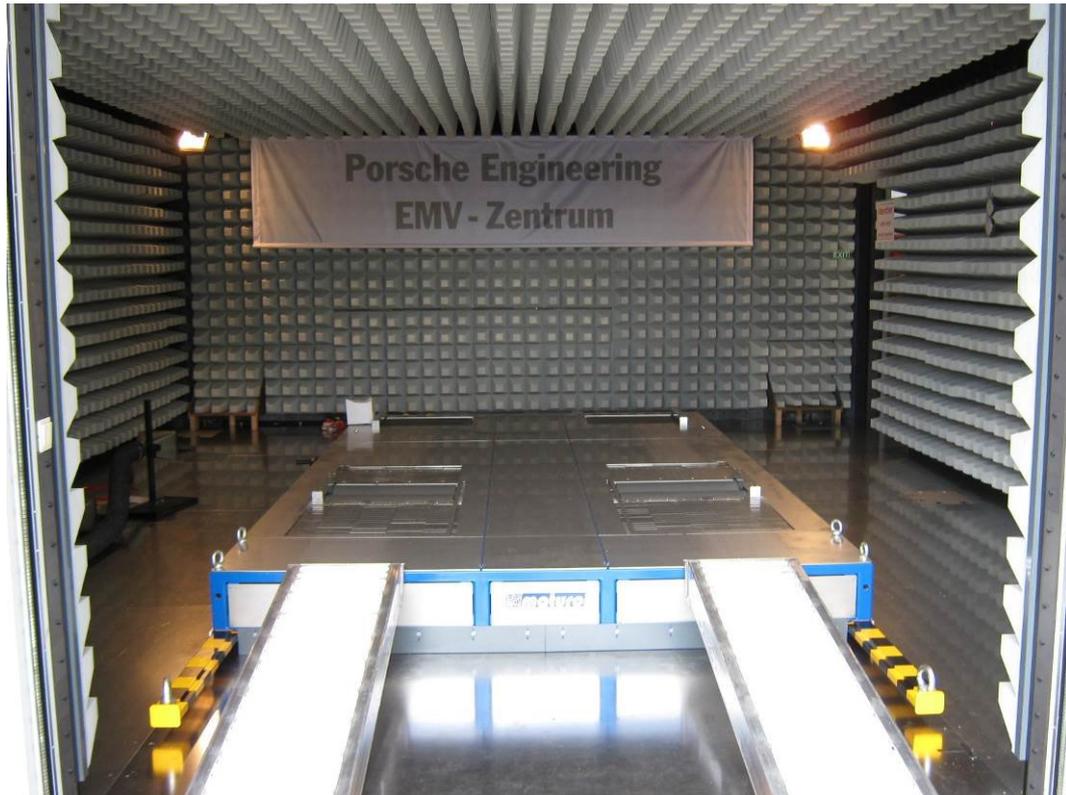


## Technical Description

# Dynamometer FR-DYN-3t-F

Free-standing on top of hall floor or turntable



### Specifications:

- Free-standing version
- For use in anechoic chambers for EMI and EMC measurements
- 2 passive axles, for cars with rear /front – or four wheel drive
- 4 free-running roller pairs, driven by the vehicle engine
- Removable, fixed on the turntable cover plates
- With loading ramps and bridges between both axles
- Optional mechanical coupling of front and rear axles available

Information presented enclosed is subject to change as product enhancements are made regularly. Please contact matur for current specifications. Pictures included are for illustration purposes only and do not represent all possible configurations.

### Technical Data:

Permissible axle load		1.500 kg (each axle)
Max speeds for cars		100 km/h
Acceleration/ deceleration	max.	1.0g from 10 to 60 km/h

Wheel track between the front wheels	1200 to 2100 mm
Wheelbase between the front and rear wheel	1400 to 3200 mm

Diameter car wheels	min.	400 mm
	max.	800 mm

Diameter rollers (4 roller pairs) 200 mm  
The surface of the rollers is flame-coated  
The rollers are static heaved up to 2000 rpm

Dimensions:

Housing frame L x W	approx.	4000 x 2500 mm
Overall Height	approx.	270 mm
Complete weight	approx.	2000 kg



### Brief Description:

#### **General:**

The Dynamometer FR-DYN-F is constructed as a freestanding dynamometer, which can be fixed onto a turntable or a stand-alone system. Two passive axles 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.

**Structure:**

The 4 independent roller pairs of the dynamometer are integrated into a “self-contained” frame, which minimize the dynamic energy output to the turntable or hall floor.

