



The Use of
COLLABORATIVE
Robots

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By AHS Staff

Robots are viewed as task-driven machines that aim to take over jobs that humans are incapable of doing efficiently and effectively. Outside of the material handling industry, this perspective is greatly shared. In the manufacturing world, we think of robots as fast-moving, high-volume creating machines. Often these machines are fenced in, and safety signage and zones are designed to keep humans from potentially injuring themselves. For many years, robots and humans existed in the same work environment but each in their own spaces away from one another. While these atmospheres and processes exist today, some environments are finding the value in collaborating humans and robots.

According to Dictionary.com, collaboration is "...the action of working with someone or something to produce or create something." The conversation often starts with the question: why are robots replacing humans in the workforce? Every day we see applications where robots exist, and jobs are threatened due to efficiency and labor savings a robot can provide for an organization. However, most robots are valuable when they are collaborating with a human. The demand for high productivity is at an all-time high as the "Amazon effect" continues to push

organizations to their limits in the logistics world. The need for humans to do more value-added work is now at a premium. Collaborative robots allow organizations to place their workforce into these roles that are critical for success and meeting everyday metrics.

The Value of Cobots

Collaborative robots (Cobots) provide value in two central ways for an organization: working nonstop throughout multiple shifts, and most importantly, they are safe. Caging and fencing are not required – humans can interact with them. Because sensor-rich robots adapt to a variety of new ideas and challenges quickly, there are more cases for real-world application.

Cobots are more precise and increasingly flexible with advanced sensor technology, AI, Lidar/Radar, GPS, and connectivity. Machine learning has also made cobots more versatile – not just in their hardware, but in software that facilitates adapt to a broad array of tasks.

More Time for Value-Added Tasks

Let's look at a scenario in which a collaborative AMR (autonomous mobile robot) is being deployed: A worker in a distribution center is pulled away from their task to move a cart filled with garbage or cardboard as their area begins to become cluttered. Hauling trash takes the worker away from a value-added job for an extended period of time. In this same scenario, a collaborative robot can be called to grab this cart, bring it back to the compacting area, and then move to its next command or pickup. This allows an organization to keep its employees in their roles, while collaborative robots do the excess movement that often creates bottlenecks or low throughputs. Depending on how the collaborative AMR is outfitted, it can handle many tasks that will cut down the flow; excess walking and lifting that humans encounter daily in a facility.

Robotic arms are also being used in a collaborative environment. The robotic arms provide precision and move high volumes in many applications. Humans program these robots to teach them points and how to interact. Once the robot is programmed, the bots move on their axis and perform multiple tasks depending on the end-effector being used. Some processes are using suction to pick up bags, or even a gripper to pick up and drop items. There are many processes within the four walls of a distribution center where a robotic arm can be useful. These bots are equipped with vision systems and proximity sensors so that humans can be in the same workstation with the robot.



Integrating Cobots with Software

Cobots are being shaped to integrate fully into software so that they can work smartly and independently. They can tie into the ERP, WMS, or operational software within a facility. This allows the bots to be used in processes that vary based on daily and timely volumes. Software integration can have a cobot hauling trash for the first four hours of a shift and assisting with picking the last four hours without interrupting an operator to make this change. Their ability to be used in many applications makes them a versatile solution that cannot only give an organization a payback on the machine but also make humans jobs and tasks much more efficient. With the correct integration strategy, collaborative robots can optimize processes quickly and effectively.

Introducing Cobots into Your Facility

One of the most significant advantages of cobots is their ease of introduction into an existing process without substantial transformation. Cobots can relieve employees of the

repetition and labor-intensive activities which allows them to focus on ways to make their process stronger and better. This can create an organizational change that forms the bottom-up effect, where the worker finds value in their role and generates ideas. Employees can now have a more considerable influence and have the desire to stay within their organization and grow.

Summary

Collaborative Robots, also known as Cobots, are fast-growing, and offer a wide range of benefits. The cobots have been labeled as collaborative because they are specifically designed to interact with humans without the use of additional safety equipment and components. They have the ability to integrate into operational software and can be introduced into your facility without substantial transformation.

Want to learn more and possibly see a Collaborative Robot in person? Contact our experts at AHS, LLC for help!

Call us at **800-891-5504** or email us today at **emergingtechnologies@ahs1.com**.

