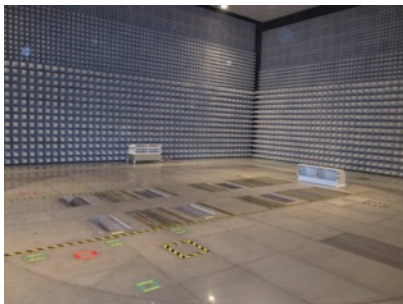
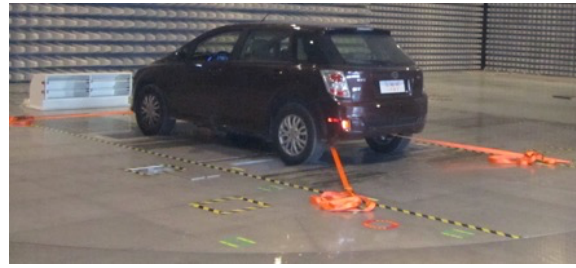
### Fixing points incl. lashing straps

- to fix the vehicle during tests
- lashing straps made of non-metal material
- shieldable fixing points integrated in the turntable cover plates



### Accessories included

- Four lashing straps to fix the vehicle while running. They are integrated in the system structure and are adjustable to each specific vehicle and made of neutral material.  
Tensile strength: 5000 N  
Length adjustment: 1.0 m – 6.0 m
- Roller blocking system for easy loading or unloading of the vehicle
- Safety cover for tires



### Accessories upon request:

- Speed sensor
- Increased permissible vehicle/axis weight
- Mechanical axis coupling to prevent triggering the vehicle's safety systems in the vehicle, e.g. ABS or ESP
- Clamping device for motorcycle
- Cooling system to keep the motor and/or the tires cool during testing

### Stand-alone cooling fan system (optional)

- adjustable guide plates for wind direction
- different maximum air flows and maximum wind speeds available, e.g. 20 000 m<sup>3</sup>/h and 80 km/h
- wind speed optionally adjustable or automatically adjusted depending on vehicle speed
- The stand-alone option is equipped with four wheels for easy movement and made of plastic and wood.



### Robot R – AB for accelerator and brake pedal (optional)

- Remote controlled vehicle driving on chassis dynamometer for EMC tests
- Actuation of pedal positions to external, analogue setpoints
- Safe non-energized basic positions
- Quick snap-in mechanism of pedal actuator for individual settings
- Easy mounting in vehicle
- No EMC emission due to pneumatic operation

| Technical data                                  |   |
|---|---|
| Stroke distance accelerator stepless adjustable | up to 100 mm  |
| Strength  | 200 N   |
| Stroke distance brake stepless adjustable       | up to 125 mm  |
| Strength  | 350 N   |
| Power consumption                               | 208 VAC – 230 VAC,<br>50Hz / 60 Hz, single phase    |
| Current consumption                             | approx. 0.5 A                                       |
| Fuse  | 2 A, 250 V  |
| Compressed air supply                           | via pressure regulator and 0.5 inch quick connector |
| Signal pressure                                 | 0.2 – 1.0 bar                                       |
| Nominal pressure                                | 5 bar   |
| Length of lines                                 | Air tube 5 m from dynamometer to robot              |
| Operating temperature                           | 5° C – 40° C  |
| Total weight                                    | approx. 25 kg                                       |

