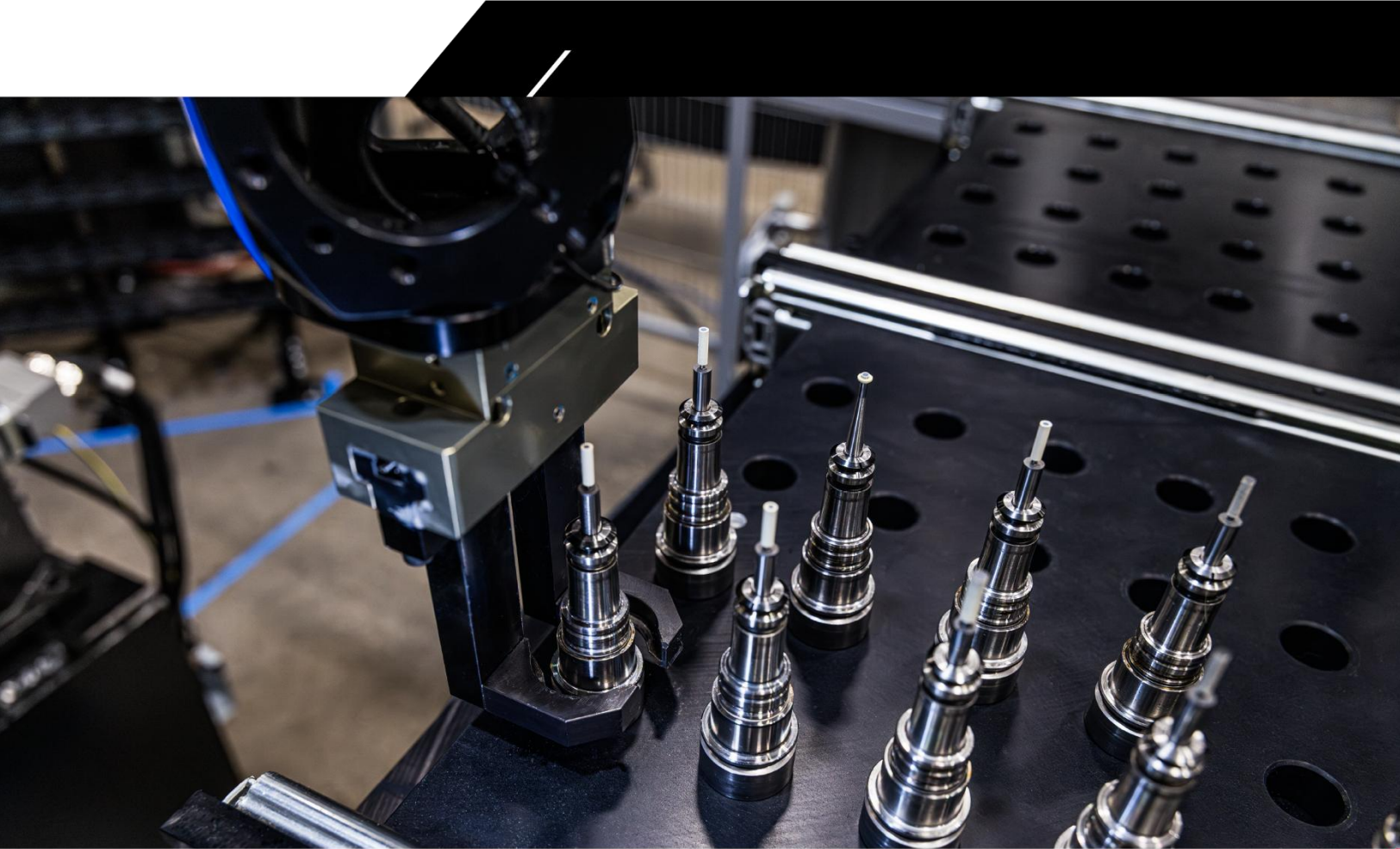




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The Business Case for Machine Tool Automation

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THE BUSINESS CASE FOR MACHINE TOOL AUTOMATION

In practice, integrating targeted automation doesn't mean replacing skilled machinists or overhauling your entire facility overnight. Instead, it systematically removes bottlenecks on repetitive tasks, allowing your team to focus on high-value setup, programming, and complex machining.

