

Martorell factory:
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SEAT

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1. One car every 40 seconds

The Martorell production facility, located some 30 km from Barcelona, was opened in **1993** and is one of the most modern facilities of its kind in Europe. It covers a total surface area of over **2,800.000 square metres** –the equivalent of 400 football fields– of which 260,000 are landscaped areas.

Over **7,000 people** work in its 15 buildings. Martorell is the **third largest plant** within the Volkswagen Group in the world (excluding those in China) and it is one of the most competitive, innovative and flexible plants.

Today, the **daily production** is around **2,100 cars** and the manufacturing speed is one car every 40 seconds, which are then shipped for marketing via road, sea and rail. SEAT sells its cars in more than 80 countries.



Martorell plant

The SEAT iconic models **Ibiza** and **Leon**, and the **Audi Q3**, are manufactured at the Martorell plant based on the fundamental premise of offering top-quality product capable of satisfying customer requirements. In addition, the production of the new compact crossover SEAT **Arona** will start during the second half of 2017.

Martorell is the **highest volume production plant in Spain**, the second largest manufacturer in Europe and the number eight worldwide. One out of every five cars built in Spain is made in Martorell. The factory closed 2016 with a volume of **449.063 vehicles** – 313,216 of SEAT models and 135,847 of Audi models-. Martorell is at 90% capacity and since 2009 production has gone up by 50%.



Production of the new Ibiza

2. State-of-the-art technology

The production process begins at the **presses** where body parts are stamped – those presses are located within a soundproofed area to as to prevent **noise pollution**. The area has three lines where parts are transported automatically to shape all the car's bodywork elements.

At the second stage, the **bodywork shops** take pride of place. They are the most highly automated part of the factory, and within them more than two thousand **robots** make almost 100% of the bodywork's spot-welds. Ultrasound-controlled laser welding is used in some areas so as to guarantee pinpoint precision in the finishes.



New MQB A0 platform

The **painting** process is carried in two different workshops, which are built and equipped bearing in mind the most environmentally friendly technology. Once painted, the bodywork is transferred to the assembly workshop, where the **interior parts** are fitted.

The introduction of innovations in the production processes, the broadening of personnel training and the use of state-of-the-art technology have enabled modernisation of the facility, whose assembly lines offer great **production versatility**.

In the last years, the Martorell factory has implemented the most **advanced technologies** for digitally simulating the vehicle production process and almost all tasks are automated. For example, **virtual tools** – enabling visualisation of the processes before implementation – are used in order to improve efficiency in the introduction of new processes.



Innovation - AGV



Innovation - robot

The introduction of the **transversal modular platform MQB A0** in Martorell –the first factory of the Volkswagen Group to use this platform– makes the factory a well-designed workplace that provides optimum conditions to their workers. This technology provides greater flexibility by allowing different models to be manufactured with different body types on the same platform.

3. Efficiency & Sustainability & Quality

In order to permanently improve quality and productivity in the manufacturing process the company is carrying out the **PQT strategy** (Production, Quality and Team). In this framework, SEAT has implemented measures to reduce the use of energy resources, increase the levels of quality and improve productivity.

The efforts made by SEAT to increase the efficiency of its production processes are clearly visible by indicators such as manufacturing **cost per vehicle** or the number of **vehicles produced per worker**.

The environment is a key pillar of SEAT corporate social responsibility in which significant steps were taken. SEAT has managed to **reduce energy** consumption by 23.2% and **water consumption** by 24.5% in its production processes over the last five years.

Both indicators are part of the **ECOMOTIVE Factory strategy**, which was launched in 2011, aimed at optimising resources and making the company's plants increasingly more efficient and sustainable. Its goal is to reduce the main environmental performance indicators and the **consumption of resources per vehicle** produced by 25% in the period 2010-2018.



New SEAT Ibiza

The Martorell production factory uses the most stringent quality assurance and sustainability criteria in the vehicle manufacturing process.

In recent years the **SEAT al Sol** ("SEAT of the sun") project has transformed the Martorell facility into the largest **photovoltaic panel** plant anywhere in the automotive industry world with 276,000 m². The 53,000 solar panels on the rooftops of the workshops and the temporary vehicle holding areas generate around 15 million kWh per year, supposing the elimination of 7,000 tonnes of CO₂ annually.

The factory also has a combined **heat & power plant**, generating 50% of the electricity and 90% of the thermal energy it consumes, thus eliminating as much as 12,800 tonnes of CO₂ per year. The Martorell facility is also equipped with two other emission-reducing systems.



