



Wind Tunnel, new technology for Ground Effect Simulation

With a 4 million euros investment Pininfarina is ready to enter the racing world and widen the range of services offered to the customer.

Turin, October 30, 2006. It is called **T-Belt** and it uses **three belts** in combination. It is the new **Ground Effect Simulation System**, installed in the full-scale **Automotive Wind Tunnel** of the **Pininfarina Aerodynamic Centre in Grugliasco** (Turin) inaugurated today in the presence of the Chairman and CEO Pininfarina Group, **Andrea Pininfarina**, of the Director Aerodynamic and Aeroacoustic Research Centre Pininfarina, **Antonello Cogotti**, of the Regional Councillor for Innovation, **Andrea Bairati**, and Major of Grugliasco, **Marcello Mazzù**.

The new technology requested a **4 million euros investment** and it replaces the single-belt system installed in 1995, which was the first in the world to be able to test full-scale cars by simulating the aerodynamic effects due to wheel rotation and ground relative motion.

"Pininfarina continually invests in research and innovation programmes in all the areas of activity it covers – comments **Andrea Pininfarina** – In the case of the Aerodynamic and Aeroacoustic Research Centre, innovation allows us to face new business opportunities in sectors never explored before, such as the **racing one**".

This further investment is part of the strategy followed by Pininfarina Group to **extend the range of services offered** to the car makers: the Wind Tunnel, in fact, created in 1972 and remained for a long time the sole in Italy and one of the few in the world. It is used not only for the aerodynamic and aeroacoustic tests for cars manufactured in Pininfarina's facilities, but also for external customers who do not possess technologies so sophisticated and updated. Therefore, the Wind Tunnel in Grugliasco, together with Test Track **CERAM** (Centre d'Essais et de Recherche Automobile de Mortefontaine, Paris) the **Special Projects** Division and the activities of product and interior design made by **Pininfarina Extra**, complete the range of services starting from Design arriving to the Product and Process Engineering and Niche Vehicles Manufacturing making Pininfarina Group a **full service provider**.

Pininfarina has shown itself over a number of years now to be a real industrial strength to be reckoned with. This is well and truly backed up by the five new production lines set up between the end of 2005 and 2006: the Alfa Romeo Spider, Mitsubishi Colt CZC and Ford Focus Coupé-Cabriolet – where we also dealt with the design and development, and the Volvo C70 and Alfa Romeo Brera - where we were also in charge of the engineering.

"During 2006 we have set up five new production lines – adds Andrea Pininfarina – with an economic and industrial effort unprecedented in the history of the Company. We are relieved by the number of orders that make us predict a sales success for all the models we are manufacturing: **Alfa Romeo Spider, Alfa Romeo Brera, Mitsubishi Colt CZC, Volvo C70 e Ford Focus Coupé-Cabriolet**. The strong engagement dedicated to the manufacturing activities did not divert our energies from the design and engineering sectors, as showed by the investments in research and technology, the success of the Special Projects Division and the reorganization of our presence in **Germany**.

Among the main characteristics of the new system – protected by a patent - the overall width of the upstream end of the moving ground has been increased from 1.0 m to 2.5 m, for a length of 1.5 m, by the installation of

3 belts side by side. The central belt is 6.7 m long and the two side belts are 1.5 m long, extending from the front of the central belt to the front wheels.

“In particular – explains **Antonello Cogotti** - the large width of the moving ground front end is important for front-wing and front-diffuser equipped **racing cars**, as well as for conventional cars with wheel housings. The improved simulation of the flow upstream of the front wheels improves the flow around the wheels and within the wheel-housings, and will lead to a better flow under the vehicle. It is known that the front wheels and their wheel housing are the most important source of a car aerodynamic drag and their behaviour will now be better simulated. Furthermore it improves the simulation for front brake flows and radiator/cooling-package flows”.

The **maximum velocity** of the three belts has been increased to 250 km/h (it was 200 in the old system), to reach the same maximum speed as the wind, increased itself to 250 km/h since 2005 through the installation of a **13 fans system**.

For further information: <http://arc.pininfarina.com>