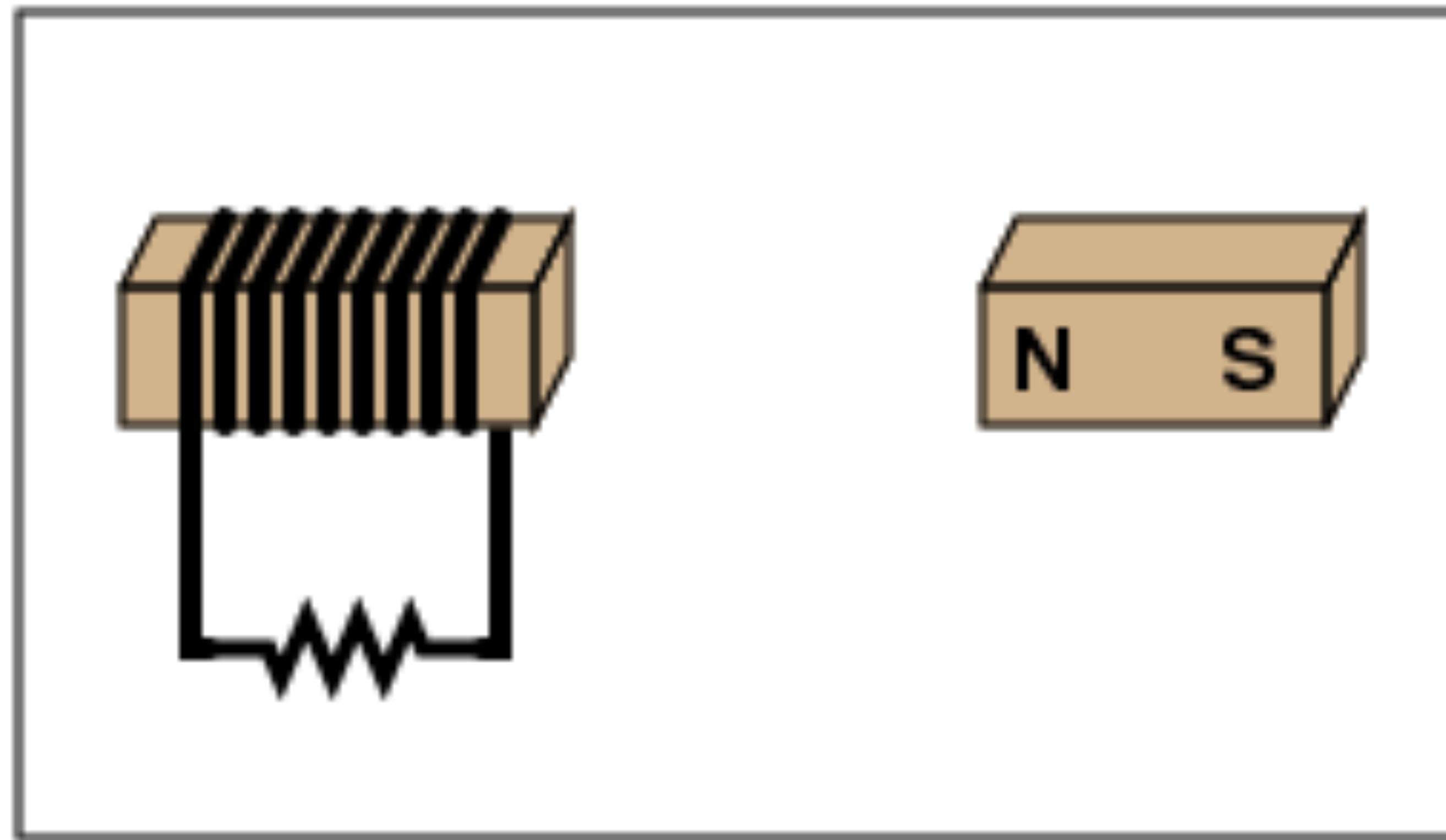


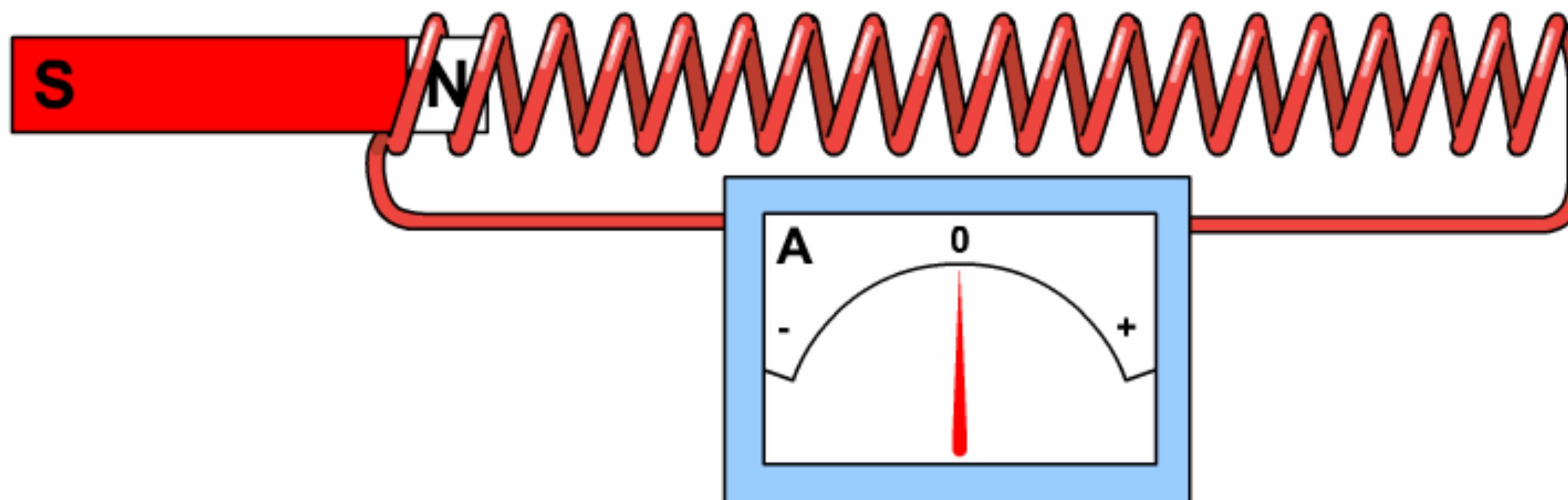


Electromagnetism

