

ELECTRO-MECHANICAL MOTION CONTROL OVERVIEW

Moog electro-mechanical portfolio at a glance

WHEN PERFORMANCE REALLY MATTERS

MOOG

MAKING THE IMPOSSIBLE POSSIBLE IN MOTION CONTROL

Moog Industrial is your partner of choice when performance really matters. We combine world class technologies with expert advisory support to solve our customers' most difficult challenges in motion control.

Our Experience

Moog Industrial excels in a wide range of applications, including industrial automation, metal working, robotics and medical motion control - just to name a few.

Get exceptional customer support from our well-trained experts, backed by Moog's longstanding track record of high performance and trusted experience. All related technology is owned by Moog.

Will Make You Triumph

Moog's typical hands-on mentality and our ambition to make the impossible possible in motion control can provide you with a competitive advantage, which will most likely last for years.

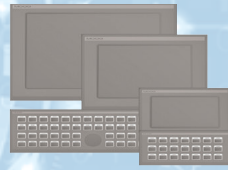
Our formula:

- Superior and reliable machine design, based on technology-neutral approach
- Customize to your very specific requirements, including the utmost compactness and quietness
- Improved profitability through economically effective project design
- A trustful partnership, driven by empathy and passion

MOOG ELECTRIC MACHINE

IoT
Industry 4.0

ETHERNET



LOCAL HMI

CONTROLS



SMARTMOTOR™



DECENTRALIZED
DRIVES



MULTI-AXIS
DRIVES



MACHINE
CONTROLLERS



SINGLE-AXIS
DRIVES

MOTION



MOTORS AND BLOWERS



SERVO MOTORS

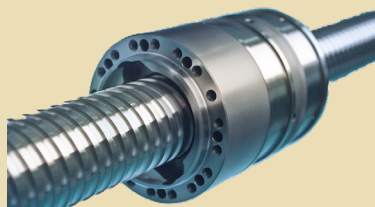


EM ACTUATORS



LINEAR MOTORS

MECHANICAL



BALL SCREWS



ROLLER SCREWS



INVERTED ROLLER SCREWS

MOOG PORTFOLIO

Moog consistently makes available to all its partners the high performance, deep technical know-how and absolute reliability that have made the company a world leading motion control solutions provider. By applying EM technology to solve our customers' problems in the industrial, energy, simulation, aviation and medical fields for decades, we have accrued a unique base of knowledge that sets us apart from the others.

With its vocation as a collaborative solutions provider Moog will help our customers develop the best applications to achieve their goals. Moog can leverage its ability to easily tailor its products to fulfill all specific machine requirements and to meet and exceed your expectations.

Our portfolio includes products at all levels of industrial automation machinery, from mechanical to motion to high precision control.

MECHANICAL



MOOG BALL SCREWS

High performance and precision design, reducing power requirements. Particularly effective in applications where the load on the screw varies quickly, such as machining tools.



MOOG PLANETARY ROLLER SCREWS

Also known as satellite roller screws. Low-friction precision screw-type actuator. Well suited for heavy loads, high duty, high rotational speeds. Extremely low maintenance requirements reducing machine downtimes. Inverted roller design also available.



MOOG INVERTED ROLLER SCREWS

An inverted roller screw works on the same principle as a planetary roller screw. In order to reduce the overall actuator dimensions, either the nut or screw can be directly used as a push tube, with the load acting directly on it.

MOTION



DC MOTORS - SILENCER™ SERIES

Compact in size and built for rugged applications and environments, the Silencer™ series very quiet, efficient design is well suited for working conditions where low noise and reliable, long life operation are particularly important. Inside rotor construction for quick acceleration.



SEALLESS COOLANT PUMP

Among the smallest on the market and designed to safely circulate coolants through mainframe computing systems, these leak-proof pumps with rotor magnetics integrated with the impeller, find also application in the cryogenics, petrochemical, pharmaceutical, biotech and semiconductor industries.



BLOWERS - AIRMAX™

High efficiency, low noise 3-phase brushless DC motor with Internal drive electronics. Integrated electronics with customizable system interface. Configurable with any voltage, flow sensors and finger guards. Custom mounting flanges can be fabricated to fit exactly every application.



SERVO MOTORS

Fully customizable, modular motors, available with special feedbacks and natural, forced and liquid cooling. Our servo motor families can provide high dynamics and powers into compact dimensions (especially shorter lengths). Frameless packages, special axles, windings and designs are available.



EXPLOSION PROOF DYNAMIC SERVO MOTORS - ExD SERIES

Designed and tested for operation in conditions where vapors or gases form flammable or explosive environments. Flameproof housing withstands internal explosions. Certified for ATEX, IECEx, UL, CCC EX, KOSHA and TRCU.

