



Talgo 250

Maximum commercial speed	250 km/h (UIC gauge) 220 km/h (Spanish gauge)
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



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TRACTION UNIT

TECHNICAL SPECIFICATIONS

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

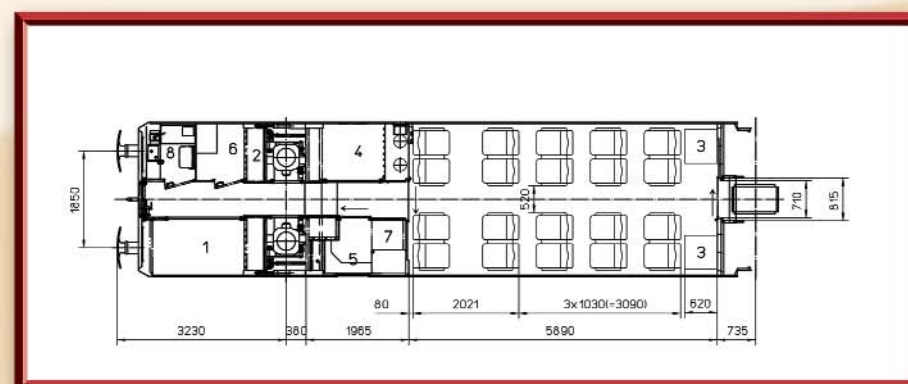
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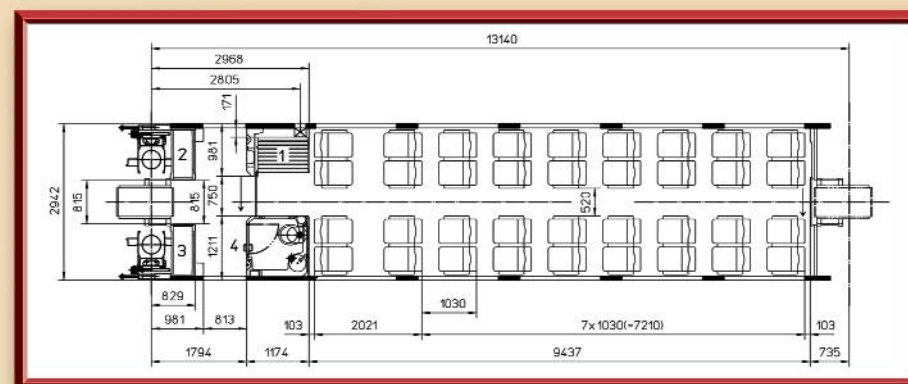
COACHES



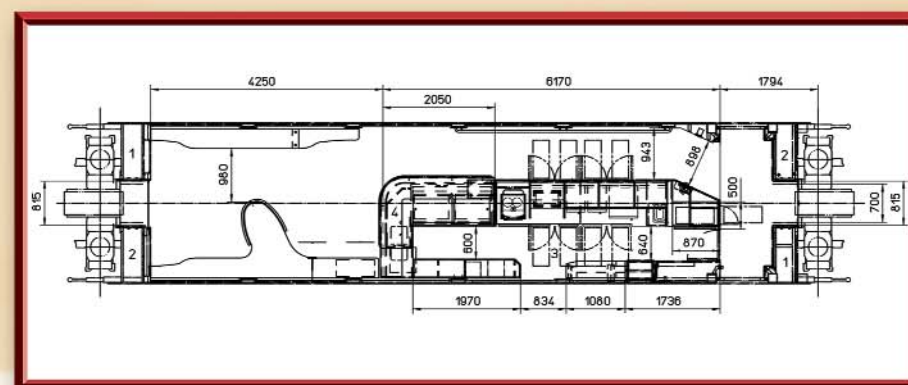
- CARBODIES** Lightweight, airtight, pressurized for tunnels and crossings. Very low weight per seat.
- COUPLING BETWEEN CARS** Articulated with anti-overturning and anti-vertical hunting mechanisms.
- CENTER OF GRAVITY** Very low, improving stability on travel.
- ROLLING ASSEMBLIES** Single axles, with 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).



