

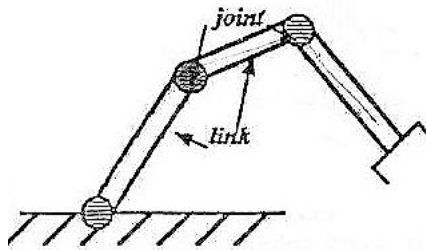
Bagian Bagian Robot



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Bagian-bagian robot



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Bagian-bagian robot

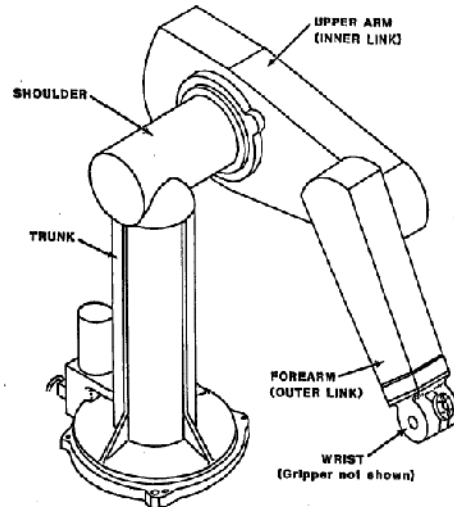


Figure 1 The six degree-of-freedom PUMA 560 robot manipulator.

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Manipulator

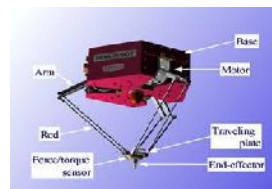
- suatu struktur mekanik yang terdiri atas beberapa badan yang kaku (*link*), yang dihubungkan dengan sendi (*joint*). Manipulator terdiri atas lengan (*arm*) yang melakukan gerakan, pergelangan (*wrist*) yang memberikan kecekatan serta *end effector* yang melakukan tugas yang diinginkan, seperti misalnya grip.

Types of industrial robots

- Serial manipulator



- Parallel configuration

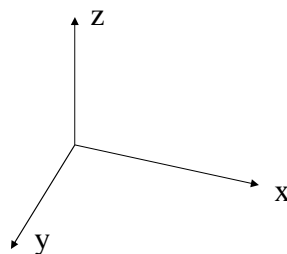


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Manipulator Kartesian

- Cartesian robot
 - Lengan robot bergerak linier dalam 3 sumbu axis. x,y,z

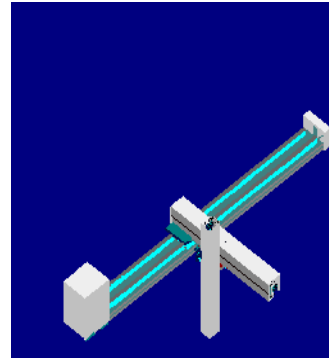
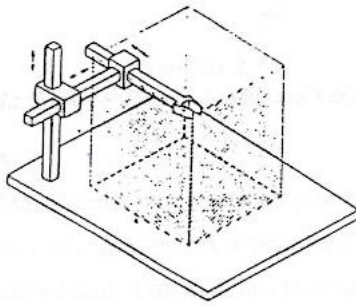


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Klasifikasi Robot Menurut Konstruksi Mekanik

- *Manipulator Kartesian*

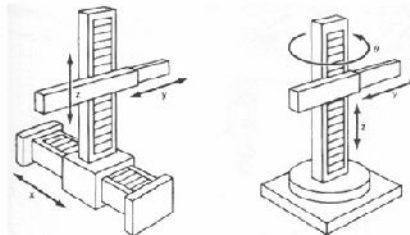


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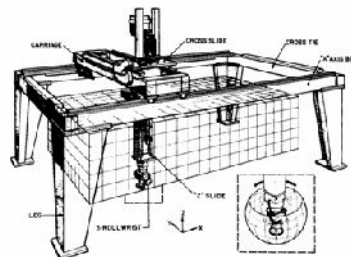
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Further Classification of Serial Manipulator

