



Engineering your competitive advantage

Your partner for the development and production
of state-of-the-art automotive single or assembled
thermoset, thermoplastic, and rubber components



Automotive





Fuel pump parts

Helvoet is a high precision molder and finisher of critical parts for fuel pumps such as impellers, pump inlets and outlets. The components of the fuel pump are made from materials such as PPS, Phenolic and BMC with glass and mineral content over 80%. Helvoet has developed extensive knowledge how various resins act and react in fuel over extended periods of time. Helvoet is the market leader for this application, with our parts being build into more than 20 million cars yearly.



Armatures and solenoids

Helvoet manufactures seals for pneumatic magnet activated valves. These valves contain solenoids which are usually equipped with one or two rubber seals, either by assembly or over moulding. A precise air flow is achieved by controlling two important parts of the product; the metal insert and the rubber seal on top of the insert.

Over 70 years of automotive experience

Helvoet Rubber & Plastics provides expertise in precision manufacturing, engineered components, and utilization of highly engineered resins. Helvoet is able to manufacture a specialized range of components for motor management, brake systems, fuel pumps and modules for vehicle power trains and driver assistance systems. The heart and soul of the automotive system deserves a specialist to manufacture its pumps, diaphragms, safety valves, vacuum actuators and other mission critical modules. We at Helvoet have supplied hundreds of millions of products that provide the medium for the automotive to move smoothly and safely down the road. With over 70 years of experience in developing components in systems that concentrate on moving gasoline, diesel fuel, oil, water and vacuum through automotive systems, Helvoet is considered a premium supplier at the world's largest Tier 1's.

Unique combinations, optimal solutions

Our ability to combine individual materials (rubbers, plastics and metals) results in a unique and complementing combination of precision technologies for the best customer solution. This, combined with our in-house assembly facilities, ensures Helvoet's customers the highest product quality and outstanding accelerating possibilities for their time to market.

Our specific and rich experience in the field of automotive system components makes it possible to put our engineering and product design capability to work, to develop solutions that will help you to obtain a perfect product. That is why many of our customers involve Helvoet early in the development stage of a product. As the applications we produce have to meet high demands, intensive homologation and approvals, process reliability is a major criterion for our customers. We therefore keep strict project management and quality assurance methodologies, such as FMEA, MSA, FEA (Abaqus), DRVP, Moldflow, Design2Cost etc. Our state-of-the-art production and assembly processes guarantee flawless products, meeting all high demands in terms of geometry, thin-walled and precision tolerances.

"PROVIDING QUALITY
YOU CAN RELY ON"

INNOVATION IS AN ATTITUDE



Throttle body housings

Helvoet produces as-molded throttle housings out of BMC material. This technology replaces die-casted and machined aluminium housings by a precision molded thermoset part. This solution offers advantages in weight and cost, which are both of the highest importance for our customers.

Our products

Motor management

Motor management systems are key towards fuel efficiency and ongoing emission reduction. Helvoet is supporting this global effort for a better planet with her expertise in high quality system components. The design, and manufacturing of vacuum actuators or throttle bodies is an expertise where all strengths of Helvoet are combined. With this part we combine the in-house production of parts out of rubber, and thermoplastic material together with a well-developed supply chain with our assembly capabilities. The result is the delivery of thousands of vacuum actuators each year, controlling the air flow of the engine and turbo charging of millions of cars, worldwide.

Brake systems

Brake systems are a lot more than callipers and disks with some hydraulics. Where historically brakes were just mechanical systems to slow down the wheels, nowadays it is a complex system comprising functions like Dynamic Stability Control, ABS and other intervention systems aboard a car to safeguard the passengers.

It is in this manifold where Helvoet parts are driving the systems functionality. Before, elaborate micro metal parts were used, having both economical and functional disadvantages. Helvoet managed to translate the requirements on the braking systems, for instance the brake pins or the rods into functional plastic parts. Parts which are able to withstand the extreme load and harsh conditions that prevail in a modern vehicle control system. Due to smart processing and mold design, Helvoet achieves tolerances that are given in microns rather than millimetres, a requirement for these specialist products.

The advantages of using plastic parts:

- Micro tolerance parts, lighter, faster and functionally superior to steel alternatives
- Designed for a high load and high temperature environment
- Advanced materials available, both in thermoset and thermoplastics



Vacuum actuators and membranes

The vacuum actuators are extensively used to operate different types of valves in the motor compartment. Our ability to design and produce custom vacuum actuators according to customer specification sets Helvoet apart. An important part in the vacuum actuator is the membrane. The elongation under stress, the permeability, the shape, the temperature resistance and the capability to return to his original position during millions of strokes without tearing or leaking are the most important design features of the membrane.



Vacuum connectors

The vacuum connector functions as a connector for the tubing in for instance braking systems and has an integrated check valve. Helvoet manufactures millions of connectors on advanced assembly equipment, including 100% functional leakage test. The heart of the connector is the rubber valve. Designed to close the air stream at the moment the engines stops. The valve is spring loaded and the chemical resistance as well as the temperature behaviour plays a vital role.



Valve blocks

Helvoet is producing valve blocks in thermoset material for DSG (Dual Shift Gears or Doppelschalt Getriebe) with multi cavity tools on dedicated injection molding equipment. Post treatment and packing is done in cleanroom production area to achieve the severe cleanliness requirements that are required for these high tech applications.



Radar parts

Radar units require complex and high precision functional parts which are produced by Helvoet. The main current product is a very accurate and stable part made out of special phenolic material executed with a metal coating on the outside. Combining thermoset injection molding technology and our expertise with coating, we offer systems rather than a component.

Power train

The complicated engine management is one thing, getting the wheels in motion, and therefore the car moving, is another. This requires an assembly of gears and associated parts by which power is transmitted from the engine to a driving axle. Specific Helvoet parts play an important role in this area.

Helvoet is producing valve blocks in thermoset material for DSG (Dual Shift Gears) with multi cavity tools on dedicated injection molding equipment. We offer vacuum connectors in a large number of varieties in size and shape, designed to fit into the space available at the engine.

Fuel Pumps are the heart of the car. These parts have challenging dimensions such as a roundness of 30-40 μm 's on the outside diameter for sealing, to shaft ID's of $\pm 10 \mu\text{m}$'s and flatness below $\pm 5 \mu\text{m}$'s to reduce noise, vibration, and contamination wear. Helvoet masters precision.

Driver Assistance

Safety is the number 1 priority in driving. With our precise and high-end applications in safety systems Helvoet plays a role in reducing the number of casualties from traffic accidents. The use of electronic control systems has developed rapidly in the past ten years. Advanced Driver Assistance Systems (ADAS) like Adaptive Cruise Control, ABS, EBS and Collision Avoidance Systems helps the driver's safety. The heart of the radar systems is a very precise rotating drum manufactured of a thermoset material and coated with a silver layer for optimal reflection.



Helvoet

Since its foundation in 1939, Helvoet has acquired a great deal of expertise in the development and production of single and assembled plastics and rubber products. With about 650 employees and locations in the Netherlands, Belgium, Germany, India and the United States we provide global support to many leading customers. Innovative product development, specific knowledge of applications and continuous improvement of our sophisticated production technologies are important capabilities of Helvoet. We give our customers a lead in their market segment, giving definite meaning to our motto 'Engineering your competitive advantage'.



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