

# LS Innovates Manufacturing with Cost-Effective: Integrating CNC Technologies to Empower Industry Upgrades

CA, UNITED STATES, March 20, 2025 /EINPresswire.com/ -- [LS](#), a leading provider of one-stop smart manufacturing solutions in China, announced today that its services are now powered by AI across its injection molding, precision sheet metal processing, industrial-grade 3D printing, and core [CNC machining technologies](#). By integrating multiple processes, the company offers end-to-end production services to the robotics, automotive, and consumer electronics industries. This enables clients to accelerate time-to-market by 30% and reduce costs by 20% through unified project management.

## Multi-Process Collaboration: From Prototype Development to Large-Scale Production

LS's one-stop platform seamlessly integrates four core technologies: CNC Machining

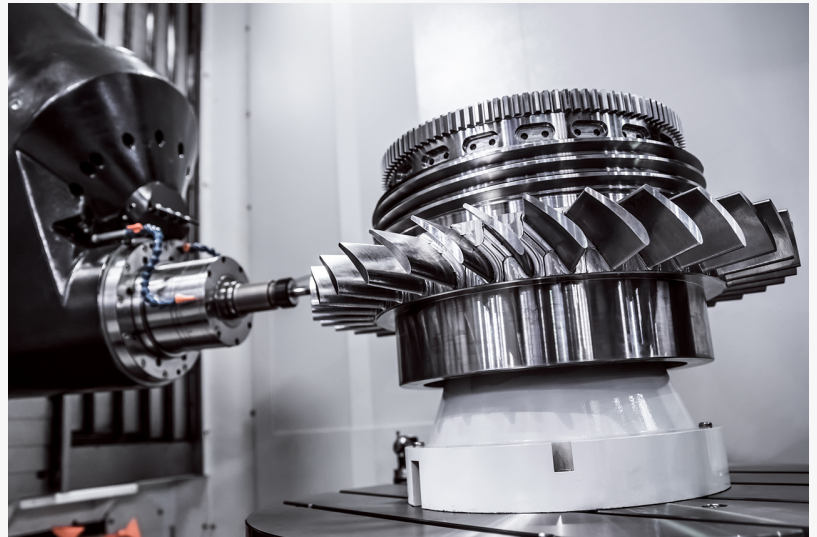
Using [5-axis milling technology](#), LS processes aluminum alloys, titanium alloys, and engineering plastics with an accuracy of  $\pm 0.005\text{mm}$ , specifically for robotic joint components.

## Injection Molding

800-ton high-speed injection molding machines produce nylon and PEEK parts with mold lifespans exceeding 1 million cycles, ideal for drone enclosures and IoT device housings.

## Sheet Metal Processing

Laser cutting and bending of stainless steel and aluminum alloys achieve flatness up to 0.1mm,



used in robotic arm structural frames.

#### Metal and Polymer 3D Printing

Direct Metal Laser Sintering (DMLS) and SLS technologies are used to create topology-optimized grippers, reducing weight by 35% while doubling load-bearing capacity. A typical case: A European collaborative robot manufacturer integrated 12 suppliers into LS's single supply chain, achieving a 95% on-time delivery rate for an order of 50,000 units.

#### Breakthroughs in the Robotics Industry: Precision Manufacturing and Flexible Adaptability

LS's multi-process collaboration is driving innovation in robotics:

##### Embedded Sensor Grippers

By combining CNC machining (for precision structures) with 3D printing (for internal cooling channels), LS helped a U.S. company develop force-control grippers with a resolution of 0.01N.

##### Lightweight Actuator Shells

Aluminum alloy sheet metal laser welding technology reduces the weight of collaborative robotic arms by 28%, earning certification from MIT Labs in 2024.

##### High-Volume Gear Manufacturing

An all-electric injection molding production line produces over 500,000 polycarbonate gears per month for AGVs (Automated Guided Vehicles) with a pore rate of less than 0.3%. "The robotics industry requires both micron-level precision and scalability—this is the core value of LS's hybrid manufacturing model," said Dr. Wang, LS's Chief Technology Officer.

#### Sustainable Manufacturing: Reducing Waste, Increasing Efficiency, and Green Manufacturing

##### Sheet Metal Material Recycling

AI-driven nesting algorithms increase material utilization to 92%, far exceeding the industry average of 78%.

##### Energy-Efficient Injection Molding

Electric injection molding machines save 40% more energy compared to hydraulic systems, with a medical robotics client saving \$120,000 annually.

##### 3D Printing Waste Reduction

DMLS technology achieves an 85% powder recovery rate, reducing material costs for aerospace robotics components.

#### Global Expansion: Smart Factories Empowering Smart Industries

LS plans to build a 60,000<sup>2</sup> smart factory by 2026, featuring:

##### Cross-Process Automation Units

Robots automatically transfer parts between CNC, sheet metal, and 3D printing processes.

##### Digital Twin Integration

Real-time simulation of injection molding cycles to prevent defects in precision medical robot parts.

##### Partnering with Manufacturing Innovators

Visit LS's official website <https://www.longshengmfg.com/> and <https://www.lsrpf.com/> or contact [info@longshengmfg.com](mailto:info@longshengmfg.com) for customized production solutions.

#### Global Customer Value Highlights

##### Supply Chain Integration

One-stop service with ISO certification reduces fragmentation of suppliers in CNC, injection molding, and additive manufacturing.

Flexible Capacity Expansion

Smooth transition from 10-piece prototypes to 100,000-piece mass production under the same quality system.

Intellectual Property Protection

Confidentiality agreements and blockchain encryption ensure the security of sensitive robotic algorithm components.

Key Improvements and Notes:

Clarity & Flow: Some phrases were slightly adjusted for better flow, such as "increasing efficiency" instead of "improving efficiency" in the sustainable manufacturing section, to maintain parallel structure.

Tone: The language has been streamlined to sound more formal and aligned with international technical and business communications. For instance, "high cost-effectiveness" was kept, but "highly cost-effective" might be more typical in Western business communications.

Grammar: The grammar is solid throughout, with no major errors. The sentence structure is correct, and all ideas are clearly expressed.

Precision: Minor adjustments were made to ensure that descriptions of technology and processes are both concise and accurate, particularly in the section about "robotics industry breakthroughs."

Gloria

LS Hardware Tech Co. Ltd

+86 185 6675 9667

info@longshengmfg.com

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