

Higher efficiency thanks to AGATHON's anti-friction guide elements for high-performance injection molding

Today's mould construction is changing. Current requirements are for the highest accuracy of the parts, short cycle times and long service life of the mould in order to achieve a crucial competitive advantage. To meet these demands, clearance-free anti-friction systems should be considered over commonly used slide bushings (with a corresponding clearance). Ball and roller guides feature the following advantages:

- **No clamping of the guide during thermal fluctuation.** The tool can be opened earlier, resulting in a **shorter cycle time**.
- **Smooth running properties of the guides so that the plates do not tilt.** This will have a positive effect on the ejection performance of the product, improved part quality, and will **reduce rejects**. Therefore, the ejector pins can be optimally adjusted.
- **Minimal wear.** More **consistent quality** and **longer service life** of the guide will have a positive effect on the service life of the form.
- **Operation without lubrication is possible**, e.g. for applications in the **medical field**.
- **When using roller guides for the main guidance**, supporting of the middle plate (for example, in a multi-stack tool) is no longer required. As a result, the changeover time will be shorter. Additionally, extra centering elements may become unnecessary thanks to the **higher precision and rigidity** of this guide.

An optimal preload is most important for the proper function of an anti-friction guide. This can only be achieved when every single component is manufactured with the closest form and positional tolerance along with the highest surface finish.

Until now the use of anti-friction guide elements was often not possible due to the stroke, resulting in the pillar or bushing disengaging out of the preload with each stroke.

By combining a **Cage Retaining System** (movable or fixed depending on the place ratio) with a **spiral spring** for positioning the cage when entering the preload, it is now possible to use anti-friction guides for such applications. When defining the dimension, it is important to take into account / calculate the load of the rolling elements. Often the solution requires project-specific special components. AGATHON provides you with competent advice and support for defining the appropriate guide units.

