



OEM Solutions for Automotive Powertrain Applications



 **Kilian**[®]
Manufacturing
An Altra Industrial Motion Company

KILIAN MANUFACTURING PROVIDES POWERTRAIN SOLUTIONS FOR AUTOMOTIVE APPLICATIONS

Kilian is the world leader in designing, developing, and manufacturing machined race bearings and custom engineered powertrain components. Kilian's powertrain products serve OEM requirements for demanding automotive applications.

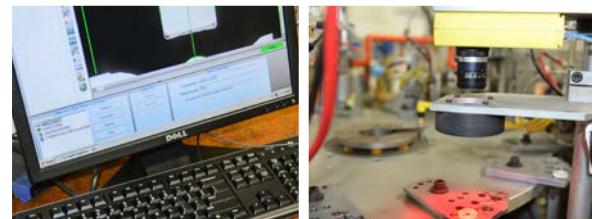


With expert mechanical engineers on staff and thousands of innovative designs, Kilian works as an extension of your own, in-house engineering team to create cost-effective solutions and deliver the support you need to speed new product development and dramatically cut time to market. Our engineers leverage years of experience in design to build a custom solution that perfectly meets your application needs.

With a reputation built on rapid, professional response that spans over 80 years in business, Kilian produces the finest precision-machined bearings and components available today.

KILIAN PRODUCTS DESIGNED SPECIFICALLY FOR **AUTOMOTIVE POWERTRAIN APPLICATIONS**

Kilian designs a wide range of products to meet a broad spectrum of automotive powertrain application needs. Our major application areas are: **Transmission, Transfer Case, Shift Actuation, & Variable Cam Timing.**



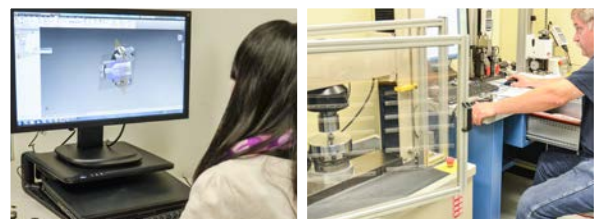
Allow Kilian to be your Automotive Powertrain Component Supplier

- Design and manufacturing engineering
- Quantities up to 8,000,000 pieces annually
- CNC precision machining
- Automated assembly
- Heat treating
- Plating
- Injection molding

LEVERAGE THE STRENGTH OF KILIAN'S **DESIGN ENGINEERING TEAM**

We develop our products to meet the customer's design needs.

Our engineers will work closely with your engineering team to develop a custom solution, making on site visits whenever necessary.



Tools used for rapid and robust design engineering:

- Solid modeling
- FEA
- On-site test lab for design verification
- Rapid prototyping capability

DUAL CLUTCH TRANSMISSION ACTUATION PISTON IN APPLICATION



Actuator Piston and Detent

MANUFACTURING CAPABILITIES

DCT Piston



- Precision machined
- Broached and milled slot
- Carburized for wear resistance
- Engineered polymer overmold
- Neodymium magnet



DCT Detent



- Injection molded polymer insert
- High fatigue limit spring
- Precision bored I.D.
- Through hardened housing for durability
- Assembly pre-form and staking operation
- Plated for corrosion protection
- Machine and precision ground O.D.

Shift Fork



- Heat treated casting
- CNC machined finishing operation
- Staked actuation bearing
- Assembled to mating components
- Low friction engineered polymer pads

Belted Drives and Sheaves

TB Wood's

Belted Drives

Chambersburg, PA - USA
1-888-829-6637 – Press #5

*For application assistance:
 1-888-829-6637 – Press #7*

Couplings

Ameridrives Couplings

*Mill Spindles, Ameriflex,
 Ameridisc*

Erie, PA - USA
1-814-480-5000

Gear Couplings

San Marcos, TX - USA
1-800-458-0887

Ameridrives Power Transmission

*Universal Joints, Drive Shafts,
 Mill Gear Couplings*

Green Bay, WI - USA
1-920-593-2444

Bibby Turboflex

*Disc, Gear, Grid Couplings,
 Overload Clutches*

Dewsbury, England
+44 (0) 1924 460801

Boksburg, South Africa
+27(0) 11 918 4270

Guardian Couplings

*Engineered Flywheel Couplings,
 Engine Housings and Pump Mounts,
 Flexible Shaft Couplings*

Michigan City, IN - USA
1-219-874-5248

Huco Dynatork

*Precision Couplings and
 Air Motors*

Hertford, England
+44 (0) 1992 501900

Chambersburg, PA - USA
1-888-829-6637

Couplings Cont.

