

INNOVATION

SPOTLIGHT from the brands of Altra Industrial Motion Corp.



CUSTOM KILIAN BEARING AND DETENT DESIGN SOLUTIONS PROVIDE RELIABLE PERFORMANCE IN AUTOMOTIVE POWERTRAIN APPLICATIONS

Automotive engineers are constantly challenged to improve the fuel economy and performance of their vehicles while also lowering cost. Every aspect of a vehicle is scrutinized, from body panel metals and composite materials, to engine and powertrain components.

Transmission and transfer case OEMs strive to develop innovative designs to meet cost targets while providing improved performance and enhanced driver experience.

KILIAN RECOGNIZED FOR SUPERIOR APPLICATION EXPERTISE

For more than 25 years, Kilian has built an excellent reputation for providing customized bearing and detent design solutions to major auto transmission/transfer case OEMs in the United States, Canada, Mexico, Austria, Spain, Poland, France and China. Kilian's global expertise in this market focuses primarily on shift detents, shift forks, planetary gear sets for actuators and assemblies used to control hydraulic pressure.

Kilian engineers specialize in identifying the best materials, heat treatment, lubrication, bearing type and part geometry that will provide the optimum performance at the lowest overall cost. In most cases, Kilian also provides integral attachment features that make it easy to install the product, and also eliminates the need to source and stock a fastener and perform an assembly operation.

In addition, Kilian can add engineered overmolded plastics to a design to provide a solution that requires a non-magnetic characteristic.



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STRUCTURED FOR SUCCESS

Kilian's exceptionally talented group of co-located design and manufacturing engineers work closely together at the onset of a project to ensure that a product design not only meets the specific application requirements but also considers "Design for Manufacturability" (DFM). This allows Kilian custom design solutions to be competitively priced.



Machining and assembly is also located in the same facility so engineers have the ability to view prototypes and monitor the manufacturing process at every step to make design improvements and cost reduction suggestions.

A complete in-house prototype department allows Kilian to provide production-intent designs to the customer in approximately 4 weeks.

RESPONSIVE DESIGN SUPPORT

Many design iterations are often required to ensure that not only the Kilian design solution, but the complete OEM end-product meets form, fit and function requirements. Part designs might change multiple times to further perfect the final end-product. As a custom bearing and assembly designer, Kilian can easily adapt to specification and design changes.

COMPREHENSIVE IN-HOUSE TESTING CAPABILITIES

Kilian has developed specialized in-house capabilities for comprehensive testing of all facets of a design, including durability testing of bearing components when required. Kilian is also certified to perform cleanliness testing in accordance with established standards of major OEMs.

Kilian also performs DV (Design Verification) and PV (Product Validation) testing. Testing can be conducted under ambient temperatures as well as elevated and low temperatures (torque testing for example).



Detent/piston designs are routinely tested for 2 million cycles utilizing Kilian's unique Radial Bearing Durability Test Machine. The machine features a variable speed/variable distance precision-guided table and custom-designed fixtures that allow for testing multiple detents simultaneously.