



TT Motor All-Metal Gearbox – 1:90 Gear Ratio

PRODUCT ID: 3802

These durable (but affordable!) gearbox motors (also known as 'TT' motors) are an easy, low-cost way to get your projects moving. This is a TT DC All-Metal Gearbox Motor with a gear ratio of 1:90 about double of the 'standard' 1:48 ratio. That gives them higher torque but slower rotational speed. Since they're slower they're good for robots where strength is more important than speed.

They look a lot like our yellow all-plastic-gearbox motors but these have all of the motor gears machined from steel, so they won't strip as easily, and they're twice as slow (and twice as powerful) given their lower gearbox ratio. The metal gears also mean they're louder when running.

You can power these motors with 3VDC up to 6VDC, they'll of course go a little faster at the higher voltages. We grabbed one motor and found these stats when running it from a bench-top supply

- At 3VDC we measured 80mA @ 60 RPM no-load, and 0.5 Amps when stalled
- At 4.5VDC we measured 90mA @ 90 RPM no-load, and 0.8 Amps when stalled
- At 6VDC we measured 100mA @ 120 RPM no-load, and 1.0 Amps when stalled

Note that these are very basic motors, and have no built-in encoders, speed control or positional feedback. Voltage goes in, rotation goes out! There will be variation from motor to motor, so a separate feedback system is required if you need precision movement.

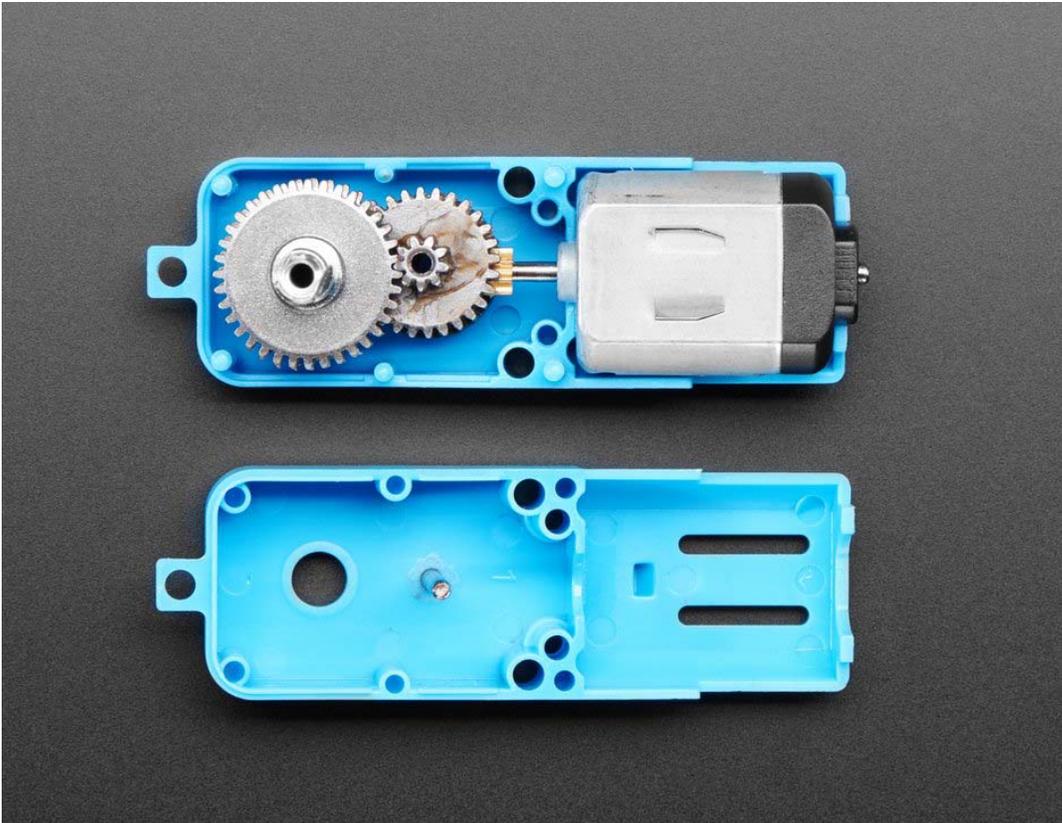
Comes 1 x per order, with just the motor. These motors *do not* come with wires attached, so you'll need to solder wires on yourself.

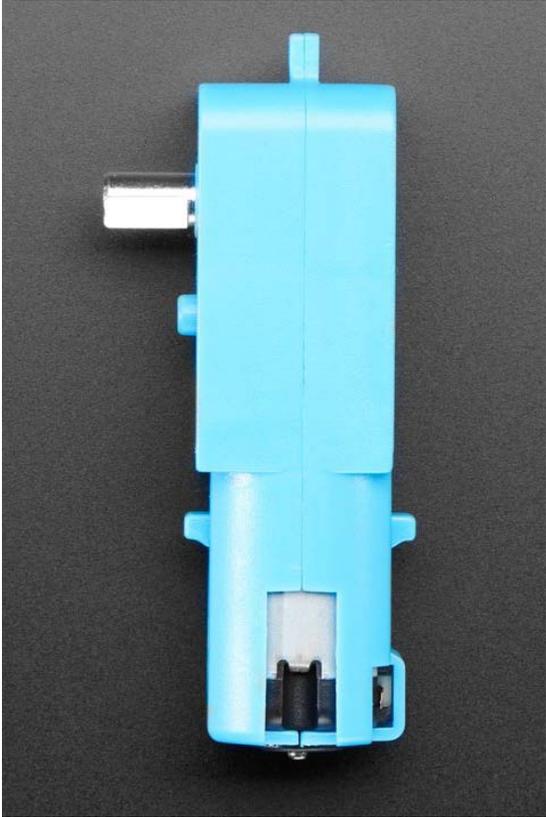
You *cannot* drive these directly from a microcontroller, a high-current motor driver is required! We recommend our DRV8833 motor driver for these motors, as it works well down to 3V and can be set up with current limiting since the stall current on these can get high. The TB6612 can also be used, it's on our shields and wings, but you'll need to supply at least 4.5V – which is what you'll likely want to run these motors at anyhow!

We have a range of wheels, add-ons and accessories for these motors so you can bling out your bot just the way you like.

Dimensions (excluding shaft): 69.5 x 22 x 20.7mm

Product Weight: 39.4g / 1.4oz





<https://www.adafruit.com/product/3802> 5-31-18