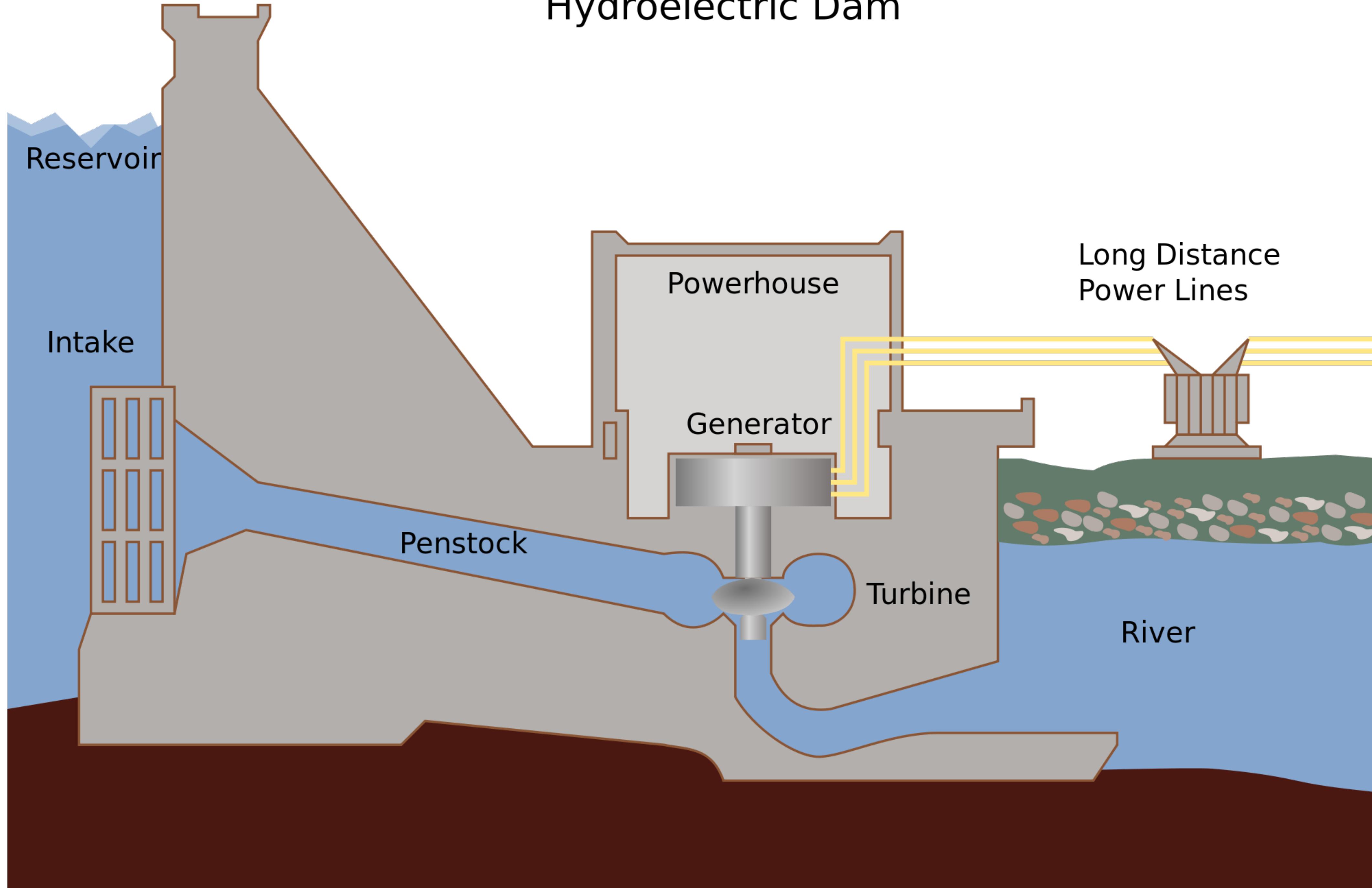
Induction: induce a magnetic field my sending current through wire



