

# Corus in automotive

## Working in partnership – making a difference

**With 16 per cent of our business in the automotive sector, Corus is committed to this industry. Corus combines its materials knowledge, automotive engineering expertise and manufacturing-process innovation to offer its customers unique solutions. We help customers to produce cost-effective, lighter weight, higher quality vehicles.**

Corus works in partnership with customers, offering advanced technology and hands-on help at pre-development, design engineering and production stages. This helps facilitate improvements in the design, manufacture and durability of cars, enhancing their appearance, performance and end-of-life recyclability.

### **We understand the industry challenges**

Be it changes in emissions, safety performance legislation, the contemporary needs of car designers, or pushing the boundaries of material performance, we share knowledge and respond to the challenges of our automotive customers. Our aim is to help customers get the best value from every gram of steel they buy from us.

By listening to customers, attending key European automotive forums and through focused market analysis, our specialists keep abreast of industry trends and look for opportunities to bring a new competitiveness or performance edge to automotive manufacturing through the specification and application of steel.

When Ford was looking for ways to improve the crash performance and lightness of its latest Galaxy model, Corus was ready with its High Strength Steels and the advanced automotive engineering services needed to implement them in body structures.

Just as the automotive industry was moving to eliminate hexavalent chromium commonly used in the production of adhesive coated metals, Corus was ready with Envirobond™ – an alternative adhesive coating process for metal trim parts.

When Mitsubishi wanted help to improve press-shop performance on its five-door Colt model, Corus was ready with a unique portable measurement and analysis system, PHAST™ and In-Form™, which helped NedCar to improve capability in its bodyside stamping process.



### **We listen, and we respond**

Sometimes, specific adjustments to material specifications are needed to enhance the manufacturability and performance of specialised components. Corus supports new and ongoing vehicle and product development programmes, working with customers to develop tailored specifications for their needs, and giving advice on the selection of steel fit for task.

When Xtrac approached Corus asking for gear steels with better impact resistance, machinability and carburising qualities, Corus offered to adjust the standard chemistry of its Hy-Tuf product, improving its chemical tolerances and cleanliness. The resulting XMO materials enabled Xtrac to make narrower gears that can run at higher temperatures, requiring smaller oil-coolers and thereby improving the aerodynamics of the vehicle.

When Corus was asked for steels with better machinability by Wigpool – a supplier of machined parts to motorcycle manufacturer Triumph – Corus worked with the company to select Hitenspeed 65, a material that delivered machinability improvements to a factor of three, but with no loss of strength performance.

## Making a difference



*“Our customers get value from every gram of steel they buy from us”*

### We innovate

Our customers don't just buy our metal, they buy the thinking and innovation that have gone into the development, distribution and technology needed to deploy that metal for its most effective use – 'intelligent metal'.

One example of this is the Corus-Vegter materials model, for which data is made freely available on the internet for engineers studying how to form complex 3D parts from 2D blanks. This advanced data model bridges the gap in knowledge between how traditional steels stretch as they are pressed in a press shop, and how the particular properties of Advanced High Strength Steels modify this behaviour.

Years of research and development have resulted in a model that is used directly inside the industry standard PAM-STAMP™ forming analysis software package. It is an innovation that improves the accuracy of simulated virtual prototypes. Improved confidence

in this process permits engineers to develop parts by computer simulation long before hardware prototypes are made, benefiting original equipment manufacturers (OEMs) and their Tier suppliers. The model is easy to download from the Corus automotive website.

### We make a difference

Corus realises that building long-term relationships with customers is key to our success. Our customers know that by involving Corus early in their new product development cycles, substantial savings can be made when their product eventually goes into production.



### We deliver

To make cars efficiently it is vital that supplies of parts and materials are delivered to OEMs and their Tier suppliers on time. Consistent quality, integrated supply chains and timely supply are all critical factors that need to be satisfied.

To meet these needs, Corus has its own distribution network, including numerous pre-production capabilities at service centres around the world for de-coiling and blanking sheet steel.

When BMW wanted to use extra-thick sheet steel bodysides for its new Mini Cabriolet (compensating for the lack of roof), Corus was ready with a large-bed press blanking line, capable of pressing out blanks up to the required 3mm thickness. The Wednesfield Automotive Service Centre that supplied these blanks boasts a comprehensive line-up of dedicated automotive processing facilities. A range of automotive customers, including Land Rover, benefit from the full-bodyside-capable 400 and 600-tonne blanking

lines, and a Tailor Welded Blank facility to create blanks for door and body-structure parts.

With all Corus service centres accredited to TS16949 quality standards, automotive component makers are enjoying the benefits of significant Corus investment. Corus distribution and service centres are sited throughout Europe. More recently, Corus Distribution has been responding to the gradual eastward migration of automotive manufacturing, setting up a service centre near Gyor in Hungary at the end of 2006.

### Did you know?

In the UK alone, Corus makes over 21,000 strip steel deliveries a year to automotive customers, most of it via the rail network.