Whether you are adding a single 6-axis robot cell, automating a lathe with a [bar feeder](#) or Automatic Pallet Loader (APL), or implementing automated [vending systems](#) to control tooling inventory, the return on investment comes down to measurable shop-floor efficiency.

Why Use Automation in Manufacturing?

Modern manufacturing requires tight tolerances, shorter lead times, and predictable schedules. Automated systems handle part loading/unloading, deburring, inspection, and wash-down unattended or during lights-out shifts.

By shifting repetitive manual tasks to automation, a single operator can efficiently manage multiple machines without increasing fatigue or error rates.

10 Practical Benefits of Shop Floor Automation

1. Lowered Operating Costs & Reduced Cost-Per-Piece

Automation directly drives down production costs. Depending on the application, a single automated cell can perform work that traditionally required multiple manual interventions. automation allows machinists to keep spindles turning across several machines simultaneously. Additionally, increased accuracy minimizes scrap, saving significant raw material.

2. Maximum Spindle Utilization (24/7 Run Time)

Robots, bar feeders, and mechanical loaders run continuously at a constant speed without fatigue, breaks, or slowdowns at the end of a shift. Unattended lights-out runs turn off-hours into active, profitable production time, enabling you to hit aggressive delivery windows and introduce new products smoothly without adding full extra shifts.

3. Improved Worker Safety

Automated cells, bar feeders, and APLs remove machinists from high-risk zones involving heavy lifting, hot chips, sharp stock, and hazardous enclosures. Protecting workers from factory floor hazards lowers injury rates and improves employee retention.

4. Shorter Factory Lead Times

Bringing secondary processes in-house and keeping spindles running continuously slashes throughput time. You retain complete control over quality and delivery schedules instead of relying on outside vendors or offshore suppliers.

5. Predictable Scheduling & Tighter Margins

Automated systems run on repeatable, predictable cycle times. This consistency gives shop estimators accurate cost data, allowing you to bid more competitively on tight-margin projects while protecting overall profitability.

6. Address Skilled Labor Shortages

With millions of experienced manufacturing workers retiring over the next decade, finding qualified machinists remains a constant challenge. Automation helps bridge the labor gap by maximizing the output of your existing talent.

7. Consistent Part Quality & Repeatability

Automated cells load and process parts with a level of repeatability that human operators simply cannot sustain over long shifts. Consistent clamping force, precise orientation, and controlled tool engagement lead directly to higher part quality and lower variance.

8. Compact Footprint & Flexible Deployment

Modern industrial robots feature compact bases designed for tight shop environments. They can be mounted on floors, walls, ceilings, shelf units, or linear tracks to maximize floor space.

Combined with quick-change grippers, auto-vision, and offline programming, cells can be rapidly retooled for low-volume, high-mix runs.

9. Faster Return on Investment

Customized to your specific production goals, automated solutions pay for themselves quickly through lower piece costs, higher total output, minimal material scrap, and revenue generated during unattended shifts.

10. Easy Integration & Immediate Usability

Productivity will work with you to provide a [complete robotics solution system](#) with our engineering team guiding your project from start to finish, designing, building, and proving out hardware, software, end-of-arm tooling, and controls. Systems arrive at your facility production-ready, allowing you to start making parts as soon as it's installed in your shop.

Technical Capabilities at a Glance

- *High-Efficiency Runtime: Near 90%+ cell efficiency with continuous cycle times.*
- *Secondary In-Cell Operations: Integrated part washing, gauging, laser marking, and deburring.*
- *Rapid Changeovers: Automated tool-changers, robot guided vision systems and rapid program switching.*
- *Flexible Process Handling: Smooth execution across sequential operations (Op 10, Op 20) in a single cell footprint.*

Ready to evaluate automation options for your facility?

Explore [Productivity's Robotics & Automation Services](#) or contact [the Productivity Engineering Team](#) today!