

\*Innovation and Quality for the International Automotive Industry



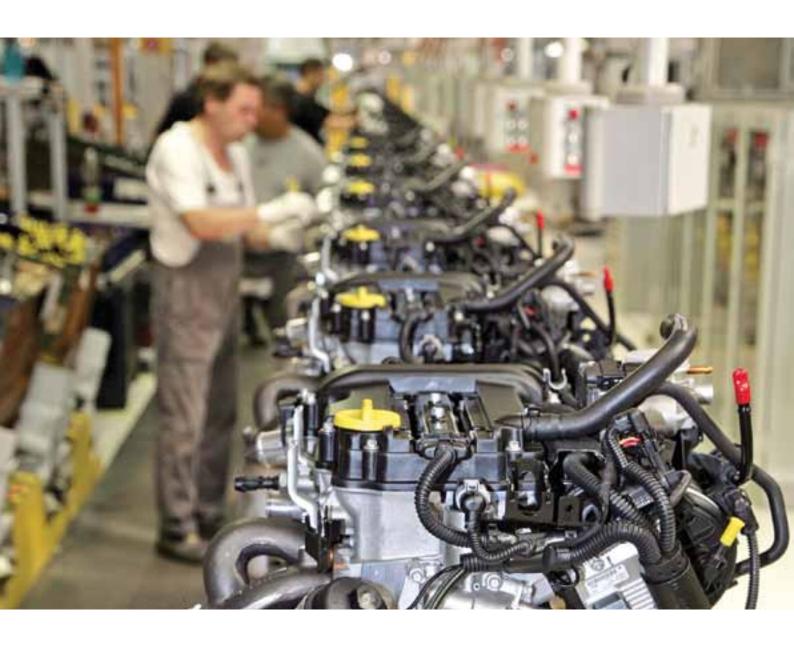


Austria's central location in the heart of Europe makes it the ideal East-West business hub.

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Engine production at General Motors Powertrain-Austria. The automobile producer General Motors has put its faith in its Austrian facility since 1982. At that time the first Opel plant opened in Vienna-Aspern.

### The Automotive Powerhouse

Front wheel drive, the first Porsche off the assembly line or the electric car of the future: Austria's automotive industry stands for quality and inspirational ideas.



Austria not only sets the tone when it comes to classical music. Since its beginnings more than 100 years ago, the country has emerged as a driving force behind Europe's automotive industry. Today it is a business location with a future.

**A promising industry.** Numerous global automobile manufacturers and component suppliers such as Magna, Miba or MAN Nutzfahrzeuge produce vehicles or components and develop innovations in Austria. The business location Austria is highly sought after internationally: For example, General Motors invested approx. EUR 200 million alone in its Vienna-Aspern engine plant during the period 2008-2010.

The automotive industry is one of the top five industrial sectors in Austria. More than 700 companies with an estimated 150,000 to 200,000 employees generate annual revenues of about EUR 21.5 billion. Together with related industries and services, the automotive industry secures employment for some 370,000 people, or close to every 8th job in Austria.

The number of engines, transmissions and motor vehicles rolling off the assembly lines each year is also quite impressive. A total of 1.8 million engines and transmissions and close to 290,000 high-quality motor vehicles on two or four wheels are produced in Austria annually. Automobiles and components made in Austria are particularly in demand around the world: the export ratio is about 90 percent.

#### **Excellent Logistics Infrastructure**

10= Logistics infrastructure for goods and services is efficient

Austria	9.31
Singapore	9.15
Switzerland	9.07
Germany	9.02
France	8.87
Japan	8.65
USA	8.60
Netherlands	8.52
<b>Great Britain</b>	8.31
Czech Republic	8.25
Norway	7.45
Hungary	6.84
Poland	6.65
Italy	5.40

#### Output per Man-Hour in Manufacturing Industry

GDP per person employed

Norway	1	62.09				
Luxembourg	2	57.78				
USA	3	53.25				
France	4	50.83				
Netherlands	5	50.17				
Austria	8	44.67				
Italy	10	43.13				
United Kindom	14	57.78 53.25 50.83 50.17 <b>44.67</b>				
Germany	3 53.25 4 50.83 5 50.17 8 44.67 10 43.13 14 40.56 18 38.54 20 37.89 25 33.00 31 25.78 32 25.33					
Switzerland	20	5 50.17  8 44.67  0 43.13  4 40.56  8 38.54  0 37.89  5 33.00  1 25.78  2 25.33				
Japan	25	33.00				
Hungary	31	25.78				
Czech Republic	32	25.33				
Poland	35	22.06				



**Good reasons in favor of Austria.** The central geographical location and the excellent logistics infrastructure are major competitive advantages for investors. Some ten automobile production plants are located in a radius of 300 km from Vienna. More than 1,000 international companies, including BMW, Magna and Volvo, coordinate their business operations in the dynamic markets of Eastern and South East Europe from an Austrian base. In contrast, an increasing number of investors from CEE are taking advantage of Austria as the springboard to the European Union.

