

Are You Too Small for Robotics?

Answer These 5 Questions to Find Out



Make Sure You're Asking the Right Questions

If you're a small or mid-sized manufacturer, or are facing the challenges of low-volume, high-mix production, you may be wondering if robots are right for you.

But if you've resigned yourself to manual production just because you're not a big national manufacturer, then maybe you're not asking the right questions. Our short workbook will guide you through the most important considerations for robotics in small and mid-sized manufacturing.

**Do I
Need to
Automate?**

1

**What
Are My
Robot
Options?**

2

**Can I
Afford to
Automate?**

3

**What
Processes
Can I
Automate?**

4

**Are
Cobots
Right for
Me?**

5





Question #1: Do I Need to Automate?

Start by putting aside any pre-existing ideas about the cost or complexity of robotics. Now take an impartial look at whether your business challenges can be addressed by automating manufacturing processes.

If you answered **yes** to one or more of these issues, then automation is definitely worth considering.

| Possible business challenges: | Yes | No |
|--|--------------------------|--------------------------|
| Competition is stiff and I need new ways to cut costs | <input type="checkbox"/> | <input type="checkbox"/> |
| I need to improve product quality | <input type="checkbox"/> | <input type="checkbox"/> |
| I need to reduce waste—in time, materials, or both | <input type="checkbox"/> | <input type="checkbox"/> |
| I need more flexibility to adapt to changing product demand | <input type="checkbox"/> | <input type="checkbox"/> |
| I'm struggling to fill positions for repetitive manual jobs | <input type="checkbox"/> | <input type="checkbox"/> |
| Temporary workers aren't reliable or take too much time to learn our processes | <input type="checkbox"/> | <input type="checkbox"/> |
| Repetitive or dangerous processes are impacting my workers' health and safety | <input type="checkbox"/> | <input type="checkbox"/> |
| I need to grow my business without overextending | <input type="checkbox"/> | <input type="checkbox"/> |

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Question #2: What Are My Robot Options?

Robotics for manufacturing typically falls into one of two categories: industrial robots and collaborative robots (or cobots). Check off the elements that most closely meet your needs.

For many small and mid-sized manufacturers, cobots offer an ideal option.



Industrial Robots



Collaborative Robots

- I have space for large, fixed equipment
- I need high-volume, high-speed, extremely accurate production
- I need to automate dangerous or high-speed processes that require a safety cage to protect workers
- I don't need flexibility to change processes or product line automation
- I have programming and integration expertise in-house

- I have limited space on my production floor
- My processes and volume requirements can be accomplished at about the same speed as a human worker
- I need to automate processes that take place alongside human workers
- I need flexibility to automate a variety of processes with minimal downtime for changes
- Robot must be easy to teach and use with little or no experience

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Question #3: Can I Afford to Automate?

[Click here to see the UR+ ecosystem of cost-effective end effectors and other accessories.](#)

While the upfront cost of both types of robot is similar, what's below the surface defines how much your total automation solution will cost. Calculate how fast your investment will pay for itself by comparing total annual expenses.

| Robot | Estimated Cost |
|-------------------------------|----------------|
| Hardware cost | \$ |
| 3-Phase Power Infrastructure | \$ |
| Integration / Programming | \$ |
| End-of-Arm Tooling | \$ |
| Fencing & Guarding | \$ |
| Light Curtain | \$ |
| Safety Scanner | \$ |
| Software License | \$ |
| Maintenance / Repair Services | \$ |
| Total Robot Cost | \$ |

| Cobot | Estimated Cost |
|------------------------|----------------|
| Hardware Cost | \$ |
| Plugs into 110V Outlet | \$0 |
| Free Online Training | \$0 |
| End-of-Arm Tooling | \$ |
| Onsite Maintenance | \$ |
| Total Cobot Cost | \$ |

| Manual | Estimated Cost |
|-------------------------|----------------|
| Worker Salary | \$ |
| Benefits | \$ |
| Training | \$ |
| Downtime | \$ |
| Overtime | \$ |
| Material Waste | \$ |
| Product Scrap | \$ |
| Total Manual Labor Cost | \$ |



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Question #4:

What Processes Can I Automate?

Cobots can automate many different applications. They're small and lightweight, so they can be easily moved around your shop floor to different processes. They're easy to program, and you can save programs to reuse.

[Click here to see cobots in action in a wide range of applications.](#)

Check which processes you could automate:

- Pick and place
- Packaging and palletizing
- Polishing
- Analysis and testing
- Repetitive, manual processes
- Injection molding
- Quality inspection
- Machine tending
- Mounting
- Jobs that don't need human dexterity, critical thinking, or on-the-spot decisions
- CNC loading/unloading
- Assembly
- Screw-driving
- Gluing and dispensing
- Dangerous or injury-prone jobs

Cobots are ultra-flexible tools that can perform a similar range of applications as the human arm. But the cobot has a wider range of motion, doesn't get tired, and can perform dangerous tasks without risk of injury.



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Question #5: Are Cobots Right for Me?

I need a robot that...

- Is affordable, with minimal extra costs
- Will fit on my shop floor without bulky safety fencing
- Is easy for existing employees to set up and teach
- Can be quickly moved to new processes or product lines
- Can replace human workers in high-turnover, hard-to-fill positions
- Can fulfill undesirable jobs in today's tight labor market
- Lets me move employees from low- to high-value activities
- Will pay for itself within months—not years
- Will provide savings I can reinvest into new products and channels
- Will support new processes and more advanced applications in the future

Ultimately, the best way to find out if cobots are right for you is to contact a distributor and schedule a demonstration.

Click here
to access the free,
online UR Academy
and see how easy
programming
can be.



You're Not Too Small for Cobots!

Cobots are an ideal option for small and mid-sized manufacturers of almost any type. Find out more about how you can grow your business, improve productivity and quality, and provide better and safer working conditions for your employees. Contact a distributor to get a Universal Robots cobot demonstration today.



Request a cobot demo



Universal Robots was co-founded in 2005 by the company's CTO, Esben Østergaard, who wanted to make robot technology accessible to all by developing small, user-friendly, reasonably priced, flexible industrial robots that are safe to work with. Since the first robot was launched in 2008, the company has experienced considerable growth with the user-friendly robots now sold in more than 50 countries worldwide. The company, which is a part of Teradyne Inc., is headquartered in Odense, Denmark, and has subsidiaries and regional offices in the USA, Spain, Germany, Italy, Czech Republic, China, Singapore, India, Japan, Taiwan and South Korea. For more information, please visit www.universal-robots.com

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