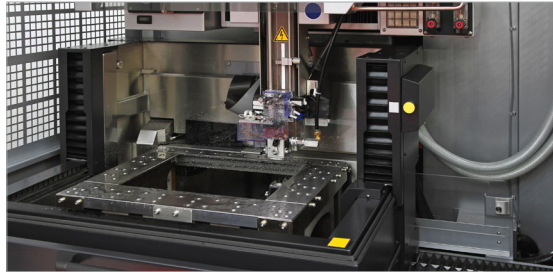
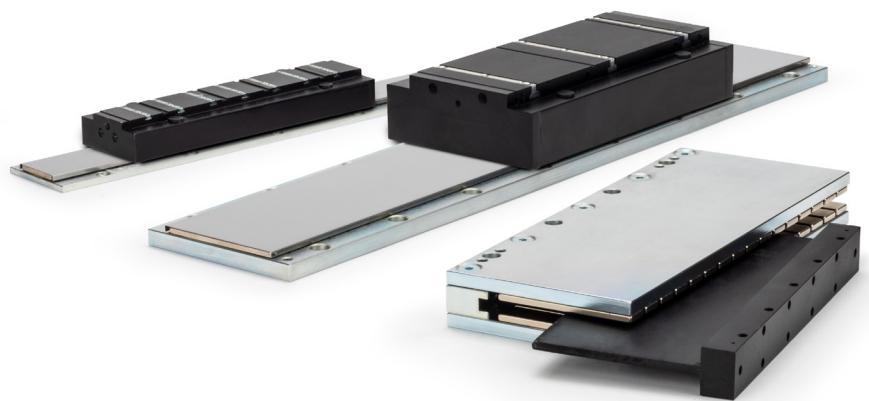


Precise. Powerful. Simple.



Kollmorgen Direct Drive Linear Motors

Transmission-free performance and simplicity



KOLLMORGEN

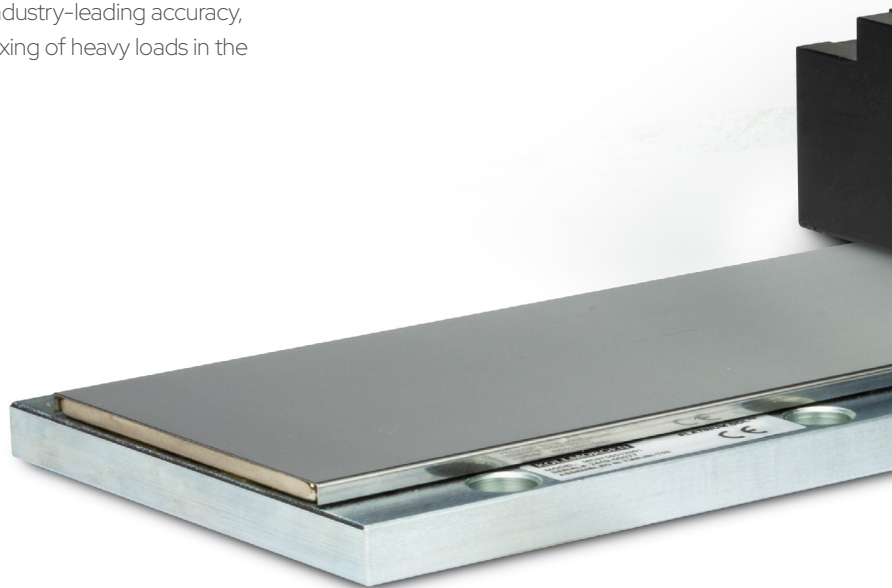
A REGAL REXNORD BRAND

Rapid, precise linear motion with zero maintenance

When your application requires linear movement of loads, especially with the speed and precision that a linear actuator can't achieve, direct drive linear motors provide the most rapid, powerful and exacting motion for the job.

DDL motors drive the load directly, eliminating the need for couplings, belts, ball/lead screws, rack & pinion gears or other transmission components. In addition to forgoing backlash-prone transmissions, DDL motors allow you to simplify machine design while reducing noise, avoiding lubrication and other maintenance tasks, and minimizing components subject to wear. The result is a faster, more capable and reliable machine.

Choose Kollmorgen's permanent-magnet DDL motors for industry-leading accuracy, bandwidth and force density, enabling rapid and precise indexing of heavy loads in the most compact machine design.



