

Case Study

Latch unit



Fig. 1 Latch unit

The firm **DIRAK** was founded in 1991 by Dieter Ramsauer. It develops and manufactures both mechanical and mechatronic fittings for hinge, profile and closure technology.

Since 1969, the firm **KB Kunststofftechnik**, founded by Horst Langenberg, has been accompanying new developments and manufacturing a variety of components in the field of thermoplastic processing.

In accordance with the philosophies of both companies, the management teams attach great importance to innovative action and special customer service as a joint solution. Together, problems are tackled and solved, and ideas turned into practical solutions.

One of these solutions is this latch unit (see Fig. 1), which is used, for example, in switch cabinets for server rooms. At the Hanover Fair, this article received the certificate “Best of 2012” under the patronage of the VDI and the German state of Lower Saxony. In this all-plastic version of the latch, two different materials from LANXESS are used.

Fig. 2 shows the different components that go together to make up the latch unit. The cam is made of Durethan BKV 30 H2.0 and the insert of Durethan BKV 130.

OEM: DIRAK Dieter Ramsauer Konstruktionselemente GmbH, Germany

Grade: Durethan® BKV 130
Durethan® BKV 30 H2.0

Manufacturer: KB Kunststofftechnik Vertriebsgesellschaft mbH, Germany



Fig. 2 Individual components of the latch unit

The housing has a special characteristic. It is also made of the impact-modified polyamide 6 Durethan BKV 130, but at the same time a TPE gasket is molded-on by 2-component injection molding as a rotary table application in one step. It is permanently joined to the polyamide housing, cannot be lost, and assumes sealing functions between the door and the insert in both the head and the interior areas. The thermoplastic elastomer is provided with a special adhesive modifier. This gasket ensures dust and water tightness according to IP65/67 DIN EN 60529.

The demands made on the LANXESS materials were as follows:

- Good strength and toughness (also at low temperatures) to create high closing forces
- Low creep behavior to ensure long-lasting holding and closing forces
- Processability by 2-component injection molding to save assembly steps

A big advantage of this latch unit is the much reduced assembly time. The insert and the cam can be clipped together without any tools before putting them into the housing so that the latch unit can be pre-assembled and fixed with a nut.

This information and our technical advice - whether verbal, in writing or by way of trials - are given in good faith but without warranty, and this also applies where proprietary rights of third parties are involved. Our advice does not release you from the obligation to verify the information currently provided - especially that contained in our safety data and technical information sheets - and to test our products as to their suitability for the intended processes and uses. The application, use and processing of our products and the products manufactured by you on the basis of our technical advice are beyond our control and, therefore, entirely your own responsibility. Our products are sold in accordance with the current version of our General Conditions of Sale and Delivery.

Trial Products (grade designations beginning e.g. with the codes DP, TP, KL or KU) are sales products at the developmental stage (trial products). For this reason, no assurances can be given as to type conformity, processability, long-term performance characteristics or other production or application parameters. No definitive statements can be made regarding the behavior of the product during processing or use. The purchaser/user uses the product entirely at his own risk. The marketing and continued supply of this material are not assured and may be discontinued at any time.