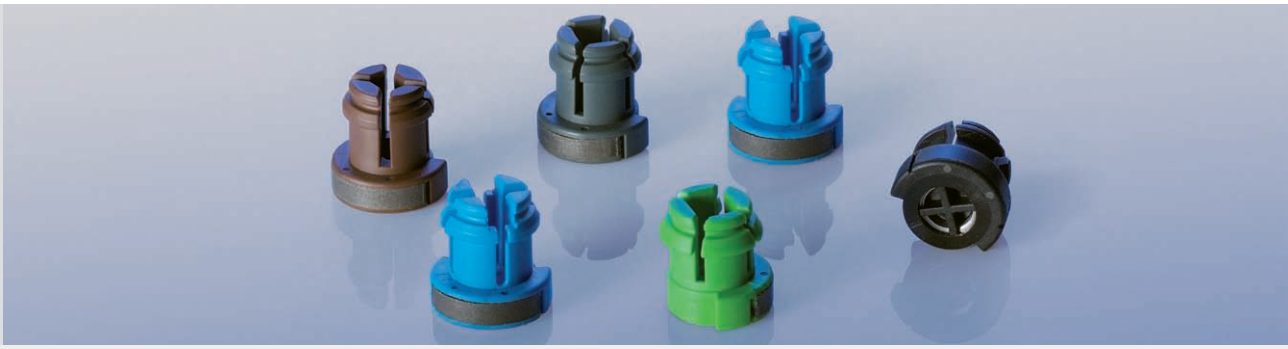


Tumble flap sensor
for FSI motor

Polymer Bonded Magnets for electric drives and sensors

The future of sensorics

Yesterday they were still regarded as being something exotic, but meanwhile they have conquered drive technology. The so-called Polymer Bonded Magnets (PBMs) have now proved of value in ever more new fields of sensor and actuator applications, electronic control of drives and motors.

Because, used as a signal generator for sensors, PBMs have one unbeatable advantage: Numerous magnetic functions can be integrated into a single compact component by different orienting fields in the injection mold! It is just this very integratability that opens up undreamt-of possibilities for PB magnets, e.g., in electronic systems for cars, generators and actuators.

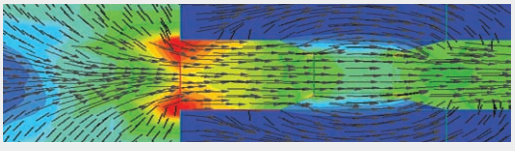
It is our goal to become one of the driving forces behind the development and manufacture of innovative magnets. OECHSLER is one of the few pioneers worldwide that are bringing to market maturity the PBM technology in combination with other special injection molding techniques – and also one of the few that have and are going to expand the know-how for the manufacture of permanent magnets and their integration in polymer-based assemblies of customized layout.

Polymer Bonded Magnets offer maximum flexibility and integratability

Intelligence on a minimum of space

The inconspicuous PBMs are not to be underestimated. On a minimum of space, qualitatively different magnet patterns can be integrated – precisely oriented pole fields that serve as signal generators, e.g., for the control of tachometers and counting mechanisms, of motors and brake systems. In addition to their integratability and compactness the PBMs have further advantages over classical sinter magnets:

- **PBMs** can be given almost any shape you like and be combined, e.g., with mechanical components, such as gear wheels, shafts or snap-on elements to form a complex component using different joining technologies.
- **PBMs** are more elastic and higher loadable. The sensitivity of the edges to break and hence fouling is decreased – an advantage resulting in more safety during further processing and application.
- **PBMs** are non-corroding and can thus be used in a moist environment.
- **PBMs** are cost-effective in their manufacture – the proper answer to miniaturization and cost pressure.



Magnetic tool layout using FE simulation

Integrated Polymer Bonded Magnets “from a single source”

OECHSLER is one of the few technology leaders in the injection molding industry that produces Polymer Bonded Magnets. We have the know-how to select the appropriate magnet compound for your application. We have the experience in making special tools with integrated orienting fields for the orientation and magnetization of the components, and in making multicomponent tools as well. And we know the possibilities of combining the plastics to obtain optimum material compounds.

Innovative power for tomorrow

OECHSLER’s PBMs are already magnetized in the injection mold

For optimum use of the magnetic potential, orientation and magnetization of OECHSLER’s Polymer Bonded Magnets are done mainly directly in the tool as early as during the injection molding process to provide such a permanent magnet field pattern orientation as it is intended to be later on. OECHSLER also combines this filler orientation/magnetization with other techniques such as the multicomponent injection molding.

Also in matters of tool engineering OECHSLER is playing a leading part. In cooperation with universities and partner companies we are working on new tool concepts with integrated magnet orienting fields.

Together with our automotive customer we designed a state-of-the-art product which shows the innovation strength of OECHSLER’s experts. A polymer bonded magnet with an integrated soft magnet has been developed and works as a signal transmitter inside the tumble flap sensor of the FSI motor. The magnetisation which is carried out inside the injection mold follows strictly the results of the part design. For the manufacturing of this product we combined the 2-component and insert technology with the special technology of polymer bonded magnets. A particular tool technology meets the multitude of variants together with a high production output. In a final step the part is tested and released if the 100% magnetisation is fulfilled. Thus an innovative and competitive product has been created which shows the future-oriented features of polymer bonded magnets.

Magnetic rotor for the tumble flap sensor

OECHSLER – Polymer Bonded Magnets at a glance

- We give you advice regarding materials and magnet compounds, e.g. with ferrite, SmCo, NdFeB
- We discuss, develop and manufacture multifunctional PBMs according to your specifications
- We integrate magnets in plastic assemblies according to your requirements
- We make special and multicomponent tools with application- and material-specific magnet orienting fields

Locations:

Germany
- Ansbach
- Weißenburg
- Küps

China
- Taicang

Romania
- Lipova

Our Ansbach Headquarter

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