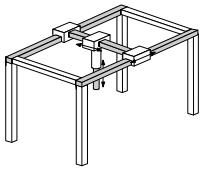
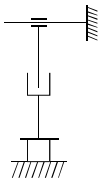
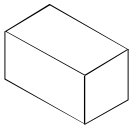
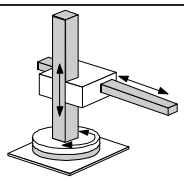
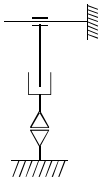
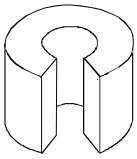
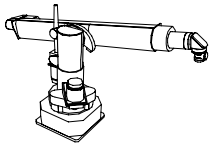
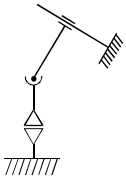
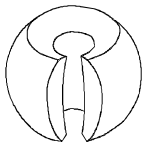
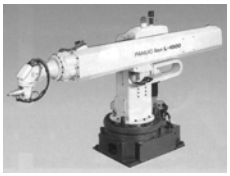
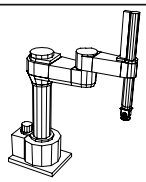
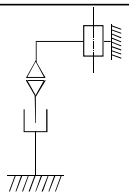
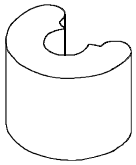
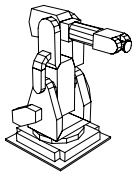
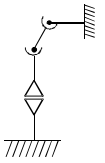
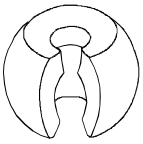
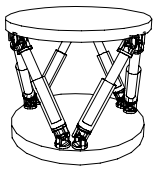
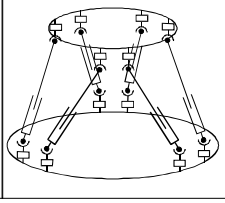
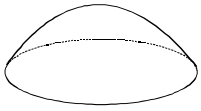
DEFINITION OF A ROBOT

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.

Robot	Axes		Examples
Principle	Kinematic Structure	Workspace	Photo
 Cartesian Robot			
 Cylindrical Robot			
 Spherical Robot			
 SCARA Robot			
 Articulated Robot			
 Parallel Robot			

Robots broken down by mechanical structure

The following four categories (see also figure 1) with respect to mechanical structure are to be used (definitions in accordance with ISO 8373).

Cartesian (Gantry) robots

Robots whose arms have three prismatic joints, whose axes are coincident with a Cartesian coordinate system

SCARA robots

Robot which has two parallel rotary joints to provide compliance in a selected plane.
Note: SCARA derives from Selectively Complient Arm for Robotic Asssembly.

Articulated robots

Robots whose arms (primary axes) have three concurrent prismatic joints

Parallel robots

Robots whose arms (primary axes) have three concurrent prismatic joints

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