SEAT al Sol



New lighting

On one hand, it has **two rail** links totalling **40 kilometres** in length – the “Autometro”, transporting cars directly to the Harbour of Barcelona; and the “Cargometro”, bringing components directly from Barcelona’s *Zona Franca*. Taken together, these rail links take some 50,000 vehicles trips off the road and eliminate the emission of 2,000 tonnes of CO₂ per year.

On the other hand, in December 2016 SEAT partnered with Philips Lighting to light up the Martorell plant in the most eco-friendly manner. This **new lighting** allows the factory to obtain an **energy saving of 80%**, corresponding to more than 900 MWh per year.

4. The road to manufacturing 4.0

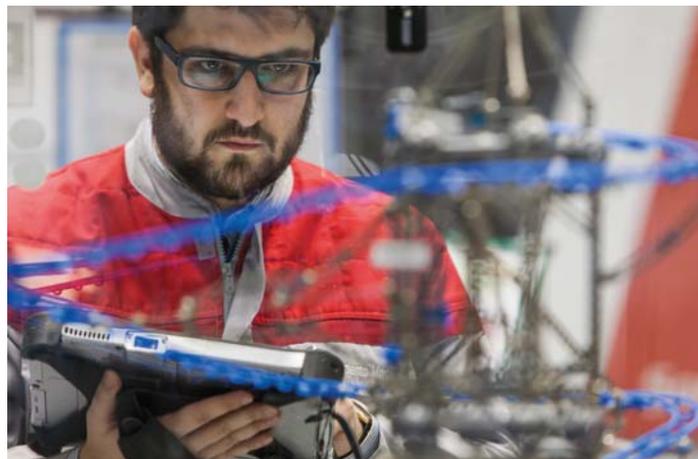
SEAT has grown and evolved to the point of fully entering Industry 4.0, the “smart factory”, a concept that above all implies a technological push by its manufacturing plants. The road to manufacturing 4.0 includes the development of the most advanced technology with the goal to carry out more projects in less time.

SEAT is working to create a **smart, digitalised and coordinated factory** that will be able to adapt to production needs and processes, and that will manage resources and communication between the different areas of the company more effectively.

In this new reality, each workspace opens the doors to a new world: **cyber-physical systems, exoskeleton, 3D printing, algorithms** that identify any kind of error in the process, smart logistical systems, **smart glasses** that offer virtual assistance, among others. And in this technological environment the role of robots is essential. In Martorell, just over every 30 seconds, more than two thousand perfectly synchronised **robots** are in constant motion working in a new car.



An exemple of Cobot



Maintenance 4.0



Exoskeleton

5. An awarded plant

SEAT received **The Lean & Green Management Award** in 2015, the certification that recognises the Martorell plant as the most efficient factory of the automotive industry in Europe.

SEAT is the first company in the automotive sector in Spain with **ISO 14006 ecodesign environmental certification** and in receiving **“Healthy Company” AENOR’s certificate**. The first certification recognizes companies that have incorporated environmental improvements in the design of their products throughout their entire lifecycle, beyond manufacturing. The second one guarantees SEAT’s management system implementation to foster and to protect health, safety and well being of its employees.

Furthermore, Martorell was rewarded with the **Factory of the Year award**, one of the most prestigious industrial and international competitions. It rewards the factories of any sector that stand out for their productivity, quality, innovation, digitalization, and economic sustainability, among other aspects. The efficiency and sustainability of the processes has been one of the aspects that has been worth to the company a special mention to the quality

6. Did you know that...?

/ The surface area of Martorell is equivalent to 400 football fields and has a larger area than the Principality of Monaco.

/ Over 7.000 employees work at the Martorell plant.

/ The factory counts with over 2,400 robots.

/ One out of every five cars manufactured in Spain is made in Martorell.

/ Martorell is the first factory of Volkswagen Group with the transversal modular platform MQB A0.

/ The Lean & Green Management Award received by SEAT recognises the Martorell plant as the most efficient factory of the automotive industry in Europe.

/ The ECOMOTIVE Factory strategy aimed at optimising resources and making the SEAT's plants increasingly more efficient and sustainable.

/ The Martorell facility is the largest photovoltaic panel plant anywhere in the automotive industry world ("SEAT al Sol").

/ Martorell was rewarded with the Factory of the Year award 2016.