

FOCUS ON APPLICATIONS

TOOLS IN TOP FORM

INNER FORMING DIES FOR NON-CUTTING PRODUCTION



Top quality for inner forming dies

Cold forming is characterised by the high degree of deformation on the workpiece and the associated extreme demands on the tool. Depending on the process, very high pressures combined with high sliding speeds can arise. There is also a risk of the tool fusing to the workpiece. It is therefore essential for the friction coefficient of the forming tool surface to be as low as possible. This friction

coefficient is highly dependent on the tool roughness. Tools are therefore generally polished to achieve a perfectly smooth surface. The surface roughness significantly affects the forming tools' service life as well. A smooth surface produces less friction, and therefore less wear, on the forming surfaces. A perfectly shaped and smoothed die also benefits the processing result on the workpiece. This surface processing has been done mainly by hand using diamond paste until now. However, manual processing is very time-consuming and expensive and fails to deliver consistent and reproducible results.

OTEC permits perfect surface machining with precise results. Combined with ideally matched process parameters, this allows forming tools to be processed economically and in consistent quality. The tool is clamped into a holder and lowered into a rotating container filled with an abrasive or polishing media. The workpiece rotates and is processed as the media circulates around it. Inner forming dies can be polished rapidly with OTEC machines. Various machine models are available depending on requirements and quantities.

FOCUS ON APPLICATIONS

The [SF 3 RLS \(Robot Loading System\)](#) stream finishing machine with tooling robot for automatic workpiece loading is ideal for producing and processing large quantities. This machine features three independent lifting units and tool holders and permits very short processing times. Its intelligent control system ensures that a tool can be changed on one station while the other two are involved in processing. This minimises changeover times and results in an extremely high output. The machine can process workpieces measuring between 3 and 26 mm in diameter and up to 250 mm in length (further diameters planned). Typical processing times for inner forming dies in the stream finishing process are in the range from 3 to 15 minutes.



SF 3 RLS – stream finishing machine with automatic loading