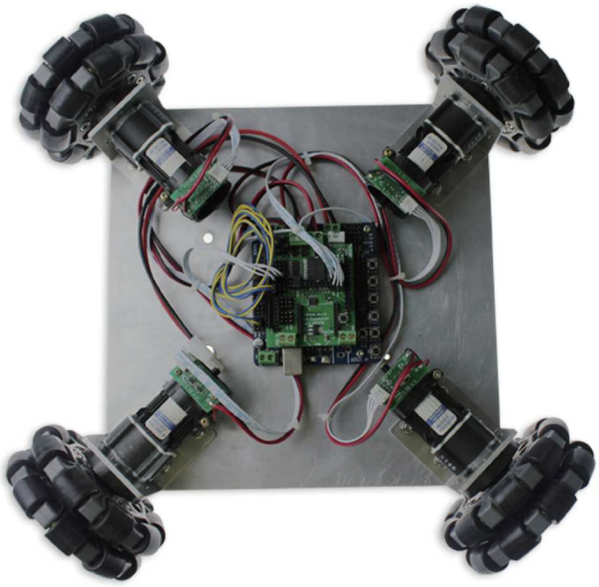
NEXUS robot

4WD 100mm omni wheel learning kit 10008



This is 4 wheel drive omni wheel mobile robot kit.It includes microcontroller, IO expansion, DC motor with encoder and by varying the speed and direction of each wheel it can move in any direction without turning its orientation.It is a learning kit for you to learn and enjoy the fun of omni direction moving.

4 wheels drive

Omni wheel

Aluminum alloy frame

Encoder

Prograrmmable

Features:

- 4 wheels drive
- Omni wheel
- Easy to assemble
- Open source
- DC motor with encoder
- Capable of moving omni direction and rotating

Parts included:

- 100mm omni wheel X 4
- DC motor with encoder X 4
- Microcontroller X 1
- IO expansion board X 1

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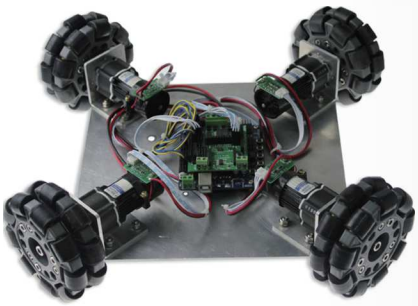

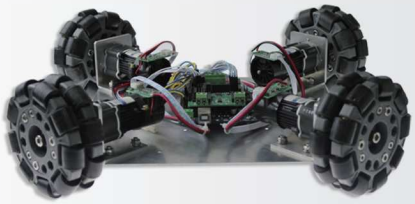

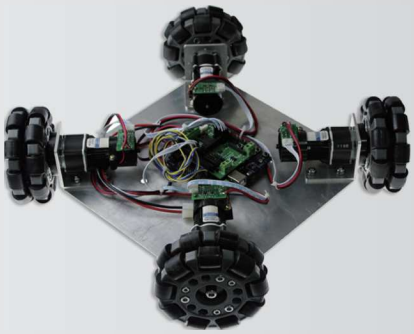

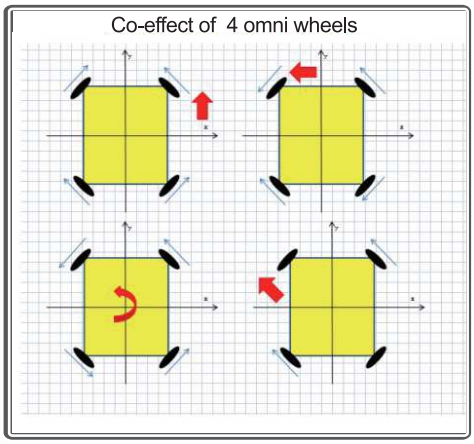

Omni-directional wheels are unique as they are able to roll freely in two directions .It can ether roll like a normal wheel or roll laterally using the wheels along its circumference. Omni-direction wheels allow a robot to convert from a non-holonomic to a holonomic robot.A non-holonomic robot that uses normal wheels has only 2 out of 3 controllable degrees-of-freedom which are,moving forward/backwards and rotation.Not being able to move side ways makes a robot slower and less efficient in reaching its given goal. The holonomicomni-directional wheels are able to overcome this problem,as it is a highly maneuverable.Unlike normal non-holonomic robot,the holonomic omni-directional robot can move in an arbitrary direction continuously without changing the direction of the wheels.It can move back and forth,slidewaysmand rotates at the same position.

Specifications:

Chassis	Appearance	Square
	Max Width	402mm
	Height	100mm
	Chassis Height	21mm
	Wheel Base	260mm
	Coupled Mode	Compaction
	Material	Aluminium Alloy
	Color	Yellow, Black
	Speed	0.6m/s
	Drive Mode	4 wheel drive
	Climbing Capacity	20 degree
	Load Capacity	10kg
	PC104 Compatible	Yes
Wheel	Type	90 degree Omni Wheel
	Diameter	100mm or 123mm
	Thickness	38mm
	Material	Nylon or Aluminium Alloy
	Load Capacity	20kg
	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