Induction: also create electricity by moving a magnet through a coil of wire



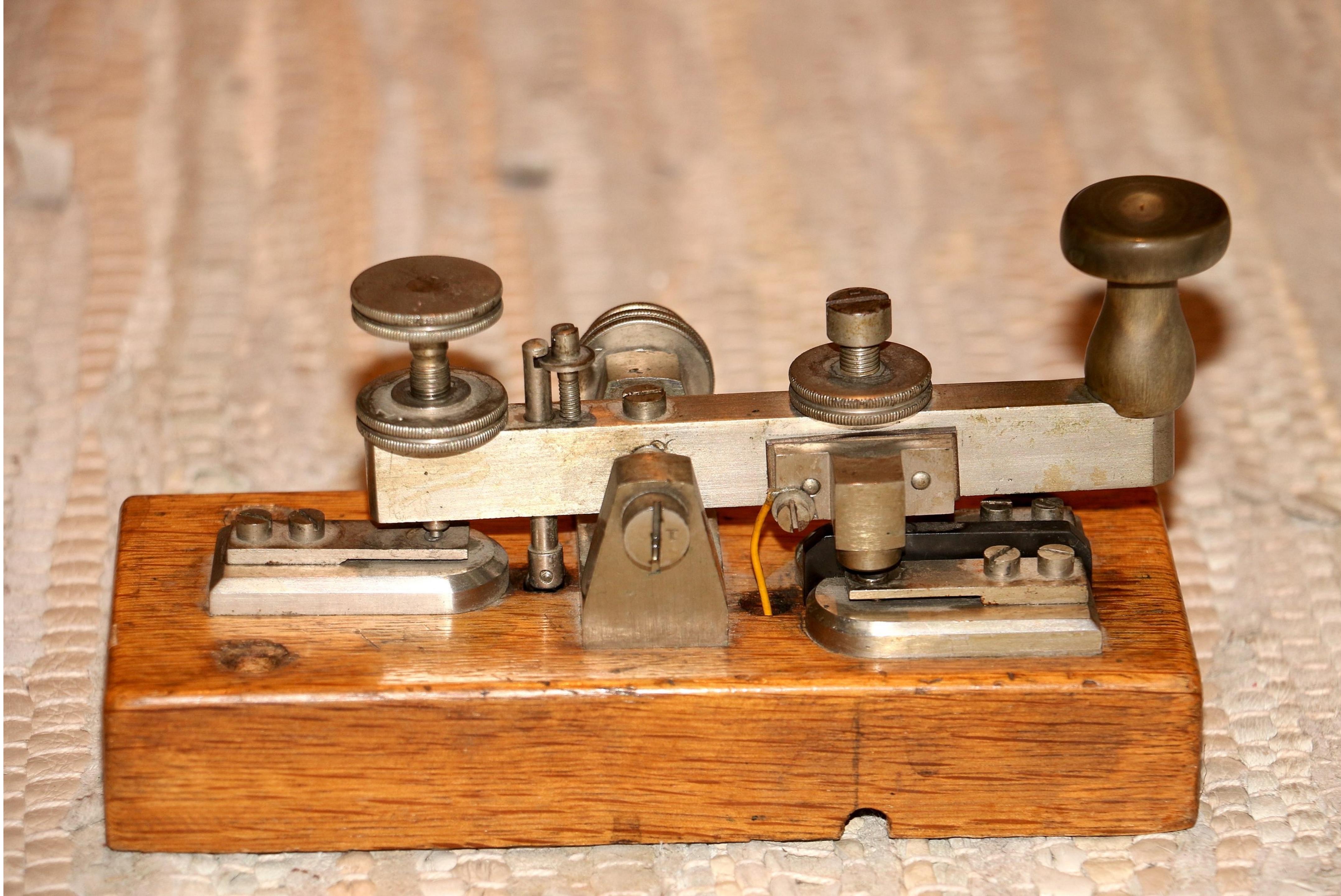
Hydroelectric Dam

