"Glass" concept car to mark Rinspeed's 30th birthday - 40 years after Bayer's first "all-plastic" car

eXasis - Glass-free transparency

World premiere at the Geneva Motor Show from March 8-18, 2007

Zumikon / Leverkusen – "There's never been anything like it" were the words used in the online edition of an acclaimed international news magazine to describe its editor's reaction when the first sketches of the new Rinspeed concept car, "eXasis", appeared on the Internet, "and it looks like no other vehicle before it". In fact, the illustrations could only hint at what Swiss automotive visionary Frank M. Rinderknecht had thought up in collaboration with the experts from Bayer MaterialScience AG – one of the largest plastics producers in the world – to mark his company's 30th anniversary: a drivable "glass" car with a completely transparent body and floor made of Makrolon®. Once again, this Rinspeed creation has been built by the Swiss engineering specialists Esoro, and will be shown to the public for the first time at the Geneva Motor Show (March 8-18, 2007), 40 years after Bayer presented the first "all-plastic car" at the K67 Plastics Fair in Germany in 1967.

"Everyone who sees the eXasis for the first time raves about the glass car, but they actually mean our transparent high-tech plastic," says Ian Paterson, the member of the Bayer MaterialScience Board of Management responsible for Innovation, describing the typical reaction to the prototype. "Many people only talk about innovation. We do it, in conjunction with our partners." In fact, nearly all the Bayer MaterialScience business units were involved in the development of the concept car, providing products such as surface coatings and polyurethanes (for molding tools). but it was the plastics experts from BMS with their Makrolon® polycarbonate who were responsible for the transparency of the eXasis. Frank M. Rinderknecht: "In this ethereal transparency, the true spirit of the eXasis becomes visible. An abstract idea becomes material, visions become a tangible car. Yet the eXasis still doesn't seem to have quite arrived in our material world."

So is it just a clever 3D projection, a fata morgana or perhaps a four-wheel ‘objet d'art’? In any case, the third vehicle to emerge from the cooperation between the two companies differs fundamentally from the other two: the futuristic-looking "Senso" and the pure-blooded "zaZen" sports car. The eXasis is a completely new development, in other words it is not based on a production-line vehicle. The insect-like, shiny yellow body with the exposed wheels looks like a mix of the legendary Auto-Union racing cars from the first half of the last century and an off-road vehicle, offering room for two people, one behind the other. The reinterpretation of the frequently cited cigar form is crowned in the "sexy" rear section with an attractively integrated ventilator and a superb matching, highly polished Remus exhaust muffler. And the transparency also provides an unrestricted view of the compact 2-cylinder 750 ccm Weber engine, which, very unusually, sits above the transmission.

The eXasis is a real eye-catcher with nothing to hide. The outer Makrolon® shell, molded by the Swiss firm Mecaplex and coated with a tinge of yellow by the German hard coatings specialist, KRD, reveals the vehicle's load-bearing aluminum chassis. The chassis looks as if it has been cut from a solid piece of material, and in fact the bulkheads are. Despite this, the entire construction exudes a sense of lightness like bamboo, underlined by a Lesonal chrome effect finish based on Bayer MaterialScience's Desmodur® and Desmophen®. To finish the surfaces of the knobs and levers, the Bayer experts came up with a special soft-feel coating based on waterborne binders – their sole aim being to pamper the eyes and hands of the driver.

The two occupants sit in special seats designed in cooperation with Recaro. Each seat consists of twelve transparent Makrolon® ribs – the same number as a human being has. The head restraint and armrests are made of transparent Technogel®. The Hightex/Sellner Group, which is specialized in interior design, was responsible not only for the futuristic seat coverings and the design of the fabric-covered steering wheel, it has also added a number of other stylish highlights. One example is the innovative application of aluminized glass fiber material with a diamond-shape design on the wheel rims, trim, wishbones, fuel tank and headlamps.

The two transparent indicator and function displays are an absolute delight, both technically and optically. They seem to hover on both sides in the driver's field of vision. By touching them, various functions can be displayed and controlled. Each of the touch-panels is made of a transparent CD/DVD Makrolon® blank that has been coated with electrically conductive Baytron® from H.C. Starck to trigger the switch functions. The displays were developed by the Swiss safety and closure system specialists, Kaba. The personalized access system to the car is also be integrated in the touch panels.

