



# VAIA CAR TSR-340E



## TSR-340E FULL ELECTRIC

### Rail - Road Shunter

#### Technical Specifications

**Powertrain:** The vehicle is equipped with two electric motor with a power of 185 kW each, powered by an HV battery pack with a capacity of 240 kWh

**Drive system :** POWERSHIFT integral traction, capable of under load gearbox change, coupled with electric motors working on the road differentials.

**Road translation :** permanent integral traction with differential axles with planetary gearboxes.

**Rail translation :** occurs through contact between rubber wheels and rails with a special device for regulating the contact pressure.

**Frame :** in solid steel profiles with electro-welded cross membres

**Axles :**

**Front** ..... steering with bevel gear and planetary reductions on the wheels, with differential lock  
**Rear** ..... fixed with bevel gear and planetary reductions on the wheels, with differential lock

**Buffers :** front and rear buffers according to U.I.C specifications.

**Rail tow-hooks :** front and rear, F.S type.

**Automatic rail tow-hooks:** front and rear, controlled from the driver's cab (only on request)

**Rail trucks :** front and rear. Every one consists in 4 rail wheels, acting on special hydraulic active regulable suspensions which assure perfect locomotive stability even under the worse working conditions (for example: discontinuous difference in height between rail-level and earth-level).

**Gauge :** 1435 mm / 1520 mm / 1668 mm / 1676 mm

**Telescopic hydraulic stabilizers :** the vehicle is equipped with four telescopic hydraulic stabilizers that permit the execution of the following function  
 -to lift and translate laterally the vehicle in order to transition from the road to the rail line and vice versa, even in the worst working conditions;  
 -to lift the vehicle in order to carry out maintenance operations (such as changing tires).

**Body :** in steel plate properly dimensioned and accurately trimmed.

**Tyre :** front and rear, 12.00.R24 type.

**Hydraulic system and auxiliary duties :** n.1 fixed displacement pump operated by an electric motor, with a dedicated inverter, that supply the driving member of the vehicle and the auxiliary duties; n.1 electric motor, with a dedicated inverter, that operate the air compressor.

**Steering system :** hydraulic servo-assisted with orientable steering column. Steering lock during transfer on rail.

**Braking system** Pneumo hydraulic system with :

**Service brake (direct brake)** ..... pneumo-hydraulic type (with a double independent circuit) agent on the 4 wheels  
**Emergency brake** ..... incorporated with service brake  
**Parking brake** ..... fail-safe, integrated in the road axles differentials  
**Rail wagon brake (continuous brake)** ..... pneumatic type. Composed of n.1 air compressor with max capacity of 3600 l/1'

**Electric installation :** 700 Vdc for the power circuit, 24 Vdc for the electrical controls.

**Description and tank capacities :**

Battery pack HV ..... lithium ion battery with a minimum capacity of 240 kWh (more on request)  
 Battery pack HV autonomy ..... 6/9 hours (depending on the working cycles)  
 Hydraulic oil tank ..... in plate, with 200 Lt capacity  
 Air pressure reservoir for machine brake ..... nr. 2 aluminium reservoirs properly dimensioned  
 Air pressure reservoir for convoy brake ..... 600 Lt

**Driving cab :** large visibility, heatless pans, sound dampened, equipped with cooling and heating system. Dashboard with complete instrumentation essentially consisting of an on-board computer capable of managing all the vehicle's functions and alarms.

**Devices for lighting and light signaling :** according to technical E.E.C. dispositions.

**Backsight devices and CCTV :** according to technical E.E.C. dispositions

**Overall dimensions:**

Total length ..... 6750 (without buffers)  
 Total width ..... 2500 mm  
 Road gauge ..... 2800 mm  
 Rail gauge ..... 5500 mm

Machine weight ..... kg 34000  
 Maximum speed ..... ca. 30 km/h  
 Maximum tractive effort on road wheels ..... 28900 daN  
 Maximum tractive effort on rail wheels ..... 23800 daN  
 Maximum tow capacity on plain ..... 4750 Ton

**Self-positioning on road or on track :** by means of proper movement of front and rear hydraulic telescopic stabilizers it is possible to position automatically the machine from road onto track and vice versa in any condition.

**Homologation MCTC and ANSFISA :** (on request) The Approval Certificate is issued in order to obtain the Road circulation certificate of Transport Department.

**Noise :** Inside the cab from 70 dB to 78 dB; Comply to 2006/42/CE directive.

**Charging system :** The vehicle can be supplied with a special DC column, to be placed on the ground, to allow complete charging in approximately 2 hours.

**Radio control device :** (on request).

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