COACH CLASS END CAR

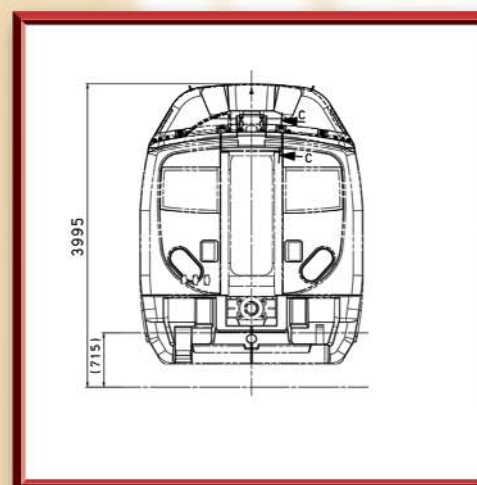


COACH CLASS

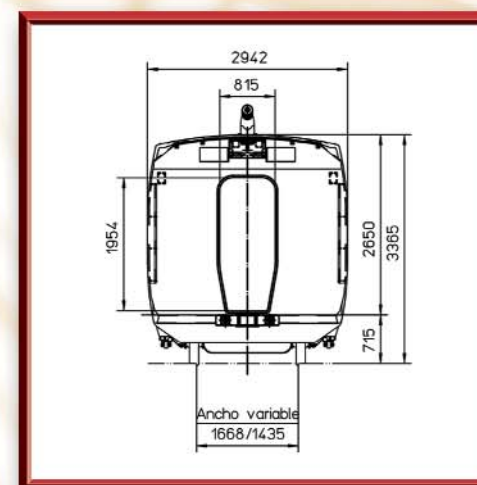


BISTRO CARS

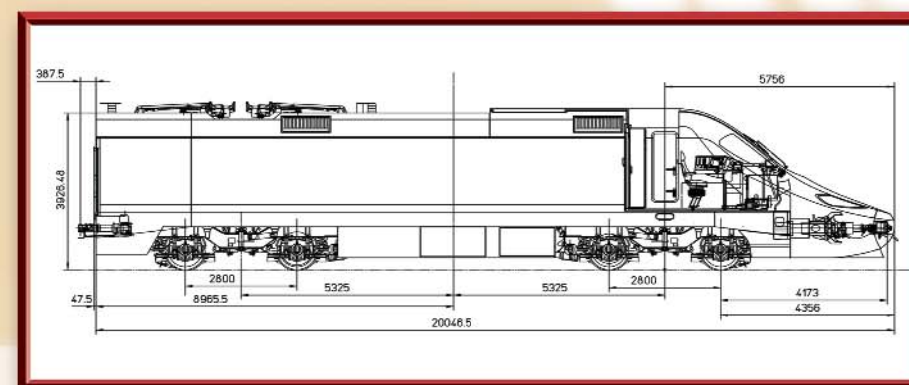
Talgo 250



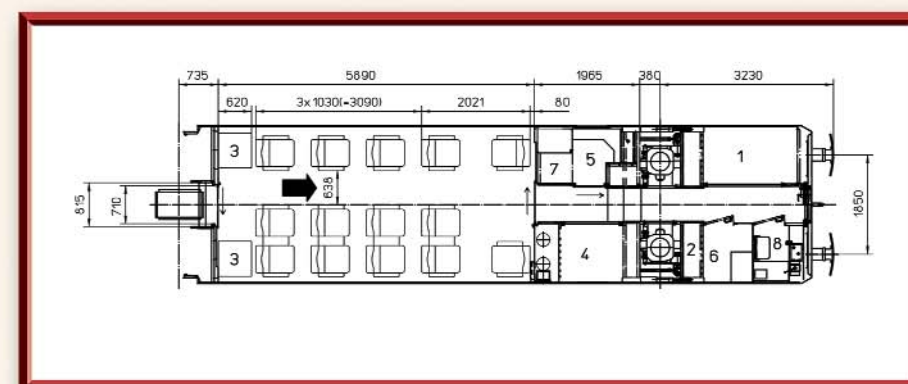
ROOF COVER



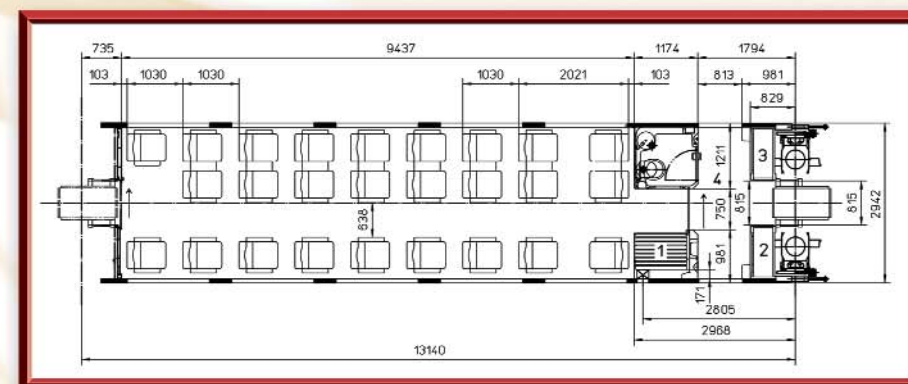
TRANSVERSAL SECTION



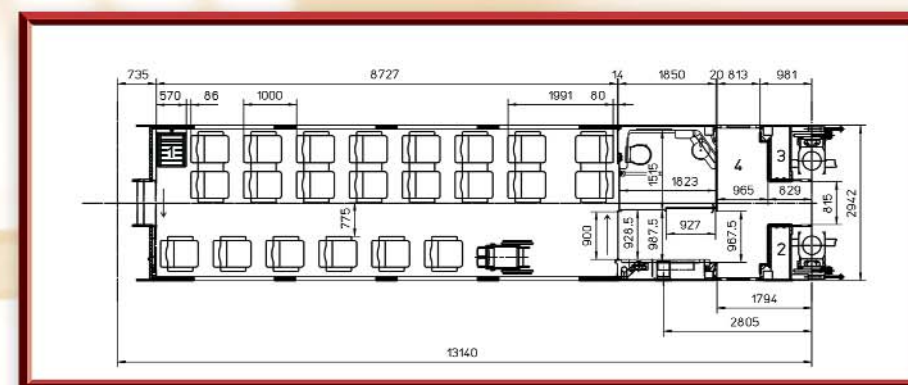
TRACTION UNIT



FIRST CLASS END CAR