The "eXasis" is powered by an extremely lightweight, 150 bhp Weber engine driven by CO2-emission-reducing bioethanol. In view of the fact that the car weighs only 750 kg because of its lightweight plastic construction, one horsepower has to shift only 5 kg – and that is about the same as a very nippy Porsche.

Rinspeed was also able to persuade some state-owned companies and government departments to become involved in the eXasis project. The fuel is provided by Alcosuisse, the profit center of the Swiss Alcohol Board, while the Swiss Federal Office of Energy has chosen the eXasis to take part in a study on the subject of lightweight construction and ecology. More information on bioethanol and Germany's first fuel station brand for environmentally friendly fuels can be found on the Internet at biofuel24.de.

To transfer all this power to the road, the KW chassis specialists have accommodated the tailor-made spring and shock absorber units vertically in the front in the partition wall and horizontally at the rear. The tires are Pirelli's 22-inch High-Performance P Zero, mounted on forged five-spoke wheels manufactured by the German wheel maker, AEZ. Here too, attention to detail is evident: the wheels are decorated with transparent "inlays" of Makrolon® that look like small windows.

Despite the attractive sweeping contours that blend smoothly into the car's transparency, the eXasis is ‘edgy’ and definitely has a character of its own. But everybody who has the pleasure of driving it is agreed on one thing: glancing down through the transparent floor while the car is moving gives a very special kind of thrill…

Swiss made

Esoro

Frank M. Rinderknecht used highly advanced technology and a Swiss-based network of top automotive specialists for his project. Although there is no automobile production in Switzerland, there is a very active automotive supply industry there. Many highly innovative prototypes have been developed and manufactured in Switzerland. engineered by Esoro - What you dream is what you get.

For the eighth time the Swiss engineering company Esoro was hired to serve as general contractor for the entire vehicle project. Esoro was responsible for project management, implementation of new technologies, engineering, design and manufacturing of the Rinspeed “eXasis”.

Esoro realized the concept with the help of its highly competent suppliers Schwaller AG (chassis), Weber Motor / Swissauto (engine) and Protoscar (styling). Starting with initial concepts, it took the highly skilled development team just six months to realize the entire project.

Esoro has been a contract developer in the areas of automotive production, lightweight design and plastics technology for 16 years. During this time it has gained a well-deserved reputation for excellent efficiency and innovative solutions not just in these but also in other fields, including fuel-cell vehicles and prototype design. Esoro has impressively demonstrated its expertise with numerous extraordinary prototypes.

Another recent development from Esoro is the new E-LFT production technology developed for Weber Fibertech. E-LFT makes large scale production of high-strength and lightweight composite parts affordable. E-LFT composite parts weigh 30-50 percent less than comparable steel parts. The tailgate of the new smart fortwo is actually produced with our E-LFT technology. Furthermore another production process for niche markets, like high performance cars, trucks and caravans is now introduced by ESORO to several OEM's. The new and patented process called Melt Embossing does offer the possibility to produce high end thermoplastic composite parts with low initial invest for structural and semi-structural applications. Esoro is able to offer the entire service starting from topological optimization and explicit FE calculations trough to the delivery of the serial parts.

eXasis – why the Swiss Federal Office of Energy (SFOE) is involved in this project

The SFOE is interested in the eXasis concept for two main reasons: The vehicle is energy-efficient thanks to its lightweight construction and it is powered by renewable energy.

The most effective way to cut a motor vehicle's fuel consumption is to reduce its body weight, and this in turn gives rise to other weight reductions: Lighter vehicle - lighter components - smaller and lighter engine.

Effects of improvements:

Nature of improvement	Reduction of fuel consumption in %
Weight reduction by 1%	- 0.7%
Reduction of air resistance by 1%	- 0.25%
Reduction of rolling resistance by 1%	- 0.27%
Increase in engine efficiency	Equivalent reduction of fuel consumption

The SFOE is of course well aware that the eXasis can never be brought onto the commercial market. However, components and assemblies based on its technology can certainly help cut fuel consumption. Viewed in this light, eXasis can function as a demonstration platform for lightweight (i.e. energy-efficient) components such as: seats, body panels and fenders.

The second reason for the SFOE's involvement in this project concerns the fuel the vehicle uses: E85. This is a mixture comprising 15 percent petrol and 85 percent ethanol. Ethanol is a renewable bio-fuel that is largely CO2 neutral when burned. In the future it will become especially attractive once it can be marketed as a second-generation bio-fuel (i.e. use of the entire plant instead of just its fruit). Thanks to its high octane level, E85 can also be used in engines with a high compression ratio, and this in turn increases the engine's level of efficiency.