Lamiflex Couplings

*Flexible Couplings, Bearing
 Isolators, and Coupling Guards*

Cotia, SP - Brasil
+55 (11) 4615-6300

TB Wood's

Elastomeric Couplings

Chambersburg, PA - USA
1-888-829-6637 – Press #5

*For application assistance:
 1-888-829-6637 – Press #7*

General Purpose Disc Couplings

San Marcos, TX - USA
1-888-449-9439

**Electromagnetic
 Clutches and Brakes**

Inertia Dynamics

*Spring Set Brakes; Power On and
 Wrap Spring Clutch/Brakes*

New Hartford, CT - USA
1-800-800-6445

Matrix International

*Electromagnetic Clutches
 and Brakes, Pressure Operated
 Clutches and Brakes*

Brechin, Scotland
+44 (0) 1356 602000

New Hartford, CT - USA
1-800-825-6544

Warner Electric

*Electromagnetic Clutches
 and Brakes*

New Hartford, CT - USA
1-800-825-6544

*For application assistance:
 1-800-825-9050*

Saint Barthélemy d'Anjou, France
+33 (0)2 41 21 24 24

*Precision Electric Coils and
 Electromagnetic Clutches and
 Brakes*

Columbia City, IN - USA
1-260-244-6183

**Engineered
 Bearing Assemblies**

Kilian Manufacturing

*Engineered Bearing
 Assemblies*

Syracuse, NY - USA
1-315-432-0700

Gearing

Bauer Gear Motor

Gearred Motors

Esslingen, Germany
+49 (711) 3518-0

Somerset, NJ - USA
1-732-469-8770

Boston Gear

*Enclosed and Open Gearing,
 Electrical and Mechanical
 P.T. Components*

Charlotte, NC - USA
1-800-825-6544

*For application assistance:
 1-800-816-5608*

**Nuttall Gear and
 Delroyd Worm Gear**

*Worm Gear and
 Helical Speed Reducers*

Niagara Falls, NY - USA
1-716-298-4100

**Heavy Duty
 Clutches and Brakes**

Industrial Clutch

*Pneumatic and Oil Immersed
 Clutches and Brakes*

Waukesha, WI - USA
1-262-547-3357

Svendborg Brakes

*Industrial Brakes and
 Brake Systems*

Vejstrup, Denmark
+45 63 255 255

Twiflex Limited

Caliper Brakes and Thrusters

Wichita Falls, TX - USA
1-844-723-3483

Twickenham, England
+44 (0) 20 8894 1161

**Heavy Duty
 Clutches and Brakes Cont.**

Wichita Clutch

*Pneumatic Clutches
 and Brakes*

Wichita Falls, TX - USA
1-800-964-3262

Bedford, England
+44 (0) 1234 350311

Linear Products

Warner Linear

Linear Actuators

Belvidere, IL - USA
1-800-825-6544

*For application assistance:
 1-800-825-9050*

Saint Barthélemy d'Anjou,
 France
+33 (0)2 41 21 24 24

Overrunning Clutches

Formsprag Clutch

*Overrunning Clutches
 and Holdbacks*

Warren, MI - USA
1-800-348-0881 – Press #1

*For application assistance:
 1-800-348-0881 – Press #2*

Marland Clutch

*Roller Ramp and Sprag Type
 Overrunning Clutches
 and Backstops*

South Beloit, IL - USA
1-800-216-3515

Stieber Clutch

*Overrunning Clutches
 and Holdbacks*

Heidelberg, Germany
+49 (0) 6221-30470

For information concerning our
 sales offices in Asia Pacific
 check our website
www.altramotion.com.cn



www.kilianbearings.com

1728 Burnet Avenue
 Syracuse, NY 13217 - USA
 315-432-0700 ext. 7251
 Fax: 315-432-1312