International manufacturers and component suppliers value the high productivity as well as the well educated and motivated work force. The economic and political situation is stable, and the public administration is transparent. Moreover, companies know exactly where they stand with respect to taxes: the corporate income tax of 25 percent is moderate and the Group taxation system is attractive for holdings.

**The green car of the future.** According to recent studies, a total of 200,000 electric cars powered by green electricity could be operating on Austria's roads by the year 2020. Top-notch firms in the energy sector as well as industrial companies and research institutions are pursuing a common goal within the framework of the Austrian Mobile Power platform, i.e. to lead Austria into the age of electromobility. Accordingly, the partners want to invest EUR 50 million by 2020.

It's not without reason that many people are pinning their hopes on electromobility. It is an efficient, environmentally-friendly and economical means of private transport – even more so when electricity is supplied by renewable energy sources. The next planned step is the setting up of a Mobile Power Region. The use of 200,000 electric powered vehicles could reduce waste gas emissions by half a million tons of CO<sub>2</sub> and help save 140 million liters of crude oil annually in the future.

→ www.austrian-mobile-power.at



The Schaeffler Group is a global leader for precision products. Top quality rolling bearings have been manufactured in Berndorf, Lower Austria for more than 50 years.



# The Way Innovations Get into Cars

Innovations don't simply occur by coincidence. They require specialized knowledge, a networked infrastructure and funding. These are all factors given top priority in Austria.

The competitive edge and technology leadership of Austria in many sectors are based on a common strength: groundbreaking ideas. They are essential for the quality of the products and services offered.

**East-West business interface.** With its central geographical location, Austria has long served as a transnational knowledge base. Many top qualified managers as well as specialized staff from countries such as Hungary or the Czech Republic also contribute their know-how to companies. Numerous students from the CEE region are attending Austrian universities.

The Professional MBA Automotive Industry jointly offered by the Vienna University of Technology and the University of Technology in Bratislava is unique in Europe. This post graduate program developed by the Mobility Cluster of the Vienna Business Agency (the former Automotive Cluster Vienna Region) for specialists in the automotive sector exploits the existing expertise in the region to promote knowledge transfer.

**Exemplary professional training and continuing education.** Employees receive an outstanding education, are particularly motivated to deliver top performance and willingly undertake further training to gain additional qualifications. This is made possible by Austria's extremely practice-oriented educational system. At present, a total of 1,400 young people are completing traineeships in the automotive industry, and many will conclude their studies with the general qualification for university entrance.

Various educational institutions offer study courses and instruction focusing on the automotive sector, for example, the universities of technology in Vienna and Graz, the University of Linz with its Center of Mechatronics or Montana University Leoben. Universities of applied sciences such as the FH (= University of Applied Sciences) JOANNEUM in Graz, FH Wiener Neustadt or FH Upper Austria offer a practice-oriented education of the highest quality.

**Funding for research-based companies.** Austria is in the European vanguard with respect to innovation. According to the EU's Innovation Scorecard, the country is ranked seventh. Austria has posted the most dynamic growth throughout the European Union when it comes to R&D expenditures, which have risen by about 8 percent annually. Investments in research and development have doubled since 1999. In 2010 2.76 percent of the gross domestic product were devoted to R&D.

Magna E-Car-Systems operates a competence center for electromobility in Graz together with Energie Steiermark und Graz AG. Infineon and AVL LIST rank among the top 10 research champions in Austria, with an R&D share of 22 and 13 percent respectively. Like many other companies, they benefit from initiatives designed to promote research and development. Public authorities offer tax advantages to companies and promote the cooperation between the business and scientific communities in many different ways.

**New Austrian technologies for the world.** The domestic automotive industry has been traditionally strong in the fields of engineering and plant automation. Austrian companies are also in the forefront of new developments and applications. Focal points include electromobility, alternative drive systems and storage technologies.

The platform Austrian Mobile Power forces electric powered vehicles on Austria's roads. Since 2010 the showcase project EmporA (Electric Mobile Power Austria) has been resolutely moving ahead with the further development of a complete system for electromobility in Austria. Leading industrial companies as well as prominent research partners are participating in the project.

The energy cells developed by Fronius have attracted international attention. They convert surplus electricity to hydrogen, store it and then convert it back to utilizable energy when needed. The company PLANSEE in Tyrol develops components for fuel cells. Various research projects are focusing on the development of second generation biofuels derived from raw materials such as green waste, straw or wood.