MOTION (LINEAR)



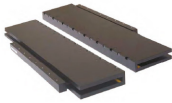
ELECTRIC LINEAR SERVO ACTUATORS

Higher forces, rod speeds and longer strokes than standard market actuators. Inline and foldback design with internal anti-rotation. Variety of motor windings for optimized performance. Customizable screw leads for speed/force variations.



FLAT LINEAR MOTORS

Synchronous linear motors with compact design. The flat design reduces significantly backlash, windup, wear, and maintenance issues associated with other linear motion systems. Forces from 300 N to 16 kN movement speed up to 8.6 m/sec. Linear motors with high degrees of protection (up to IP67) are also available.



FLAT LINEAR MOTORS - LNS SERIES (with no ferromagnetic material)

The primary parts without ferromagnetic materials reduce virtually to zero the pull forces between primary and secondary parts with an absence of pulling force pulsations, delivering high efficiency, accuracy of movement and fast acceleration.

CONTROL



SMARTMOTOR™

Highly programmable, integrated servo motor system consisting of a motor, an encoder, an amplifier, a controller, RS-232/RS-485 communication, and IOs. Works with Combitronic™, proprietary parallel processing system. Easy integration into linear actuators and sub-assemblies for high-end automation.



MULTI-AXIS SERVO DRIVES

Compact design and multi-axis modular architecture. Maximum flexibility and exceptional synchronization between axes. Safe Torque Off. User-friendly graphic interface. Wide range of control systems: EtherCAT®, CANopen and PROFINET® among others.



SINGLE-AXIS SERVO

Extremely compact design, smallest cabinet footprint on the market, modular architecture. Safe Torque Off. User-friendly graphic interface. Wide range of control systems: EtherCAT®, CANopen and PROFINET® among others.



DECENTRALIZED MOTOR INTEGRATED SERVO DRIVES

Decentralized architecture with IP65 protection rating. Maximum mounting flexibility. Safe Torque Off (STO) and Safe Brake Control. Complete integration with multi-axis system. Daisy-chain connection for simplified wiring.



DECENTRALIZED MACHINE MOUNTED SERVO DRIVES

Decentralized architecture with IP67 protection rating. Absolute mounting flexibility on any surface of the machine. Shared power supply (integrated within a multi-axis system). Daisy-chain connection for simplified wiring.



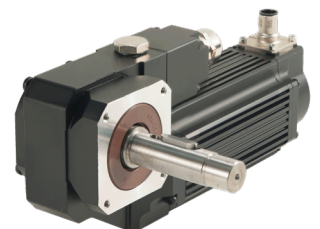
MACHINE CONTROLLERS

Support of multiple controllers in one project, multiple applications running on one controller. Extended visualization and programming features (i.e. Object Oriented Programming - OOP) Analog functions with high resolution and modular design.

