



# Large push-pull solenoid

PRODUCT ID: 413

Solenoids are basically electromagnets: they are made of a big coil of copper wire with an armature (a slug of metal) in the middle. When the coil is energized, the slug is pulled into the center of the coil. This makes the solenoid able to pull (from one end) or push (from the other)

This solenoid in particular is nice and strong, with a 40mm long body and a 'captive' armature with a return spring. This means that when activated with up to 12VDC, the solenoid moves and then the voltage is removed it springs back to the original position, which is quite handy. Many lower cost solenoids are only push type or only pull type and may not have a captive armature (it'll fall out!) or don't have a return spring. This solenoid has 4xM3 (metric) threaded holes in the bottom for easy mounting.

To drive a solenoid you will need a power transistor and a diode, check this [diagram for how to wire it to an Arduino or other microcontroller](#). You will need a fairly good power supply to drive a solenoid, as a lot of current will rush into the solenoid to charge up the electro-magnet, about 250mA, so don't try to power it with a 9V battery! Works best with a 12V power supply.

**Please Note:** As of June 7th 2017, we are now selling the 12V version of this product instead of the 24V!

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## TECHNICAL DETAILS

- 12 DC operation (you can use 9–12 DC volts, but lower voltage results in weaker/slower operation)
- Push or pull type with 10 mm throw
- Coil resistance: ~12 ohms
- 6 Newton starting force (12VDC / 50% duty cycle)
- 5.1 oz / 144 grams

