LEADING SUPPLIER FOR THE MOBILITY INDUSTRY

Datwyler focuses on high-quality, system-critical poly-mer components and has leading positions in attractive global markets such as mobility, healthcare, oil & gas, food & beverage and general industry.

Thanks to its core competencies solution design, material expertise, and operational excellence, Datwyler supports and assists its customers at every stage of the process – from early development through to serial production of molded parts, components molded onto metal or plastic, and O-rings with specific requirements.

Datwyler’s Core Competencies

Datwyler supports its partners to promote a mobility that is safe, intelligent, and sustainable.
SUSTAINABLE AND RELIABLE

Datwyler maintains a sustainable management approach and acts as a reliable partner in its social and environmental responsibilities. This is reflected in its membership of the UN Global Compact. Datwyler also has public targets for reducing the relative consumption of natural resources per unit of sales. With the EcoVadis audit, the company makes its corporate social responsibility and sustainability activities available to its customers in a standardized way.

MOBILITY GLOBAL FOOTPRINT & SERVICES

With 11 strategic locations across key mobility markets including Europe, Asia, South America, and the NAFTA region, Datwyler’s state-of-the-art production sites guarantee the highest levels of service, expertise, and flexibility, exactly where its customers need it. Datwyler’s global set-up of modern mixing facilities ensures processed compounds of the highest quality.
BEST-IN-CLASS PROCESSING

The Datwyler Production System (DPS) ensures Datwyler produces best-in-class sealing solutions that meet the highest industry standards. Dedicated DPS professionals drive continuous improvement within Datwyler’s production processes, allowing Datwyler to guarantee the highest quality with short lead times, to deliver with maximum efficiency. From state-of-the-art factory designs and layout to reliable and future-proof technologies, all processes are monitored and scrutinized to the highest possible degree.

HIGH-PERFORMANCE COMPONENTS FOR BRAKE SYSTEMS

In-depth expertise in brake systems enables Datwyler to produce high-performance polymer components for use in a wide range of temperatures and pressure. Meeting the highest safety standards, Datwyler’s system-critical brake components are characterized by mechanical-dynamic stability, resistance to high and low temperature and media for maximum durability.

Components for brake systems cover numerous applications for actuation such as vacuum brake booster and EHB (electrohydraulic brake booster). Datwyler is also a global leader for components used in foundation, EPB (electric parking brake), as well as in future-oriented technologies like brake-by-wire.
CO-ENGINEERING FOR FUTURE BRAKE TECHNOLOGIES

The brake technology has evolved and will continue to do so. The evolution into the electrohydraulic booster (EHB) technology has largely been driven by the move towards the electrification of vehicles and the increasing amount of advanced driver assistance systems. Regarding electric vehicles (EV), EHB is a natural fit, particularly given there is no internal vacuum creation that is required for the vacuum booster.

DATWYLER’S ADVANCEMENT IN SEALING APPLICATIONS ENABLES THE USE OF SENSORS FOR STREAM-LINED PRODUCTION AND TRACKING

The traceability of parts via smart sealings – for example with embedded sensor technology – could expedite a product recall if required, minimizing the safety impact and potential reputational damage a brand could suffer. Sensors could also be used for predictive maintenance purposes in the future, along with providing solutions relating to authenticity that could combat counterfeiting and ensure parts are from the original manufacturer. Not least, Datwyler’s sealing solutions designed and co-engineered specifically for purpose in these new applications will provide the highest levels of quality and integrity, ensuring the safe operation of the brake system throughout its lifetime.

Thanks to close and trustful engineering relationships with market leaders over decades, Datwyler is the right partner for future-oriented brake systems and already involved in numerous projects.

Things move fast, and the industry is already seeing the emergence of brake-by-wire technology. This is considered to be the next level after EHB, and the main component differences are that there are no brake fluids within the system, meaning it will be smaller still when compared to EHB. The parts and their associated components will be even more sophisticated, there will be a very high focus on precision molding and a move towards automated processes.

With the supply of system-critical components for brake systems, Datwyler makes an important contribution to the road safety worldwide.

LEAN & CLEAN PRODUCTION LAYOUT IN SWITZERLAND

To meet the significantly increasing requirements of the mobility industry, Datwyler developed the new production layout “Lean & Clean” in Schattdorf, Switzerland, in order to minimize the residual dirt and contamination of the production processes and parts. Focusing on highly automated processes, Datwyler is a first-class supplier for products with demanding requirements on technical aspects, safety, quality, and cleanliness, from in-house prototyping to serial production.