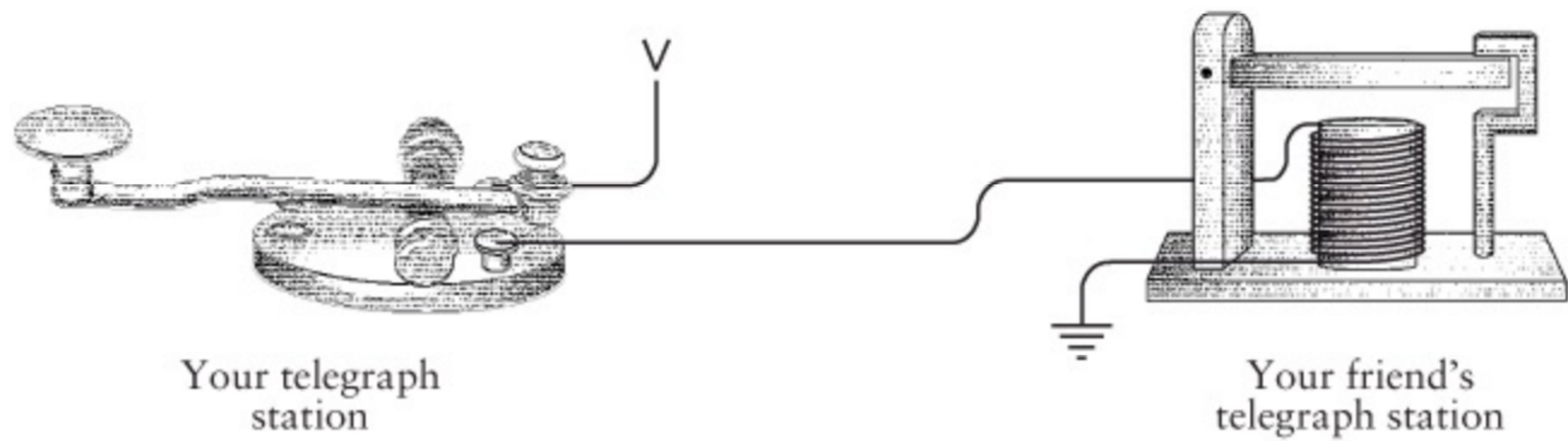


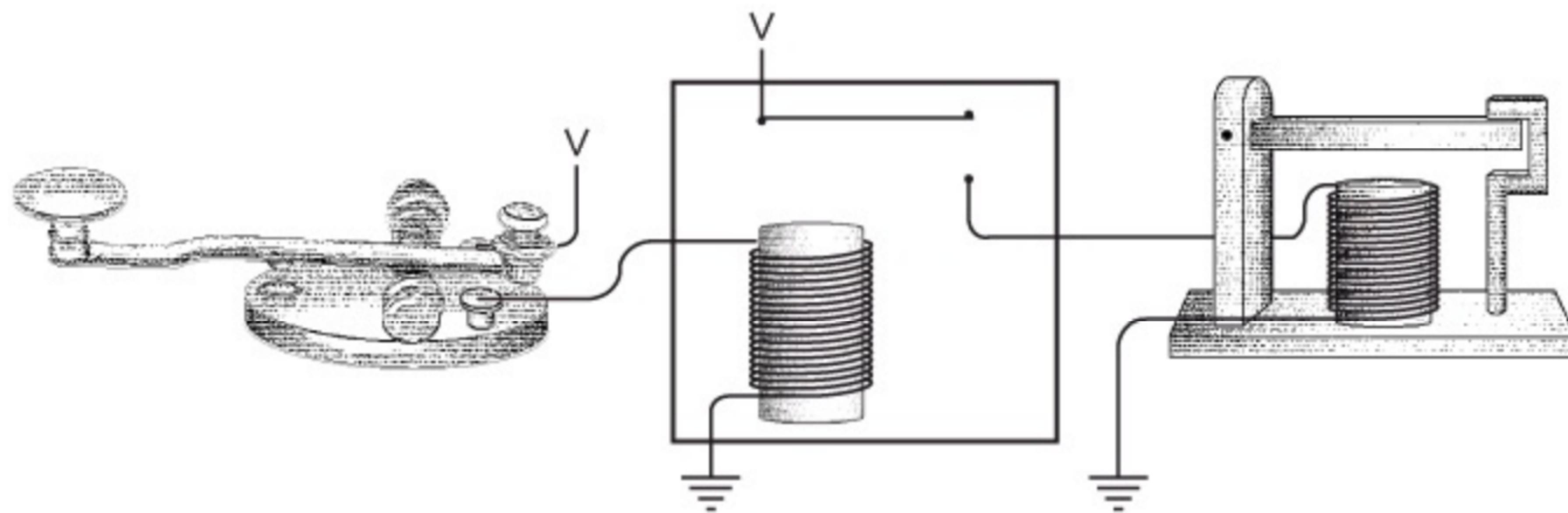
Motors

Inspiration: <https://vimeo.com/7235817>





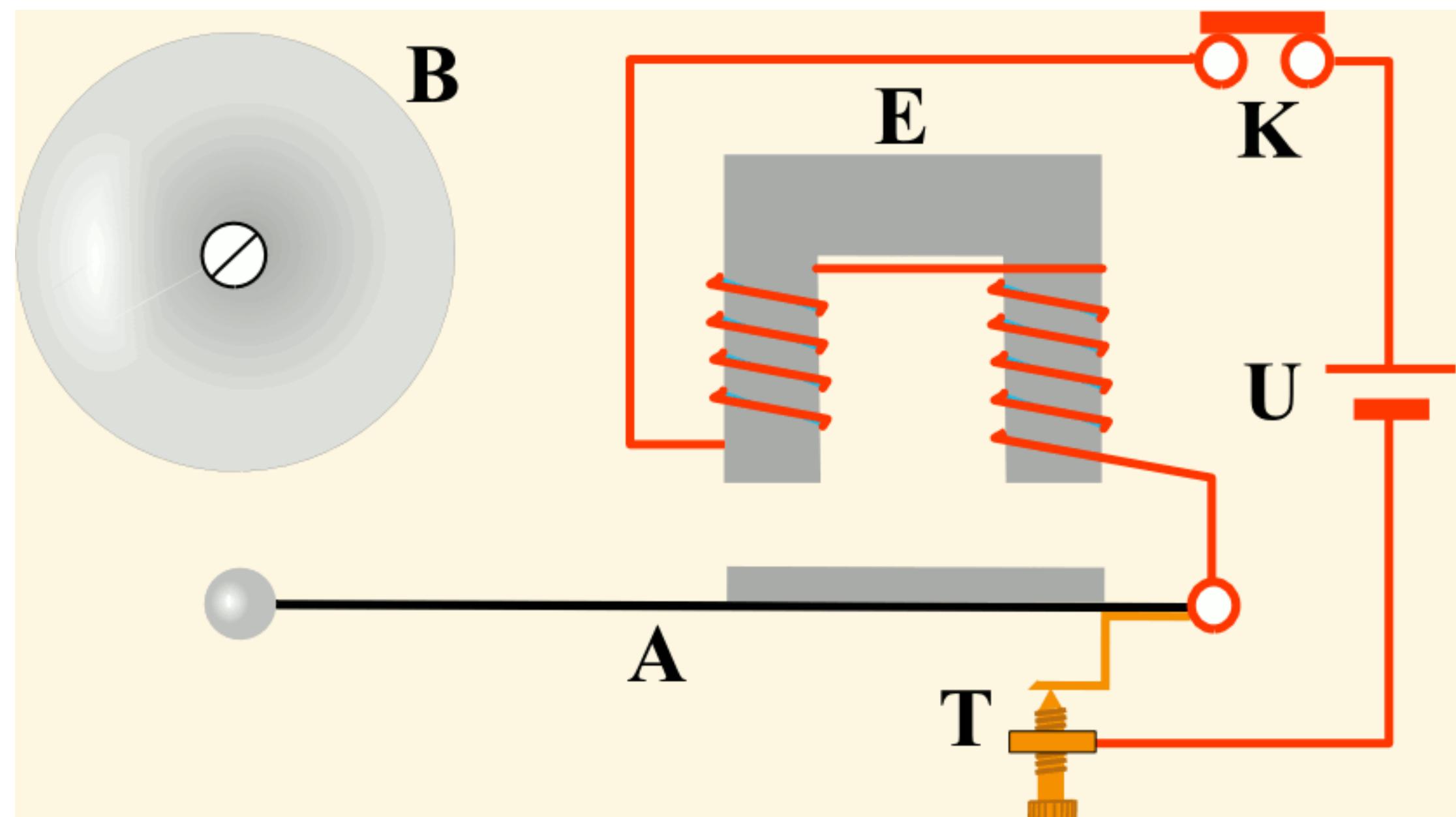




