NEWS RELEASE

The Cartesian Robotics System: Simplifying Automation Control

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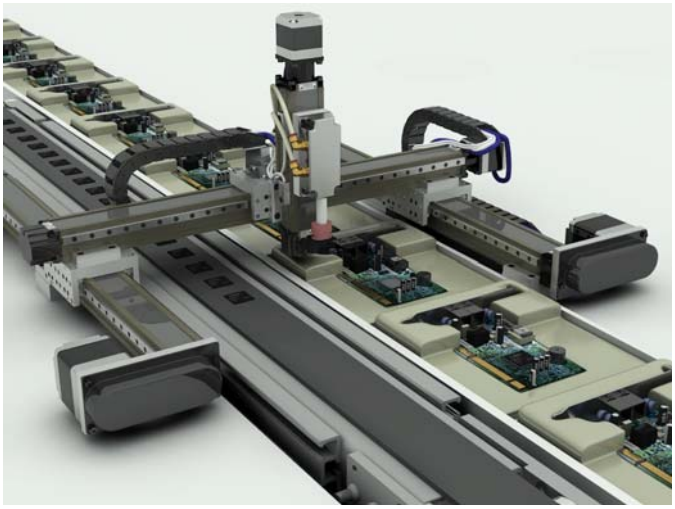
Robots come in several forms. They are used to automate a wide range of tasks in manufacturing and assembly lines in virtually every industry from cell phone production to candy packaging. Based upon the required application, a full assortment of robot formats can be implemented: SCARA, Delta, articulated-arm and Cartesian configurations (center-stacked, cantilevered or gantry) to name a few.



Which of these formats ends up being installed depends upon load, working-area, and precision. However, a growing trend is to simplify the automation process by utilizing Cartesian robots—allowing for fewer controllers, enhancing usability and offering more integrated and unified software. This saves the decision maker on cost, training, and maintenance.

Where to use which format? Assembly and pick-and-place are tasks any of these robots can fulfill. However, depending on the workload, speed and accuracy required, certain formats outperform others in particular applications.

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Robot Formats			
Cartesian	**SCARA**	**Delta**	**Articulated Arm**
• Can be designed as center-stacked, cantilevered or in a gantry assembly • Very versatile • Simplifies robot and master control systems • Large work envelope • High accuracy	• Donut Shaped work envelope • Small footprint • High speed capabilities • Perform great in short-stroke, fast assembly and pick-and-place applications • **Disadvantage:** Typically requires dedicated robot controller in addition to line master controller like PLC/PC	• Very high speed • Contact lens shaped working envelope • Excels in high speed, lightweight pick and place applications (candy packaging) • **Disadvantage:** Typically requires dedicated robot controller in addition to line master controller like PLC/PC	• Reach over and under objects • High speed • Large working envelope • Great in unique controller, welding and painting applications • **Disadvantage:** Typically requires dedicated robot controller in addition to line master controller like PLC/PC

Why use a Cartesian format? Cartesian robots excel in a multitude of different applications due to their high speed travel, precise multi-axial guidance, wide working envelope and versatility; including packaging, dispensing, palletizing and large-scale assembly. They can be designed as center-stacked

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assemblies for low-cost, high speed linear guidance. They can also be used for cantilevered linear motion for precision pick-and-place applications. Finally, Cartesian robots can be used as gantries to accomplish tasks using overhead manipulation, which frees up floor space and helps simplify the assembly line. High performance positioners along each axis support the gantry's wide maneuverability across the working envelope. Cartesian multi-axial gantries can precisely lift heavy loads along a wide working space for repeatable operation and sophisticated automation.

A new emerging trend in robotics—that also gives Cartesian an edge—is that of simplifying controllers. Typically along an assembly line, each robot would have its own, unique controlling system. A master controller would also be used for control of the overall assembly line. Each robot controller has its own software, manual and technical guide—necessitating further machine training and increased maintenance cost. Cartesian assemblies, with their wide working envelope, reduce and simplify controlling. Fewer controllers require less periodic maintenance and training—streamlining the automation process, simplifying system components, and saving on cost!

For more information on high-performance Cartesian robotic assemblies or other examples of full application solutions, please call 1.800.729.9085, email to marketing@pbclinear.com or visit us at our Linear Actuator Technology (LAT) dedicated webpage at LAT.pbclinear.com.

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