#### Education/Training:

FH Joanneum

→ www.fh-joanneum.at

FH Wiener Neustadt → www.fhwn.ac.at

FH Upper Austria

→ www.fh-ooe.at/fe/forschung/

Montana University Leoben
→ www.unileoben.ac.at

Graz University of Technology

→ www.tugraz.at

Vienna University of Technology

→ www.tuwien.ac.at

University of Linz

→ www.mechatronik.jku.at

MBA Automotive Industry

→ automotive.tuwien.ac.at

#### Research promotion

Austria Wirtschaftsservice (AWS) → www.awsg.at

Austrian Research Promotion Agency (FFG)
→ www.ffg.at

Austrian Science Fund (FWF)

→ www.fwf.ac.at



HYCAR1 is the first hydrogenpowered vehicle in Austria, and is licensed for road use.

#### The first hydrogen car in Austria

HycentA (Hydrogen Center Austria) is THE main point of contact for Austrian research focusing on the use of hydrogen. Equipped with Austria's first hydrogen filling station and a testing center, the employees only have one goal in mind, namely to harness the power of hydrogen as an energy source for a wide range of uses.

The required hydrogen is produced locally based on the electrolysis of water by electricity, naturally from hydroelectric power plants. HyCentA is credited for developing the first hydrogen-powered motor vehicle in Austria. The HYCAR1 is even licensed to operate on the country's roads following an expertise prepared by TÜV Austria. The combustion motor operates with gasoline, hydrogen or natural gas as well as a mixture of natural gas and hydrogen.

→ www.hycenta.tugraz.at



Driven by wind power: Infineon's semi-conductors get electric and hybrid cars up and running

#### Recharging from an electric outlet at any time

Infineon, the world market leader for microchips used in the automotive industry, is involved in the platform Austrian Mobile Power together with 19 other partners. The aim is to move ahead with the rapid development of e-mobility in Austria. The concept "Charge everywhere" functions without the necessity of relying on conventional electric vehicle charging stations. The vehicles are charged using high voltage current from electric outlets – at home, in a person's garage, in the office or while shopping in a supermarket.

Semiconductors are essential, particularly for electric vehicles. They convert electrical energy, distribute it to the engine and auxiliary power units and optimize the charging and discharging of the battery. Microchips are also used for the powertrain and safety of cars and in calculating electricity consumption.

→ www.infineon.com

# AVL: On the Research-Based Path to Success

AVL List ranks among the most research-intensive companies in Austria. Each year, 12 percent of revenues are devoted to its own research efforts.

The company is one of the innovation champions in Austria. Josef Affenzeller, who serves as Director of National and International Research, discusses prerequisites and plans for the future.

## Which prerequisites has AVL fulfilled for years now in order to be among the innovation leaders?

The corporate culture at AVL enables us to deal with future issues relating to our R&D work. Our goal is to be the innovation partner for manufacturing industry. This also explains our high number of patents. At the same time we also pay considerable attention to the quality of our employees as well as ensuring a good mix of know-how and skills. And we are continually motivating them to look beyond their own professional horizons.

#### What role is being played by information technology?

One focal point is the development of software and information tools. This also includes testing systems, in which we test drive systems or individual components quasi in real-time operation. In this way, for example, we realistically simulate road conditions. Or else we test individual components and virtually complement the required environment. This program is based on highly complex software solutions. The CD laboratory in Salzburg is working on future solutions for these systems.

#### And what is new in the field of electric vehicles?

For example, we are also active in the field of battery research and development and in the complex control of systems, and are already supplying testing systems. The AVL Range Extender is a generator which produces electricity when required and thus extends the range of electric vehicles. Thus it is possible to design components to be smaller and reduce costs. This is an important step in the acceptance of electrified vehicles.

#### AVL

AVL is the world's largest independent company for the development, simulation and testing technology of powertrains for passenger cars, trucks and large engines. A total of 4,300 people are employed at the Styrian firm's 45 subsidiaries worldwide, 1,920 of whom work at AVL LIST headquarters in Graz. The export ratio is 96 percent.



Josef Affenzeller, Director of National and International Research at AVL LIST

 $\rightarrow$  www.avl.com



## through Knowledge

A Competitive Edge

Strategic partnerships make it possible: companies and research facilities jointly develop innovations, exploit synergies and save costs.

#### Automotive cluster and competence centers

Austrian Agency for Alternative
Propulsion Systems
→ www.a3ps.at

Automobile Cluster Upper Austria

→ www.automobile-cluster.at

ACstyria
→ www.acstyria.at

austrian automotive association

→ www.aaa.co.at

KAI → www.k-ai.at

Austrian Society of Automotive Engineers → www.övk.at

Virtual Vehicle Competence Center

→ www.vif.tugraz.at

The business and research communities are closely linked in Austria. Component suppliers, motor vehicle manufacturers, service providers and research institutions work together in clusters and competence centers on future technologies, exploit innovations and mutually profit from the know-how at their disposal.

