



KOLLMORGEN[™]

Custom Motor Products

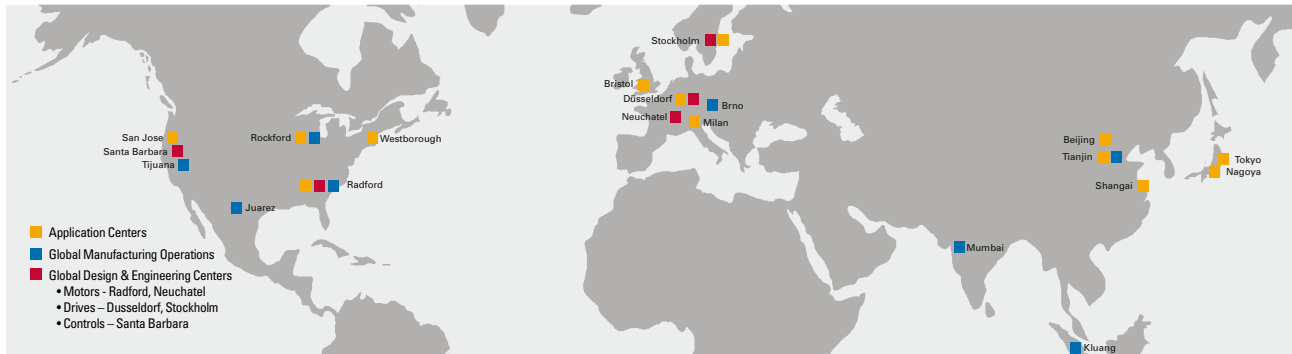
Engineered Solutions That Deliver Maximum Customer Value



*Helping you build a better machine, **faster.***

A Distinguished History of Design Expertise and Engineering Excellence

With more than 50 years of experience designing custom Kollmorgen motor solutions, Danaher Motion provides the latest technological advancements and application expertise to deliver the broadest capabilities in the industry.



Global Facilities and Supply Chain

We have been improving the efficiency and productivity of businesses worldwide for decades.

Our breakthrough innovations are based on application experience around the globe and across many industries. We have design and application engineering centers, ISO9001:2000 high volume manufacturing facilities, sales offices and distribution partners around the world, giving us the unique advantage and flexibility to produce where you need.

Industry-Leading Prototyping Capability

From design to production-ready prototype, our team of electromagnetic and mechanical designers gets involved early in the process and works side-by-side with our manufacturing group, thereby shortening the standard design cycle, to achieve:

- high product quality and on-time delivery
- an optimized package design
- faster implementation

We have a long history of delivering an initial product that's built and ready to operate in your environment with minimal to no design turnbacks.

Wide-Ranging Product Scope, Greatest Number of Solutions

Our product breadth is unmatched in the industry. With solutions for practically every application, the opportunities for optimizing package, performance, and features are endless.

When the solution demands it, we integrate higher level assemblies with ball screws, drives, gearboxes, cables, controls, feedback devices, and more — all available from Danaher Motion. **Danaher Motion Custom Electronics** can also provide you with a custom package to meet your unique motion control requirements.



Dedicated Project Management

We follow a structured development process from initial concept to volume production. This enables us to provide a complete solution from design to implementation.

Our skilled engineering team is assigned to each project and ensures a high quality product designed and delivered on time, successfully taking the prototype to full production.

Dedicated Resources & Equipment

Real Time Customer Collaboration

Rapid Concept-to-Hardware

Validation of Performance, Cost & Manufacturability Before Volume Production

Customer Visibility Throughout the Entire Process

A communicative and proactive approach keeps you updated and aware of what is required throughout, what it will cost, and what to expect for design testing.

This not only puts you in charge of approving any modifications before installation, but ensures the product is up and running quickly, with minimal development time and maximum value.