SPECIAL PRODUCTS

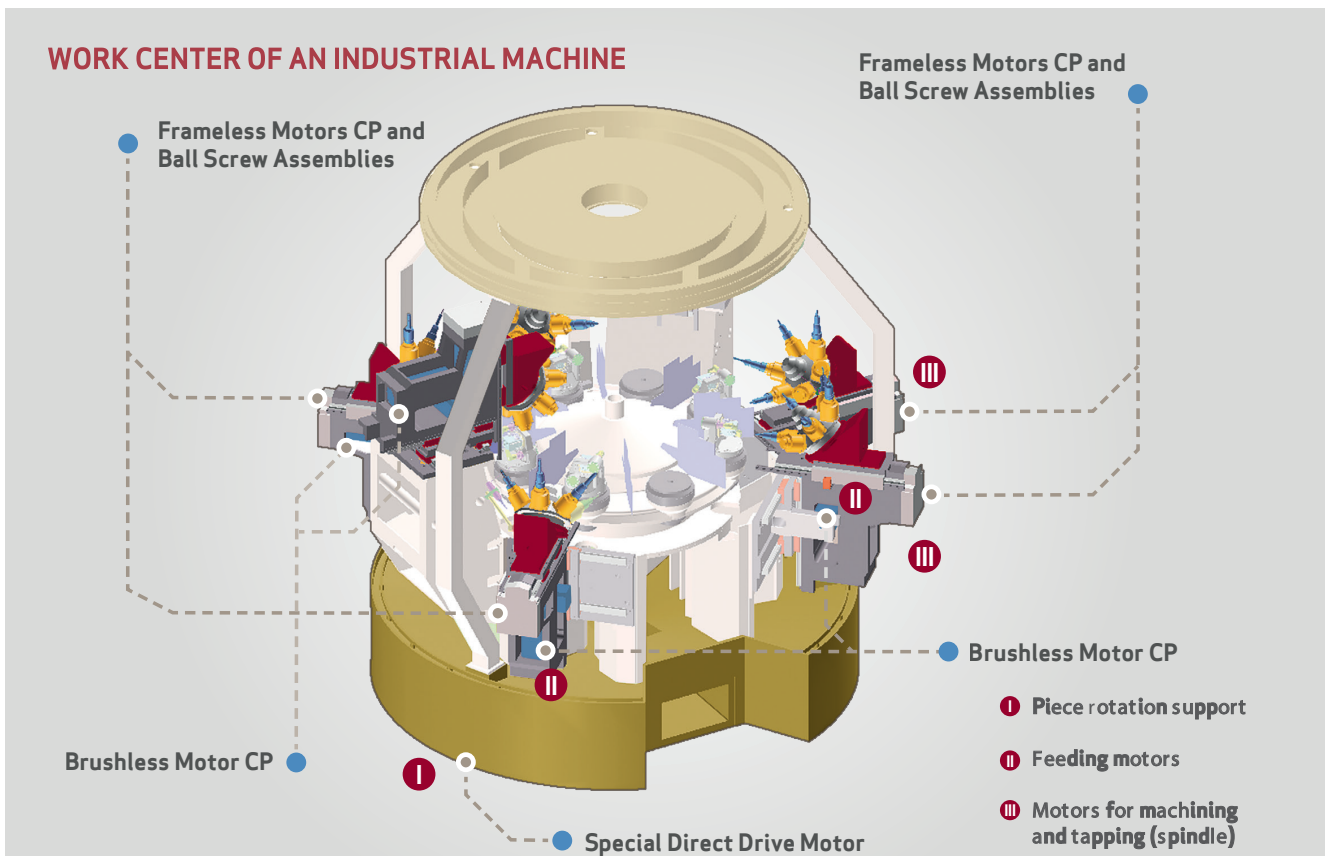
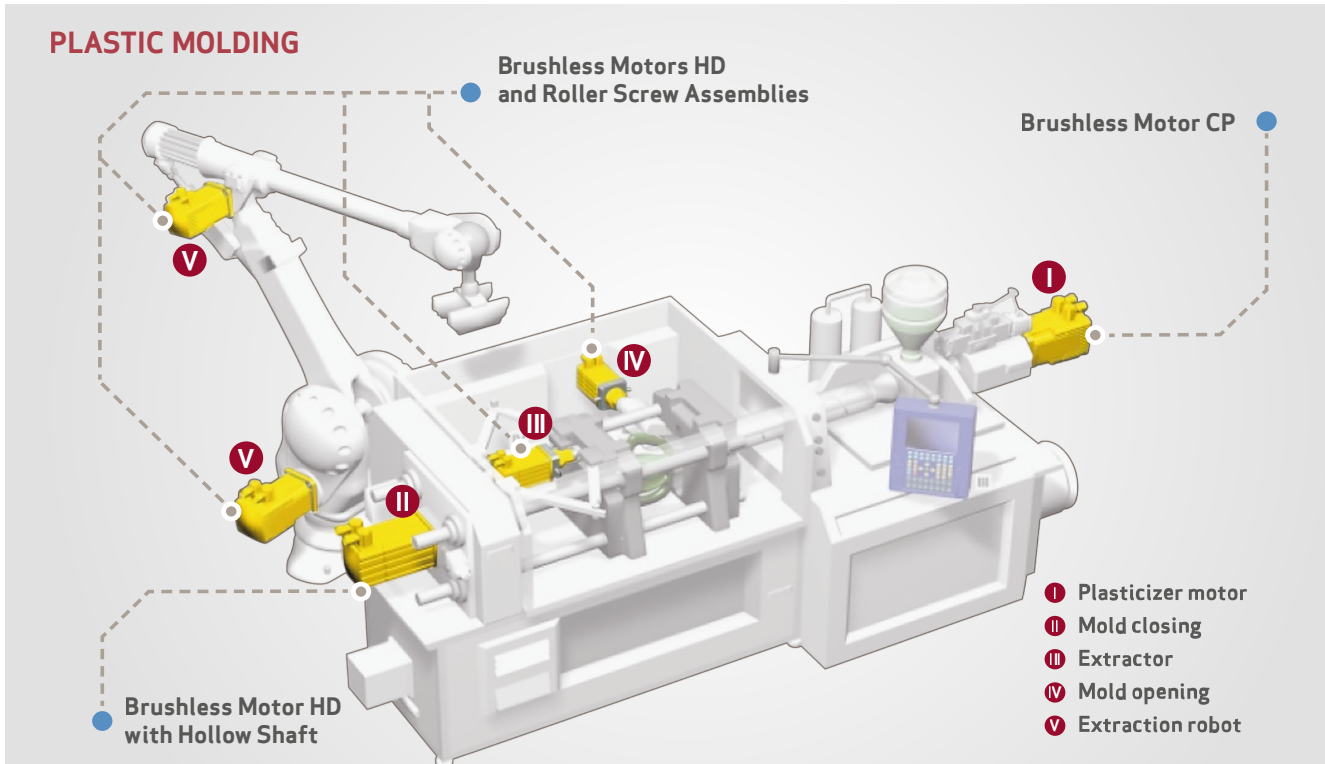
Moog's deep know how and our extended production capabilities around the world, allow us to create special custom made solutions to fit the most challenging and complex requirements. One of a kind applications, special prototypes, ruggedizing for extreme working conditions, whatever our customer needs, our expert design teams will deliver.

