Boost your efficiency
Röchling Automotive is the global partner for integrated system solutions that utilize the entire potential of modern plastics. Our solutions are based on bundled designs in the disciplines of airflow, thermal & fluid management as well as sound design and functional integration paired with lightweight designs. We deliver highly innovative solutions for your applications – the challenges of the future.

Our Vision: Boost the efficiency of mobility.

Our Mission: Reduce Weight and Emissions while Enhancing Comfort.

Our holistic competence: Applying our Fluid, Thermal and Acoustic Competences to Develop Lightweight Solutions for Aerodynamics, Powertrain and New Mobility.

All you need for the development of the future.
Airflow control, heat storage and quieter environments.

We support our customers in the development of systems for improving vehicle aerodynamics in order to reduce air resistance and thus reduce fuel consumption and CO₂ emissions. In addition to this, we develop and produce thermoacoustic solutions that contribute to heat retention and to improve vehicle acoustics.

Our innovative approach optimizes airflow and thermal management in the engine compartment. The combination of Active Grille Shutters with a thermoacoustic engine encapsulation reduces emissions and fuel consumption and improving vehicle acoustics simultaneously.

Our expertise in aerodynamics, acoustics, thermodynamics, material development and actuator technology makes us your ideal integrated system development partner. Our services include everything from customer specific validation to wind tunnel testing, conformity audits, error diagnosis to integrated functional safety checks.

- Active Grille Shutters, Speed Lips, Air Dam, Underbodies
- Thermal-acoustic Engine Encapsulation
- Holistic aerodynamic concepts

roechling.com/automotive/products/aerodynamics
INTELLIGENT: CONTROLLABLE AIRFLOWS

In automotive applications, full force cooling airflows are rarely required. Hence, airflow systems that can be actively controlled – i.e. Active Grille Shutters – provide an intelligent needs-based solution. When open, the maximum air flow is delivered. When closed, the airflow is directed around the vehicle, reducing drag.

- Optimized aerodynamics: air resistance coefficient improved by up to 6 %
- Reduced fuel consumption and emissions
- CO₂ minimization by up to 3 grams of CO₂ per kilometer
- Noise reduction
- Shutter control provided by dependable programmable actuators

INSULATED AND ISOLATED: LIGHTWEIGHT MATERIAL BASED THERMO-ACOUSTIC ENGINE ENCAPSULATION

Combined with the Active Grille Shutter, the engine encapsulation provides heat retention and sound insulation. Multi-layer materials combine thermal and acoustic insulation with lightweight technology. With our developments, we support our customers in the system design process.

- Improved engine acoustics, reduced noise level, more comfort
- Reduced emissions and fuel consumption
- Lightweight materials translate into reduced weight and lower costs
- Significantly optimized heat storage thanks to thermo-acoustic encapsulation plus Active Grille Shutters

We have global full spectrum OEM experience and offer extensive competences, including:

- Simulation (ANSYS CFX, OpenFoam)
- Testing/laboratory experiments in compliance with all common methods
- Complete development of mechatronic components
- Environmental safety and EMV validation, LIN conformity tests
- Vehicle integration consulting (testing, controlling strategy)
- Programs & tools: Vector, Matlab/Simulink, Doors, AUTOSAR, etc.
- Module development for end of line testing

ACTIVE SPEED LIPS:

- Individually retractable
- Reduced air resistance
- Prevents turbulences in the wheelhouse with reduced clearance at higher speeds

System integration for increased efficiency: Combination of Active Grille Shutters with thermal-acoustic engine encapsulation and Speed Lips
Lightweight materials for a more comfortable ride: tailor made coverings.

We consider the coverings for the engine and the floor boards one integral system. As system partners we deliver efficiency benefits through lightweight solutions and multifunctionalities. The results are remarkable.

Underbody systems from Röchling Automotive combine optimum aerodynamics and minimum weight with maximum acoustic comfort for drivers, passengers and the environment.

Thanks to the intelligent pairing of extremely lightweight compound materials with core and cover layers of varying porosities, we are able to create integrated covering solutions that need only a minimum of installation space while meeting premium demands. They effectively reduce fuel consumption levels and help attain exacting CO₂ emission goals without compromising the vehicle’s comfort.