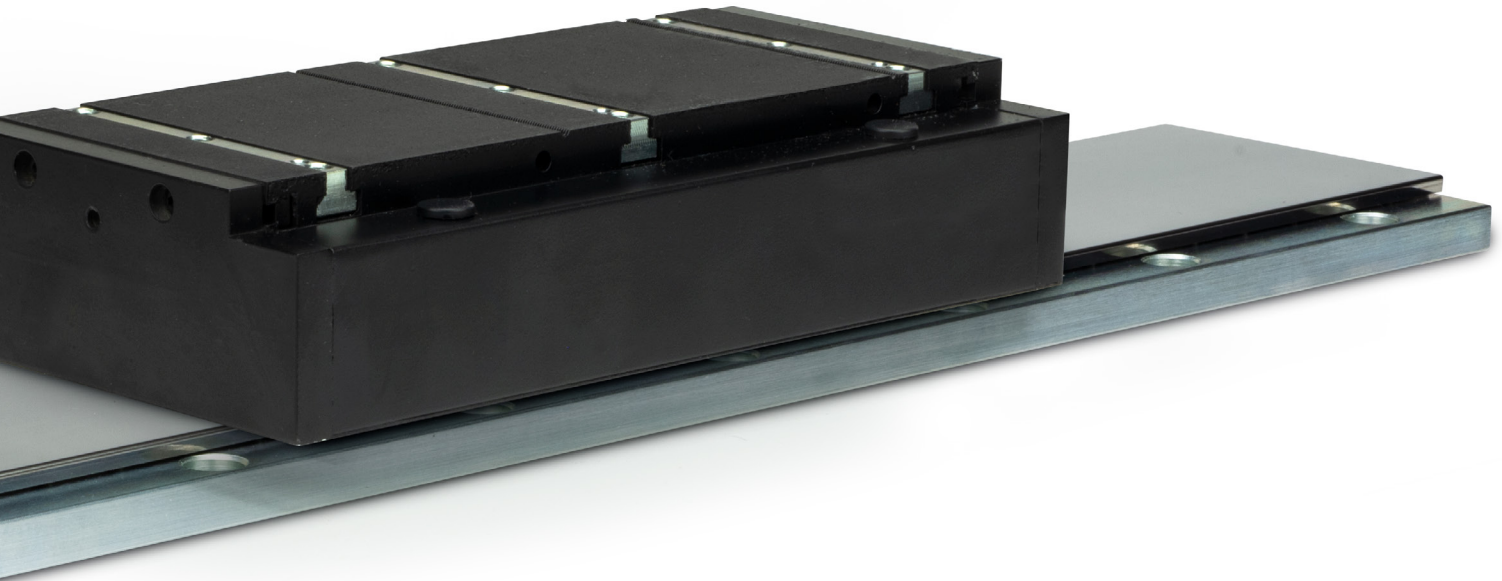
DDL linear motor design

Kollmorgen DDL motors are frameless, permanent magnet, 3-phase servo motors. They function on the same principles as rotary servo motors, except that what would otherwise be called the “stator” and “rotor” are flat rather than circular, so they push and pull the load linearly across a defined distance as opposed to spinning indefinitely.

In this flat configuration, copper coils are wound on a “slider,” and the permanent magnets are mounted to a base, forming a “magnet way” or track. This magnet way is assembled from modular sections and can be virtually any length, allowing for linear travel as short as 1 millimeter to as long as 100 meters or more.

DDL servo motors provide reliable, high-performance linear motion for:

- Machine tools and metal forming
- Semiconductor manufacturing
- Battery production
- Solar panel production
- Industrial automation
- Any application that can benefit from high-performance, low-maintenance linear motion

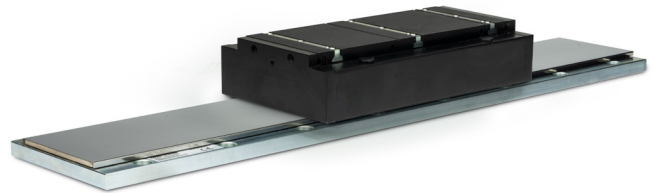


Kollmorgen DDL motor types and options

Kollmorgen offers a wide range of linear motor designs, bus voltages and force ranges, with servo drives and system options to suit virtually any application requirement.

IC Ironcore DDL

With the highest force per size and a high K_m motor constant, this design is ideal for accelerating and moving large masses while maintaining stiffness. An anti-cogging design yields extremely smooth operation.



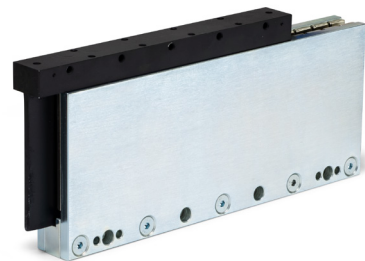
ICD Ironcore Low Profile DDL

Like the IC Ironcore DDL, this design incorporates copper coils wound around silicon steel laminations to maximize force, but the low-profile design supports more compact applications.



