



# World rail speed record

DCI – SP - Rail unit

**April 3, 2007:** French TGV East line breaks world rail speed record at **574.8 Km/hr**. SNR says congratulations to ALSTOM and French railways, SNCF.

SNR took an active part in this record: all wheel axle boxes were equipped with SNR bearings.

## SNR and TGV:

SNR has been SNCF's and ALSTOM's development cooperator for more than 20 years, that is to say since the very beginning of the South East TGV program ("TGV Sud Est"). SNR provides OEM transmission and axle bearings to ALSTOM, as well as Aftermarket items to SNCF. The various TGV versions are equipped with SNR bearings (TGV Sud Est, TGV Atlantique, PBKA, TGV Korea, TGV Duplex...).

The new "TGV EST" to be put into service on the French East network in June 2007 is equipped with new cartridge bearings especially developed by SNR for very high speeds. Many approval tests were conducted on bearings in order to reach operating speed of 350 Km/hr.

## SNR and the WSR train:

The WSR train which broke the record is equipped with **100% SNR axle bearings**. These bearings originate from series production... and they could reach the record-breaking speed of **574.8 km/hr**. For this outstanding performance, the 150x250x180 mm size and CA. 40 Kg weight bearings nearly turned at **3,000 rpm** and, according to SNCF, only incurred a 10°C temperature increase. This success is notably attributable to SNR's know-how in matters of internal geometry and temperature control.

The same bearings will now be mounted on the "TGV EST" as well as the future TGVs.

## SNR and the future TGVs:

Further to this TGV's proof of excellence, different countries expressed their interest in this technology (Argentina, Italy, the USA). SNR's rail team is already mobilized to penetrate these markets.

New technical upgrades are currently being developed in order to better meet our current and future clients' expectations.

Yohan SOUTEYRAND

Rail Unit Manager

SNR Roulements





# Congratulations from Alstom

Object: V150 record AGV TGV  
Date: Thu, 5 Apr 2007 10:28:52 +0200  
From: Didier Parayre  
To: yohan.souteyrand@snr.fr

Hello,

Warmly and sincerely **thank and congratulate the SNR teams!** They are fully involved in the recent success of the "AGV-TGV speed record".

You showed a sense of commitment and dedication to deliver the AGV and TGV bogie axle bearings in a... record-breaking time.

The SNR FC-12790 S06 axle bearings which are mounted on all bogies of the V150 train are therefore **the fastest rail technology bearings in the world!**

Once again, **congratulations** for SNR's performance!

Obviously, you will officially be involved in the celebration events in the coming weeks.

Best regards,

Didier PARAYRE, Transmission System Purchasing Department  
ALSTOM Transport, Le Creusot



## Alstom figures

**574.8 km/hr:** Alstom Transport's V150 train breaks world rail speed record.

We took up the challenge! The "V150" record-breaking train reached 574.8 km/hr at kilometeric point 191 on the new European East high speed line, "LGV Est", in France, at 1:13 p.m. on Tuesday, April 3.

Alstom project team: 60 persons

Development hours: ca. 100,000 hours

**Power: 19.6 mW** (more than 25,000 HP)

Weight: 234 metric tons

Length: 100 m

Number of test runs: 40 runs at speeds in excess of 450 Km/hr

Number of **test hours: 200 hr**

**Test kilometers covered: 3,200**

Number of checkpoints: 350

Designed and manufactured in the various Alstom transport sites, the V150 train which broke this world record comprises 2 European "TGV Est" POS motor cars, 3 TGV Duplex cars and 2 last generation high speed train motor bogies developed by Alstom: the AGV. In total, it generates a power of 19.6 MW (25,000 HP) versus 9.3 megawatts (12,500 HP) for a conventional TGV.

The V150 train development and production are the fruit of a **14-month work effort** for 100 engineers and technicians, cumulating 100,000 hours of development and preparation over 14 months.

More than 600 measurement points were analyzed by the 40 technicians onboard the laboratory car.

The previous world record had been held since May 18, 1990, by the French railways, SNCF, with the "TGV Atlantique" train No. 325 which had reached a speed of 515.3 km/hr at kilometeric point 166 on the Atlantic TGV line, near Vendôme.