Reduction of CO2 with bioethanol

By signing the protocol of Kyoto, Switzerland engaged to reduce the emission of climate affecting gas. Our law on CO2 requires that the emissions up to the year 2010 get reduced for 10 % compared with 1990. The use of bioethanol as fuel may be a contribution to reach this objective. During its project Etha+, Alcosuisse – a profit centre of the Swiss Alcohol Board – analyses the use and the competitive ability of ethanol blended petrol in Switzerland.

Bioethanol means ethyl alcohol obtained by fermentation of sugars in plants. The chemical formula of bioethanol is the same as for traditional ethanol (C2H5OH). Ethanol may only be named as bioethanol if it is produced from vegetable raw material like for example wood, beets, corn and grass. These renewable energy sources we know also as biomass.

Concerning the production and use of bioethanol as a fuel, Brazil is probably the most advanced country. There, bioethanol takes 22 % of the fuel needs. In the USA, more than 10 % of petrol is blended with more than 10 % bioethanol. In Sweden, the petrol that is blended with 5 % bioethanol gets distributed by the normal cannels and without any special label at the filling station.

Unleaded petrol as a blend with 5 % bioethanol reduces the emission of CO2 for about 3.5 % to 4.0 % per litre petrol replaced by bioethanol. That means there is a reduction of 1.6 kg to 1.8 kg CO2 emission. As long as the ethanol is produced only from renewable raw materials the production lasts CO2 neutral. The emission of greenhouse gas during the production and combustion of bioethanol get compensated by the plant's CO2 intake during its growth.

Several studies allowed express by concrete figures the reduction of CO2 emissions. Unleaded petrol blended with 5 % bioethanol provides for savings of 1.3 litres crude oil and 2.4 kg CO2equiv per added litre bioethanol on the same power density. If the total of Swiss petrol consumption was replaced by ethanol blended petrol, we reached an annual reduction of CO2 greenhouse gas emissions for over 600'000 tons.

However, from the production surplus from potatoes, grain, sugar beets and whey, there could be produced 45 million litre bioethanol today. This corresponds to 900 million litre petrol blended with 5 % bioethanol. That means about a fifth of the Swiss petrol consumption.

Due to the high labour costs and several legal regulations to be met, the prime costs in Switzerland are much higher than for example in Brazil. That's why, for an inland production of bioethanol, a protection by customs or contingents especially during the starting phase would be necessary. This might be difficult to agree with the current economic policy and the existing trade agreements. So, for politic and economic reasons it seems obviously to import the bioethanol. If this is also ecologically efficient, is undecided.

Actually, the largest part of bioethanol that is used for fuel purpose in Switzerland is produced by Borregaard Schweiz AG in Attisholz. The ethanol is obtained by fermentation of a by-product of the cellulose production. The raw material of this Swiss Bioethanol for fuel purpose is wood.

A word from our technical partners

AEZ Leichtmetallräder - The Company

With sales in excess of 1,500,000 units worldwide AEZ is the top wheel producer and leader in the European passenger car aftermarket. AEZ has managed to remake its image, going from classic wheel manufacturer to leading image brand in less than a decade. AEZ owes its success to impressive designs, speed in innovation, top quality standards and strong customer service.

AEZ's impressive product portfolio ranges from classic designer wheels to exclusive more-section designs, including wheels for SUV and off-road vehicles. AEZ is one of the few manufacturers world-wide to offer a new generation of super-light wheels. Lite tec® wheels are lighter than any other alloy wheels, made by either heat treating the wheel or by applying a rotation forging process to the wheel dish or other high-tech techniques. The lighter the wheel dish is in relation to the wheel spider, the less sluggish the wheel is. The result is improved acceleration and braking ability, as well as optimised handling and greater driving comfort. AEZ Lite tec® weighs between 20 and 35 percent less than normal alloy wheels. The wheels fitted on the Rinspeed eXasis are especially developed for this vehicle but based on the 3-piece forged Lite tec® wheel AEZ Nemesis which will be available for the public from March 2007.

The future runs on Biofuel24

Europe's professional conversion specialist for bioethanol E85. More power, significantly reduced CO2 emissions.