By choosing the most suitable fibers and mixing ratios it is not only possible to adjust acoustics and mechanical parameters, but also water absorption, flammability properties and temperature stability.

roechling.com/automotive/products/aerodynamics
The complete solution: Stone chip, corrosion and heat protection that includes optimized aerodynamics and acoustics. As one of the leading manufacturers of engine shields, underbody and wheelhouse coverings as well as Active Speed Lips, we offer the entire development and production process service spectrum from a single source. Our Softlofting™ technology for underbodies and wheelhouse coverings has been an established benchmark for many years, as it achieves maximum acoustic effectiveness at the lowest possible weight. Using a broad spectrum of materials and manufacturing processes, we have the ability to implement even the most complex solutions to attain the most exacting standards.

- Integrated acoustic functions in engine shields and underbody coverings reduce both, the interior and exterior noise levels
- Best in class lightweight designs featuring Softlofting™
- Mechanical integrity even under the toughest conditions
- Higher degree of underbody sealing
- Thermally insulating
- Large scale, extremely flat and stable coverings
- Lightweight wheel arch liner
- Wide range of material combination with various different production processes

INTEGRATED SANDWICH FLOOR (ISF)

- Reduced weight
- Reduced part thickness
- Acoustically absorbing
- Thermally insulating
- All-in-One solution for simplified assembly

FULLY AUTOMATIC 650 T PRESS

Reduced weight
- Reduced part thickness
- Acoustically absorbing
- Thermally insulating
- All-in-One solution for simplified assembly

INTEGRATED SANDWICH FLOOR (ISF)
Fluid systems – for optimum flows all-around.

Whenever liquid or gas media has to be efficiently and safely moved, steered, distributed, prepared and stored, we are your partner for emissions reducing, package, and weight optimized solutions, focused on the complete system.

Our fluid components offer system advantages in numerous applications, when it comes to coolants, oils or air/water separation. We provide flow technically optimized supply systems in complex geometries with highly integrated functionalities. Our portfolio covers everything from media lines to containers with sensors made of electrical conductive plastics and expansion tanks for fuel cell vehicles.

Based on vast engineering, design and materials expertise as well as our special physics and chemical know-how, we develop highly efficient solutions. We utilize modern in-house developed and produced tools, computation tools and we use an intelligent test infrastructure. Our manufacturing operations are highly productive, thanks to flexible automated equipment.

Röchling Automotive is always a step ahead: with our joining process expertise and our clean room condition container manufacturing, we are an established specialist for the market leaders' fluid management needs – including hybrid and electric cars.

roechling.com/automotive/products/powertrain
MORE COMPACT AND LIGHT-WEIGHT – EVERYTHING IN ITS PLACE: SCR TANK SYSTEMS

We manufacture injection molded SCR/DEF tanks and filling systems for diesel vehicle DEF/Adblue liquids.

- Functionally integrated: Slosh reducing, assembly concepts
- Integrated pump module with temperature and quality measurements, continuous level control and heating systems
- Optimized volume usage
- Optimized wall thickness, ice pressure resistant, minimal weight

SAFE DESIGNS: COOLANT RESERVOIRS SYSTEMS

Röchling Automotive is one of the largest surge tank manufactures worldwide. We continuously improve our competencies to design reservoirs that optimize part weight, degassing properties and robustness. We offer vast sensor technology expertise and a high degree of functional integration:

- 2-chamber tanks: only one component for high and low temperature cooling cycles, used in fuel cell and hybrid vehicles
- Excess pressure of up to 40 bar
- Integrated level sensors, degas function
- High temperature resistant tanks

INTEGRATED WATER MANAGEMENT AND AIR CONDITIONING SYSTEMS

Our product innovations reduce noise levels for the passenger and driver. This is achieved upfront through efficient water separation together with optimized air flow and other noise reduction within the climate ducting.

