DLC coated quality standard components ensure a longer service life

Not only in the injection moulding of packaging products, medical products or toys is it important to avoid the use of lubricants. Lubricant-free operation with maximum service life is nowadays increasingly required in the production of many other plastic products, such as white goods and precision parts for the automotive and computer industries. Especially with highly stressed moving mould components, how-

2/ DLC coated ejectors and guide elements

ever, a lack of tribological properties can lead to greater wear, cold welding and fretting corrosion. This must be avoided at all costs.
In tool and mouldmaking, DLC (Diamond Like Carbon) coating is therefore increasingly being used for moving components. This is a coating applied by the PACVD process (Plasma-Assisted Chemical Vapour Deposition), which significantly reduces friction and wear.

HASCO establishes DLC coatings as the standard

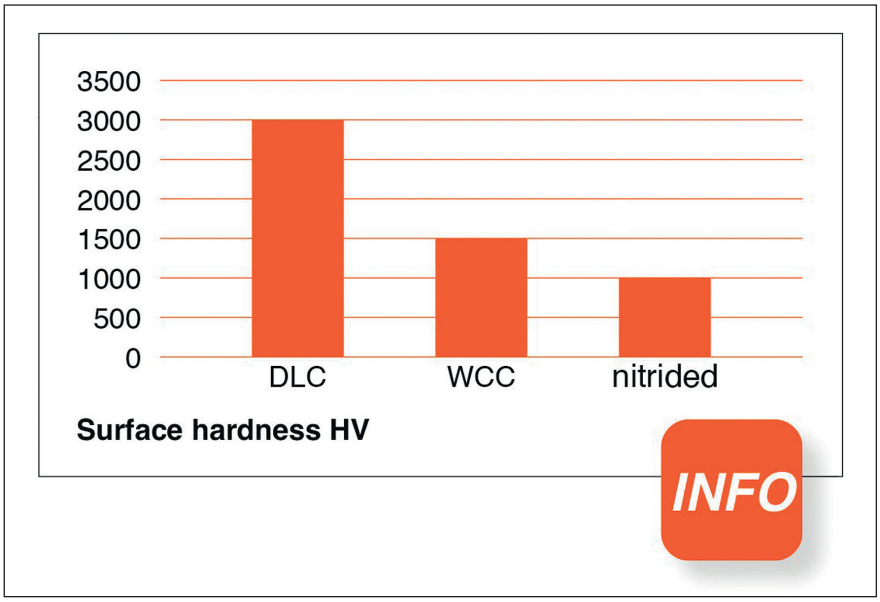
As a pioneer in the standardisation of DLC coated products, that have now become firmly established as the standard in tool and mouldmaking, are being used in more and more injection moulding tools, HASCO also offers the largest range of products. It covers not only locating, slide and guide units, but also moving elements such as ejectors, ejector sleeves, two stage ejectors, latch locking units etc.

Maximum service life without lubrication

The advantages of a DLC coating are immediately obvious. The surface hardness of up to 3000HV is significantly higher than the 950HV of a nitriding layer. The friction coefficient against steel is also considerably lower, 0.1 compared with 0.2. The accompanying high abrasion resistance and good corrosion prevention enable lubricant-free operation and thus longer maintenance intervals and maximum service life. Also when running dry, cold welding of the mould components is effectively avoided.
A DLC coating allows considerable productivity increases without lubrication. For example, a larger number of shots are also possible, which is of major importance for many applications.
“In LED lamp development, the use of light-guiding optical components of PMMA is ideal. In order to guarantee optimum light quality, we have decided to demould thick-walled optical parts in two steps from the injection moulding tool. The DLC coating of the two-step ejector enables the necessary dry-running properties of the moulding tool for lighting components,” explains Otto Ersching, Tool designer, Production / Mouldmaking, ERCO GmbH/DE-Lüdenscheid.

Suitable for clean-room applications and LGA-approved

Because of the elimination of any need for lubrication, DLC coated components are ideal for use in clean-room



3/ Info Surface hardness HV

conditions and, thanks to their LGA approval, are also suitable for use in the food industry. There is no longer any need for the time-consuming subsequent cleaning of the grease marks from injection moulding parts, and the economic efficiency of the production process rises while the reject rate falls.
When lubricants are used, the manufactured products tend to become contaminated, which is fundamentally banned with clean-room applications. Nor is it nowadays desirable with many conventional applications for a number of reasons, e.g. greasy edges on the parts.
Added to this is the fact that the application of lubricants always interrupts the ongoing process and thus negatively influences it. The resultant production interruptions naturally – like the very high costs for certified lubricants – have a negative effect on the production costs and thus reduce producers' already narrow margins even further.
"We in the Vangest group rely on HASCO's DLC components in mouldmaking for the medical and packaging industries, because they are suitable for clean-room applications and ensure minimum maintenance with maximum reliability," says Jorge Oliveira, General Manager MOLIPOREX (Vangest Group) / Portugal

100 % interchangeability of all components

Because HASCO manufactures the DLC components with a specific tolerance geared precisely to the coating, the parts have exactly the given original tolerance after the coating. This means that the HASCO customer receives the tolerances he ordered, which guarantees 100 % interchangeability of the components.
With the standardisation of DLC coated products, as has now become firmly established in tool and mouldmaking and is being deployed in more and more injection moulding tools, HASCO has created an industry standard that has become indispensable for any modern moulding tool.
As well as the technical benefits, customers also appreciate among other things the fact that the standardised components can be ordered from HASCO ex stock. That, too, saves time and money.

4/ With just a few clicks to the desired product
(Pictures: HASCO Hasenclever GmbH + Co KG, Lüdenscheid, Germany)