**DEFINITION OF A ROBOT**

*Manipulating industrial robot as defined in ISO 8373*

An automatically controlled, reprogrammable, multipurpose, manipulator programmable in three or more axes, which may be either fixed in place or mobile for use in industrial automation applications.

<table>
<thead>
<tr>
<th>Robot</th>
<th>Axes</th>
<th>Examples</th>
<th>Robots broken down by mechanical structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principle</td>
<td>Kinematic Structure</td>
<td>Workspace</td>
<td>Photo</td>
</tr>
<tr>
<td>Cartesian (Gantry) robots</td>
<td>Robots whose arms have three prismatic joints, whose axes are coincident with a Cartesian coordinate system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCARA robots</td>
<td>Robot which has two parallel rotary joints to provide compliance in a selected plane. <em>Note:</em> SCARA derives from Selectively Compliant Arm for Robotic Assembly.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Articulated robots</td>
<td>Robots whose arms (primary axes) have three concurrent prismatic joints</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parallel robots</td>
<td>Robots whose arms (primary axes) have three concurrent prismatic joints</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Robots broken down by control types**

The definitions are in accordance with ISO 8373

- **Sequence-controlled robot**
  Definition
  A robot having a system of control in which a state of machine movements occurs in a desired order, the completion of one movement initiating the next.

- **Trajectory operated robot**
  Definition
  A robot, which performs a controlled procedure whereby three or more controlled axis motions operate in accordance with instructions that specify the required timebased trajectory to the next required pose (normally achieved through interpolation).

- **Adaptive robot**
  Definition
  A robot having sensory control, adaptive control, or learning-control functions.

- **Teleoperated robot**
  Definition
  A robot that can be remotely operated by a human operator. Its function extends the human’s sensory-motor functions to remote locations and the response of the machine to the actions of the operator is programmable.