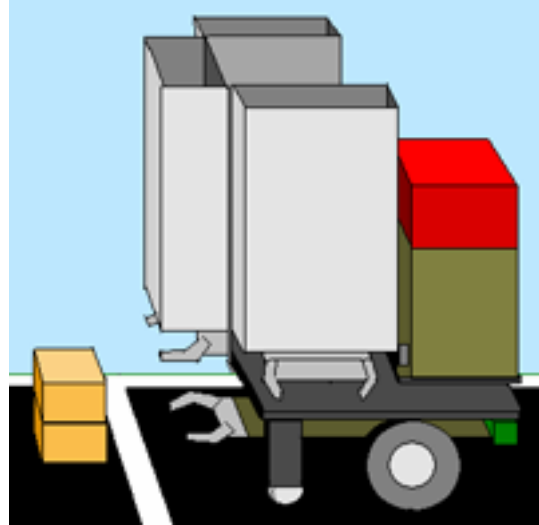


R3D3

Autonomous Delivery Robot

Features

- Small but powerful PIC Microcontroller allows for autonomous operation
- Line sensors detect white navigation lines and delivery locations
- Sonar range finders prevent collision with pickup and delivery structures
- Barcode scanner ensures accurate package delivery
- Linear actuators and mechanical grippers retrieves packages from pickup area



Specifications

PIC Microcontroller

Enhanced Flash Memory
64K Program Memory
40 Pin DIP
40MHz clock speed
36 I/O Pins

Package Acquisition

150mm gripper jaw movement
0.28 seconds gripper close time
Gripper accurate to 0.05mm

Linear Actuator

3 in arm extension
1.83 in x 1.83 in x 3.75 in

Software

Efficient navigation algorithms
provide timely package delivery

Locomotion

PK244PA Stepping Motors
55.2 ounce-inch holding torque
1.8 degree step size

Line-Sensing System

Omron photomicrosensor array
4.4 mm optimal distance

Obstacle Avoidance

Sonar range finder to detect
pickup and delivery structures

Dimensions

8 in x 8 in x 12 in

Power Supply

Rechargeable NiMH AA
Batteries