**Austria as a land of clusters.** The three most important automotive clusters located in Upper Austria, Styria and the Vienna Region promote strategic partnerships and support new developments. The Automobile Cluster Upper Austria is the largest cluster with 215 members. One current cooperation project is the e-mobility platform "Clean Motion Upper Austria", in which 32 component suppliers are preparing for the series production of electric vehicles.

The cluster in Styria, the region with the highest innovative strength in Austria, encompasses 180 partner companies. ACstyria offers them a platform for cooperation and further education initiatives, organizing the annual business meeting Autocontact in Leibnitz. The Mobility Cluster of the Vienna Business Agency links about 120 suppliers and contractors in the regions surrounding Vienna and Bratislava, promotes knowledge transfer with neighboring countries and runs the Automotive Academy Vienna.

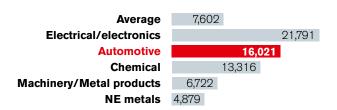
**Competence centers promote developments.** More than 1,500 employees form business and research jointly work on projects at the competence centers supported by the initiative "COMET – Competence Center for Excellent Technologies". One example is the research program "K2 MOBILITY – Sustainable Vehicle Technologies". Manufacturers such as Audi, BMW and Daimler are developing a system for a complete vehicle of the future in cooperation with research partners.

In the project "AdvAluE – Advanced Aluminum Application within ECO Transport," the Light Metals Competence Center Ranshofen is working with MAGNA STEYR, Georg Fischer and other companies as well as research institutions on light metal materials for motor vehicle construction. Another example is the "KAI Competence Center for Automobile and Industrial Electronics" located in Villach, at which Infineon and Kristl, Seibt & Co develop electronic components for motor vehicles together with research partners.

**Research keeps things running.** The automobile industry researches, develops and continually invests in new products. AVL LIST in Graz is an internationally recognized research and development center for combustion engines. The semiconductor manufacturers Infineon and austriamicrosystems rank among the most research-intensive companies in Austria. MAGNA STEYR Graz is the largest development center worldwide for the industrial group. The Frank Stronach Institute at the Graz University of Technology comprises four departments, including Automotive Engineering and Vehicle Safety.

Universities as well as non-university research facilities work closely together with industry. In addition to the universities of technology located in Vienna and Graz, many research institutes carry out top-of-the-line research by international standards. The Austrian Institute of Technology (AIT) is the largest non-university research institution in Austria with its more than 900 employees. The focus of the innovation and technology supplier JOANNEUM RESEARCH is applied research and technology development.

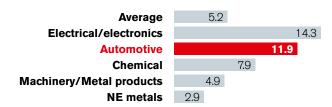
**Top 5 – Industrial research** R&D expenditures per employee in EUR



Source: Austrian Automotive Association, 2010

## Share of researchers in relation to industrial employees

in %



Source: Statistics Austria, 2007



#### Research institutions

ΑIT

→ www ait ac at

Carinthian Tech Research

→ www.ctr.at

Christian Doppler Research Association

→ www.cdg.ac.at

Joanneum Graz

→ www.joanneum.at

Linz Center of Mechatronics
→ www.lcm.at

Graz University of Technology

→ www.tugraz.at

Vienna University of Technology

→ www.tuwien.ac.at

VRVis Research Centger for Virtual Reality and Visualization

→ www.vrvis.at

#### **Events**

Automobile Forum Graz

→ www.automobilforum-graz.de

Automotive, Linz

→ www.automobil-cluster.at

Autocontact, Leibnitz

→ www.autocontact.at

Automotive Academy Vienna

→ www.aavr.at

International Vienna Motor Symposium

→ www.oevk.at



Karl Pansy, CEO ACstyria

# The Cluster: A Success Model with a Future

The federal province of Styria boasts a research ratio of 4.3 percent, the highest in Austria. ACstyria and its innovations account for a big share of this.

Members of ACstyria include showcase companies such as AVL LIST, MAGNA STEYR, Infineon, AT&S and austriamicrosystems. ACstyria Managing Director Karl Pansy explains the advantages clusters offer to its members.

#### What advantages do clusters offer their members?

A cluster is a network, which optimally links business, industry, research and public institutions. We serve as an information interface and central contact point for our partners, as well as the driving force behind innovative developments. Our daily impetus is networking and bundling the existing know-how.