Your telegraph
station

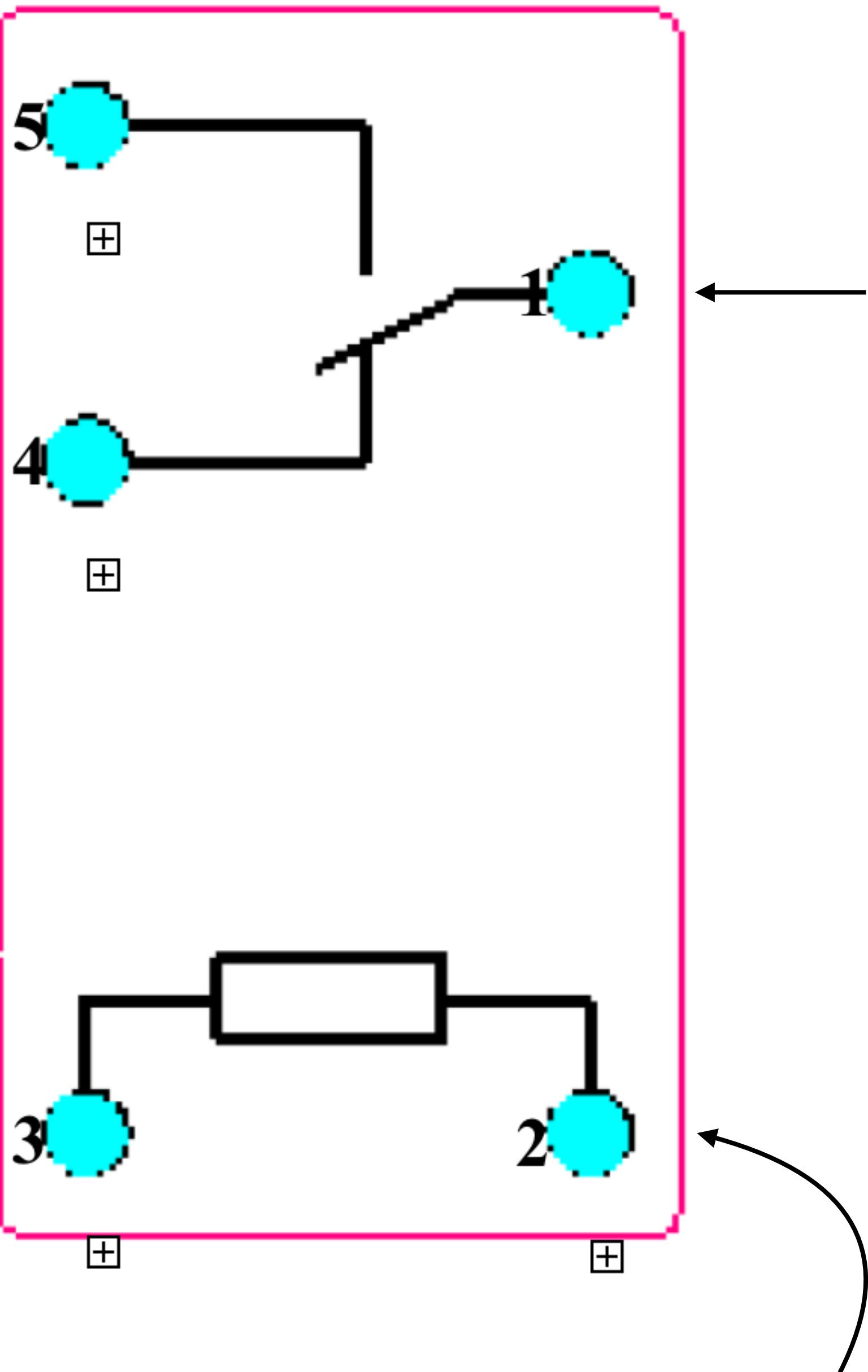
The relay station

Your friend's
telegraph station





Arduino Digital Write

