Automate More With Cobots

Your Guide to Selecting Automatable Tasks
Automating with cobots: Your guide to selecting the right task

Introduction

Collaborative robots, or cobots, are having a profound impact on global manufacturing. With so many tasks running in factories every day, it can be difficult to select the one that best aligns with a cobot’s strengths. This guide, which we’ve developed based on our experience with hundreds of cobot deployments, will help you select the tasks best-suited to this new form of industrial automation.

Cobots are ready to go to work. They’re small, adaptable and smart, making them the ideal co-workers for those jobs your employees aren’t keen on doing. This guide is designed to help you identify where a cobot could make a major impact on your production metrics, and improve operations in your factory, while boosting employee satisfaction.
The labor issue

Repetitive, monotonous tasks are part of running a production line, and it can be difficult to fill and retain those roles. So difficult, in fact, that Deloitte predicts by 2025, there will be two million unfilled manufacturing jobs in the U.S. alone. And the problem is getting worse and effecting more and more countries. The combination of an aging population, rising wages and cultural trends like the opioid epidemic mean the field of eligible workers is going to be restricted well into the next decade.

The answer to the labor gap lies in automation: from artificial intelligence to the connected factory, new advances in manufacturing will come from the tech world, not human resources. Cobots are poised to help manufacturers address the growing talent shortage by doing those jobs that humans don’t want. Cobots are safe to work alongside people, without requiring the elaborate safety caging that you see around traditional industrial robots. Cobots can operate 24/7/365 and they don’t mind mundane tasks – rather, they excel at them.

With Rethink Robotics, you can automate so much more.

Rethink Robotics’ cobots transform the way work gets done in manufacturing and distribution operations. Powered by the Intera software platform, Rethink Robotics’ Sawyer cobot can be trained and on the job quickly, and is highly reliable, adaptable and productive.

Rethink Robotics has deployed cobots in factories around the globe, providing a cost-effective, trusted industrial automation solution to manufacturers of all types. With Sawyer, manufacturers can automate tasks that were never possible before, from packaging to machine tending as well as many other applications.
Which task is best?

Cobots are, without a doubt, an integral component of the factory of the future. They’re moving manufacturers into the next phase of adaptable automation on the factory floor, and addressing multiple challenges – labor shortages, product quality, production metrics, ergonomic challenges – that have traditionally not been met with automation. But cobots will never replace humans; the key to a successful deployment is to find the dull, dirty or dangerous task that a robot could do, thereby freeing up the human operator for more valued work.

There are a few characteristics to be on the lookout for when identifying cobot tasks. Ideal cobot tasks are typically:

**Repetitive or mundane:**
These tasks could be completed by humans, but the reality is that they aren’t very interesting, and you’ll usually have a hard time keeping people on the line for long.

**Ergonomically challenging:**
In general, these are the tasks that humans should avoid. They often require repeated twisting and turning, and could result in health issues after a period of time.

**Dangerous or high risk:**
These tasks often involve working in close proximity to heavy machinery, which increases the risk of injury to your workers.
Four tips to a successful cobot deployment:

When deploying a cobot, it’s critical to balance three factors: ease & speed of deployment, impact on throughput & ROI and the level of additional automation/fixturing needed for success.

Here are a few tips to help guide you toward success:

**Tip No. 1 – Start with a deployment that will be relatively straightforward, but impactful:**

You may be still learning what your cobot can do, and many times, you’ll find that you can envision a cobot doing something differently after working alongside it for a while. Find a simple task with a fast deployment time and quick return on your investment to put the cobot to work quickly.

**Tip No. 2 – Be selective about what you expect your robot to accomplish:**

There are some tasks that still require the human skills of cognition, dexterity and reason – cobots will let you redeploy your best people to where they can contribute to business success and their own satisfaction.

**Tip No. 3 – Tap into your cobot pipeline:**

Work closely with your cobot manufacturer and/or distributor so they can help you find the right task for deployment. No one knows the cobot’s capabilities as well as its manufacturer, and at Rethink Robotics, we hire people who have been in your shoes. We specifically look for manufacturing experience when we hire – not roboticists – so they can help you practically deploy Sawyer.