IL Ironless DDL

With no steel laminations and no attractive forces between the coil assembly and magnet way, this design is very lightweight and exhibits zero cogging even at ultra-low speeds.



Feedback devices

All Kollmorgen DDL motors are optionally available with a digital output Hall effect assembly. Third-party high-resolution linear feedback devices (not offered directly from Kollmorgen) are accepted by, and recommended for use with AKD and AKD2G drives.

Liquid cooling

Optional liquid cooling of our IC Ironcore DDL motors provides the flexibility to increase continuous force, for example raising the maximum continuous force delivered from 5,834 N to 8,211 N, without requiring a larger motor.

Thermal sensors

Thermistors (all models) or Thermostats (IC only) are available to monitor winding temperature and provide AKD and AKD2G drive-based thermal protection.



Complete your linear motion system with advanced drive performance

Any motor performs at its best when paired with the optimum drive. For most Kollmorgen DDL models and sizes, we recommend choosing the AKD2G servo drive for the ultimate in flexibility and performance. These powerful, personalized, plug-and-play drives offer:

- **Industry-leading power density** in a compact, easy-to-mount package, allowing for optimum dynamic response in compact, lightweight applications.
- **Flexible communication options**, including EtherCAT® & FSoE, CANopen®, Ethernet/IP with CIP Sync and PROFINET IRT, all built-in and user-selectable for ease of integration with Kollmorgen Automation Suite or your choice of third-party control systems.
- **Optional SafeMotion™ Monitor (SMM), SIL3/PLe** to meet functional safety needs and enable greater productivity in a wide range of applications.
- **Single-axis operation or an innovative dual-axis model**, ideal for powering applications such as x/y tables without the need to house, wire and commission a second drive.
- **Full cable sets**, including power and data cables optimized for simple installation, durability and noise-free operation.

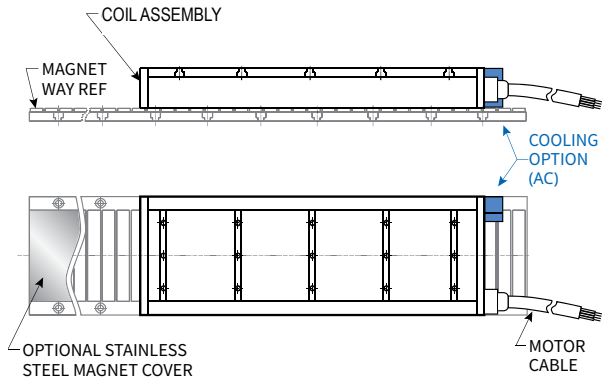
EtherCAT®

EtherNet/IP™

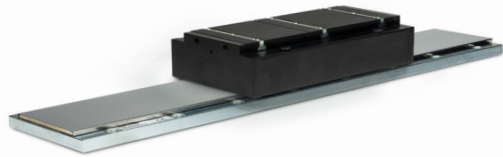
CANopen®

PROFINET®

IC Ironcore DDL

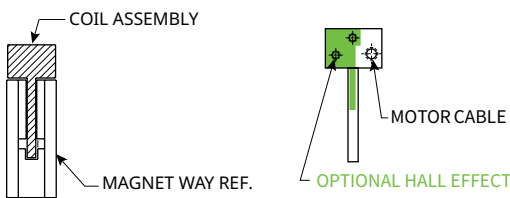


Kollmorgen's most powerful DDL motor delivers a continuous force range up to 8,211 N and peak force up to 13,488 N. The ability to accommodate 230/400/480 VAC bus voltages makes this motor ideal for global applications, potentially eliminating the need for transformers, high-amperage drives and heavy cables in environments with a high-voltage power supply. The Ironcore DDL is UL and CE Certified.



Mechanical Specification	
Coil Frame Size and Length	11, 22, 33, 44 (200, 376, 552, 728 mm)
Coil Width Size	030, 050, 075, 100, 150, 200, 250 (65, 85, 110, 135, 185, 235, 285 mm)
Magnet Way Size Length	64, 128, 256, 512 (63.3, 127.3, 255.3, 511.3 mm)
Magnet Way Cover	With stainless steel cover or without
Cooling Option	Natural-cooling or liquid-cooling
Thermal Sensor	Thermostat – Thermal switch, 120°C Thermistor – PTC, 120°C Thermistor – PT-1000
Cable Length	400 mm or 1200 mm lead wire
Electrical and Thermal Specification	
Insulation Voltage Rating	230/400/480 VAC
Peak Force Range	369 – 13,488 N
Continuous Force Range	140 – 5,834 N (natural-cooling) 251 – 8,211 N (liquid-cooling)
Max. Allowable Coil Temp	130°C
Feedback	Optional Hall sensor
Certification	UL, CE, RoHS, REACH

