

MG995 Servo Motor Tower Pro 180 Degree (Full Metal Gear) – High Torque & Precision Control

The **MG995 Servo Motor Tower Pro 180 Degree (Full Metal Gear)** is a **high-performance, durable servo motor** designed for **RC vehicles, robotics, automation systems, and DIY electronics projects**. With its **full metal gear construction**, the MG995 offers **maximum strength, reliability, and precision**, making it suitable for demanding applications where robust performance is essential.

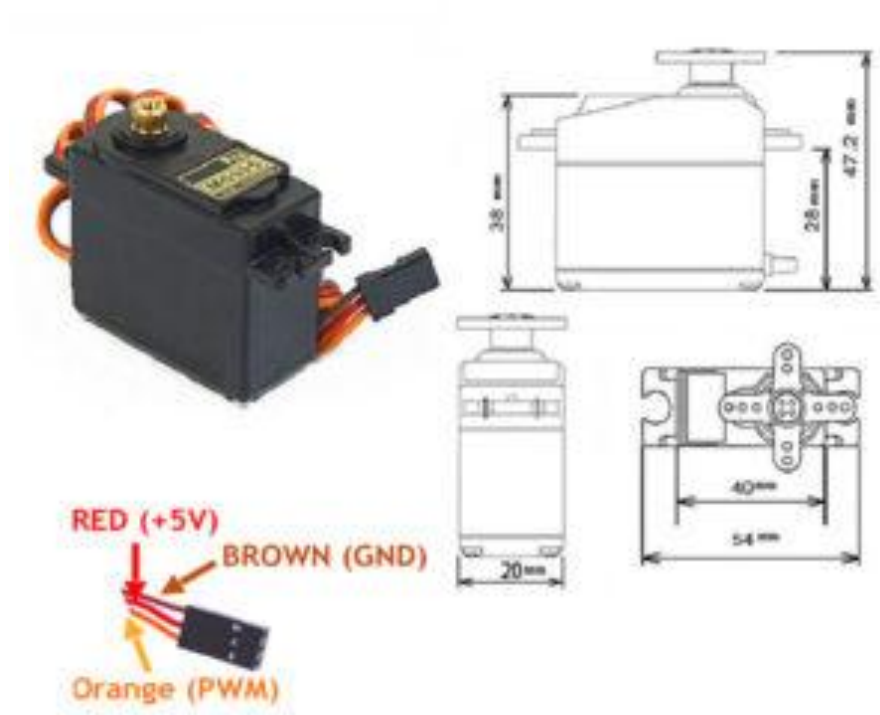
This servo motor is widely used by **hobbyists, robotics enthusiasts, and professional engineers** for projects requiring **high torque, accurate positioning, and consistent performance**. Its **180-degree rotation range** allows smooth and precise angular control, making it ideal for **robotic arms, steering mechanisms, pan-and-tilt camera mounts, and other mechanical systems**.



Key Features

- **Full Metal Gears:** Provides long-lasting durability and resistance to wear under heavy loads.
- **High Torque:** Up to 12 kg.cm at 6V, capable of handling heavy-duty tasks.
- **Rotation Range:** 0–180 degrees for precise positioning.
- **Fast Response:** 0.20 seconds per 60 degrees at 6V for quick and accurate movement.
- **Wide Voltage Range:** Operates between 4.8V–7.2V, compatible with most microcontroller projects.
- **Standard PWM Control:** 3-pin interface compatible with Arduino, Raspberry Pi, and other controllers.
- **Compact & Lightweight:** Easy to mount in various mechanical setups.





Technical Specifications

- **Model:** MG995 Tower Pro Servo Motor
- **Torque:** 12 kg.cm at 6V (approx. 10 kg.cm at 4.8V)
- **Speed:** 0.20 sec / 60° at 6V
- **Operating Voltage:** 4.8V – 7.2V
- **Rotation Range:** 0° – 180°
- **Gear Type:** Full metal gears for durability
- **Motor Type:** DC motor with potentiometer feedback
- **Connector Type:** Standard 3-pin PWM connector
- **Dimensions:** Approx. 40.7 x 19.7 x 42.9 mm
- **Weight:** 55g

Dimension



Advantages of the MG995 Full Metal Servo

1. **High Torque:** Capable of moving heavy loads, perfect for robotic arms, grippers, and high-stress RC steering systems.

2. **Durable Gears:** Full metal gears extend lifespan and reduce maintenance compared to plastic or half-metal servos.
3. **Precise Control:** Accurate 180-degree rotation ensures smooth and reliable motion for robotics and automation.
4. **Versatile Compatibility:** Works with Arduino, Raspberry Pi, and other microcontroller platforms.
5. **Reliable Performance:** Maintains stable and consistent movement even under repeated heavy loads.

Applications

The **MG995 Servo Motor Tower Pro 180 Degree (Full Metal Gear)** is ideal for:

- **Robotics:** Control joints, arms, grippers, and pan-and-tilt camera systems.
- **RC Vehicles:** Heavy-duty steering for cars, boats, and tanks.
- **Pan-and-Tilt Mounts:** Smooth movement for cameras, sensors, and robotic platforms.
- **DIY Electronics Projects:** Arduino and microcontroller-based automation tasks.
- **Industrial Prototypes:** Small machines and mechanisms requiring strong torque and precise control.
- **Educational Robotics Kits:** Teach students about mechanics, robotics, and electronics.

How the MG995 Servo Works

The MG995 operates using a **DC motor with a potentiometer feedback system**. A **PWM (Pulse Width Modulation) signal** from a microcontroller controls the servo's angular position. By sending a pulse of specific width, users can precisely set the servo anywhere within its **0–180° rotation range**.

The **full metal gears** provide additional strength, allowing the servo to handle heavier loads without wear or stripping. The potentiometer ensures accurate feedback for smooth and precise movement.

Example Project

A common project is a **robotic arm**. By combining multiple MG995 servos, you can create joints and grippers capable of lifting and rotating objects with precision.

Another application is a **pan-and-tilt camera mount** for a surveillance robot. Two MG995 servos can control horizontal and vertical movement, enabling smooth tracking of objects or video recording.

The MG995 is also suitable for **RC cars**, providing strong and responsive steering for navigating rough terrain or heavy vehicles.

Why Choose the MG995 Full Metal Servo

The **MG995 Servo Motor Tower Pro 180 Degree (Full Metal Gear)** stands out for its **strength, durability, and precision**. Its full metal gears and high torque make it ideal for **demanding robotics and RC projects**, while its PWM interface ensures easy integration with microcontrollers. This servo provides **reliable performance for both hobbyists and professionals**, making it a versatile choice for any project.

Conclusion

The **MG995 Tower Pro Full Metal Gear Servo Motor** is a **powerful, precise, and durable actuator** for robotics, RC vehicles, automation, and DIY electronics. With **high torque, full metal gears, and a 180-degree rotation**, it delivers reliable and accurate performance for mechanical and robotic applications.

Upgrade your projects with the **MG995 Full Metal Servo** for **smooth, powerful, and precise movement** in all your mechanical and electronic projects.