**Tip No. 4 – Get up close and personal with your cobot:**

Cobots are safer than other industrial robots. They’re truly collaborative, and designed to work next to human counterparts without causing damage – so you can deploy them on tasks that are totally different than what you’re used to automating. See how you can automate more – safely – with cobots.
Customers Around the World

As we’ve helped customers around the world deploy cobots, we’ve identified the top seven tasks Sawyer does best. In each instance, manufacturers have found that cobots help them decrease errors and reallocate critical employees to other higher value tasks on the factory floor.

Seven Tasks Cobots Love

- CNC Machine Tending
- Pick & Place
- Metal Stamping & Press Tending
- Testing & Quality Inspection
- Co-Packing & End-of-Line Packaging
- PCB Handling & ICT
- Plastic Injection & Blow Molding
From plastics and wood manufacturers to metal fabricators, computer numerical control (CNC) machines are everywhere in manufacturing. Typically, CNC machines require human workers to complete the tedious task of repeatedly loading and unloading them; operators have to load the machine, wait for long cycles to complete before unloading the machine, and then repeat the whole process again. Today, many manufacturers are turning to cobots to close the loop and automate the entire CNC machining process, increasing uptime and lowering scrap rates.

See Sawyer working with a CNC machine.
**Pick & Place**

Manufacturing is moving from a high volume, low mix manufacturing model to low volume, high mix operations, making material handling more challenging than ever for traditional automation. Whether working on a conveyor, case, fixture or rotary table, Sawyer can maintain part counts and reorient parts quickly – and that means a higher level of quality.

[Watch Sawyer perform a pick and place in a packaging facility.](#)
Metal Stamping & Press Tending

Working with metal forming press brake and stamping machines can be dirty and dangerous. Handling smaller parts with sharp exposed edges, or moving metal pieces into place for extended periods of time, translates into increased safety-related issues due to worker fatigue and human error. Metal fab workers must adapt to constantly changing line configurations, precisely load and unload parts and tend to complex machinery. Automating these tasks with a Sawyer cobot improves worker safety and satisfaction, increases productivity and improves quality.

See Sawyer working with a press brake.
Testing & Inspection Quality

The same level of test and inspection quality that is normally found on high volume production lines is now available to all manufacturers. Sawyer can conduct multi-point inspections using its embedded vision system to identify and pinpoint defective or faulty parts before they leave the factory.

See how Sawyer uses vision to conduct an inspection.
Co-Packing & End-of-Line Packaging

Packaging operations are everywhere, and the tasks – layer packing, pick and pack, sorting and bagging – are repetitive and monotonous, but vary enough to deter traditional automation options. Sawyer packages cases, parts and materials, and stacks layers for different types of products and containers. Sawyer is poised to help manufacturers and co-packers deal with trends like decreasing batch volumes, greater packaging variability and increased product diversity.

Take a look at Sawyer at work packing plastic parts.
PCB Handling & ICT

Tending circuit board testers has historically been hard to automate because the parts involved are so delicate, and excess pressure could damage the system. Sawyer is equipped with features that make these tasks easy for the cobot to move and manipulate delicate components without causing damage to the parts or fixtures - such as torque sensors built into every joint on the robot that let you precisely control the amount of force being applied.

Watch how Sawyer carefully handles printed circuit boards.
Plastic Injection & Blow Molding

With increasing requirements from customers for 100 percent part inspection, plastics manufacturers are forced to balance front-end production costs with back-end risk of increased scrap, product returns and refusals. Add to this hour-to-hour line variability such as mold changeovers and new products – plus human workers stretched to the limit – and it becomes very clear plastics manufacturers need a new factory automation tool. Collaborative robots like Sawyer are perfect for tending injection molding machines, reducing cycle times, increasing machine time utilization and reducing errors.

Watch Sawyer on the job at a plastics blow molding plant.
Power to change

In the age of cobots, manufacturers are no longer limited to the rigid, expensive machines that defined traditional factory automation for so many years. Take advantage of the benefits cobots bring by deploying them on the tasks for which they’re best suited, and you’ll quickly see a noticeable improvement in important metrics like throughput, product quality and employee satisfaction.

Collaborative robots have the power to change your entire manufacturing operation – they’ll help you rethink automation in a whole new way.

See Sawyer at Work
Watch how manufacturers like you are automating more with collaborative robots, in the Rethink Robotics video gallery.

View the Cobot Buyer’s Guide
Get to know the most important factors to consider when evaluating collaborative robots.