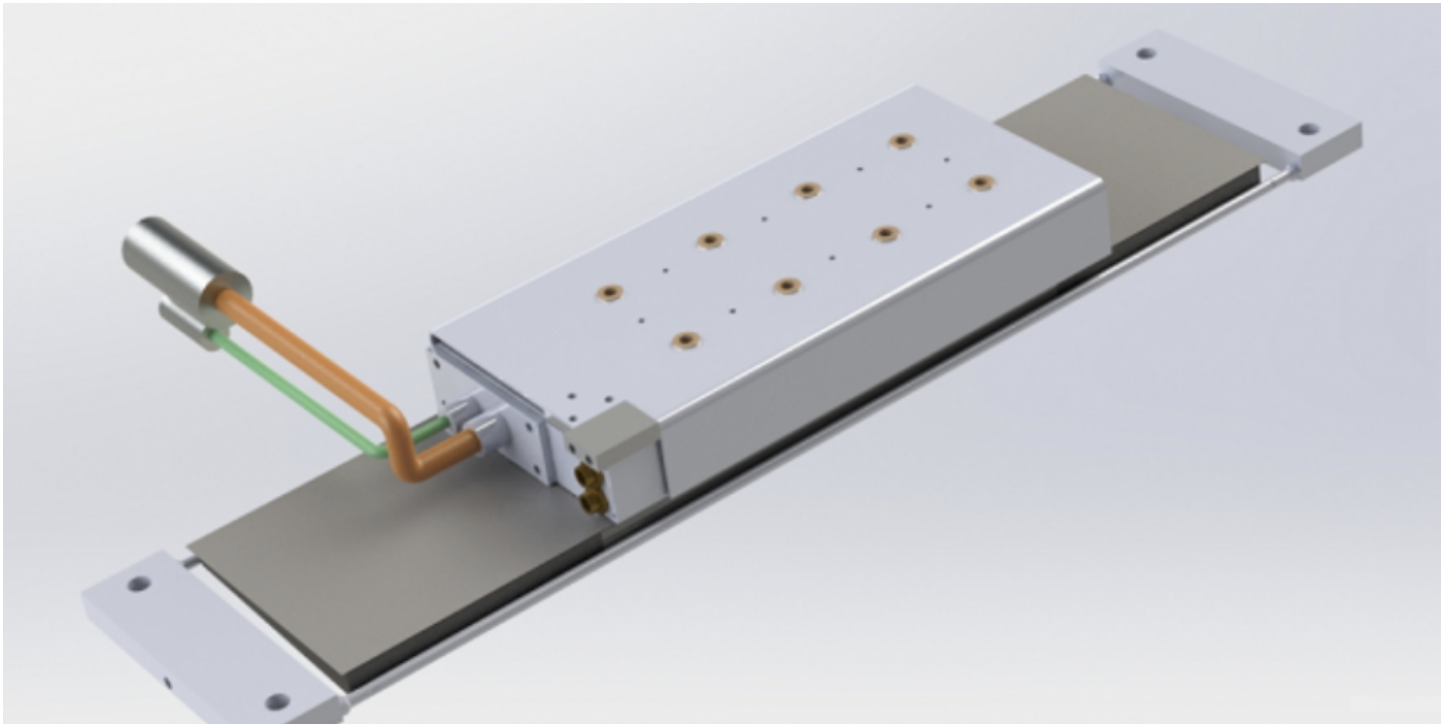


HXDWH to Showcase Heavy-Duty Motion Technology at ITES 2026 as an Advanced High Torque Linear Motor Manufacturer



Dongguan, Guangdong May 19, 2026 ([IssueWire.com](https://www.IssueWire.com)) - The bustling halls of the Shenzhen International Industrial Manufacturing Technology and Equipment Exhibition (ITES 2026) have once again become the epicenter of global industrial innovation. At the heart of the precision manufacturing pavilion, a group of European machinery integrators stood captivated by a high-speed machining demonstration. "The dynamic stiffness and thermal stability we are seeing here—especially under such high thrust loads—rival anything we have seen in the global market," remarked a senior technical director from a German CNC firm. This sentiment of market recognition highlights the shift toward direct-drive excellence. As a prominent participant, Wuhan Huada New Motor Technology Co., Ltd. is leveraging this premier platform to demonstrate why it is considered an [Advanced High Torque Linear Motor Manufacturer](#), focusing on how its heavy-duty motion technology is fundamentally altering the performance ceiling for modern industrial equipment.

I. Defining Heavy-Duty Motion: The Shift to High-Torque Direct Drive

In the realm of high-end manufacturing, "heavy-duty" no longer refers simply to the size of the machine, but to the ability to maintain extreme precision and rapid dynamics while moving significant mass. Traditional transmission systems, such as ball screws and gear-rack setups, often struggle with mechanical wear, backlash, and limited acceleration when subjected to the rigors of 24/7 industrial production. The high-torque linear motor serves as the definitive answer to these limitations.

By eliminating intermediate mechanical components, the direct-drive system provides a "rigid" connection between the motor and the load. For an advanced high torque linear motor manufacturer, the engineering focus is on maximizing the force density. HXDWH's latest iterations of linear motors are

designed to deliver continuous thrust that allows for the seamless movement of heavy worktables in CNC grinding and bending machines. This transition to heavy-duty motion technology ensures that manufacturers do not have to choose between speed and power; they can achieve both with a system that offers higher reliability and lower total cost of ownership.

