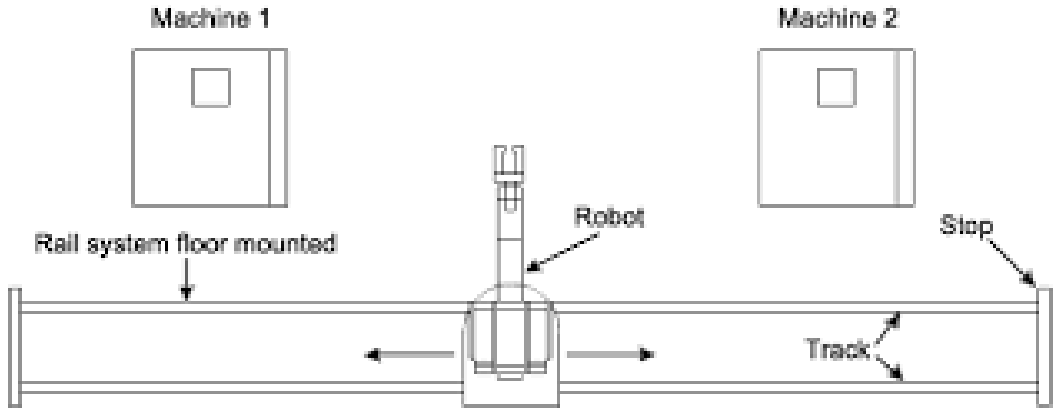
Workspace Organisation

What is Workspace Organisation

- Definition: Arrangement of robots, tools, materials, and tasks within a production environment

- Key goals:
  - Maximise efficiency
  - Ensure safety
  - Minimise downtime
  - Reduce waste and handling

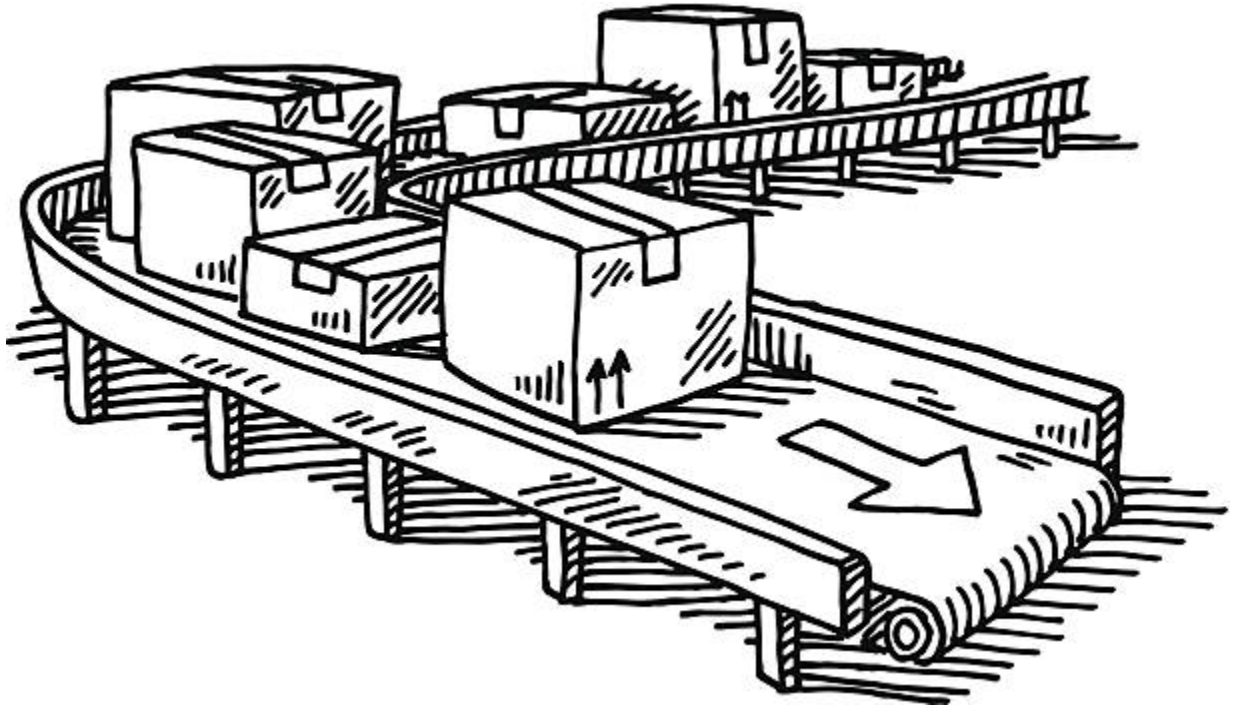


Feed of Work

- **Concept**: Supplying raw materials or components to the robot

- **Methods:**
  - Manual loading (operators)
  - Conveyors and feeders
  - Automated guided vehicles (AGVs)

