

Advancing Gasket Manufacturing Through Digital Cutting Technology

By Keith Soya, Zund America Inc.

Gasket manufacturers face increasing demands for precision, efficient material utilization, and fast response to changing customer needs. As materials diversify and application requirements become more specialized, production teams must manage the cutting process carefully, including dimensional accuracy, to ensure reliable output quality and, ultimately, product performance. Digital cutting technology has emerged as a valuable solution, offering consistent accuracy, flexible production capabilities, and streamlined job preparation.

Zünd's digital cutting systems support these needs through dependable mechanical performance combined with ongoing advancements in process control and workflow automation. Together, these capabilities help manufacturers achieve repeatable, high-quality results across a wide range of products and production volumes.

Reliable cutting performance

Advancements in Zünd's software ecosystem continue to expand what manufacturers can accomplish when processing both traditional and next-generation gasketing materials. Updated cutting algorithms, refined tool-parameter controls, and automated calibration and setup routines contribute to reliable, repeatable results—even with layered, compressible, or fiber-reinforced substrates.

These improvements support the precise execution of intricate geometries, maintain consistent cutting depths across areas of variable material density, and ensure stable edge quality throughout extended runs. By reducing material-driven variability and improving process control, digital workflows help fabricators maintain tight dimensional tolerances while minimizing rework and waste.

Benefits of digital cutting in gasket manufacturing

Digital cutting offers gasket manufacturers a flexible and efficient alternative to traditional flatbed or rotary die-cutting processes. Because digital systems do not rely on physical dies, production can begin immediately once a design is finalized, eliminating lead times associated with die fabrication, maintenance, storage, and replacement. This makes it easier to accommodate on-the-fly design updates, material changes, and mixed-order production.

Digital cutting also enables the creation of complex shapes with fine details that may be difficult or costly to achieve with conventional tooling. Consistent accuracy across varied material types and thicknesses helps maximize material yield and minimize scrap, while fast, tool-less changeovers support short runs, prototypes, customized parts, and high-mix production.

Workflow Efficiency and Automation

As in any manufacturing environment, workflow efficiency is increasingly important in gasket production. Zünd's software tools support streamlined job preparation, efficient nesting for optimized material usage, and automated tool-parameter management tailored to specific materials. These capabilities reduce manual steps in production, minimize operator intervention, and improve throughput across the entire workflow.

Automated job sequencing, digital job tracking, and standardized cut settings help ensure consistency from shift to shift, supporting dependable productivity in fast-paced manufacturing environments. When combined with improved material utilization, these workflow enhancements help reduce production costs while maintaining high levels of output quality and reliability.

Supporting industry standards and material requirements

Many gasketing materials must meet performance specifications defined by ASTM, SAE, ISO, or other standards. Digital cutting provides the accuracy and repeatability needed to preserve the dimensional and functional integrity of designs required by these industry standards. Clean edges, consistent dimensions, and stable processing quality help ensure finished gaskets align with prescribed performance characteristics.

Why gasket manufacturers choose Zünd

Digital cutting has become an essential tool for gasket manufacturers seeking consistent quality, flexible production capabilities, and efficient, repeatable workflows. By combining precise cutting performance with advanced software and automated job preparation, Zünd systems support reliable results across a wide range of materials and production requirements. To see how these advantages translate into real-world production, watch this testimonial to hear directly from a Zünd gasket-manufacturing customer: <https://youtu.be/v6epF6pL4js>