

Brief introduction of Mecanum wheel

The Mecanum wheel is one design for a wheel which can move in any direction. It is sometimes called the Ilon wheel after its Swedish inventor, Bengt Ilon, who came up with the idea in 1973 when he was an engineer with the Swedish company Mecanum AB.

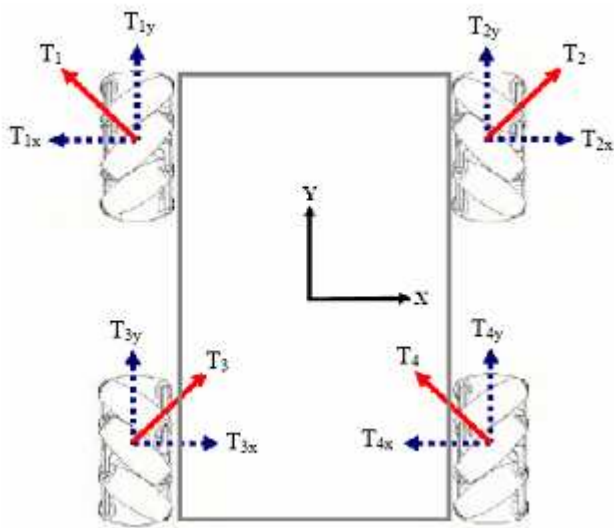
The angle between rollers axis and central wheel could have any value but in the case of conventional Swedish wheel it is 45°. The angled peripheral rollers translate a portion of the force in the rotational direction of the wheel to a force normal to the wheel direction. Depending on each individual wheel direction and speed, the resulting combination of all these forces produce a total force vector in any desired direction thus allowing the platform to move freely in the direction of the resulting force vector, without changing of the wheels themselves.

Nexus Robot Mecanum wheel

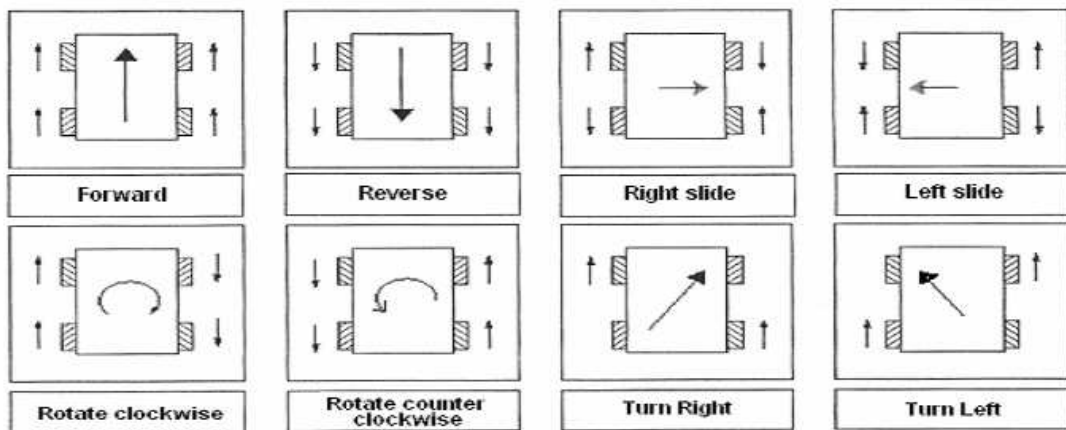


Using four of mecanum wheels provides omni-directional movement for a vehicle without needing a conventional steering system slipping is a common problem in the mecanum wheel as it has only one roller with a single point of ground contact at any one time.

Due to the dynamics of the mecanum wheel, it can create force vectors in both the x and y-direction while only being driven in the y-direction. Positioning four mecanum wheels, one at each corner of the chassis (two mirrored pairs), allows net forces to be formed in the x, y and rotational direction.



By varying the individual wheel speed we can achieve driving direction along any vector in X-Y axis



Nexus Robot Kit using Mecanum wheels