- Cartesian Robot



- Gantry Robot

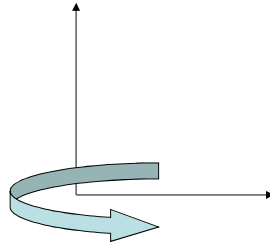


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Manipulator Silindris

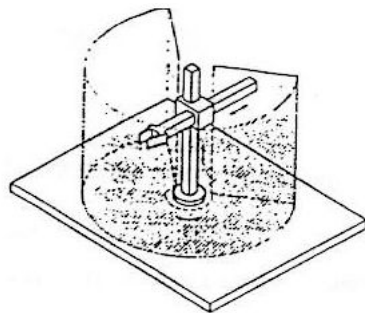
- Robot koordinat silindris
 - Lengan berputar pada basis , bergerak masuk keluar dan naik turun



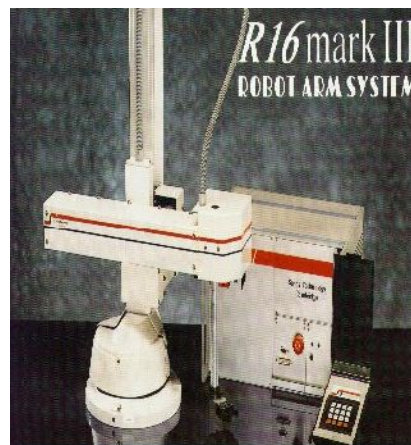
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Manipulator Silindris

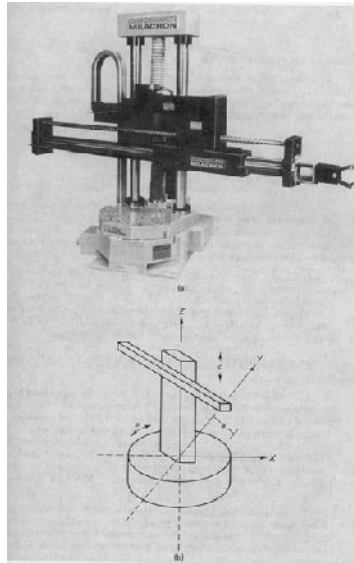


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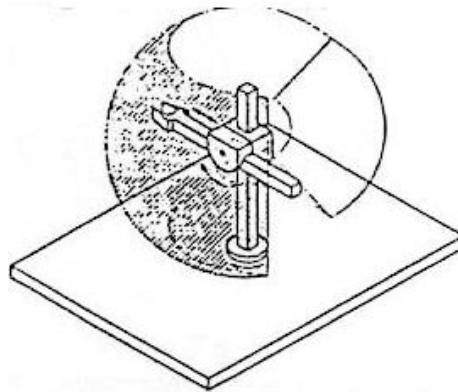
- Cylindrical Robot



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Manipulator Sferis

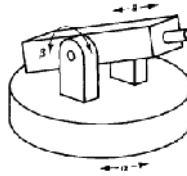


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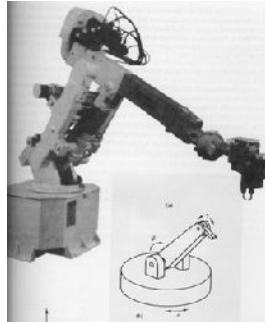
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Further Classification of Serial Man

- Spherical Robots



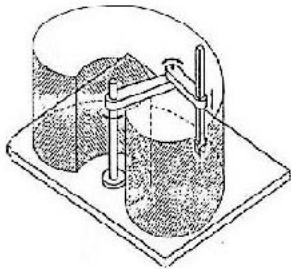
- Articulated Robots



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Manipulator Revolutive



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Manipulator Revolutive



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- Contoh robot SCARA
 - Berputar pada 2 sumbu axis dan bergerak linier naik turun