# Record photos

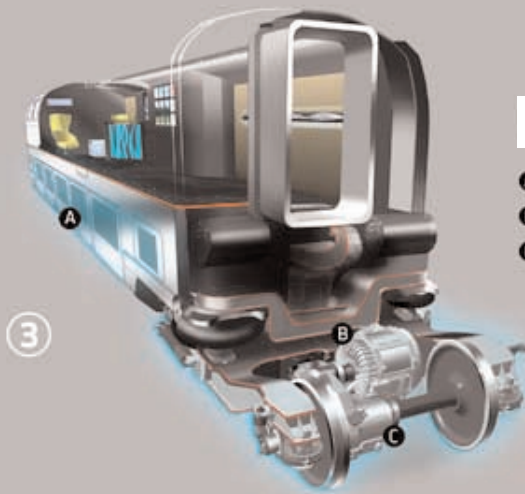
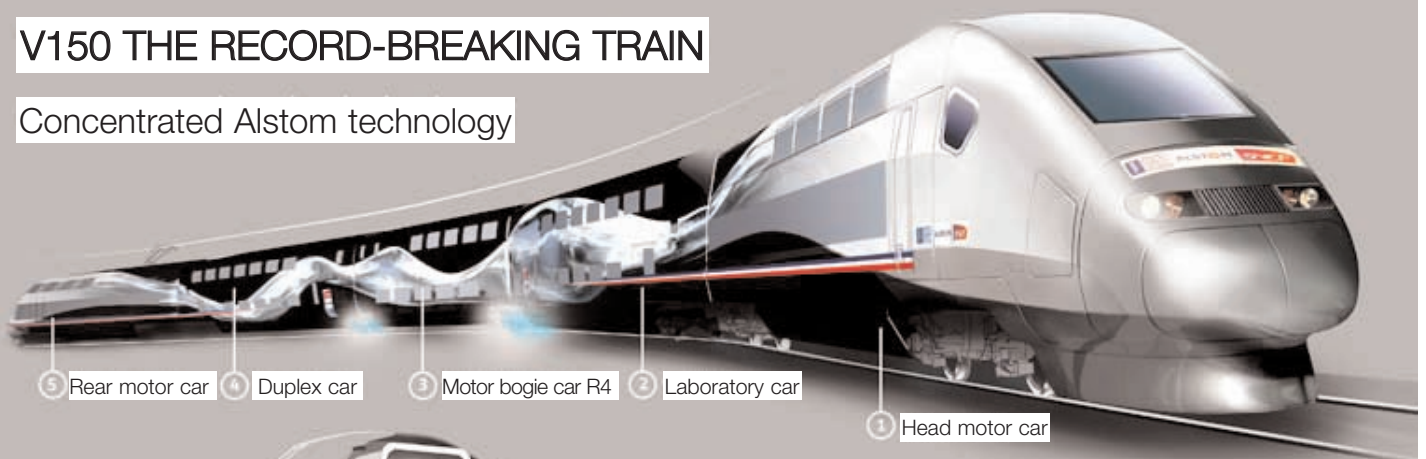




# V150 Train

## V150 THE RECORD-BREAKING TRAIN

Concentrated Alstom technology



### Alstom AGV™ Traction

- A** Power converter
- B** Synchronous permanent magnet motor
- C** Dual stage reduction gear

Total power:	19,6 MW	Train weight:	268 T
Motive power:	7,8 MW	Train length:	106 m
R4 car power:	4 MW		

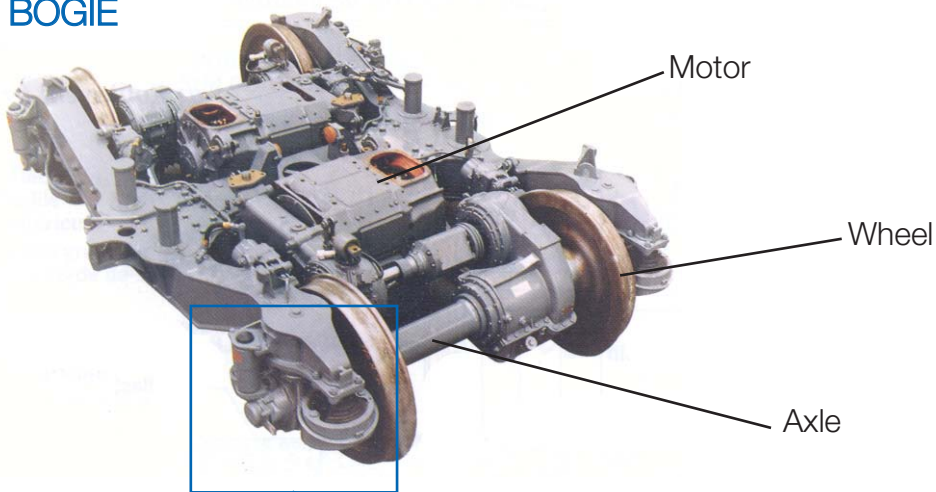


# SNR bearings

WSR train (8 bogies, 16 axes)



## BOGIE



Cartridge bearing mounted on the axle part outside the wheel, called spindle.