**Rollers:**

The rollers are static heaved up to 2000 rpm and flame-coated.  
The surface of the rollers is comparable with road surface.  
Balance quality: Q 2.5 according to VDI 2060

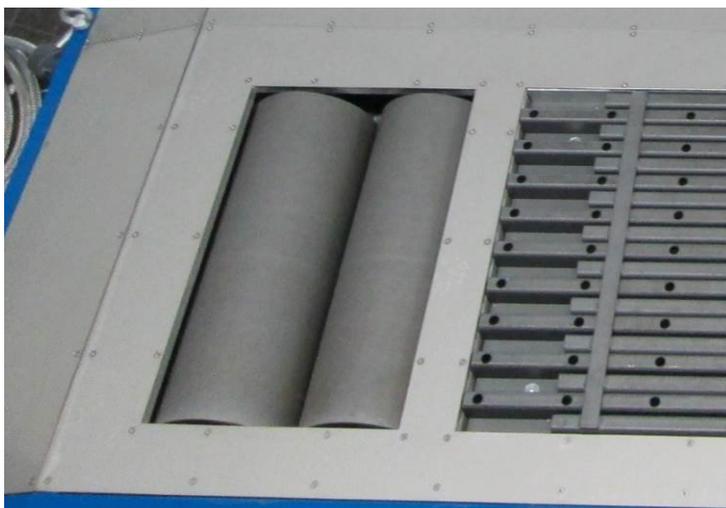


Fig.: Double roller system

**Wheel Base:**

The wheelbase is to adjust manually. The base must be adjusted according to the car wheel distance with a +/- 2 mm tolerance.  
Operation of the wheel base adjustment is only possible at a standstill of the dynamometer.

**Loading and Unloading:**

To drive the car on the stand and into the rollers two free adjustable ramps and must be used. The ramps are removable while the test is running.

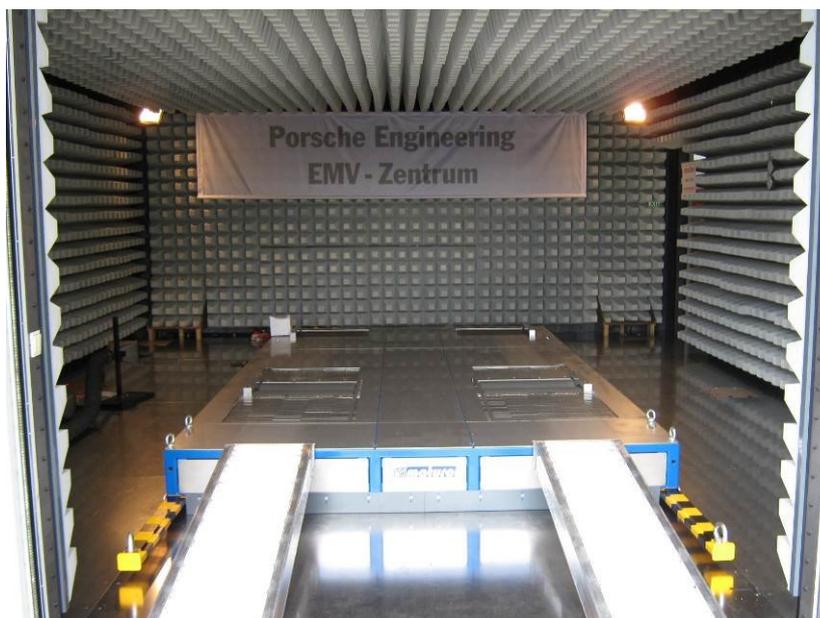


Fig.: Adjustable ramps

**Fixing elements:**

The system is equipped with four lashing straps to fixing of the vehicle while running.

Spring hooks allow an easy connection to the four fastening bolts.

The fixing elements are integrated into the structure of the system and are adjustable to the specific vehicle sizes.

The straps are made of electrically neutral material.

Length adjustment: from 1.0 to 6.0 m

Tensile strength: 5000 N



Fig.: Fixing system

**Optional: Mechanical coupling of the axles:**

Both axles are firmly mechanically linked together for a synchronous operation of all rollers.

This coupling prevents a response of all driving safety systems in the vehicle; e.g. ESP.



Fig.: Mechanical coupling of the axles

### Option: Cooling Fan System

Shielded fans provide a sufficient cooling for the tyres and the motor of the vehicle under test.

The plastic air scoop on top of the turntable is used to detour the airflow.

The fan speed can be set either proportional to the roller speed (up to 60 km/h) or to a constant speed by the NCD Controller.



Fig.: Cooling Fan System

### Technical Data:

Wind speed	60 km/h
Adjustable according to the vehicle speed	
Air flow	10.000 m <sup>3</sup> /h
Outlet opening of air scoop	1.0 x 0.3 m
Material of air scoop	Plastic and wood
Current consumption	max. 16A
Power consumption	380-400 V/ 50-60 Hz/ 3-phase
Operating Temperature	5°C to 40°C
Total weight	approx. 60 kg

With guide plates for adjustment of the direction of the wind  
4 lockable castors for easy movement of the system

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*Notes*