Biofuel24 is one of the first professional conversion specialists in Europe for bioethanol (E85). Bioethanol made from renewable raw materials has been established for a long time in Brazil and Sweden. E85 is a blend of 85% ethanol and 15% petrol. It is possible to produce E85 in an environmentally compatible way from sugar beet or by fermenting wood. Combustion is largely CO2 neutral. The control units from Biofuel24 allow any vehicle fitted with a petrol engine to be converted to this environmentally friendly technology - from the older Euro1 LDV through to the future Euro5 vehicles. Depending on the vehicle type, the consumption only goes up by a mere 1 to 2 litres/100 km. Thanks to the high octane number of 110 ROZ, the engine performance is boosted; for example in the Rinspeed eXasis it increases by up to 20%. A Biofuel24 conversion to E85 thus also takes car tuning enthusiasts into account. In other words, protecting the environment can also be an absolutely fun thing to do.

Biofuel24 is a conversion, shop and filling station concept, which entails converting conventional vehicles to environmentally friendly technology. Even by the end of this year, Europe will have 50 Biofuel24 service stations. By 2020, over 1300 such service stations are planned throughout Europe, where diesel engines will be converted to vegetable oil, and petrol engines to gas or bioethanol E85. At the same time, fuels and sensible, tested technology for saving fuel will be offered. By way of example, larger belt pulleys for alternators, which, according to a test by the German Association for Technical Inspection (GTÜ) save a good half litre of fuel. According to a large-scale test, regional buses fitted with the Biofuel24 pulley save up to 3.5 litres over 100 km, whilst in taxis, the consumption is reduced in short-distance driving by up to 1.5 litres per 100 km. Biofuel24 thinks further than others. By entering into a long-term cooperation with a leading catering chain, as well as primary raffinate, Biofuel24 can also offer recycled vegetable oil, which is centrifuged, filtered and processed into fuel all at the same location. Upon request, particulate filters can also be retrofitted. CO2 neutral fuel from biomass, not from foodstuffs, is what Biofuel24 dreams of.

Do nature a favour. Faster. Saab BioPower is a bright innovation

Saab BioPower is a bright innovation. Fill up with renewable bioethanol and you'll get even more performance. At the same time you help to reduce fossil CO2 emission by up to 80 per cent. If bioethanol is not available you can simply fill up with petrol, or any mix of the two. The Saab 9-5 BioPower is a new model for you to choose from. Drive it on bioethanol and output grows. So you'll enjoy faster acceleration, better response and even more driving excitement.

Strähle+Hess / Oesterle SLR / SC Schäfer, a Member of the Hightex / Sellner Group

Hightex/Sellner is a medium-sized group of companies in the area of "high-quality car interior equipment". Our expertise for crucial details in the car interior provides the perfect appearance for the total product as a tangible entity between technology, nature and human being.

Under the leadership of the renowned Swiss design- and concept creator Rinspeed and the Hightex / Sellner Group, who are the experts regarding innovative and unusual design concepts using novel materials and surfaces, the interior concept was created with a vision of a holistic approach where shape- and design language act as catalysts for the design of a specific world.

The "eXasis": Through the interaction of all materials used, which primarily exhibit light, transparency and permeability, we transfer the viewer to a new level of sensuality. For the selection of materials, we go back to the origins of textile creation. The outer and inside worlds (Exterior and Interior) merge into a single unit. The materials smoothly blend and fuse into a new statement of "you" on a high level by abandoning their own "identity".

Textile: Since materials are noticed much more strongly by the senses, we decided upon a seat construction made from mesh and metal fibers. The knitted metal leans on a distant era, which sends us on a time journey back to the origin of humanity.

Lacquered textiles: The glass-fiber coated elements on the in- and outside suggest precision and freshness. We selected a striking pattern of lacquered filigree diamond-shapes that emphasizes the value and authenticity of the textiles. The three-dimensionality that is apparent throughout the fabric, defines the "textile" characteristics.

Materials backed-up with Technogel (for head restraint and armrest): Our "better-being" technology is an innovation. Its characteristics are the "casting" of textiles in Technogel; this promises an extraordinary experience regarding optics and touch.

Steering wheel: The unusual "steering wheel" is encased by knitted metal. In addition to the fun factor, the characteristic of a joystick patched with metal contains conveys "a pure message for your skin".