- SCARA



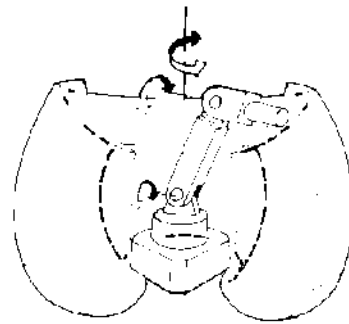
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Manipulator Angular



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Angular

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Manipulator Angular



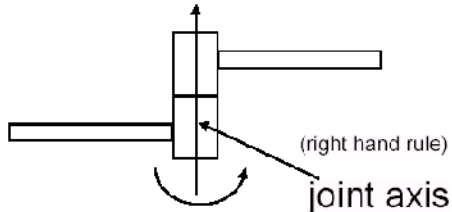
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- Titik sumbu lengan robot bergerak berputar dan dalam 3 sumbu koordinat axis

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Robot Joints

Two Basic Types:



Rotational



Translational
(Prismatic)

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Tipe joint Robot

- Spheris/Bola join
- Revolute/berputar
- Prismatik/sliding
- Flat/datar
- Helikal/sekrup

Symbol

Name



Spherical



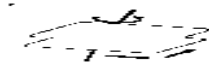
Revolute



Prismatic

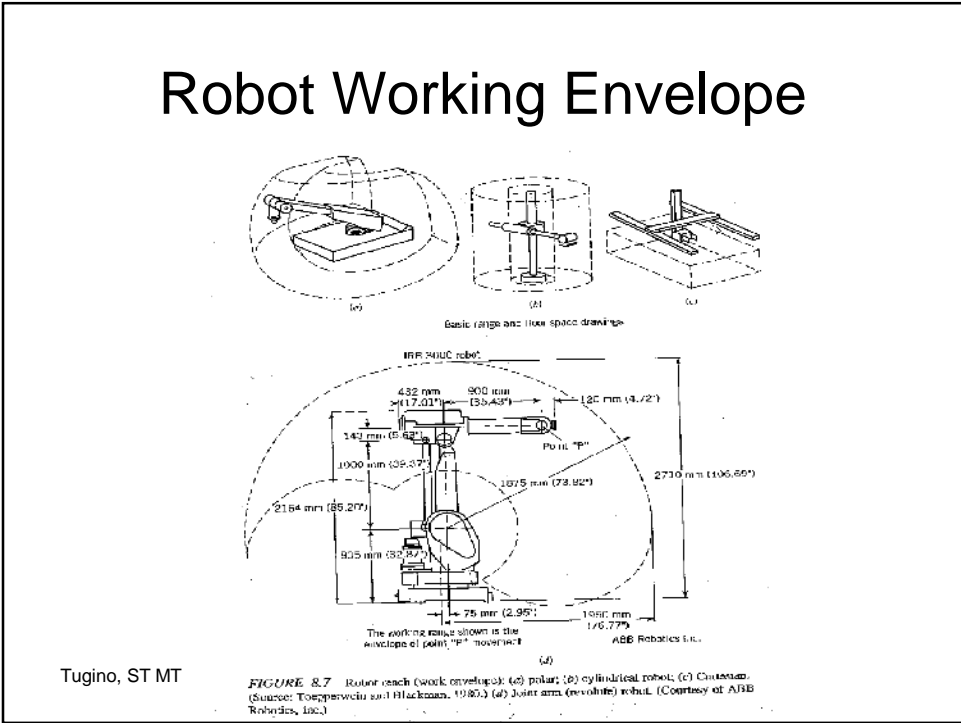
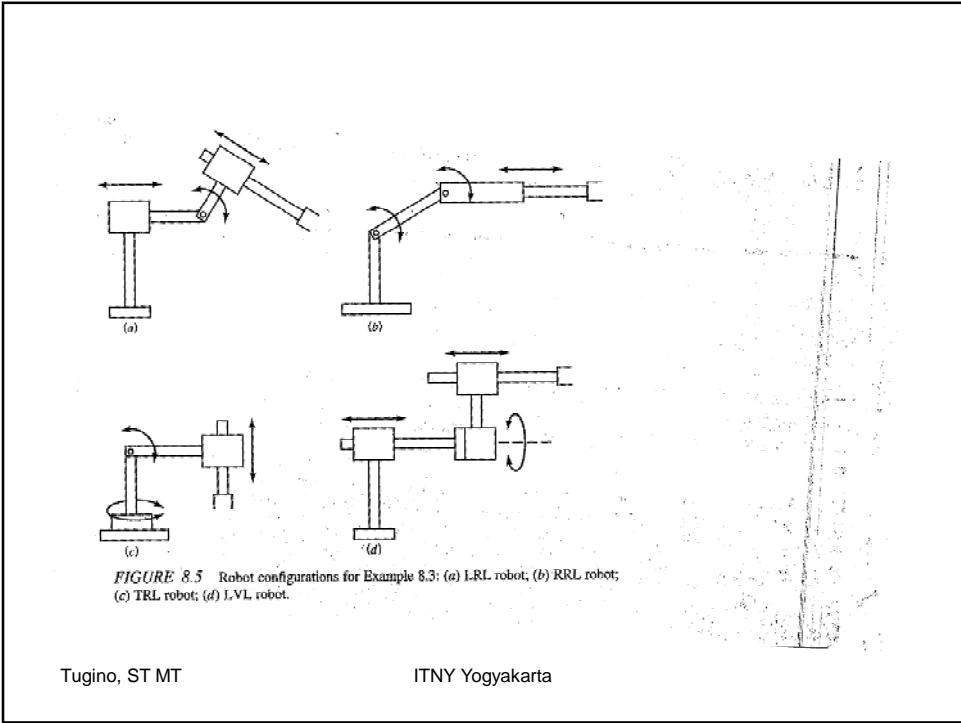