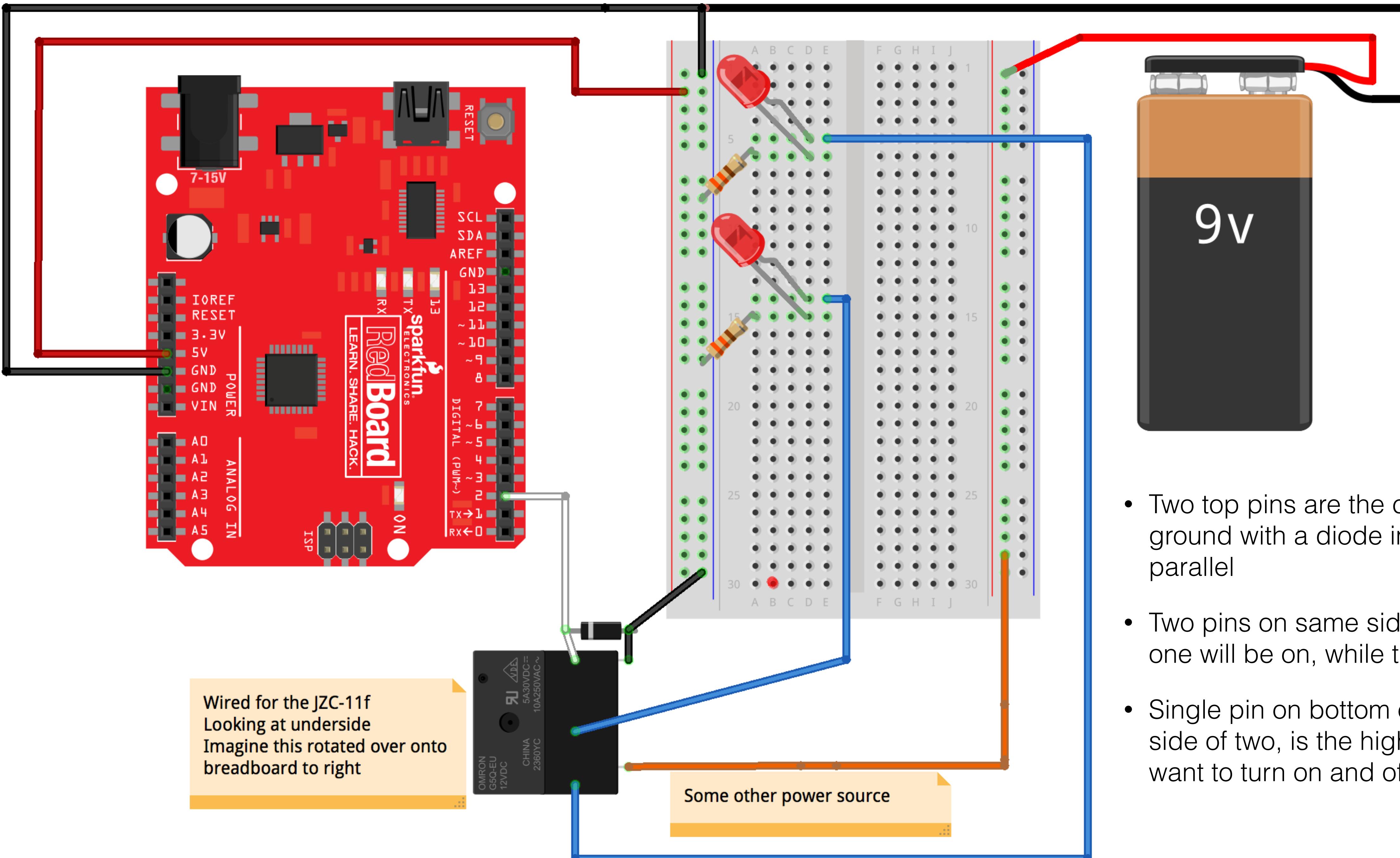


High
Voltage
you want
to control

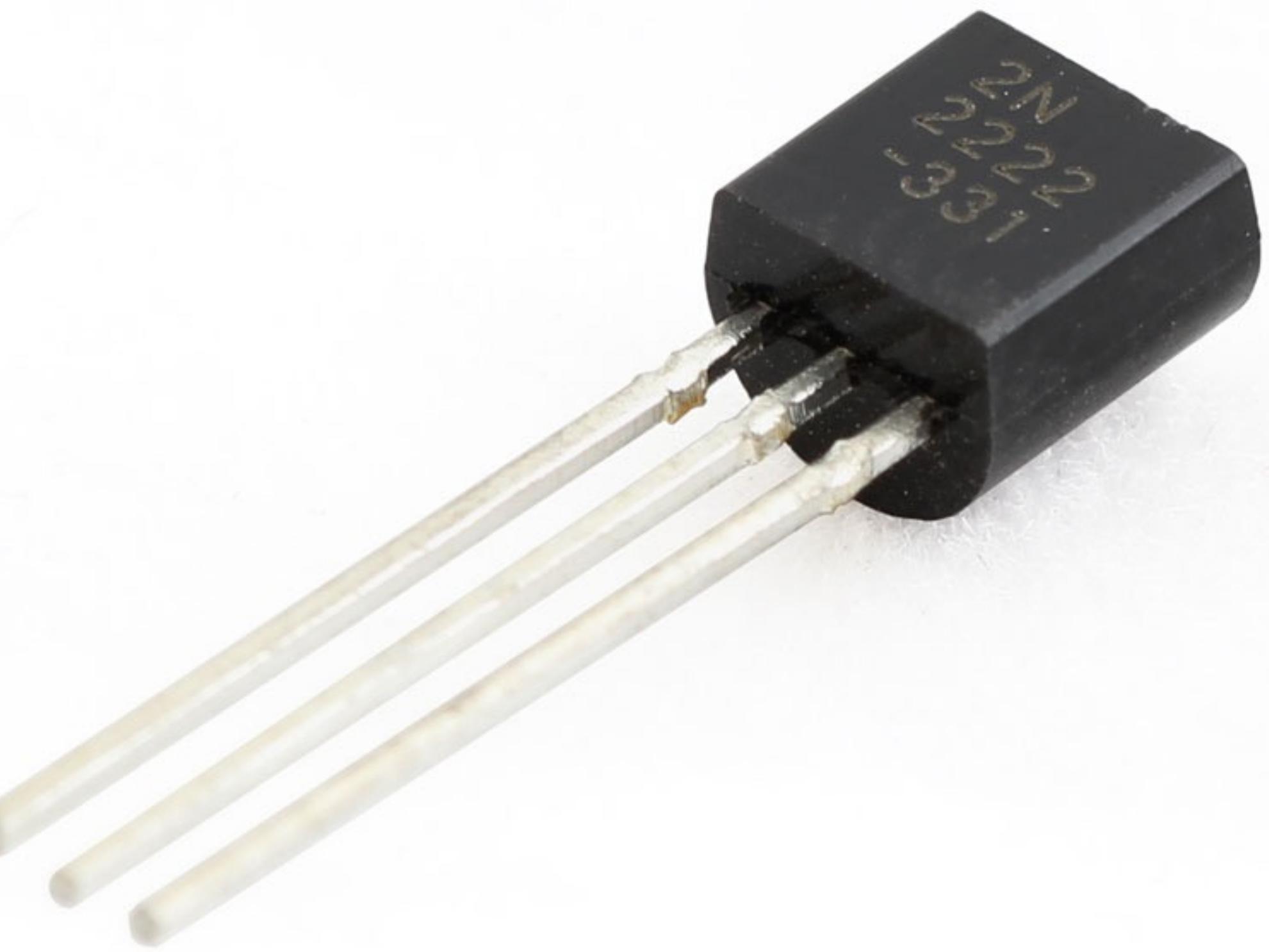
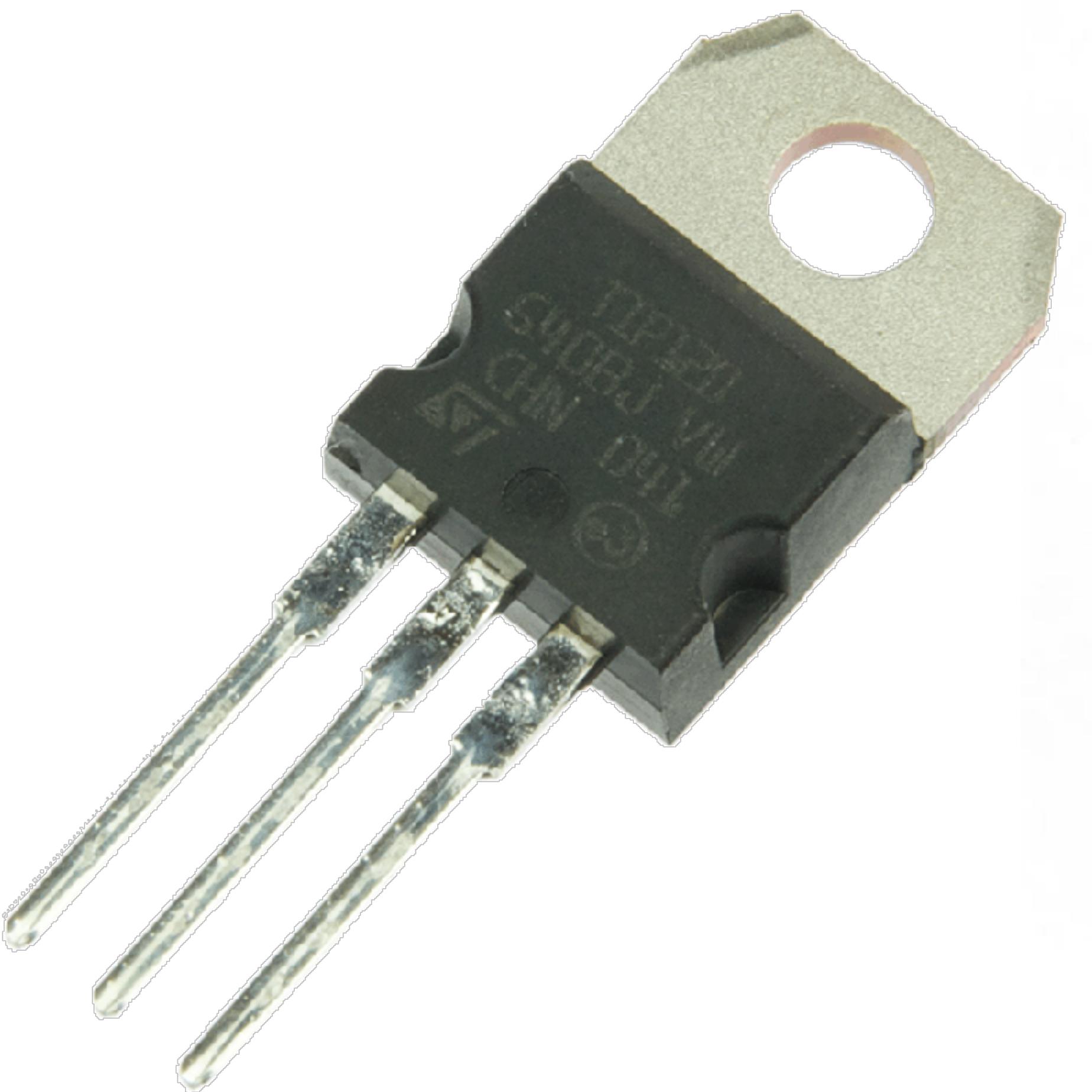
Ground



