

The **Mecanum Wheel 48mm for TT Motor** is the perfect solution for building mobile robotic platforms capable of **smooth, omni-directional movement**. Designed for compatibility with **TT DC motors**, this left and right wheel pair enables your robot to move in any direction — forward, backward, sideways, or even diagonally — without needing to change orientation.

This innovative wheel system combines both functionality and precision, making it an essential component for **smart robotics, autonomous vehicles, and educational robotics projects**.

Whether you're a beginner learning about robotics or a developer working on advanced control algorithms, the Mecanum wheel system enhances maneuverability and creativity in every build.

[caption id="attachment\_108574" align="aligncenter" width="425"]



80mm-High-Hardness-Plastic-Mecanum-Wheel-Omni-directional-Tires-with-TT-Motor-Hubs[/caption]



**What's Included in the Package:**

- **1x Left Mecanum Wheel (48mm)**
- **1x Right Mecanum Wheel (48mm)**

Both wheels are engineered with durable rollers placed at 45° angles around the wheel's circumference, allowing for **multi-directional movement** with excellent traction and control.

### **Key Features:**

#### **1. Omni-Directional Movement**

The standout feature of the **Mecanum Wheel 48mm for TT Motor** is its ability to move in any direction without turning. Thanks to the 45° angled rollers, your robot can perform advanced movements such as:

- Sideways translation (left and right)
- Diagonal motion
- Smooth rotation in place

This makes the wheels ideal for projects that require **precise navigation and agility** in tight spaces.

#### **2. Compatible with TT Motors**

The wheel is specifically designed to fit **TT DC motors**, one of the most popular motor types used in DIY robotics. Installation is straightforward — simply attach the wheel to your TT motor shaft, and it's ready to operate. This compatibility ensures you can integrate the wheel set easily into existing robot chassis designs or educational kits.

#### **3. Compact 48mm Size**

Each wheel has a **48mm diameter**, making it compact and lightweight while still providing solid grip and balance. The small size is perfect for medium and small robotic platforms that prioritize **speed, control, and responsiveness**.

#### **4. Durable Construction**

Made from **high-quality ABS plastic** with **rubber rollers**, these wheels deliver both flexibility and strength. The materials are designed to handle consistent movement, impacts, and long operating sessions — ensuring reliable performance even under continuous use.

#### **5. Smooth and Stable Operation**

The angled rollers are mounted with precision bearings to reduce friction and vibration, ensuring **smooth, stable, and quiet movement**. This results in better control, less power loss, and improved performance for your robot on flat surfaces.

### Applications:

The **Mecanum Wheel 48mm for TT Motor** is widely used in:

- **Arduino and Raspberry Pi robotics projects**
- **Omni-directional robot platforms**
- **Smart vehicles and AGVs (Automated Guided Vehicles)**
- **STEM and educational robotics**
- **Obstacle-avoidance robots**
- **Line-following robots with enhanced mobility**

This wheel set is perfect for students, hobbyists, and researchers looking to experiment with advanced robotic control systems, including **inverse kinematics and motion vector control**.

### How Mecanum Wheels Work:

The secret behind Mecanum wheels lies in their unique roller design. Each roller is mounted at a **45° angle**, which generates both forward and sideways motion components when the wheel rotates. By combining the motion of four such wheels (two left and two right), a robot can achieve any direction of movement simply by adjusting motor speeds.

For example:

- **Move forward:** all wheels spin forward.
- **Move sideways:** front and rear wheels spin in opposite directions.
- **Rotate in place:** left wheels move forward, right wheels move backward.

This makes the Mecanum wheel system a practical demonstration of **vector-based motion control**, an advanced concept in robotics engineering.

### Specifications:

- **Wheel Diameter:** 48mm
- **Material:** ABS Plastic + Rubber Rollers
- **Roller Angle:** 45°

- **Quantity:** 1x Left + 1x Right
- **Compatible Motor Type:** TT Gear Motor
- **Movement Type:** Omni-Directional

#### **Why Choose the Mecanum Wheel 48mm for TT Motor?**

- ✓ Enables full 360° motion control
- ✓ Compact, durable, and easy to install
- ✓ Perfect for robotics learning and prototyping
- ✓ Works with common TT motors and Arduino robot kits
- ✓ Provides excellent traction and precision

#### **Conclusion:**

If you're building a **smart robot** that needs advanced movement capabilities, the **Mecanum Wheel 48mm for TT Motor (Left + Right)** set is the perfect upgrade. It offers **maximum mobility, high precision, and reliability**, all in a compact design. Whether you're designing a **remote-controlled car**, a **warehouse robot**, or an **educational robotics platform**, these wheels will take your project to the next level.