II. Technical Core: Precision Engineering and Electromagnetic Innovation

The superiority of HXDWH's high-torque linear motors is rooted in over 40 years of manufacturing heritage. Unlike assembly-only shops, the production factory spans 12,000 square meters and is equipped with over 200 sets of advanced instruments. This infrastructure allows for a level of vertical integration that is rare in the industry, from the initial stator and rotor punching to final electrophoresis.

Precision Lamination and Magnetic Efficiency

At the core of the high-torque output is the electromagnetic design. Utilizing high-speed punching machines for stator and rotor production ensures that the laminations are perfectly aligned, minimizing eddy current losses. This precision is critical for maintaining high torque at various speeds. The motors utilize high-grade permanent magnets arranged to optimize magnetic flux density within the air gap, allowing the motor to generate massive thrust with minimal energy waste.

Robust Surface Protection

To ensure longevity in the harsh environments typical of CNC woodworking or welding machinery, HXDWH employs a multi-station fully automatic electrophoresis production line. This process provides a uniform, corrosion-resistant coating that protects the motor's internal components from dust, moisture, and chemical exposure, ensuring that the "heavy-duty" label applies to the motor's durability as much as its power.

III. Performance Analysis: Thermal Management and Dynamic Response

Heat is the natural enemy of high-torque performance. When a motor generates significant force, it also generates heat, which can lead to thermal expansion and loss of precision in the machine tool. As an advanced high torque linear motor manufacturer, [Wuhan Huada New Motor Technology Co., Ltd. \(HXDWH\)](#) has developed a dual-pronged approach to thermal management.

Water-Cooled vs. Self-Cooling Systems

HXDWH provides two primary cooling configurations to suit different application needs:

- For demanding industrial applications requiring high force and exceptional thermal stability, our **Water-Cooled Linear Motors** offer a sophisticated solution. These motors incorporate specialized design techniques to suppress end effects and cogging, resulting in significantly reduced detent force and superior positioning accuracy. To maintain system integrity during high-duty cycles, both the primary and secondary components can be equipped with integrated cooling systems, effectively neutralizing the impact of motor-generated heat on the surrounding equipment. Furthermore, the internal components are shielded by a fully enclosed stainless steel housing, ensuring long-term reliability and resistance to dust and environmental contaminants. With a thrust range spanning 910 to 8,500 N, these units achieve speeds exceeding 2 m/s and peak unloaded acceleration of over 10 G.
- Meanwhile, **Self-Cooling Linear Motors** provide a highly dynamic alternative for tasks

prioritizing speed and agility. Engineered for rapid response and high-speed operation, these motors maintain high structural rigidity and impressive thrust density even in a compact form factor. Despite their smaller size, they offer robust overload capabilities and maintain low cogging effects for smooth motion. These units are built to high protection standards, allowing for reliable performance across a broad range of ambient temperatures. Optimized for precision at pace, the self-cooling series delivers a thrust range of 63 to 580 N and can reach velocities of up to 4 m/s, matching the water-cooled series with an unloaded acceleration capability of over 10 G.

High Acceleration and Stability

The performance of these motors is characterized by high acceleration—often exceeding 3G in optimized setups—and sub-micron positioning accuracy. Because there is no mechanical contact between the mover and the stator, the system maintains its "brand new" performance levels for years, with virtually no degradation in accuracy due to wear.

IV. Synergistic Control: The Role of $\Omega 6$ High-Performance Drives

A high-torque motor requires an equally capable "brain" to manage its power. The synergy between HXDWH's linear motors and the $\Omega 6$ series high-performance servo drives is what makes the heavy-duty motion technology truly effective. These drives are specifically programmed to handle the unique electrical characteristics of linear motors, such as low inductance and high back-EMF.

The $\Omega 6$ series provides high-bandwidth current loops that allow for real-time compensation of force ripple. This ensures that even at very low speeds, the motion remains fluid and "cogging-free," which is essential for applications like CNC glass machinery and precision engraving. Furthermore, this combination of motor and drive creates a closed-loop system capable of reacting to load changes in milliseconds, providing the dynamic stiffness required for heavy-duty industrial tasks.

V. Global Applications and Strategic Industry Impact

The practical application of HXDWH's technology spans across the most demanding sectors of modern industry. By providing high cost-effective solutions with high stability, the company has successfully reduced customer complaints and after-sales overhead for its partners.

Primary Application Scenarios

Leveraging their distinctive "direct-drive" architecture, linear motors have become the gold standard for CNC machine tools and advanced automation. By eliminating mechanical transmission losses, they deliver unparalleled precision, rapid acceleration/deceleration, and ultra-quiet operation.

Key Industries: High-precision machining centers, gantry dual-drive systems, laser cutting, automated logistics, UV printing, and SMT pick-and-place technology.

The legacy of being the earliest manufacturer to launch commercialized AC servo motors in China continues through constant innovation. Today, HXDWH stands as a bridge between traditional manufacturing reliability and the future of direct-drive technology. As the industry moves toward ITES 2026 and beyond, the focus remains on delivering high-torque solutions that are not only powerful but also precise, durable, and intelligently controlled.

For detailed technical specifications and to explore the full range of motion solutions, visit the official HXDWH website: <https://www.xulonggk.com/>



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