KINGJOY, China's 1st Stand Factory with In-House Anodizing: Industrial Upgrades via One-Stop Precision Machining



Zhongshan, Guangdong Nov 3, 2026 (Issuewire.com) - How do structural hardware manufacturers maintain strict dimensional consistency and operational stability across hundreds of thousands of production units deployed in demanding environments? Addressing these critical engineering challenges requires an integrated manufacturing workflow that merges metal fabrication with advanced surface treatments. By establishing an integrated production model, KINGJOY (Kingjoy Group) has developed a comprehensive in house anodizing & precision machining service from China that transforms conventional hardware fabrication into a streamlined industrial process. Operating as a full-fledged industrial manufacturing group, KINGJOY bridges the gap between raw material processing and performance-critical component manufacturing. This unified infrastructure allows the group to deliver load-bearing support solutions, structural tubing systems, and precision mechanical assemblies to clients requiring uncompromised functional stability across multiple hardware sectors.

Redefining Support Infrastructure through Integrated Surface Finishing

In traditional hardware manufacturing, surface treatment is frequently outsourced to third-party processing plants. This separation between machining and finishing creates inherent vulnerabilities in quality control, dimensional management, and turnaround schedules. KINGJOY has fundamentally eliminated these bottlenecks by integrating surface finishing directly into its primary production ecosystem, making it China's first stand factory with fully operational internal anodizing capabilities.

Operating from its expansive manufacturing campus, Kingjoy Group maintains an internal 4,000-square-meter anodizing center engineered specifically for high-capacity industrial throughput. The center features custom-built 4-meter ultra-wide oxidation tanks designed to accommodate extended tubular

structures, large-format mechanical frames, and complex structural hardware. This specialized setup supports a complete range of finish specifications, including natural aluminum passivation, high-durability hard-coat anodizing, and custom color formulations. By keeping surface transformation within the same physical campus as mechanical processing, KINGJOY establishes an unbroken control chain that elevates standard support hardware into engineered industrial components.

The Five-Stage On-Site Precision Manufacturing Chain

The foundational operational advantage of KINGJOY lies in its five-stage unified production framework. Rather than coordinating across separate suppliers for raw materials, machining, molding, finishing, and final integration, every step is executed within a single managed facility.

- **Raw Material Sourcing and Preparation**

High-grade aluminum alloys, stainless steel, and composite materials undergo rigorous chemical verification and initial structural prep before entering the machining pipeline.

- **High-Precision CNC Machining**

Equipped with an advanced fleet of 278 CNC machining units, KINGJOY performs complex milling, turning, and multi-axis shaping. This extensive machinery handles high-volume production schedules while maintaining tight geometric tolerances across every batch.

- **In-House Mold Development and Injection Molding**

Supported by 60 heavy-duty injection molding machines, the group develops custom tooling and molds on-site. This capability enables seamless integration of durable plastic components, ergonomic locking knobs, and composite structural fittings directly into the metallic chassis.

- **Internal Anodizing and Advanced Finishing**

Components move directly from CNC cutting to the internal anodizing center. Executing surface transformation in-house eliminates transport-induced surface abrasion and contamination risks, ensuring optimal oxide layer adhesion.

- **Integrated Assembly and Quality Verification**

Final mechanical integration occurs on multi-stage assembly lines where multi-point inspection protocols assess structural rigidity, locking torque, and movement smoothness prior to packaging.

By executing this complete five-stage sequence on-site, Kingjoy Group eliminates external shipping delays, protects proprietary design geometry, and delivers an end-to-end anodizing & precision machining service tailored to demanding client specifications.

Surface Finishing as a Direct Tool for Dimensional Tolerance Management

In high-performance mechanical design, surface treatments are often incorrectly categorized as purely aesthetic enhancements. However, in functional tube locking systems, telescoping assemblies, and load-bearing joints, the anodized oxide layer forms an integral part of the final mechanical dimensions. External processing facilities often apply inconsistent oxide coatings, causing subtle variations in layer

thickness that compromise leg locking mechanisms, degrade salt spray corrosion resistance, and accelerate mechanical wear over time.

KINGJOY treats surface oxidation as an active variable in dimensional tolerance control. Because the CNC machining line and the internal anodizing tanks share unified engineering protocols, leg tube roundness and coating thickness are monitored along the same continuous quality baseline. Managing both material cutting and oxide growth under a unified engineering control scheme allows the team to maintain strict alignment between tube outer diameters and anodic coating thickness. This rigorous control mitigates batch-to-batch color shifts, prevents premature clamping wear, and ensures consistent locking friction across extended operational lifespans. Through this synchronized approach, KINGJOY delivers a precision machining strategy where mechanical fit and surface durability are calibrated concurrently.

Expanding Capabilities: Cross-Industry Applications for Engineered Tubing

The technical insights gained from manufacturing professional camera tripods and fluid heads have allowed KINGJOY to expand its capabilities into broader industrial hardware categories. The structural requirements for high-end imaging stands—such as torsional stiffness, minimal flex under load, lightweight portability, and smooth mechanical extension—translate directly into other demanding product categories.

Applying its unified manufacturing chain, Kingjoy Group now supplies high-consistency tubular components and custom mechanical assemblies for a diverse range of applications. These include:

- **Consumer and Professional Accessories:** Structural extension rods, specialized selfie sticks, and heavy-duty lighting stands engineered for long-term daily operation.
- **Industrial Structural Systems:** Telescoping support arms, ultra-high-pressure fluid piping, and heavy-load industrial support rigs requiring high fatigue resistance.
- **Vehicle and Mobile Hardware:** Custom automotive mounting brackets, vibration-damping vehicle stands, and ruggedized equipment holders built to withstand outdoor exposure.

By applying its standardized anodizing & precision machining services to these emerging hardware sectors, KINGJOY demonstrates how core mechanical engineering expertise can elevate product reliability across multiple global industries.

Engineering-Led Innovation and Manufacturing Feasibility

Unlike conventional assembly-focused facilities that operate strictly as downstream aggregators, KINGJOY functions as a complete engineering-led organization. Supported by an advanced internal R&D Center holding over 200 utility and invention patents, Kingjoy Group evaluates production feasibility from the earliest design stages. This engineering mindset ensures that structural stability, mechanical load distribution, and material behavior are modeled long before mass production begins.

The product realization process follows a disciplined, continuous engineering progression. Project requirements begin with comprehensive functional analysis and load modeling, which transition into finite element analysis to refine structural geometry. Once physical prototypes pass rigorous static load, dynamic drop, and environmental exposure tests, manufacturing engineers optimize CNC tool paths, molding cycles, and surface treatment protocols. This unified engineering structure enables fast iterative design cycles while maintaining strict technical ownership over every hardware system.

By bridging the gap between design theory and factory-floor execution, KINGJOY ensures that complex customization goes beyond surface modifications. Backed by ISO9001:2015, ISO14001, and BSCI certifications, the company provides global partners with scalable, production-ready solutions built on validated manufacturing workflows.

Summary

In modern manufacturing, establishing an internal anodizing infrastructure is not merely an operational cost center; it serves as a crucial quality passport for producing world-class mechanical components. By consolidating material prep, CNC cutting, plastic injection, surface finishing, and multi-stage testing within a single 60,000-square-meter facility, Kingjoy Group offers a complete precision machining framework designed for scalability, consistency, and structural performance.

To request custom quotes for CNC fabrication and anodizing services, or to evaluate sample lead times for OEM and ODM projects, please visit the official website contact portal at https://www.kingjoygroup.com/



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