Cylindrical



Flat

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Robot classification using control methods

- Point-to-Point control
- Continuous path control

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Aktuator

Aktuator : pemacu gerak yang dihubungkan ke sendi (joint) dari lengan robot. jenis tenaganya,

- Aktuator tenaga elektrik, biasanya digunakan motor arus searah. sifat mudah diatur dengan torsi kecil sampai sedang.
- Aktuator tenaga hidrolis. torsi yang besar konstruksinya sukar.
- Aktuator tenaga pneumatik. sukar dikendalikan

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Sensor

- sensor internal (pendeteksi variabel-variabel tertentu, misalnya yang berhubungan dengan pengontrolan lengan robot) dan sensor eksternal (perubahan variabel-variabel dari lingkungan sekitar. Misalnya sensor posisi, sensor kecepatan, sensor sentuhan).

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Sistem kontrol

- Sistem kontrol ini berhubungan dengan komputer dalam mengontrol dan mengawasi gerak lengan robot.

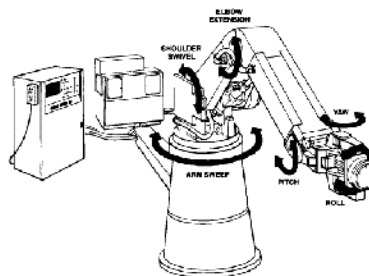
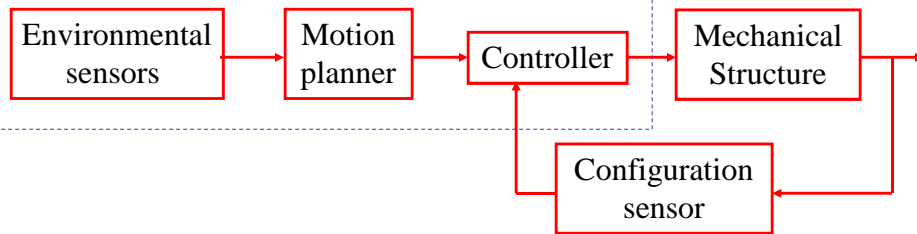


Figure 2 The six degree-of-freedom T3 robot manipulator.

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Kontrol sistem Robot



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Terimakasih

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