

7 Types of Industrial Robots

Cartesian Robots



- Also called linear or gantry robots
- Moves in straight lines on 3-axis
- Highly flexible in configurations, easy to adjust speed, precision, stroke length and size
- Used for CNC machines and 3D printing

SCARA Robots



- Selective Compliance Assembly (or Articulated) Robot Arm
- Functions on 3-axis and have rotary motion and excel in lateral movements
- Easier integration than cartesian robots
- Used for assembly, palletizing and bio-med applications

Articulated Robots



- Resembles a human arm that is mounted to a base with a twisting joint
- Can have two rotary joints to ten rotary joints which act as axes
- Utilize 4- to 6-axis
- Used for assembly, arc welding, material handling, machine tending, packaging

Cylindrical Robots



- Rotary joint at the base and a guided thrust block to connect the links
- Cylindrical-shaped work envelop, rotating shaft and extendable arm that moves in a vertical and sliding motion
- Used for tight workspaces and simple assembly, machine tending, coating applications

Delta Robots



- Parallel robots that possess three arms connected to a single base, which is mounted above the workspace
- Moves delicately and precisely at high speeds
- Used for food, pharmaceutical, electronic industries

Polar Robots



- Spherical robots with an arm with two rotary joints and one linear joint
- Axes work together to form a polar coordinate
- Used for die casting, injection molding, welding, material handling

Collaborative Robots



- Also called cobots, linear or gantry robots
- Move in straight lines on 3-axis
- Used for pick and place, palletizing, quality inspection, machine testing