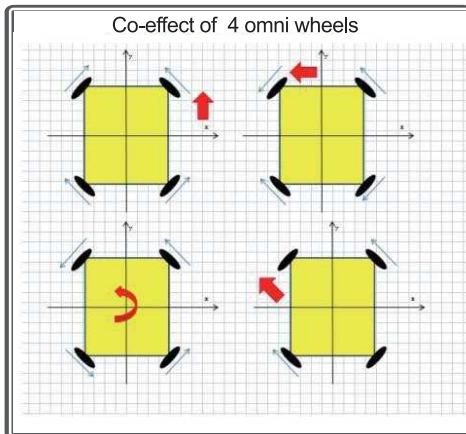
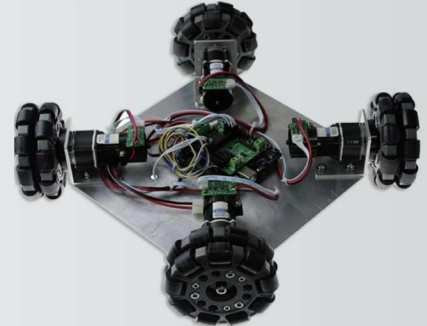
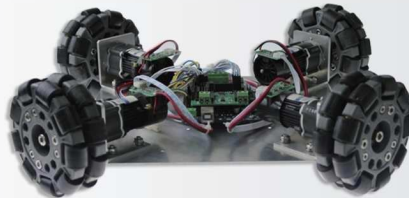
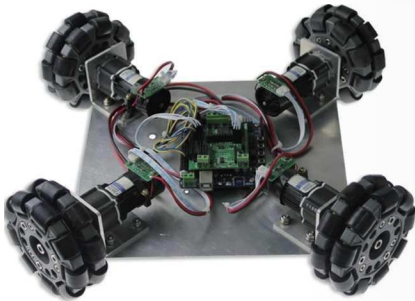


## 4WD 100mm omni wheel learning kit 10008



Omni-directional wheels are unique as they are able to roll freely in two directions. It can either 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 holonomic omni-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, sideways and rotates at the same position.

### Specifications:

<b>Chassis</b>	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
<b>Wheel</b>	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

<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>	Type	Optical
	Encoder Phase	AB
<b>Battery and Charger</b>	Battery	12V Ni-Mh
	Slow Charger	100-240V In, 2.4-12V 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
DC Supply: USB Powered or External 7V-12V DC	
DC Output: 5V / 3.3V DC and External Power Output	
Dimension: 90x80mm	
<b>IO expansion board</b>	To support RS485 interface or drive 4 motors