Datwyler assists its customers to meet the highest industry standards

Continental’s EHB MK C1, where Datwyler’s high-performance polymer components are integrated, is one of the leading electrohydraulic brake systems
ADVANCED MATERIALS AS A KEY FACTOR

Thanks to Datwyler’s strong competence in surface technologies, adhesion, and materials in elastomer/metal and elastomer/plastic including LSR (liquid silicon rubber) and TPL (thermoplastic), Datwyler is able to develop materials, which meet customer-specific requirements and needs. Electrohydraulic brake systems, for example, impose special requirements on abrasion resistance, cleanliness categories, and the precision of sealing solutions in production. Among other things, the elastomer components in modern brake control systems must resist high-frequency, dynamic-mechanical loads under high pressure, and simultaneously guarantee safety over the lifetime of a vehicle.

CUSTOMIZED SOLUTIONS

Thanks to the process of co-engineering, customers can benefit from tailor-made sealing solutions developed in cooperation with their team. Datwyler’s engineering and technical expertise, coupled with in-depth knowledge of a wide variety of materials and their specific properties, helps its customers from the very beginning of the development process with customized design and simulation services.

Based on the sophisticated analysis of various material properties, highly significant material models can be developed, which enable a unique improvement of the result accuracy of Finite Element Analyses (FEA). Therefore, Datwyler believes that product design and development processes should be fully supported by FEA, from structural-mechanical optimization of product designs, to tooling concepts optimized by advanced mold flow simulation, and simulations of the entire production process.

Datwyler enables its customers to drive innovation and materialize ideas
**MATERIAL TESTING & MODELLING**

Accurate virtual models are a prerequisite for FE-based simulation techniques, and the precise knowledge of material behaviour is key for realistic predictions of component performance. Together with academic and industrial partners, Datwyler has developed a non-contact optical strain measurement system to determine the stress-strain response of its materials with the highest accuracy. Material modelling is done with in-house software routines by using the most suitable mathematical models.

Precise material models are digital representations of real materials, and for Datwyler it is obvious that these models bear a very high value in themselves. Whenever customers use simulation technologies in their own product development, Datwyler is happy to support them with the most accurate models of the elastomer materials intended for their application.

**CO-ENGINEERING – KEY FOR JOINT SUCCESS**

For Datwyler, partnerships with customers in co-engineering projects is the key element that can make the difference between a good product design and a perfect one. Datwyler supports its customers in designing sealing systems, taking into account all functional needs and the requirements of materials, tooling designs, and manufacturing processes. While geometric design and functional performance optimization is supported by structural mechanics simulations, virtual molding simulations ensure best tool design, efficient production processes, and top product quality.

Sealing systems only achieve their optimum functionality if the design of the sealing element and mounting space are a perfect match. Therefore, successful co-engineering projects require cooperation very early in the development process, when there is still sufficient design freedom for the overall system to optimize both, the sealing element and the installation space. A broad portfolio of joint product development projects with satisfied customers prove the success of Datwyler’s co-engineering approach. Contact Datwyler at an early stage of your development project, and obtain the best-in-class support of Datwyler engineers to achieve mutual success.
KEY PRODUCTS
Components for brake systems include seals and dampers like dust boots, bushings, primary and secondary seals, O-rings, piston seals, and diaphragms. Materials include EPDM, FKM, SBR, HNBR, AEM, and silicon materials.

DATWYLER HELPS ITS CUSTOMERS TO SHAPE NEW MOBILITY – NO MATTER WHAT THE FUTURE HOLDS
As a leading global supplier of high-performance polymer components, Datwyler helps its partners to swiftly address emerging opportunities to shape the future of mobility with:

INNOVATION & DESIGN
- Advanced materials
- Customized design and simulation services
- Advanced technologies
- Global network of technology leaders

MANUFACTURING EXCELLENCE
- Best-in-class processing
- Global footprint and services (Europe, Asia, South America, and the NAFTA region)
- Broad range of technologies

HIGH-PERFORMANCE COMPONENTS
- Emission reduction systems
- Electrification
- Advanced driver assistance systems
- Brake systems
- Powertrain
- Fuel systems
- Comfort systems

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