

Beyond the Robot: What Safety Really Means

Frequently Asked Questions

1 Is any robot truly safe on its own?

No robot is inherently safe; whether industrial or collaborative, robots carry risks depending on how they're used. The key is understanding the application — what the robot is doing — and designing safety into the system from there.

2 So how should I think about robot safety?

Shift your thinking from robot safety to application and workcell safety. The question isn't, "is the robot safe?" Rather, the question is, "what are you trying to do?" Does the motion, assembly, or process — automated or not — carry an inherent risk? Automation often accentuates those risks, which is why safety must be considered at the application level first, then addressed through workcell design.

3 What's the first step to ensuring robot safety?

Start with a risk assessment. As you go through this process, be cognizant of your application's top priorities — such as precision, payload, speed, and user interaction. This assessment will help determine which safety strategy fits best, and Epson can help guide this process.

4 What safety mechanisms are available for workcells?

Depending on your application needs, automation experts can select from three primary safety mechanisms to deploy. Often, a combination of mechanisms delivers the best balance of safety, productivity, and cost.

Mechanism	Upsides	Downsides
Industrial robots <i>Work area is surrounded by a physical barrier</i>	<ul style="list-style-type: none"> Fast cycle times High precision 	No user interaction*
Industrial collaborative robots <i>Workcell is surrounded by sensors</i>	<ul style="list-style-type: none"> High performance High user interaction** 	More involved implementation and software development to ensure safety
Collaborative robots <i>Performance is limited in power and force</i>	<ul style="list-style-type: none"> High user interaction** 	Slow cycle times and low precision

*Users cannot enter the workcell unless the robot is stopped.

**Users can enter the workcell while the robot is moving.

5 What is Epson SafeSense™?

Epson SafeSense is a built-in hardware/software safety solution. It adds an integrated safety layer to your automation system without sacrificing speed or precision. SafeSense helps:

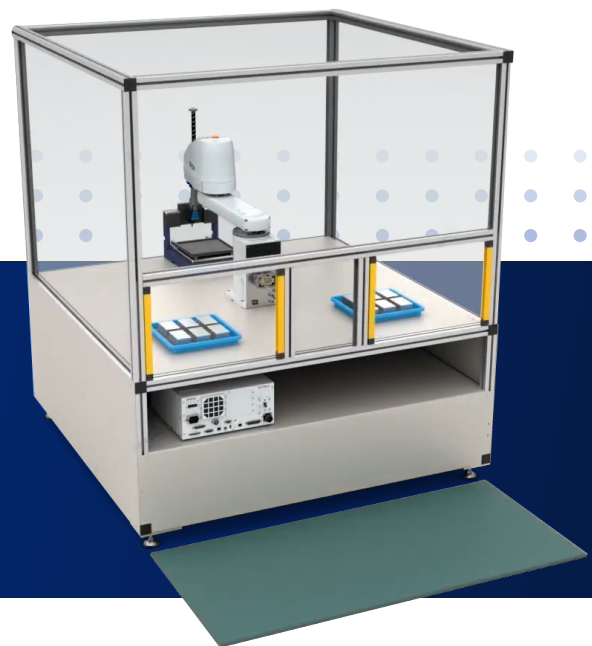
- Reduce risk
- Protect workers
- Shrink machine footprint
- Improve productivity

6 Why is robot safety even more important now than ever before?

As robots move into new spaces — like classrooms, labs, and healthcare — ensuring safe human-robot interaction becomes more critical. Safety must be designed into the application and implemented through smart, flexible workcell solutions.

7 How can Epson help me find the best safety solution?

At Epson, we don't just sell robots — we use them to manufacture our own products. That means we live these safety decisions every day. We understand the tradeoffs and are ready to help you make the right decision for your environment.



Where can I learn more?

→ Visit Epson.com/SafeSense to connect with an Epson robot expert and learn how to build a safer, smarter workcell tailored to your application.