#### How do you support companies in their search to develop something new?

The automotive industry is an extremely technology-driven and research-intensive sector. High demands are imposed with respect to quality and innovation. In order to press ahead with products and technologies with a promising future, we initiate and support the cooperation of member companies among themselves. Moreover, Styria is a hotbed of development: five universities, two universities of applied sciences and three K2 competence centers all bundle an enormous amount of specialized know-how.

#### What do you expect in the future?

We want our companies to be "fit for the future" – and thus further strengthen Styria as a business location. We attach particular importance to increasing competitiveness, taking advantage of market opportunities and promoting innovative strength. For example, this involves our annual "Future Conference" as well as the Automotive Academy Styria, a comprehensive educational facility in the automotive sector.

#### **Automotive cluster ACstyria**

ACstyria is a network of 190 partner companies in Styria's automotive industry, which employs over 40,000 people. Established in 1995, it is the oldest automobile cluster in Austria.

→ www.acstyria.com





# High-Tech Suppliers with Savvy

New ideas are the engine of growth for the automotive industry. Austria's component suppliers are playing in the global premier league of innovation and quality.

From motor screws to sport seats: there is hardly a single car in the world which can leave the assembly lines without the products supplied by Austria's supplier companies. They deserve to be on the winner's platform when it comes to innovation, quality and on-time delivery.

**Full speed ahead.** The automotive component supplier sector is one of the top industries in Austria. It is growing at a rate of 8 percent annually, more dynamically than the economy as a whole and even faster than the production of physical goods. The export ratio of the sector is about 90 percent. More than 650 suppliers which work exclusively or partially for the automobile industry generate about EUR 16.5 billion in revenues each year.

Responsibility for production and development is growing, competitive pressure is intensifying and innovations are required in increasingly shorter intervals. The Austrian supplier industry is holding its ground on the basis of product ideas, know-how and the highest quality standards. Motor vehicle manufacturers highly value the flexible approach, cooperation in product development and the broad-based product and service offering.

**Big players and specialists.** International investors as well as motor vehicle manufacturers will find prominent component suppliers operating in Austria, such as the automotive division of the steel company voestalpine, Magna, Miba and AVL. This group also includes the semiconductor producer Infineon along with Eybl International as a specialist for car seats. Companies such as BRP Rotax featuring engines for recreational vehicles have specialized in niche markets.

In addition, there are many specialty companies which stand out due to their innovations, from LED headlights to fuel cells. Numerous component suppliers profit from their geographical proximity to the booming manufacturing facilities in the CEE region. Some 5 percent of the world's motor vehicle production is already located in the expanded CENTROPE region containing the Vienna Region, Slovakia, Czech Republic, Hungary, Romania and Poland—the "Detroit of the East".

→ wko.at/autozulieferer

#### **Chassis**

e.g. axles, brakes, springs, steering, suspensions, wheels, shock absorbers etc.

AL-KO Fahrzeugtechnik

**BORBET** Austria

Georg Fischer Automotive

Hammer Aluminium Industries

Hirtenberger Automotive Safety

Johann Klinger Federn und Metallwaren

Magna E-Car-Systems

MAGNA STEYR

Miba

Pankl Racing Systems

Präzisionsfedernfabrik Nowak & Tobisch

SAG (Salzburger Aluminium AG)

Styria Federn

**VENTREX** Automotive

ZF

#### **Transmissions and engines**

e.g. exhausts, gear boxes, engines, catalytic convertors, fuel etc.

**AVL LIST** 

BMW Motoren

Collini

Delphi Automotive Systems Vienna

ELB Forn

General Motors Powertrain-Austria

Georg Fischer Automotive

Hirtenberger

Karl Fink

Knorr-Bremse

MAGNA E-Car Systems

MAGNA Powertrain

MAGNA Steyr Fahrzeugtechnik

MAHLE Aftermarket

MARK Metallwarenfabrik

Miba

Nemak Linz

Neuman Aluminium

Pankl Racing Systems

Präzisionsfedernfabrik Nowak & Tobisch

**REMUS** 

Robert Bosch

RTA (ROTH-TECHNIK AUSTRIA)

Rupert Fertinger

SAG (Salzburger Aluminium AG)

Schaeffler Austria

SEBRING Technology

TCG UNITECH

WP Radiator

Zoerkler Gears

Cars made in Austria

Many suppliers are involved in the production and the equipment of a car. This page shows a selection.



#### Car bodies

e.g. external mirrors, sheet metal, varnishes, surface technologies, pressed parts, doors etc.