The "undercover": Being the little brother of eXasis, "undercover" has yet to gain his own reputation. He disassociates himself from the airiness of his brother and longs to be "earth-linked". The color concept of "earth-brown shades with sun-yellow highlights" conveys a feeling of honesty and intensity. Here, the transparency of eXasis reverses into self-sustained, dense material concepts.

The composition of "undercover" is based on geometry, i.e. on rational-mathematical spheres. As a result, it is not surprising that the interior expresses clear forms such as diamond shapes and circles, thus creating different spaces "within the room".

As a connecting element, the "better-being" materials of eXasis are further developed for “undercover” to form decorative and rational details in the vehicle.

Seats (made from brown leather with diamond-shaped stitching): The highly aesthetic and extremely comfortable seats are styled from leather and feature a combination of stitching and diamond-shapes. Accents are set through fancy stitching in sun-yellow shades that is positioned in an unusual way. This combination idea reoccurs in the door lining. Here, elegant trimmings and applications, also made from lacquered glass-fiber, create a scenery of aesthetics and opulence and skillfully set colored accents.

Roof lining: The roof lining is eye catching due to the concept of combining diamond-shapes and circles. Here, "gel pads" cross the area of roof lining and storage-space cover in a sleek circle. The circular theme continues downwards, into the armrest and to the floor area.

Total Access to eXasis

Rinspeed AG is presenting another of its legendary concept cars at this year's Geneva Motor Show: the "Rinspeed eXasis". This transparent car combines state-of-the-art materials with futuristic design. As the icing on the cake, project partner Kaba has supplied Rinspeed with an exciting new technology.

Thanks to Kaba technology, Rinspeed AG's new concept car can only be used by authorized drivers. The driver is identified by touch and personally welcomed. In itself, this is not revolutionary, but the technology goes much further. The functions on the completely transparent dashboard can be adapted to suit the preferences of every authorized driver. What is more, the operational functions are personalized by user. This means that every "button" in the car can be programmed individually for each authorized driver.

As a result of the Kaba technology integrated into the "Rinspeed eXasis", the equipment can only be used by people with the required authorization. This is activated by a chip that is integrated into the identification medium and that sends tiny signals through the human body to a recognition unit. This provides absolutely personalized access combined with the greatest possible convenience.

This Kaba technology may open up incredible opportunities for the future. Think about it: Car theft is massively reduced since vehicles equipped with this technology are totally immobilized until an authorized driver is sitting behind the wheel. Computers start up with personalized settings only when touched by the authorized user. Medicine cabinets only stay open as long as they are being touched by an authorized person. Otherwise they remain locked. Homes are made safer for children by programming equipment such as ovens so that only adults can switch them on, or by ensuring that balcony doors or windows remain locked for children.

With this contribution to Rinspeed's latest concept car, the "eXasis", Kaba is once again demonstrating its worldwide technological leadership. Its visionary system approach proves that access control is about more than just opening doors.

The Kaba Group is a market leader in the worldwide security industry. Kaba provides innovative and comprehensive solutions that ensure security, organization and convenience in a wide variety of access situations and in the recording of personal and enterprise data. The group employs around 10,000 people in more than 60 countries. Thanks to its longstanding Total Access Strategy, Kaba is also a leader in the development and distribution of innovative identification technologies. For example, in

1990 Kaba broke new ground with the introduction of its LEGIC RIFD technology. This technology is now used every day by more than 70 million people in more than 50,000 installations.

High-tech KW coilover kit „Made in Germany“

The transparent Rinspeed creation „eXasis“ shows the normally hidden working suspension technology of KW automotive GmbH.

For the latest Rinspeed concept car a high-tech coilover kit was developed by the KW engineers. The suspension is individually adjustable according to the needs of the driver. High-strength aluminium coilover struts with patented KW damping technology of the Variant 3 are made for a maximum performance with low weight. The individual performance can be optimal adjusted by a separate rebound and compression damping adjustment. This KW coilover kit offers high-tech from motorsport with individual adjustment to the demanding driver.

KW automotive GmbH is one of the leading manufacturers for premium suspensions in small series worldwide. The Swabian company offers a complete suspension range from motorsport to street use to all their customers worldwide – from sports springs and sport suspension kits to KW coilover kits “inox-line” in three damping variants to KW competition race suspension kits.

Research and development are part and parcel at the headquarters in Fichtenberg/Germany. More than one third of the 120 employees are working on the research of new damping technologies and the development of new and innovative products for the KW suspension program as well as customers and industry orders. Since the end of 2006 the KW R&D team gets support from a high-tech hydraulic 7-post rig.

