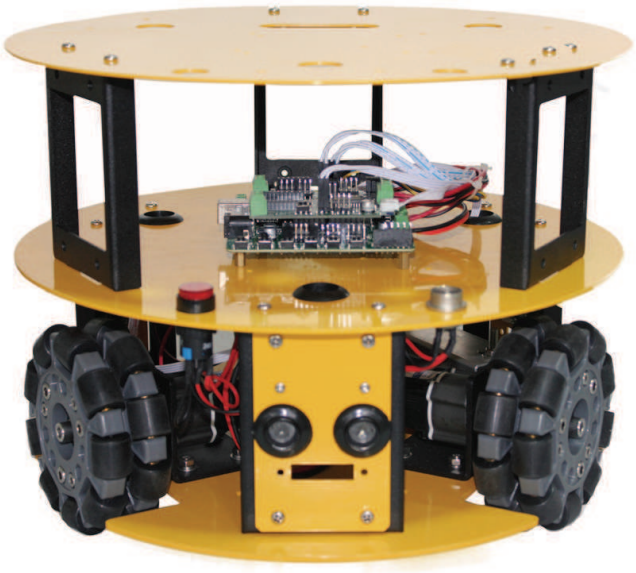
NEXUS robot

3WD 100mm omni wheel robot kit 10013

This is a 3 wheels drive mobile robot utilizing omni wheels.It capable of moving in any direction by changing the velocity and direction of each wheel without changing its orientation.It includes microcontroller,IO expansion board,DC motor with encoder,IR and ultrasonic sensors.With pre-drilled screw holes it can be easily extended.



Aluminum alloy frame


3 wheels drive


Omni wheel


Ultrasonic sensor

Encoder

Prograrmmable


Easily expand

Features:

- 3WD
- Omni wheel
- Compact size
- Aluminum alloy
- Easily expand
- Includes Ultrasonic sensor
- Dc motor with encoder
- Open source

Parts included:

- 100mm omni wheel X 3
- DC motor with encoder X 3
- Ultrasonic sensor X 3
- Microcontroller X 1
- IO expansion board X 1

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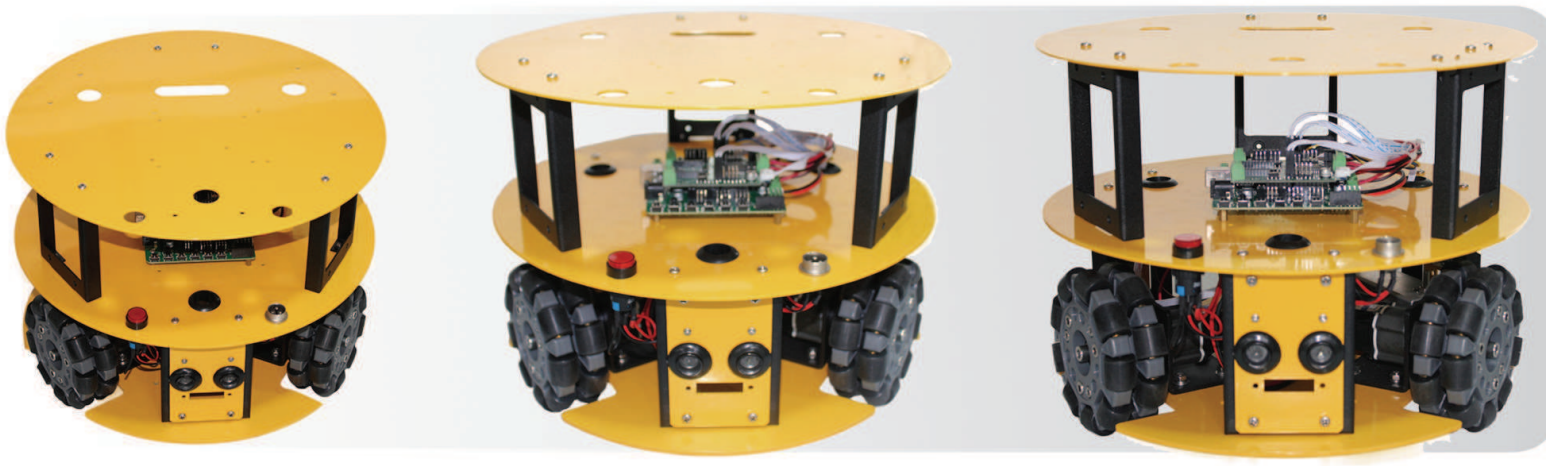

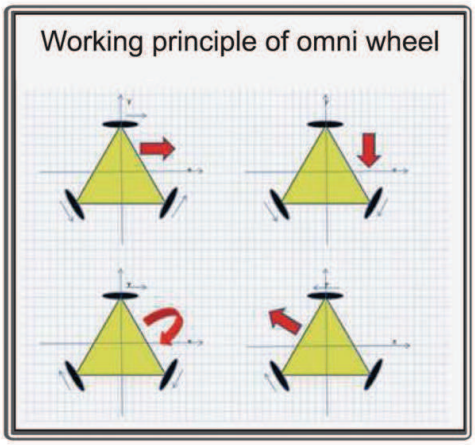

A omni-wheel robot can instantaneously move in any direction. It does not need to do any complex motions to achieve a particular heading. This type of robot would have 2 degrees of freedom in that it can move in both the X and Y plane freely.

Specifications:

Chassis	Appearance	Circule
	Max Width	305mm
	Height	126mm
	Chassis Height	19mm
	Radius	152mm
	Coupled Mode	Compaction
	Material	Aluminium Alloy
	Color	Yellow, Black
	Speed	0.6m/s
	Drive Mode	3 wheels drive
	Climbing Capacity	20degree
	Load Capacity	15kg
	PC104 compatible	Yes
Wheel	Type	90 degree Omni Wheel
	Diameter	100mm or 123mm
	Thickness	38mm
	Material	Nylon or Aluminium Alloy
	Load Capacity	15kg
	Material	Rubber or Nylon
	Diameter of Roller	19mm
	Length of Roller	19mm
	Coupled Mode	Brass Tube or bearings

Motor	Type	Faulhaber 12V DC Coreless Motor
	Power	17W
	RPM	120rpm
	Diameter	30mm
	Length	42mm
	Total Length	85mm
	Diameter of Shaft	6mm
	Length of Shaft	35mm
	No Load Current	75m
	Load Current	1400mA
	Gearbox Ratio	64:1
Encoder	Type	Optical
	Encoder Phase	AB
	Encoder Resolution	12CPR
Battery and Charger	Battery	12V Ni-Mh
	Slow Charger	100~240V In, 2.4~12V Out
	Duration of Charge	2 hours
	Running Time	0.5 hour

Microcontroller Specification	Atmega 328
	14 Channels Digital I/O
	6 PWM Channels (Pin11,Pin10,Pin9,Pin6,Pin5,Pin3)
	8 Channels 10-bit Analog I/O
	USB interface
	Auto sensing/switching power input
	ICSP header for direct program download
	Serial Interface TTL Level
	Support AREF
	Support Male and Female Pin Header
	Integrated sockets for APC220 RF Module
	Five IIC Interface Pin Sets
	Two way Motor Drive with 2A maximum current
	7 key inputs
	DC Supply:USB Powered or External 7V~12V DC
	DC Output:5V /3.3V DC and External Power Output
	Dimension:90x80mm
IO expansion board	To support RS485 interface or dirve 4 motors