Austria Metall

BENDA-LUTZ WERKE

Carbo Tech Industries

DuPont CoatingSolutions

Hammer Aluminium Industries

MAGNA STEYR Fahrzeugtechnik

Pollmann Austria

POLYTEC GROUP REHAU

SAG (Salzburger Aluminium AG)

Thöni Industriebetriebe

voestalpine

Welser Profile Austria

#### **Electrics and electronics**

e.g. acoustics, lighting, cables, wires, automatic controllers, locking devices, safety electronics etc.

**AKG Acoustics** 

Aspöck Systems

austriamicrosystems

Banner

**BECOM Electronics** 

Carcoustics

Delphi Packard Austria

Gebauer & Griller Kabelwerke

Hirschmann Automotive

I&T

Infineon Technologies

iSi Automotive

Kromberg & Schubert Austria

MAGNA E-Car Systems

TTTech Computertechnik

VDO (Continental Automotive Trading)

ZIZALA Lichtsysteme

#### Interiors

e.g. fittings, handles, interior mirrors, mats, seat belts, seats textiles, interior linings etc.

AKG Acoustics

BOXMARK Leather

Eybl Austria

Fasching Salzburg

Greiner Perfoam

HTI High Tech IndustriesIntier

iSi Automotive

Johnson Controls Austria

L&P Automotive Europe

Magna international

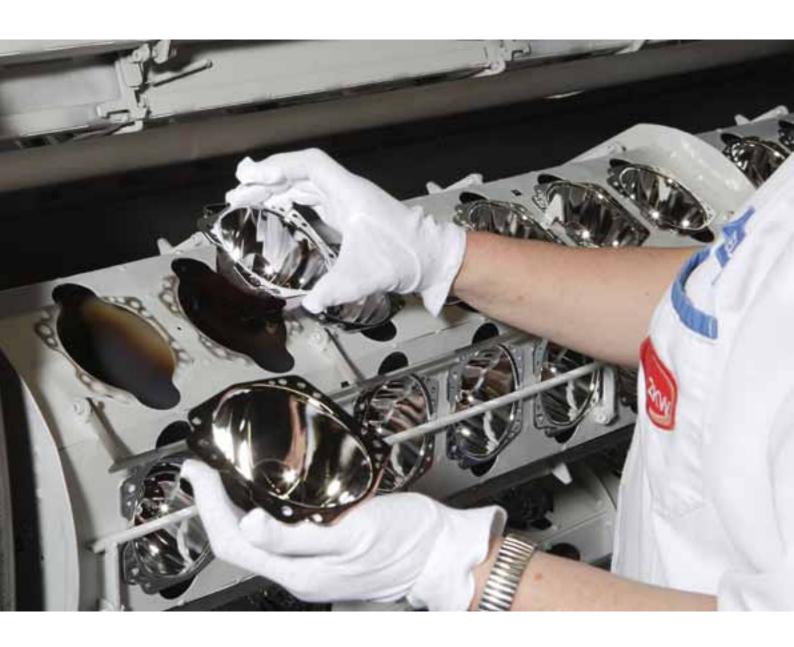
MAGNA STEYR Fahrzeugtechnik

POLYTEC GROUP

Schukra

Senoplast Klepsch & Co

Wollsdorf Leder Schmidt & Co





"The Austrian automotive components supplier industry is defined by its various strengths: a high degree of reliability, the efficient management of complex problems and the willingness to cooperate in highly technical fields."

#### Headlights of the future

The adaptive curve lighting exclusively produced by the Lower Austrian producer of lighting systems ZIZALA Lichtsysteme for the BMW K1600 is unique in the world. The headlights follow every movement of the vehicle, whether braking, accelerating or negotiating curves. As a result, the light/dark cut-off of the light beams from the headlamps always remains straight on the road. This enhances safety for bikers.

As part of the ZKW Group, this specialist offers the entire spectrum of processes involved in headlight production, from development and injection molding to delivery. The innovative LED front headlight modules have already entered series production. They are particular long-lasting, energy-efficient and light, feature an attractive appearance and do not have to be serviced in contrast to conventional lights.





The ZIZALA headlight production is subject to strict testing.

#### Patented measuring machines

The improvement of industrial automation is the objective pursued by the Grazbased company M&R Automation. A patented process enables customers to simply measure the circumferential backlash of aggregates, improve assembly quality and reduce costs. Based on its dynamic measuring machines, M&R Automation is the global market and technology leader in this field.

The company offers assembly and production machinery including all testing and measurement installations from a single provider. M&R customers around the world comprise all areas of the automotive supply industry. The comprehensive engineering ensures process reliability and traceability – from the individual work stations to the entire plant.





The dynamic measuring machine from M&R: a quality leap in engineering.



Peter Mitterbauer, CEO Miba Group

## Miba Group: Progress from Passion

The Miba Group started as a family business and is now one of the driving forces behind Austria's component supplier industry

The Austrian facilities comprise the competence centers for research and development in the Miba Group. Miba CEO Peter Mitterbauer explains which prerequisites are essential for international success.