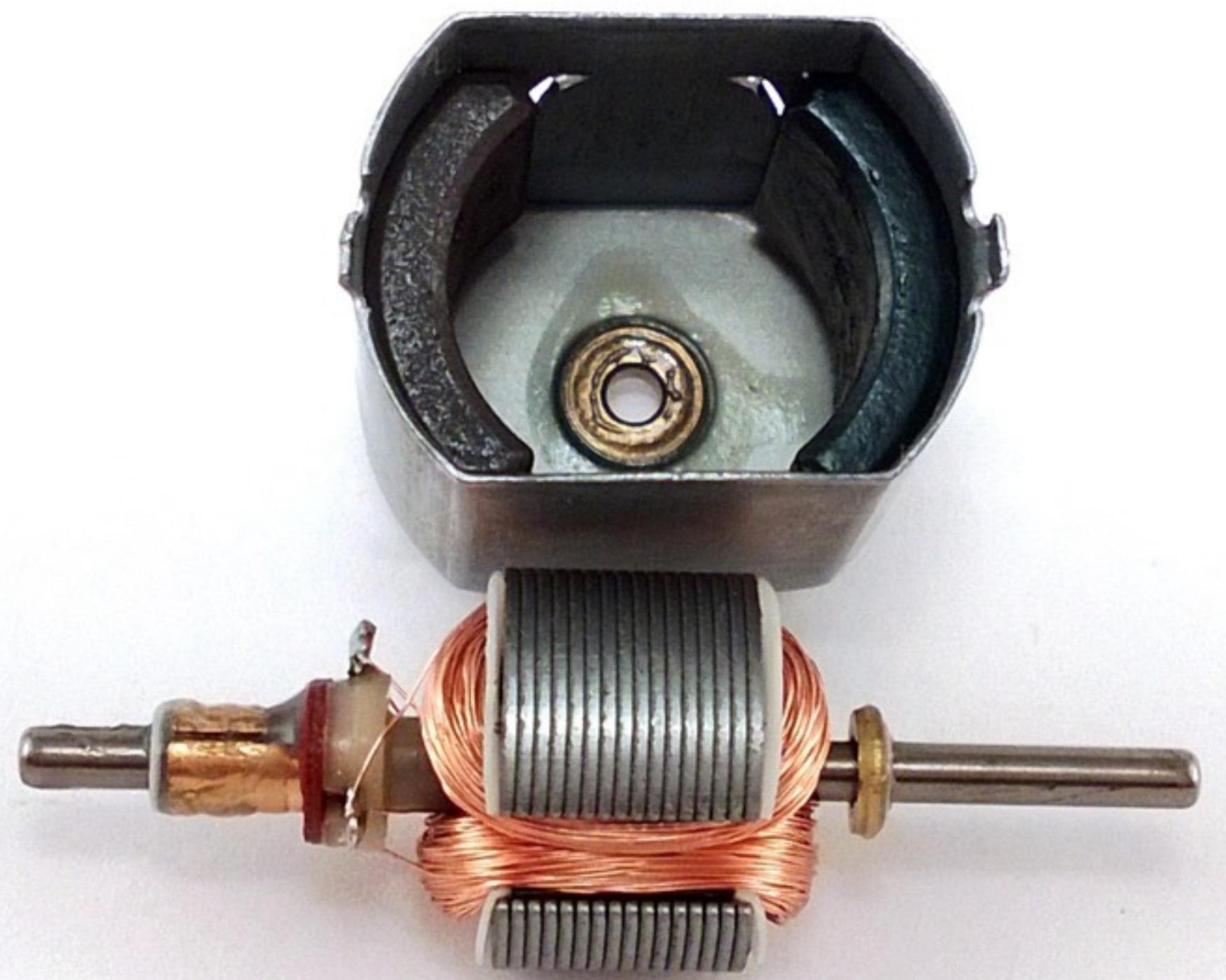
Can I hurt myself???