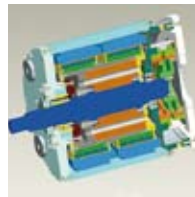
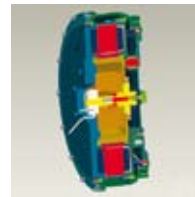
Engineering Excellence

What really sets us apart is our engineering expertise. With over 50 years of successfully designing custom motors, we are able to quickly assess, design and implement a solution that meets your needs.

Our engineers have an average tenure of 20 years, which means they have designed solutions for almost every unique and challenging situation. Their insightfulness and expertise will guide you through the development and implementation of an optimized motor solution.

We rely on the most advanced simulation tools to deliver the best products, designed to withstand the most unique and challenging environments:

- 3-D Modeling –ProE
- Finite Element Analysis
 - Electromagnetics
 - Structural (stress, vibration, fatigue)
 - Thermal
- SPEED
- Infolytica
- Ansys
- Magneto



Proven Custom Design Capability

We have a long history of success in a wide range of markets and applications, including Aerospace & Defense, Medical Equipment, Implantable Devices, Semiconductor, Petrochemical, Machine Tool, Industrial Automation, Packaging and Film Processing.

PERFORMANCE	APPLICATION	RANGE
Torque	Antenna positioning, hybrid vehicles, industrial machines, rapid indexing	Greatest torque to size ratio, up to 10K+ Lb-Ft
Speed	Earth rate telescopes, precision grinder spindles, film processing roller drives	Speeds from 1 rev. per day to 30K RPM. Designs with <0.1% velocity ripple
Voltage	Golf carts, lift trucks, semiconductor manufacturing equipment	12-72 VDC, 1-300 Amps to 155 - 600 VDC, 1-300 Amps
Size Range	Aircraft instruments, implantable heart pumps, telescopes, MRI and CT scanners	As small as 1-inch outside diameter, as large as 10+ feet outside diameter
Harsh Environments	Naval ships, orbiting satellites, deep sea drilling, missiles	Sealed, corrosion resistant, active pressure compensation, 20K g's gunfire shock, >200C sustained operating temperature
High Reliability	Artificial heart pumps and ventricular assist pumps, military gyroscopes, high volume manufacturing machines	Up to 30 year life, continuous operation or intermittent use
Smooth Operation	Medical respirators, silicon wafer handling robots, index tables, textile machines	Zero cogging slotless motors, <.5% ultra low cogging slotted brushless motors, <.5% torque ripple
Higher Level Assemblies	X-Y tables, pick and place robots, linear actuators, rotary actuators	Motors with integral ball screws, brakes, feedback devices; motors with gearboxes, custom splines, custom pulleys, flex couplings
Specialty Performance	Hybrid electric vehicles	Custom electromagnetic and mechanical designs for propulsion, controls, power generation, regenerative braking
	Redundant systems	Custom multiple motor designs in a single package or redundant windings in a single motor
	High power dissipation	Special liquid cooled housings or air cooled enclosures
	Unusual fit constraints	Large inner bore, short axial length, thin cross-section, specialty feedback, custom mechanical and electrical interfaces



Why Custom?

Optimize the Package, Performance and Features

- We provide solutions that meet your needs, including the ability to get optimum performance for the smallest package size
- Our products deliver superior quality, throughput, efficiency, and performance

Reduce Waste and Costs

- We have thousands of proven designs upon which to build new solutions. Our application experience expedites the design cycle, which enables you to be fully operational sooner.
- Greater value delivered in the final product

Meet the Most Challenging Requirements

- Designs are developed for manufacturability
- Designing and manufacturing unique products are our core competency
- We have the broadest capabilities in the industry



Compete and Win

Danaher Motion can translate your needs, from design to installation, into a custom Kollmorgen motor solution that makes your end product more competitive
 – **driving market share and profitability for your company.**

For flexible production runs, from high volume to one piece, Danaher Motion provides an optimized solution that fits your needs — perfectly. Call the Danaher Motion – Custom Motor Products group to schedule a needs assessment today at 1-540-633-3400 or e-mail DMAC@danahermotion.com.

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