- Optimized primary air/water separation through CFD Water droplet behavior analysis
- Flow optimized air conditioning through advanced CFD analysis
- Noise reduction through sound energy/damping material
- Thermal efficiency through low mass and high thermal insulation materials

EXTREMELY LIGHTWEIGHT, BUILT FOR MAXIMUM THROUGHPUT: WATER AND OIL LINES

Using innovative projectile injection technology, we manufacture water and oil lines with extremely consistent wall thicknesses across the entire pipe length. Our solutions are considered the benchmark as far as the exterior dimensions to wall thickness ratio is concerned.

- Low weight solution in reduced package space
- Lowest possible pressure loss
- Integration of fixings and ramification
- Integrated flexible solutions with quick connectors for easy installation

Surge tank with integrated level sensor

Surge tank with modular fixing system

Cowl Grille with integrated pedestrian protection, projectile injection technology produced engine bay sealing

Air conditioning airflow duct made of LWRT and injection molded material

Projectile injection technology manufactured cooling water pipes with integrated fixings and Quickfit connectors

Integrated ribs reduce annoying sloshing noises

Lightweight thanks to uniform and low wall thickness, components welded using multiple welding technologies

Filling systems with acoustic decoupling, integrated fixing points for maximum dimensional accuracy and robustness
Allow engines to breathe: Maximize pure airflow, tuning sound on demand.

Our experience and know-how in the development of plastic components becomes clear in what you hear and feel. We design and develop low and high pressure systems, air filters and intake manifolds from the ground up. Whenever an engine breathes freely, it performs better, consumes less fuel and sounds properly.

International automakers trust in our technology and take advantage of our developmental leadership. As a system supplier and designer we optimize all parameters of the entire air intake system and for individual components:

- Minimized pressure losses to boost performance
- Customer-specific acoustics design and testing
- Ensured requested durability and reliability

During the execution of a project, we focus from the entire system down to the smallest details. We utilize and create simulation tools to optimize acoustics, fluid dynamics and structural behavior.
**LOW PRESSURE SYSTEM: DELIVERING CLEAN AIR**

We develop low pressure systems with air filters, focusing on minimal part complexity and maximum life expectancy, reducing the costs for our customers and end-users.

- In-house developed software for filter element life projection
- In-house air filter production
- Widespread production technology and global footprint

**CHARGE AIR COOLER DUCTS**

- Applying advanced material technology to absorb engine vibrations and movements while resisting extreme temperatures
- Flexible mono or multi component ducts
- High temperature resistant materials
- High and low frequency resonator design

**INTAKE MANIFOLD EXPERIENCE FOR OVER 25 YEARS**

We simulate and validate optimal mixture and distribution of fresh- and EGR airflow into the combustion chamber.

- From diesel to gasoline or alternative fuel
- From small displacement to multi cylinder top performance applications
- From natural aspirated to forced induction
- From intercooler dimensioning to full integration
- From Polypropylene to high end materials

**JICTBONDING™**

- Eliminate welding through injection of brackets during the blow molding process
- Faster, sturdier, more precise than conventional welding solutions

**SEALBONDING™**

- Alternative to vibration welding or complex geometry joint with high cleanliness requirement
- Cost effective solution to reach ever increasing manufacturing cleanliness requirements.
Materialize New Mobility.

For us, new mobility means drawing on our sound knowledge and many years of experience to offer our customers new concepts and solutions, in order to be successful in a dynamic environment. The New Business Green Car division researches and develops easy and innovative solutions for electric and hybrid vehicles. We are looking forward to creating the future together with you.

**ION EXCHANGER FOR FUEL CELLS:**

Fuel cells to power electric vehicles give rise to high thermal, electrical and safety-related requirements. Non-conductive cooling water is required for the cooling circuit of fuel cell vehicles. For this purpose, Röchling Automotive develops special ion exchangers, filter elements as well as compensation tanks for high internal pressures. The customized, exceptional properties of our plastic materials meet the high requirements of forward-looking, low-emission vehicles.

**STRUCTURAL APPLICATIONS/ LIGHTWEIGHT CONSTRUCTION:**

Our expertise lies in developing a product that achieves just the right balance between weight, cost and integration of functions, in light of the customer’s needs. To achieve this, we draw on our comprehensive technological knowledge and our many years of experience with fiber reinforced plastics when developing components and when replacing materials. We keep further developing the established processes and combine them with new ones.

