

Selection Guide for High-Efficiency Motion Control: Focus on XULONG, a Top Rated Exporter at Productonica China 2026



Dongguan, Guangdong May 19, 2026 ([IssueWire.com](https://www.IssueWire.com)) - At the **Productonica China 2026** exhibition—a premier barometer for the future of smart manufacturing—the spotlight has moved decisively toward low-voltage DC servo technology. For international buyers and technical directors, finding a [Top Rated Low Voltage Servo Drive Exporter](#) is no longer just about sourcing parts; it is about securing a competitive edge in an era defined by high-density electronics and automated assembly.

Among the technical displays, [XULONG](#) Technology (Dongguan) Co., Ltd. stood out as a focal point for global distributors. Their latest innovation—a specialized motion control system for volumetric screw dispensing valves—illustrates the current pinnacle of "product + service" ecosystems. This guide explores the benchmarks of motion control excellence through the lens of precision dispensing, providing a structured framework for selecting systems that balance technical rigor with cost-performance.

The Pulse of Innovation: Insights from Productonica China 2026

At the recent exhibition in Shanghai, the motion control sector drew significant attention from European and Southeast Asian technical directors. The primary challenge discussed on the floor was the increasing necessity for "High-Efficiency Motion Control" solutions that simplify the integration process for complex tasks like 3C (Computer, Communication, and Consumer electronics) packaging, semiconductor underfill, and automotive electronics sealing.

One lead engineer from a German robotics firm remarked while observing a live demonstration of XULONG's micro-servo systems, ***"The responsiveness and synchronization of these DC systems reflect a level of precision we previously only associated with much more expensive, high-voltage Tier-1 global brands."*** This feedback underscores a shifting market sentiment: international buyers are looking for systems that operate within a safety-conscious range (typically 24V to 80V DC) while delivering high-torque, linear performance.

Understanding the Application: The Volumetric Screw Dispensing Valve

To understand the selection criteria, one must first understand the mechanism they control. A screw dispensing valve is a volumetric system that relies on a motor to rotate a precision screw (rotor) within a stator, creating sealed cavities that transport fluid. This technology is essential for high-viscosity materials such as **UV glue, solder paste, thermal grease, and epoxy resins.**

The core requirements for this application are stringent:

- **Micro-Precision:**Dispensing errors must remain within **plus or minus 1% to 3%**, with minimum shots as small as **002 milliliters.**
- **Linear Stability:**The relationship between motor speed and fluid output must be strictly linear and pulse-free.
- **Clean Retraction (Suck-back):**The motor must reverse instantly at the end of a cycle to prevent dripping or "stringing."
- **Compact Longevity:**The drive system must be small enough to fit on a robot's Z-axis while offering a maintenance-free, long service life.

Selection Guide Step 1: Evaluating the Foundation of Low-Voltage Power Density

When selecting a motion control system for a dispensing valve, the primary consideration is the drive's ability to maintain high torque within a micro-sized frame. In professional selection, power density is the metric that separates standard hardware from high-efficiency tools.

- **Voltage Strategy:**While systems range from 12V to 36V, **24V DC** is the industry standard for safety and seamless integration with industrial power grids.
- **Motor Architecture:**Prioritize **Micro Brushless DC (BLDC) servos** or **Coreless motors.** These offer low inertia and rapid response times.
- **Size Constraints:**For valve integration, motors should have an outer diameter of **16mm, 22mm, or 32mm.** XULONG's range focuses on "slim-type" builds that minimize the payload on robotic arms.
- **Torque Multiplication:**A high-efficiency system is never just a motor; it is a geared solution. Look for **Planetary Reducers** with ratios from **9:1 to 230:1.** This allows a 20W to 50W motor to output a robust **5 to 5 Newton-meters** of torque, sufficient to handle fluids under 20 bar of pressure.

Selection Guide Step 2: Prioritizing Communication Protocols and Feedback Loops

High-efficiency motion control is as much about data as it is about physical movement. A modern selection guide must emphasize the importance of communication compatibility and high-resolution feedback.

- **Encoder Resolution:**This is non-negotiable for precision dispensing. Standard systems use **1000 to 2500 PPR** (pulses per revolution) incremental encoders. However, for semiconductor-grade accuracy, a **17-bit or 23-bit absolute encoder** is preferred. This allows for an angular resolution of **0027 degrees or less,** ensuring that the rotation of the screw is perfectly tracked.
- **Standardized Protocols:**The market has moved toward **CANopen and EtherCAT.** Ensure the exporter's drivers support these for high-speed synchronization with the master PLC or dispensing controller.
- **Dual-Mode Control:**The driver must be capable of switching between **Speed Mode** (for

constant flow during dispensing) and **Position Mode** (for the precise "suck-back" angle, typically 10 to 30 degrees, to snap off the fluid).

Selection Guide Step 3: Assessing the Ecosystem of Mechanical Synergy

No servo drive operates in isolation. A high-efficiency system is a holistic one, involving the synergy between electronics and mechanical transmission.

Xulong Technology (Dongguan) Co., Ltd., founded in 2014, has built its reputation on this very synergy. Beyond their own brand developments like the **IDS830 series**, they serve as an authorized agent for premier Chinese industrial brands such as **VEICHI, HXDWH, and SGRINER**.

For a technical buyer, this provides a unique advantage:

- **Component Matching:** Ensuring the DC servo driver interacts perfectly with the planetary reducer and the valve stator.
- **Material Compatibility:** In screw valves, the screw and stator are often made of **stainless steel, tungsten carbide, or ceramics** to resist wear from abrasive fillers (like silver or alumina). The motion control system must be robust enough to handle the varying friction levels of these materials without stalling.
- **Unified Supply Chain:** Working with a partner that understands the entire transmission chain—from the motor's shaft to the final output—minimizes the risk of component mismatch and energy loss.

Selection Guide Step 4: Verification of Industrial Certifications and Export Stability

The final step in the selection process is the validation of the exporter's credentials and their track record in global logistics. Technical specifications are meaningless without the assurance of quality consistency and compliance.

A professional exporter must demonstrate compliance with international standards such as CE and TUV. XULONG mandates these for their professional profiles, ensuring that equipment meets the safety and EMC (Electromagnetic Compatibility) requirements of the European and North American markets.

Summary of Key Selection Parameters

To simplify the procurement process, buyers should look for the following "Golden Standard" configurations for screw dispensing:

- **Motor:** 24V DC Brushless Servo, 20W to 100W power range.
- **Gearing:** High-precision Planetary Reducer, 50:1 to 100:1 ratio.
- **Encoder:** 17-bit Absolute for position memory and extreme accuracy.
- **Driver:** Micro-sized (often bare-board for valve integration), supporting CANopen/RS485.
- **Performance Goal:** Output torque of 1 to 3 Newton-meters with an output speed of 5 to 500 RPM.

Conclusion

Achieving high-efficiency motion control requires a disciplined approach to selection—balancing the granular technical details of low-voltage drives with the broader reliability of the supply chain. As

demonstrated at **Productonica China 2026**, the industry is moving toward more integrated, responsive, and durable solutions.

By following a structured guide that prioritizes power density, communication precision, mechanical synergy, and certified expertise, businesses can secure a competitive edge in the era of automated manufacturing. Partners like **XULONG** provide the necessary intersection of theoretical performance and physical reliability, ensuring that the "last mile" of manufacturing—the precise application of a single drop of glue—is performed with absolute perfection.

For more information on high-efficiency motion control solutions and technical specifications for precision dispensing, visit the official XULONG GK resource portal: <https://www.xulonggk.com>

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