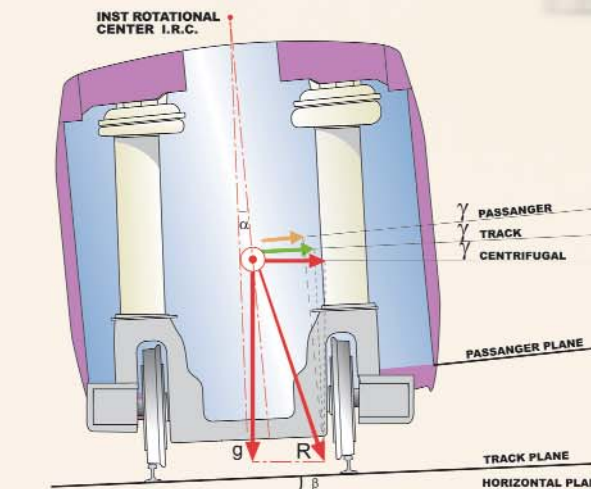


FIRST CLASS

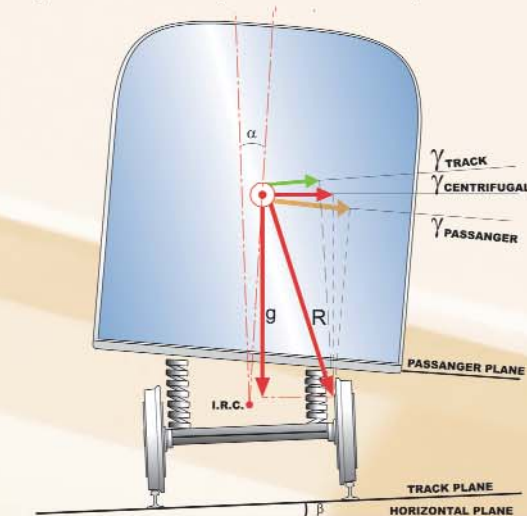


FIRST CLASS (HANDICAPPED)

TALGO PENDULAR
 $\gamma_{\text{CENTRIFUGAL}} > \gamma_{\text{TRACK}} > \gamma_{\text{PASSENGER}}$



CONVENTIONAL TRAIN
 $\gamma_{\text{PASSENGER}} > \gamma_{\text{CENTRIFUGAL}} > \gamma_{\text{TRACK}}$



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.