We work closely with our partners to develop together the best motion solutions for them.

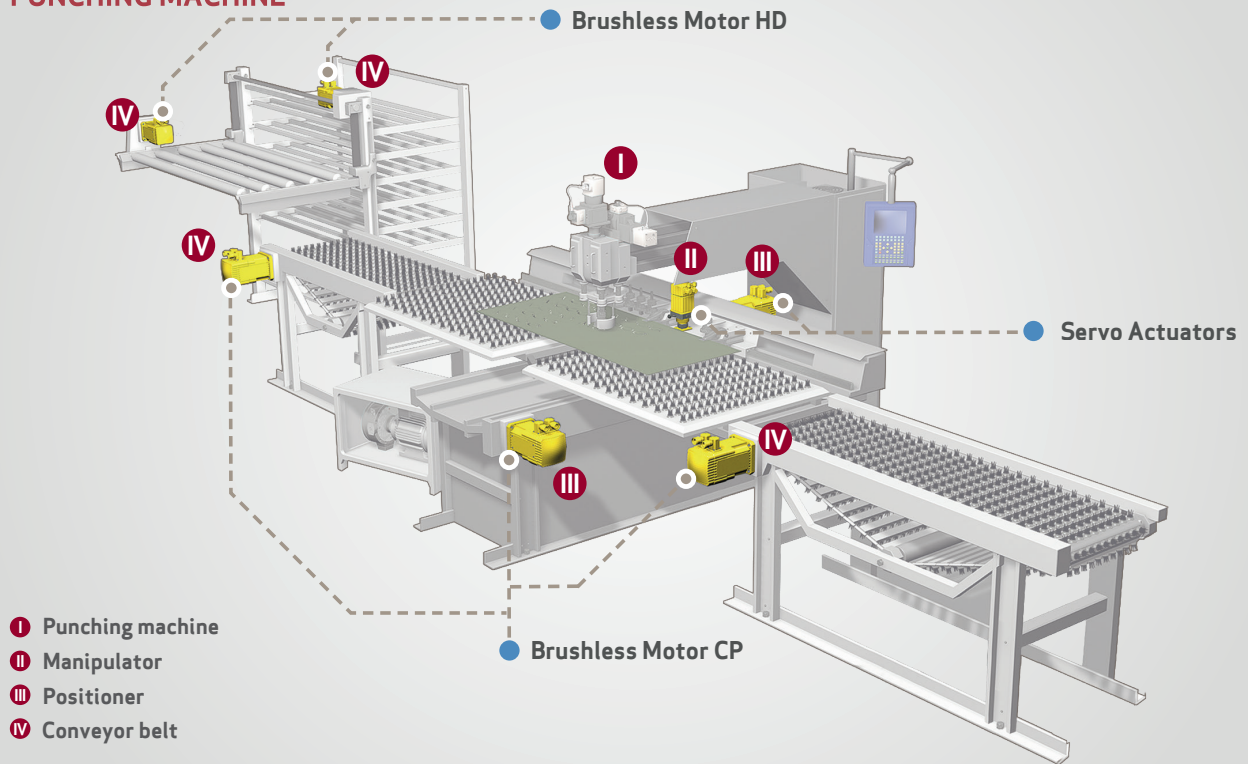


APPLICATIONS

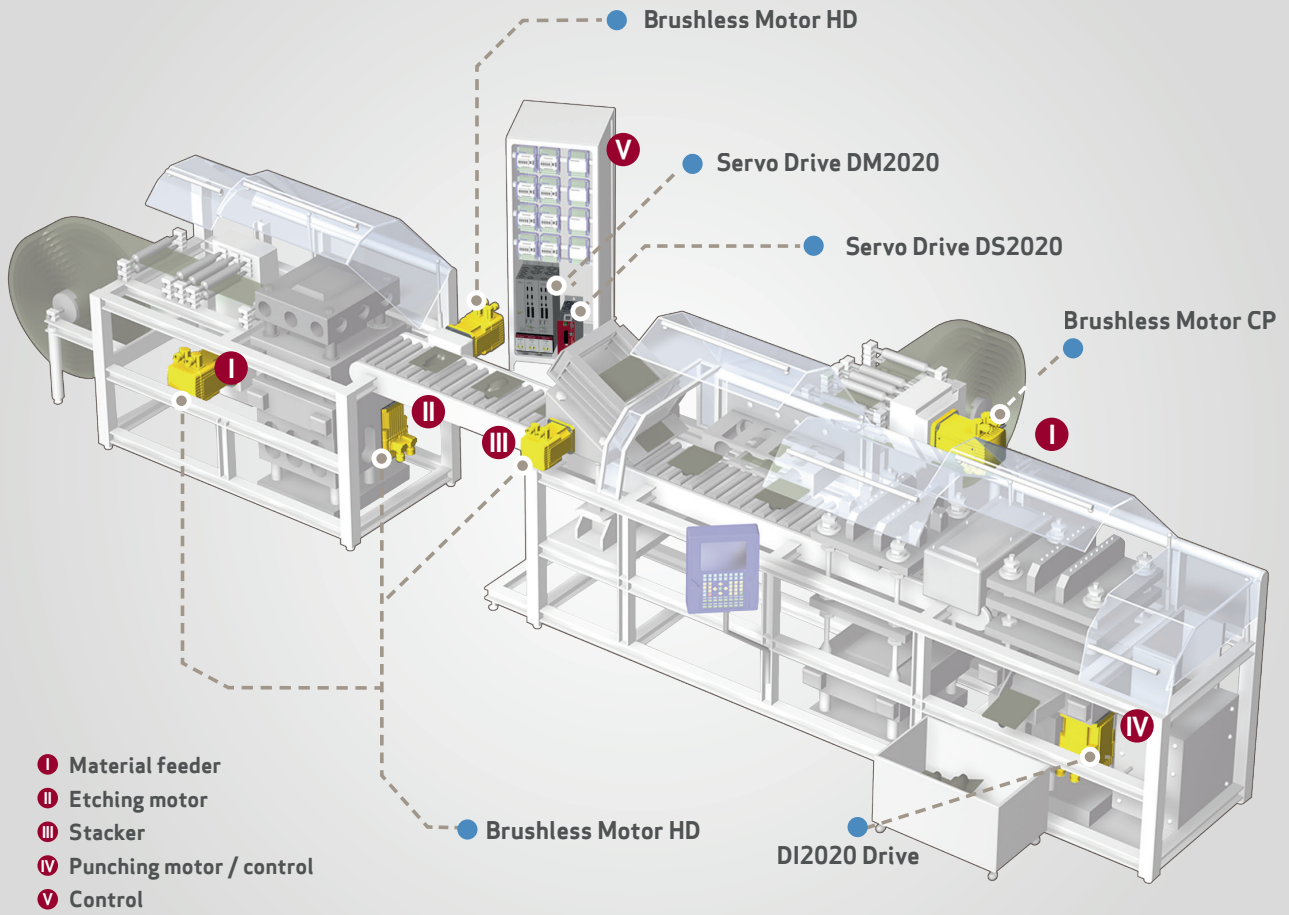
Moog technology can be found at the core of an endless variety of applications. See here just a few examples from the world of industrial automation:



PUNCHING MACHINE



PACKAGING



MORE SOLUTIONS. MORE SUPPORT.

Moog range of electromechanical and motion control products goes far beyond what is featured in this document. Moog also provides service and support for all of our products. Moog has offices around the world. For more information or the office nearest you, visit www.moog.com/contact-us/moog-facilities



For more information, visit www.moog.com
or email us em-motioncontrol@moog.com

Moog is a registered trademark of Moog Inc. and its subsidiaries.
All trademarks as indicated herein are the property of Moog Inc. and its subsidiaries. Product and company names listed are trademarks or trade names of their respective companies.

©2023 Moog Inc. All rights reserved. All changes are reserved.

Moog Electro-Mechanical Motion Control Overview Brochure
MCM/Rev. A, February 2023, Id. CDL65408-en

WHEN PERFORMANCE REALLY MATTERS

MOOG