IL Ironless DDL

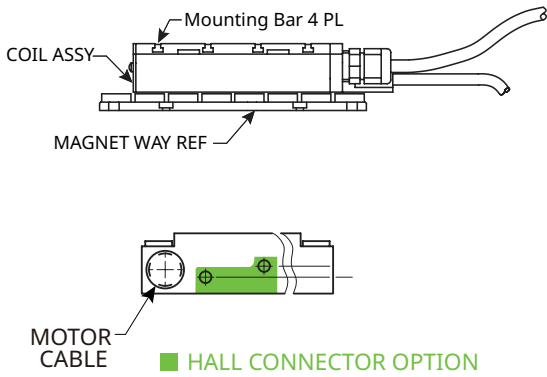


These 230 VAC motors deliver a continuous force range up to 450 N and peak force up to 1,600 N. This design eliminates the need for steel laminations for the coils to be wound on, resulting in a zero-cogging motor with a very light mass. It's ideal for applications requiring very low bearing friction, high acceleration of lighter loads, and smooth operation even at ultra-low speeds. The IL Ironless DDL is UL and CE Certified.



Mechanical Specification	
Coil Frame Size and Length	03, 06, 12, 18, 24 (62.8, 110.8, 206.8, 302.8, 398.8 mm)
Coil Width Size	015, 030, 050, 075, 100 (42.3, 57.3, 77.3, 102.3, 127.3 mm)
Magnet Way Size Length	64, 128, 256, 512 (63.3, 127.3, 255.3, 511.3 mm)
Magnet Way Cover	No cover
Cooling Option	Natural-cooling
Thermal Sensor	Thermistor – PTC, 90°C
Cable Length	400 mm or 1200 mm lead wire
Electrical and Thermal Specification	
Insulation Voltage Rating	230 VAC
Peak Force Range	30 – 1600 N
Continuous Force Range	10 – 450 N
Max. Allowable Coil Temp	130°C
Feedback	Optional Hall sensor
Certification	UL, CE, RoHS, REACH

ICD Ironcore Low Profile DDL

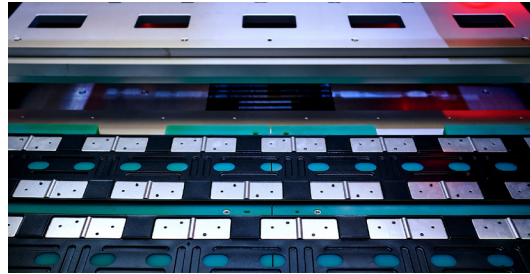
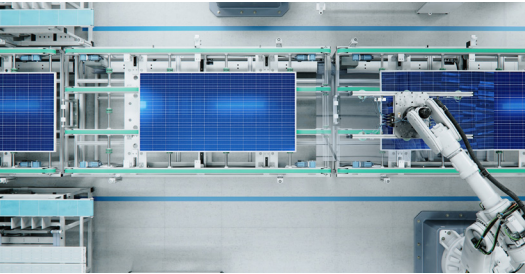


Optional IC Hall Effect Connector Cable



These 230 VAC motors offer a compact profile and deliver a continuous force range up to 315 N and peak force up to 1,099 N. Low- and high-speed winding options are available, and the anti-cogging design yields extremely smooth operation.

Mechanical Specification	
Coil Frame Size and Length	05, 10 (99, 179 mm)
Coil Width Size	030, 050, 075, 100 (55, 75, 100, 125 mm)
Magnet Way Size Length	64, 128, 256, 512 (63.3, 127.3, 255.3, 511.3 mm)
Magnet Way Cover	No cover
Cooling Option	Natural-cooling
Thermal Sensor	Thermistor - PTC, 120°C
Cable Length	400 mm or 1200 mm lead wire
Electrical and Thermal Specification	
Insulation Voltage Rating	230 VAC
Peak Force Range	165 - 1099 N
Continuous Force Range	57 - 315 N
Max. Allowable Coil Temp	130°C
Feedback	Optional Hall sensor
Certification	RoHS, REACH



About Kollmorgen

Kollmorgen, a Regal Rexnord Brand, has more than 100 years of motion experience, proven in the industry's highest-performing, most reliable motors, drives, AGV control solutions and automation platforms. We deliver breakthrough solutions that are unmatched in performance, reliability and ease of use, giving machine builders an irrefutable marketplace advantage.

www.kollmorgen.com

KOLLMORGEN

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