- **Considerations:**
  - speed
  - reliability
  - orientation of parts

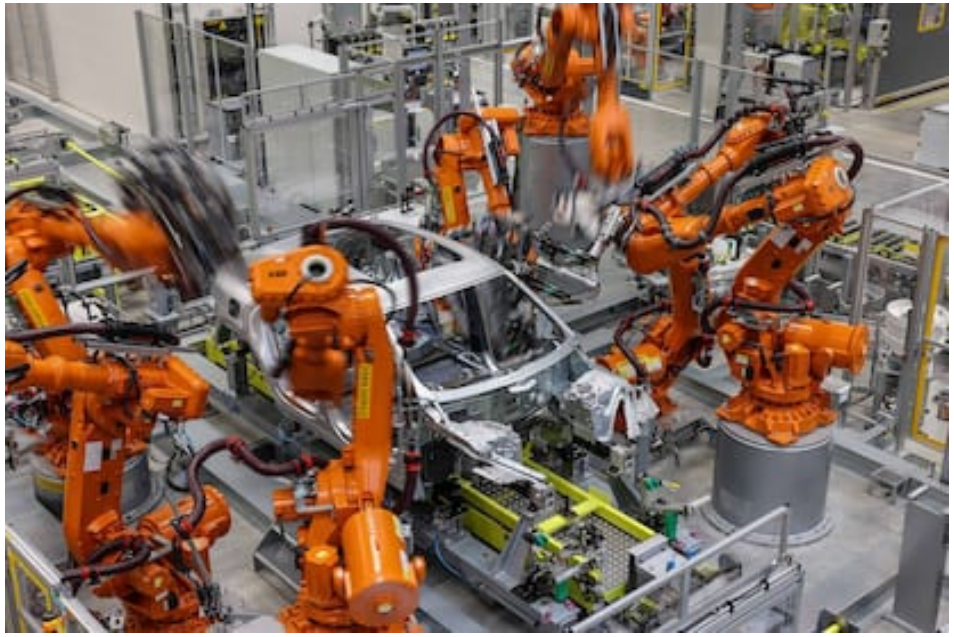


Robot-to-Robot Work

- Concept: Cooperation between multiple robots in a workflow

- Types of interaction:
  - Sequential (Robot A → Robot B)
  - Parallel (working side by side on different tasks)
  - Collaborative (shared handling of same workpiece)

- Benefits:
  - higher throughput
  - flexibility

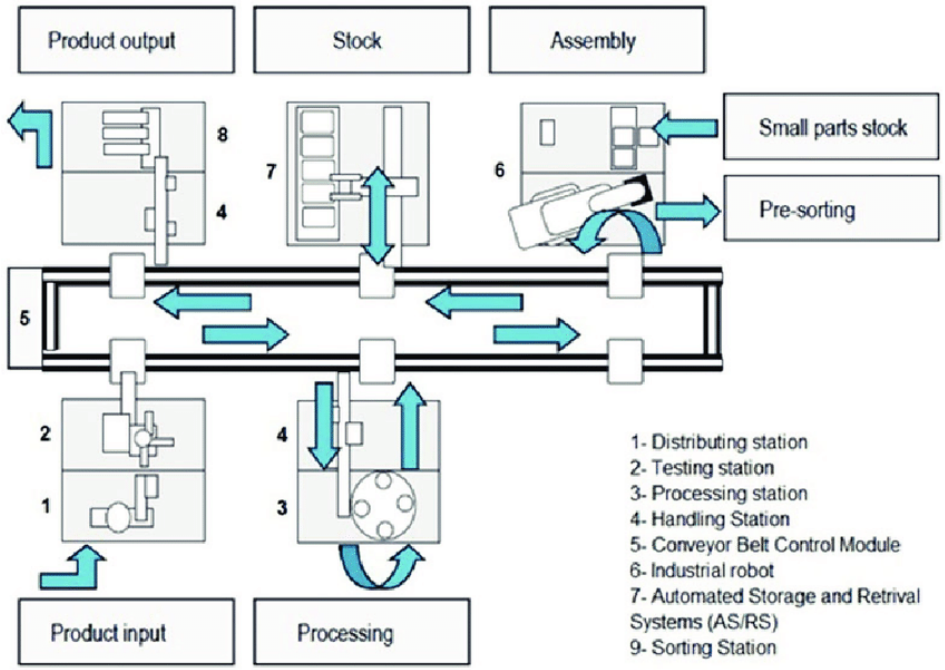


Material Flow

- Definition: The movement of parts and products through the robotic workspace

- Flow patterns:
  - Linear (straight line production)
  - Circular/loop (cellular layouts)
  - Flexible flow (multi-direction with AGVs)

- Factors:
  - Layout
  - space utilisation
  - minimising bottlenecks



Logistics in Robotics

- **Role of logistics**: ensuring the right materials, tools, and products are in the right place at the right time

- Integration with robotics:
  - Automated storage and retrieval systems (AS/RS)
  - Just-in-time delivery
  - Smart logistics (IoT & sensors)