## What are the advantages of the Austrian business location for the component supplier industry?

The opportunities open to the domestic automotive industry are clearly related to its technological competence. A sound education is extremely important. Austrian engineers already start their careers at a very high level. In addition, the corporate culture also has to fit. What counts is promoting professional development and continuing education and enabling the development of something which is new, novel and innovative – combined with an entrepreneurial spirit and a passion for success.

## What demands are being placed on suppliers by the international automobile industry?

Time is increasingly emerging as a decisive competitive factor. Automobile producers can only be faster and closer to their customers if suppliers succeed in considerably shortening product development cycles. The life cycle of vehicle models has been drastically reduced. This also imposes high demands on component suppliers.

#### What is the role played by development and innovation?

Every day some 150 employees at Miba develop components for more efficient and alternative drive systems. We protect the results of this work through patent applications. At present we have about 150 patents. But doing everything alone simply does not work. For this reason we have been cooperating with partners in our research activities for a long time. Our networks and intensive contacts to top notch institutions in Austria's research landscape make it possible to shape the future.

#### Miba Group

MIBA employs a staff of approximately 3,000 employees at 16 production sites worldwide. The automobile industry accounts for about 40 percent of Group revenues. Recently the company took a first step into the field of power electronic components on the basis of acquisitions. At the same time it is also actively investing in the energy sector.



Aston Martin Fiat		Ford	Ford		PSA Peugeot				
Graz*	Α	Graz	А	Genk	В	Graz	Α	Brussells	В
		Hordain	F	Gent	В	Kolin	CZ	Sarajewo	BIH
BMW		Esztergom	Н	Cologne	D	Aulnay-sous-B	ois F	Mlada Boleslav	√ CZ
Graz*	Α	Cassino		Saarlouis	D	Hordain	F	Kvasiny	CZ
Dingolfing	D	(Frosinone)	1	Tychy*	PL	Mulhouse	F	Vrchlabi	CZ
Leipzig	D	Maranello	- 1			Poissy	F	Dresden	D
Munich	D	Melfi (Potenza)	- 1	General Mot	ors	Rennes	F	Emden	D
Regensburg	D	Mirafiori (Turin)	- 1	Antwerp	В	Sochaux	F	Ingolstadt	D
		Modena	- 1	Bochum	D	Born*	NL	Leipzig	D
Daimler		Pomigliano d'Arc	со	Eisenach	D	Trnava	SK	Mosel	D
Graz*	Α	(Naples)	I	Russelsheim	D			Neckarsulm	D
Bremen	D	San Giorgio		Esztergom	Н	Renault		Osnabrück	D
Dusseldorf	D	Canavese*	l	Gliwice	PL	Dieppe	F	Wolfsburg	D
Ludwigsfelde	D	Suzzara	ı	Warsaw*	PL	Douai	F	Zuffenhausen	D
Rastatt	D	Termini Imerese		Kragujevac*	RS	Flins	F	Zwickau	D
Sindelfingen	D	(Palermo)	-)	0,		Sandouville	F	Molsheim	F
Ulm	D	Grugliasco (Turir		Hyundai Kia		Novo Mesto	SL	Gyor	Н
Untertürkheim		Bielsko-Biala	PL	Nosovice	CZ			Sant' Agata	
(Stuttgart)	D	Tychy*	PL	Zilina	SK	Suzuki		Bolognese	I
Hambach	F	Kragujevac	RS			Esztergom	Н	Bratislava	SK
Kecskemet	Н			KTM		Ü			
		Mattighofen	Α	Toyota					
			Mitsubishi		Kolin	CZ	*Not owned/operated		
					Onnaing		Manufacturer		
			Born *	NL	(Valenciennes)	F			



## Non-Stop Production

Engines, transmissions, cars: the know-how and technology of the vehicle manufacturers in Austria are in demand throughout the world.

Austria is especially well-known and esteemed as a country of component suppliers. But the number of two-wheel and four-wheel motor vehicles rolling off the assembly lines is also increasing following the end of the economic crisis.

**Engines, transmissions and motor vehicles.** Austria's car producers ensure that the vehicles operate to begin with. Austria ranks as one of the countries with the highest density of engines produced per capita. A total of 1.8 million engines and transmissions are manufactured here each year. BMW Motoren in Steyr is the largest engine factory in the BMW Group. And every second Opel worldwide runs on a transmission produced by General Motors Powertrain-Austria.