KW automotive Group employs worldwide more than 200 employees in five different subsidiaries – and this with upward trend.

Mecaplex Ltd

Company profile: The transparencies and aerostructure company Mecaplex Ltd, founded in 1948, employs 80 specialists for the aeronautical industry. The manufacturing program reaches from the windshield of a Very Light Aircraft or a small Light Lens up to the stable 30 mm thick windshield of a Fighter Aircraft. Optical quality and order processing are certified to aerospace standards.

Main products made of acrylic glasses or polycarbonate: windshields, canopies, cabin windows, wing tip lenses, taxi light covers.

Specialities: laminated hybrid glasses, windshields with integrated heating, transparencies with hard coatings.

Activities: development and definition of canopies and complete systems, manufacture of certified acrylic glasses, production of aircraft structural assemblies, repair / replacement and overhaul of windshield- and cabin – assemblies.

Certifications: ISO 9001:2000, EASA Part 21 Section A, Subpart G

Pirelli Tyre (Europe) SA

A company with a great industrial heritage, for over a century Pirelli Tyre has developed as a truly international enterprise, deeply rooted in the diverse national markets. Pirelli Tyre is the world's fifth largest operator in terms of turnover on the tyre markets. The Pirelli Tyre's production capability is divided among 24 factories around the world. The commercial structure covers all the principal geographic markets and reaches over 160.

Pirelli focus on high and ultra –high performance products that aim to combine notable level of stability and safety in all driving conditions. Benefiting from the continual transfer of experience accumulated in competition, Pirelli Tyre provides solutions, such as the PZero family- capable of satisfying the demands of the most sporting clientele.

Pirelli has always devoted constant attention and significant resources to innovation. The MIRS (Modular Integrated Robotized System) is one significant example for a highly robotized system to operate most efficacies production.

Another milestone is the new developed relationship with Rinspeed eXasis starting in February 2007. In Hall 1/ Booth 1210 Pirelli will be present with its latest innovation of the P ZERO Tyre , a relaunch of the PIRELLI wheel and the wide product range , aiming to support Rinspeed with its future projects.

„eXasis" - a question about hovering or sitting

Rinspeed explores a new path of automobile development with its concept car „eXasis". In this new project the Swiss car refiner dematerializes the vehicle almost completely. The transparent concept car seems to vanish - as if it does not belong to our world. A reflection of the development process of vehicles, showing how visions turn into the proverbial material (the car to touch).

The seat has a special purpose as the material between the passenger and the car. As an original pioneer of automobile seating, Recaro focuses on a seat shell reminding on a backbone carcass made of makrolon®, a "flying" fabric cover and a head rest cushion made of transparent Technogel. Due to the hovering bolster, the seat adapts itself automatically to the body shape of the passenger. The interior abducts the passenger to a new world. Usual sitting turns into relaxed sitting, even more - to hovering.

In the past and for the future Recaro will remain a pioneer and market leader in seat manufacturing regarding quality, safety and innovation in the automobile supplier industry and in the eyes of the consumers.

About the company: Recaro is an independent company in the internationally active Keiper Recaro Group which operates at a total of 34 locations world-wide. About 8,000 people are employed in the three divisions Keiper, Recaro und Recaro Aircraft Seating in the manufacture of high quality products in the field of mobile seating for vehicles and aircraft. The group achieved sales of about one billion Euro in 2005.

Recaro has a long tradition. Founded in 1906 by the master saddler Wilhelm Reutter – initially as a body factory -, Recaro can look back over a 100-year company history. Reuter produced bodies for vehicles such as the Porsche 356, VW Beetle, BMW 328, Horch and many other well-known makes. The Recaro brand evolved from REutter and CAR body. The first Recaro sports seat was presented in 1965. After the merger with the Keiper company in 1969, Recaro operated as an independent member of the Keiper Recaro family and is constantly redefining mobile seating with revolutionary innovations.

Remus Innovation - profile

Remus Innovation research and exhaust-production ltd. was founded in September 1990. With a staff of only five and a lot of good ideas the styrian company started its story of success.

Remus expanded rapidly and became the world market leader amongst the manufacturers of sportexhausts for cars and motorcycles after only five years. Furthermore the company established itself as a well known partner of the automotive industry in the field of exhaust systems.