**INNOVATION:**

Our plastic components and system solutions have been rewarded with numerous patents and innovation awards. Our enthusiasm for mobility, and our openness to all that is new, form the basis for successful innovations in your products. Materialize New Mobility – Röchling Automotive.

**BATTERY SYSTEMS:**

For electric and hybrid vehicle traction batteries, we develop and produce housings and covers as well as cell frames and insulation plates. Machining light-weight but high-strength, fiber-reinforced plastics with different process technologies facilitates new and optimized solutions:

- Customized upper and lower parts of housings for traction batteries for electric and hybrid vehicles
- Materials with special properties for cell frames and insulation plates
- Investigating and developing structures to meet crash requirements (e.g. pole crash test) with integrated EMC protection

**WIRELESS POWER TRANSMISSION (WPT):**

Developing inductive charging systems that do not need a cable connection makes electromobility even more suitable for everyday life. Röchling Automotive works on solutions to integrate the receiver in the underbody in combination with optimized vehicle aerodynamics and improved acoustic characteristics. In addition, sufficient stability of the transmitter is guaranteed by means of selected plastics and the inductive requirements are also met.

roechling.com/automotive/products/new-mobility
Clearly well ahead of our time ...

Due to the fact that we as an engineering systems partner already take future needs into account today and consider all critical key parameters in our development solutions, there is a worldwide demand for our services:

- Pre-development
- Concept development
- Small and large series production implementation
- Validation of components and systems
- In-house tool and system manufacturing
- Customer service on location

Innovative material blends, e.g. carbon and multi-material systems enable us to develop functionally integrated, space optimized lightweight solutions that are groundbreaking and used especially in hybrid and electrical cars. Hence, we are well ahead of our time ...
Full service benefit.

Design, engineering, laboratory and production

Dynamic and dependable project support that addresses every issue from A – Z gives our customers and us a competitive advantage.

We optimize and accelerate development and production processes through the utilization of modern design, simulation, testing, production tools, and by combining our competencies. Hence, we are in a position to offer bundled expert know-how that comprises everything from prototype engineering to test laboratories, tool manufacturing, process development to production technologies.

As partners of international automakers, we participate in research and development projects. The large number of patents we have secured also enable our customers and ourselves to maintain a very significant competitive edge.

Process technologies – innovative and global

- 2K, 3K injection molding
- Direct compounding
- Projectile injection (gas and water)
- LWRT, DLFT, GMT, SMC pressing
- 2K, 3D, 2K/3D extrusion bubbles
- Automated 100% checks
- JIT/JIS
- End of line programming

In the wind tunnel, the components manufactured by Röchling are tested in terms of the vehicle aerodynamics

Röchling Automotive systematically networks the different professional disciplines and bundles all competencies to deliver innovative components and groundbreaking system solutions.

Commissioning leakage test station to check the leakage values specified by the customer and to systematically examine the flaps of an Active Grille Shutter
With innovative strength and competence, we are available locally for our customers worldwide. Röchling Automotive is represented at the following locations:

Legend
- Headquarters
- Main development location
- Production facilities and main development locations
- Production facilities and engineering support
- Sales and development cooperations
- Sales and development cooperation with production
- Production facilities
- Customer offices

USA
- Akron, OH
- Troy, MI
- Danvers, SC
- San Jose, CA

Mexico
- Silao, GTO

Brazil
- Itupeva, SP

Spain
- Madrid

Italy
- Abbiasteggi Laves
- Trento

Belgium
- Gijzegem

Germany
- Gerolstein
- Mannheim
- Nuremberg
- Wolfsburg
- Wackersdorf
- Cologne
- Stuttgart
- Munich

Czech Republic
- Koprivnice
- Karlova

Romania
- Ploiești

China
- Changchun
- Shenyang
- Kunshan
- Chengdu

Japan
- Hiroshima
- Osaka
- Tokyo

France
- Paris

Sweden
- Göteborg

England
- Gloucester

Czech Republic
- Koprivnice
- Karlova

Romania
- Ploiești

China
- Changchun
- Shenyang
- Kunshan
- Chengdu

Japan
- Hiroshima
- Osaka
- Tokyo

France
- Paris

Sweden
- Göteborg

England
- Gloucester

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