

Talgo 250



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GENERAL SPECIFICATIONS

Maximum commercial speed	250 km/h
Maximum lateral acceleration in curve	1.2 m/s ²
Track gauge	1435 mm / 1668 mm
Traction	Electric
Traction units	2
Maximum passenger coaches	11
Tractive axles	8
Maximum number of axles per train	20
Maximum axle weight	18 t.
Maximum train length	183 m
Sense of travel	Bidireccional ("push - pull")
Type of operation	Single trainset or multiple mode



ELECTRIC TRACTION UNIT TECHNICAL SPECIFICATIONS

Traction	Electric
Power supply	25 kV, 50 Hz / 3 kV c.c.
Power installed	2400 kW c.a. /2000 kW c.c.
Power equipments	Two identical and independent
Bogies	Bo - Bo
Wheelbase	2,8 m
Front design	Aerodynamic. Optimized for pressure waves and lateral winds
Pneumatic brake equipment	Two disc brakes per axle
Electric brake equipment	Regenerative (2400 kW) and rheostatic (2000 kW)
Length	20 m
Maximum width	2.96 m
Height	4 m

Talgo

250 Hybrid

TRAIN DISTRIBUTION:

Car types	Unit/train	Seats
Traction Unit	2	
Technical End Coach	2	0
Coach Class	6	216 - 240
Bistro Cars	1	0
First Class (Handicapped)	1	23
First class	1	26
Total seats		265 - 289

HYBRID TRAIN S130H (TALGO 250H)

- Born from T250 train.
- Technical End Coach with a powerful set generator, which allows running on both gauges on both gauges (European standard and Iberian), with both electric traction power (25 kW and 3 kW) and diesel traction (non-electrified lines).
- Energy required to operate in non-electrified routes results from generators mounted on the Technical End Coaches.
- Changing power system is performed without stopping the train.
- Maximum speeds of 250 km/h (UIC lines) and 220 km/h (Iberian gauge) in electrified lines. Maximum speed of 180 km/h in non-electrified lines.
- Provides access to High Speed without the need for costly infrastructure investment.



TECHNICAL END COACH DIESEL MOTOR TECHNICAL DATA

Model	12v4000r43l
Traction power	1800 kw (2448 cv) to 1800 rpm.
Exhaust emissions regulation	EU 26/2004 STAGE III a
Consumption	190 g/kWh
Cylinder Displacement	4.77 liters
Total Displacement	57.23 liters
Weight	6600 kg



COACHES



- **CARBODIES** Lightweight, airtight, pressurized for tunnels and crossings. Very low weight per seat.
- **COUPLING BETWEEN CARS** Articulated with anti-overturning and anti-vertical hunting mechanisms.
- **CENTER OF GRAVITY** Very low, improving stability on travel.
- **ROLLING ASSEMBLIES** Single axles, with independent wheels and Talgo RD system, located between cars.
- **ROLLING ASSEMBLY AXLES** Permanently steered that keep the wheels parallel to the track on both straight and curved stretches.
- **MAIN SUSPENSION** Talgo Pendular type, pneumatic, with natural carbody tilting.
- **BRAKING** Pneumatic over four discs per shaft. Anti-lock brake system.
- **AIR-CONDITIONING UNITS** Located underframe.
- **SAFETY AND CONTROL** Intelligent computerized system for continuous control of on-board systems.
- **ACCESSIBILITY** Platform height close to the level of the floor of the car. 815 mm passageway between cars.
- **SEATS** Reclining and rotating. Equipped with footrests.
- **PASSENGER COMMODITIES** Video and individual audio with channel selector (4 music channels and 2 video channels) and sound volume control. In Club Class, individual video screens with three channel selections. Interior and exterior electronic information panels. GPS-based passenger information system. Automatic audio and video information notices.
- **SEAT PRIVACY** Individual reading lights and tables. Power outlets for laptop computers or mobile telephones.
- **CAR TYPES** Total seats: 299. Coach class end car (20 seats), Coach class (36 seats), Bistro cars, First Class (Handicapped) (22+1 seats), First class (26 seats) and First class end car (14 seats). First Class cars with special facilities for wheelchair-bound passengers (1 seats).



Talgo



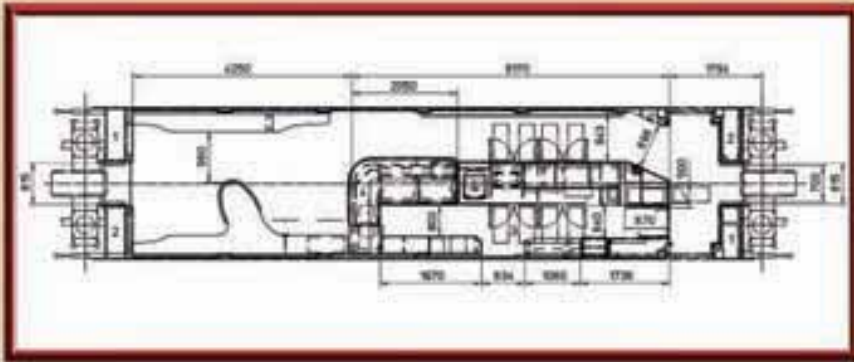
COACH CLASS END CAR



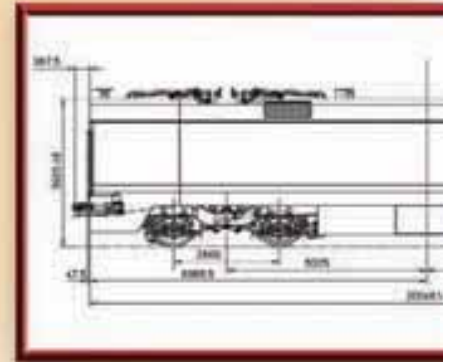
COACH CLASS



ROOF COVER



BISTRO CARS



END CAR (1)