73,000 passenger cars, trucks and buses, 27,000 tractors and trailers as well as 52,000 motorcycles are produced annually in Austria. About 90 percent of the vehicles are exported. They are in demand on all continents for private use as well as in the public sector. Even the British army relies on Austrian vehicles. The joint venture Rheinmetall MAN Military Vehicles produces military wheeled vehicles in Vienna for this purpose.

**Leading motor vehicle manufacturers.** The competence in engineering and plant automation is highly sought after beyond the country's borders. Leading global producers of automobiles and commercial vehicles have confidence in Austria as a business location. MAGNA STEYR manufactures vehicles for the Mercedes-Benz G-Class, whereas MAN Nutzfahrzeuge AG produced about 15,600 truck chassis in Austria in 2009.

Many producers have specialized in individual means of transport or specific types of motor vehicles, whether agricultural tractors, trucks and trailers to buses. The Upper Austrian company Rosenbauer is the world's biggest producer of fire fighting vehicles.

 $\rightarrow$  www.wko.at/fahrzeuge

#### MAN trucks: Innovative transport solutions for tomorrow

The commercial vehicle producer MAN Nutzfahrzeuge Österreich AG builds light-duty and medium-duty trucks as well as driver's cabins on behalf of the MAN Group. The Viennese factory focuses on the production of military vehicles. 99% of the vehicles produced by the approximately 3,500 employees in Austria are exported.

MAN trucks are highly sought after, not least due to the ongoing optimized solutions offered with respect to performance, quality and efficiency. For example, the "pure diesel" technology has been developed in line with the motto "Innovative transport solutions for tomorrow". The light and medium-duty vehicles of the MAN TGL and TGM series meet the current Euro 5 and EEV emission standards without the need for any additives. Customers appreciate the uncomplicated deployment of this truck and enjoy the advantage of lower highway tools in Austria.



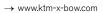


Commercial vehicles from MAN such as the TGM delivery van are in great demand internationally.

#### X-BOW: From 0 to 100 in 3.9 seconds

In 2007 the two-wheeled vehicle producer KTM presented its first car at the Geneva Auto Salon, the X-BOW (pronounced "Crossbow). Since production began in 2008, The small series manufactured and first street legal sports car with a carbon fiber monocoque had been sold 500 times by the end of 2010. The X-BOW is available in five different models – Street, Roc, Clubsport, Superlight and GT4. Starting in 2011, the new R-model will stand out due to its even more powerful engine.

The X-BOW brings Formula One technology to the roads. The basic version boasts a two-liter TFSI engine from Audi and 240 PS, featuring a top speed of 217 km/h. The speedster manufactured in Graz has only 790 kilos, making it a real lightweight vehicle, moreover with low fuel consumption and waste gas emissions.





The X-BOW R, the latest KM model, being tested on the roads.



Rudolf Hamp, Generaldirektor General Motors Powertrain-Austria

# GM Invests in a New Engine Generation

General Motors Powertrain – Austria has remained loyal to its Austrian business location since 1982. In the future it will be making considerable investments in its Vienna-Aspern plant.

20 million gearboxes: this record mark was communicated by General Motors Powertrain – Austria in the spring of 2011. CEO Rudolf Hamp explains why the facility in Austria is so valuable to the company, and what lies ahead in the future.

You are managing the biggest worldwide engine and transmission plant of General Motors. What makes Austria so interesting as a business location?

We value the high productivity, the quality in the production as well as the well trained employees with their know-how and creativity. On the basis of our continuous improvement program in the company, we saved around EUR 3.1 million in 2009 alone. On balance, there were 28,000 initiatives, or an average of 18 proposed improvements made by each employee.

## What is the role played by innovation and new technologies at General Motors Powertrain – Austria?

In the period 2008 – 2010, we invested about EUR 200 million in the Austrian plant. These investments primarily focus on the new generation of engines – the 1.4 liter turbocharged gasoline engine and the environmentally-friendly E-Flex drive system for the Chevrolet Volt and Opel Ampera. The priority for transmissions and engines in the future will be on achieving even greater operational efficiency and a simultaneous reduction in  $CO_2$  emissions.

## What do you consider to be some of the major challenges facing the automotive sector at the present time?

The important thing is to maintain the company's international competitiveness. Recently we started supplying factories in the USA, Russia, China, Australia, South America and Korea. In order to be able to competitively operate in these markets, one needs suitable conditions and flexible working time models.

#### General Motors Powertrain - Austria

The Vienna-Aspern site is GM's largest powertrain plant in the world, manufacturing some 1.3 million engines and transmissions each year. General Motors Powertrain – Austria employs approximately 2,100 people. Since it was established in 1982, GM has invested EUR 2.2 billion in the factory.

→ www.gm-powertrain.at





Every second Opel is fitted with an Austrian powertrain – and every third one powered by an engine "made in Austria".



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