Nowadays well known companies from the tuning branch like Abt, Brabus, Irmscher and Zender as well as partners from the automotive industry like Daimler Chrysler, VW, Volvo, Porsche, Opel, Ford, Seat, Renault, Mitsubishi, Ducati and Buell count on the know how of the exhaust specialists from Austria. More than 90 percent of the production volume get exported to more than 60 countries world wide with an increasing tendency.

In summer 2002 the new research and development center was put into operation to ensure and enlarge the leading position on the world market. In autumn 2006 a new production facility with 5.000 square meter enlarged the entire production area up to 17.000 square meter for about 350 employees.

The latest product of the company is the Remus diesel particle filter, a particle filter for diesel-cars which is totally maintenance free and essentially reduces the very health-endangering particles.

Sharp - the official multimedia partner for Rinspeed

The prominent Swiss design and engineering company Rinspeed is developing a new concept car, the eXasis, with LCD giant Sharp. An exceptional car merits an exceptional viewing modality. And Sharp has achieved this with its new HD resolution TVs (full HDTV resolution with progressive picture), which displays the ideas and characteristics of this visionary vehicle with amazing clarity and detail.

Sharp worldwide: Sharp, which employs 55,000 worldwide, offers an extremely broad range of electronic products and is the world market leader in the LCD TV and solar collector sectors, both of which are currently of pivotal interest.

LCD technology and Sharp are virtually synonyms: Sharp has been in the vanguard of LCD technology every since the company launched its first LCD pocket calculator back in 1973. And thus it's no surprise that the latest generation of LCD TVs are from the Sharp factory in Kameyama II, Japan, which is one of the world's most modern electronics production facilities. "Things are just beginning to happen on the European market. In view of the many tube TVs in Europe that are set to be replaced by LCD TVs in the coming years, we feel that this market has massive growth potential. However, the 18 million LCD TVs we project will be sold in Europe in 2006 represent only a fraction of our worldwide market volume," noted Hans Kleis, Sharp's CEO of all European subsidiaries and Operations.

Sharp sets its sights on the environment: Sharp's strong commitment to advanced technology is more than matched by its commitment to environmental stewardship, a stance embodied by the fact that the European Commission recently authorized Sharp to use the EU's coveted Eco label on its new LCD TVs. This is the thirtieth such product that has been granted this distinction, and it makes Sharp the world's only LCD vendor whose products boast this coveted symbol of environmental sensitivity.

Weber Automotive

Weber Automotive, located in Markdorf/Germany on the Lake of Constance, is an active international supplier to the automotive industry and consists of three varying product divisions.

Albert Weber: Holding the core trade mark, Albert Weber has been an active supplier of engine components to the automotive industry for more than 38 years.

Weber Fibertech: With its E-LFT process Weber Fibertech offers one of the few possibilities for the high volume manufacturing of crash resistant plastic components.

Weber Motor: Development objectives by Weber Motor are based on the demand of modern engine technology for minimal weight, high specific performance and vastly improved efficiency.

Rinspeed eXasis Powered by Weber Motor® MPE 750: Integrating such a powerful turbo charged engine into the Rinspeed product version eXasis was an outstanding technical challenge. Along with the minimized package and rear engine position, challenges are linked to the thermal and dynamic performance capability. The vehicle is capable with conventional gasoline as well as with Bio-Ethanol (E85). The answer to this technical challenge is to position the gear box underneath the engine. Thus an extremely short drive train is realized. This ensures, in combination with the small installation height of the turbo charged engine, an outstanding vehicle weight distribution. In respect to the dynamic performance capability the engine is also a sight for sore eyes: with turbo charging, double throttle body and intercooler a 110 kW (150 hp) engine with comparatively low 7.000 rpm is accomplished. This engine's performance is equivalent to that of 147 KW/l (200 hp/l) engine. Every engine assembled in the Weber Motor Manufacturing Center is done so according to highest quality standards. This is documented by the hand signed engine plate combined with the serial number found on each engine.

Information for editors: Extensive information and illustrative material are available online on: www.rinspeed.com and www.presse.bayerbms.de

A detailed TV-feed is available from Medialink: Telephone: +44 2075542704, Email: mediarelations@europe.medialink.com

Forward-Looking Statements

This news release contains forward-looking statements based on current assumptions and forecasts made by Bayer Group and Rinspeed management. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in our public reports filed with the Frankfurt Stock Exchange and with the U.S. Securities and Exchange Commission (including our Form 20-F). The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.