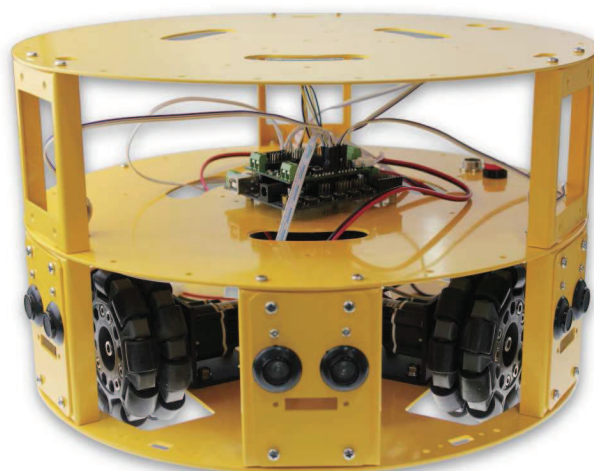


## 3WD 100mm omni wheel robot kit 10006

This is a 3 wheels drive, omni-wheel mobile robot kit. It is capable of moving in any direction by changing the velocity and direction of each wheel without changing its orientation. Includes microcontroller and motors with encoders, it is programmable. There are couples of sensor mounted around its body: IR sensors, ultrasonic sensors, fall detect sensors. It has 3 levels of adequate space for extension components such as a lap-top or cameras etc. There are still pre-drilled holes of screw and its firm aluminum alloy body make it convenient and possible to add more levels.



Aluminum alloy frame



3 wheels drive



Fall detect sensor



Omni wheel



Ultrasonic sensor



IR sensor



Encoder



Programmable



Easily expand

### Features:

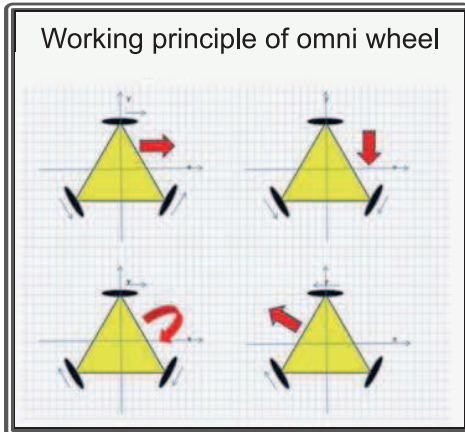
- 3 wheels drive
- Omni wheel
- Aluminum alloy frame
- Capable of rotation
- Includes Ultrasonic sensors, IR sensors, Fall detect sensors
- With Microcontroller and IO expansion board
- Large top plate for additional equipments like Lap top and camera

### Parts included:

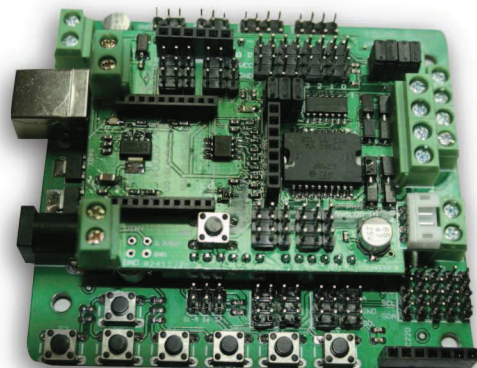
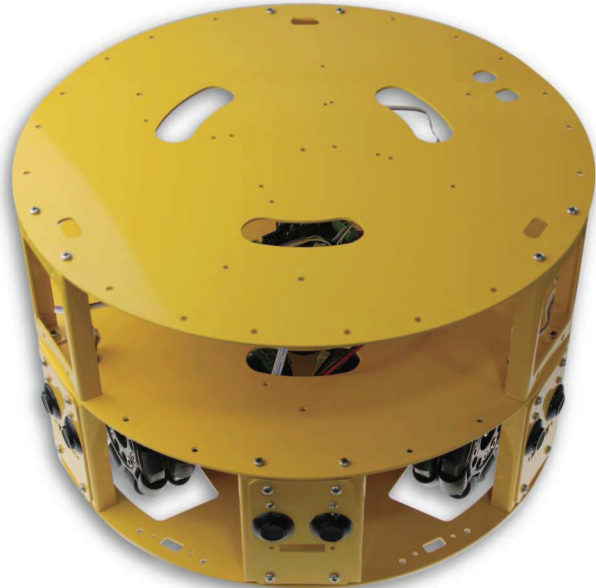
- 100mm Plastic Omni-wheel X 3
- 12V DC Motor with encoder X 3
- Arduino 328 Controller X 1
- Arduino IO Expansion X 1
- Ultrasonic Range Finders X 6
- Fall Detect IR Sensor X 3
- 12V Ni-Mh Battery X 2
- 12V Charger X 1

## 3WD 100mm omni wheel robot kit 10006

Working principle of omni wheel



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:

<b>Chassis</b>	Appearance	Circular
	Max Width	363mm
	Height	140mm
	Chassis Height	20mm
	Wheel Base	275mm
	Radius	128mm
	Coupled Mode	Compaction
	Material	Aluminium Alloy
	Color	Yellow, Black
	Speed	0.6m/s
	Drive Mode	3 wheels drive
	Climbing Capacity	20degree
	Load Capacity	15kg
	min-ITX Compatible	Yes

<b>Wheel</b>	Type	90 degree Omni Wheel
	Diameter	100mm or 123mm
	Thickness	38mm
	Load Capacity	15kg
	Body Material	Aluminum alloy
	Diameter of Roller	19mm
	Length of Roller	19mm
	Coupled Mode	Brass Tube or bearings

<b>Motor</b>	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
<b>Encoder</b>	Gearbox Ratio	64:1
	Type	Optical
	Encoder Phase	AB
<b>Battery and Charger</b>	Encoder Resolution	12CPR
	Battery	12V Ni-Mh
	Slow Charger	100-240V In, 24-12V Out
	Duration of Charge	2 hours
	Running Time	0.5 hour

<b>Microcontroller Specification</b>	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
<b>IO expansion board</b>	DC Supply: USB Powered or External 7V-12V DC
	DC Output: 5V / 3.3V DC and External Power Output
	Dimension: 90x80mm
	To support RS485 interface or drive 4 motors