COACH CLASS (6)

BISTRO CARS (1)



COACH

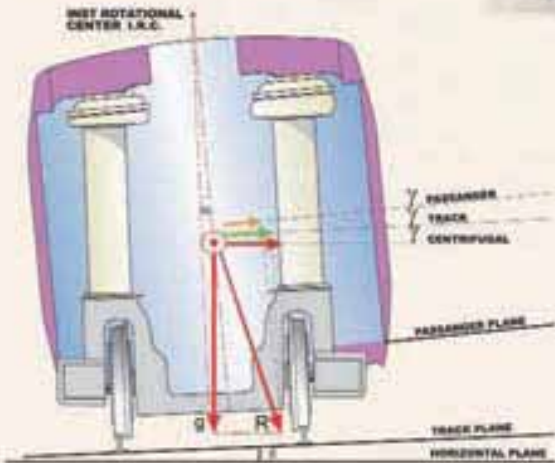
COACH CLASS (6)

BISTRO CARS (1)



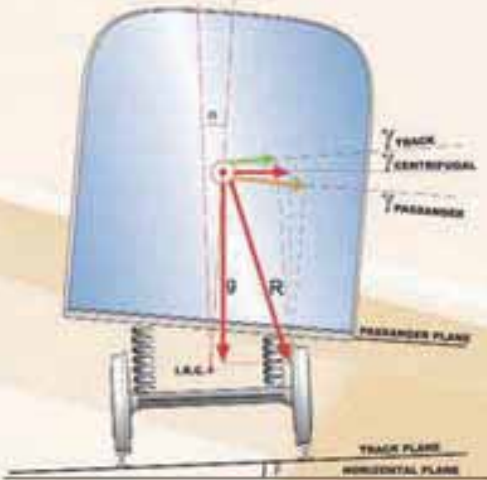
TALGO PENDULAR

$\gamma_{\text{CENTRIFUGAL}} > \gamma_{\text{TRACK}} > \gamma_{\text{PASSANGER}}$



CONVENTIONAL TRAIN

$\gamma_{\text{PASSANGER}} > \gamma_{\text{CENTRIFUGAL}} > \gamma_{\text{TRACK}}$



TALGO PENDULAR SYSTEM

- This is a unique and simple system based on the elevation of the suspension above the Centre of Gravity of the carbodies. This system is used to reduce the lateral forces that affect passengers when traveling on curves.

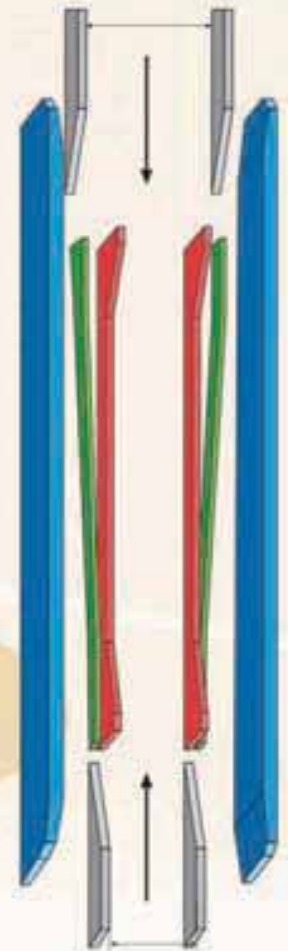
- The carbodies act under the effect of natural (centrifugal) forces without any loss of safety and comfort levels, thanks to the steered wheels and the unique talgo wheelset assembly characteristics...

... carbodies tilt towards the interior of the curves in direct relationship to the travelling velocity...

... reducing the values of lateral forces that act upon the passengers...

... thereby enabling a 25% increase in travel speed when traveling on a curve, provided that the tracks' resistance characteristics are appropriate.

... reducing the levels of the wheel-rail interactions allowing to increase speeds in curves without affecting safety.



TALGO RD

- TALGO's RD System, used to change automatically the distance between the wheels of the axles, has been successfully used since 1968 in variable-gauge axles of Talgo's trains.

- The TALGO RD System permits the automatic change of the distance between the wheels of the railway vehicles in order to make possible the running on different gauge tracks.

- The TALGO RD system can be applied to different models of passenger coaches, power heads, locomotives and freight wagons with full security and reliability, through standard /Spanish and Russian / standard gauge Railway networks.

- The change is made without human intervention while the train is running at low speed (15 Km/h) through a special installation fixed on the track in between the tracks of different gauges.





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