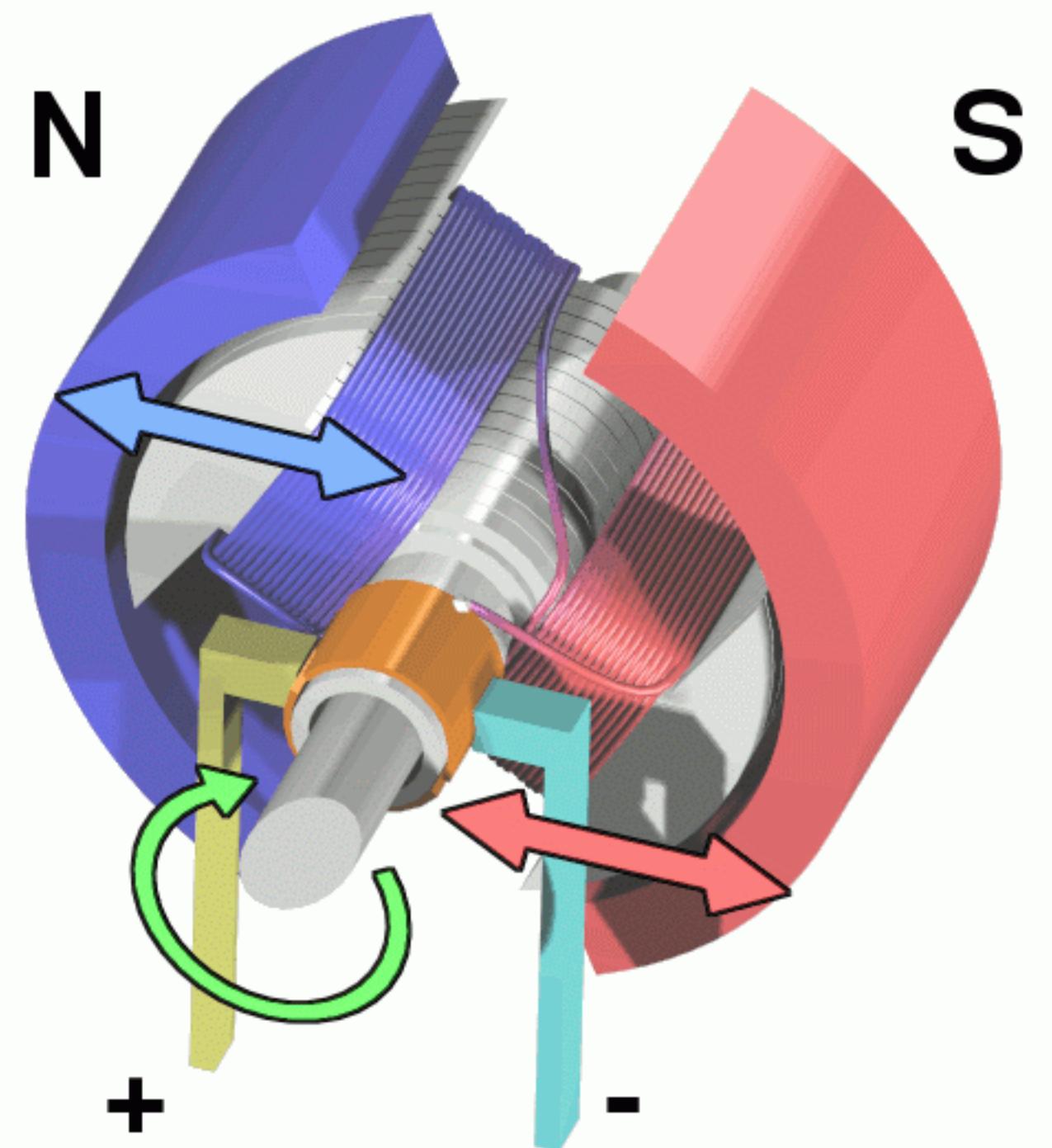


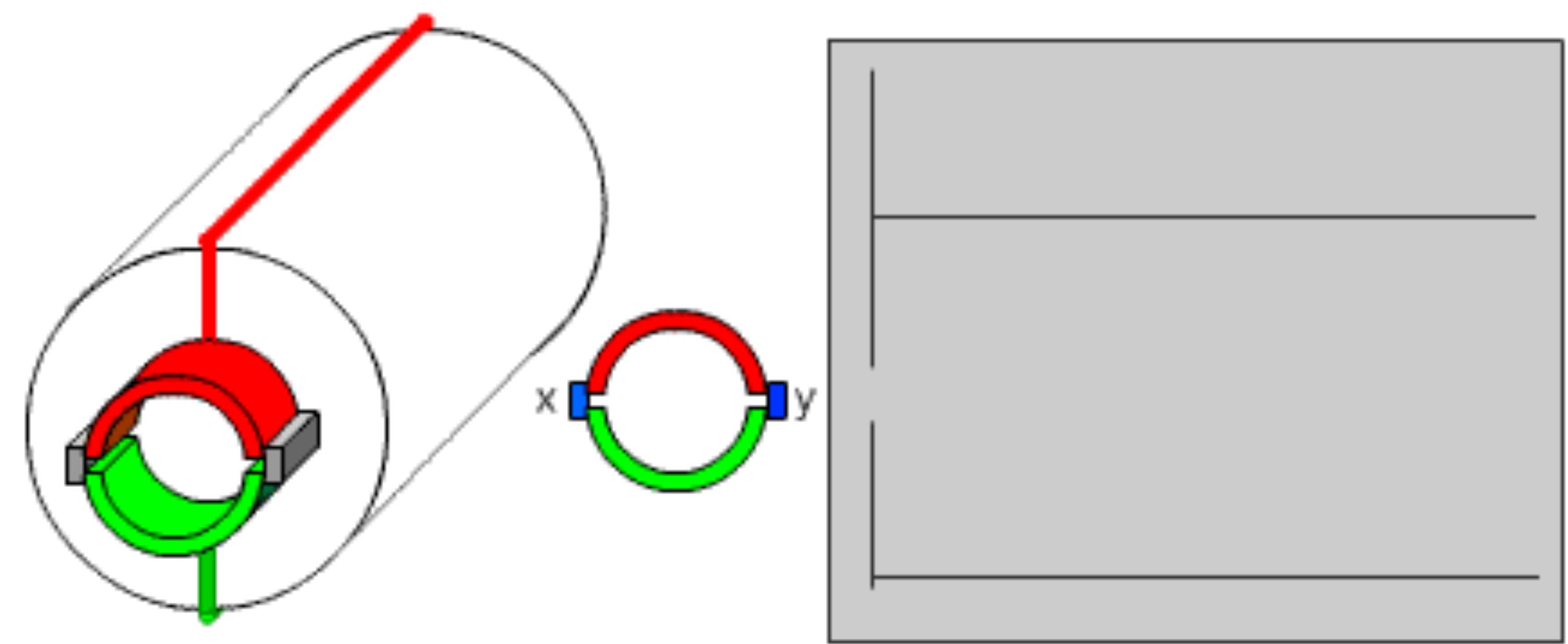
- Two top pins are the control and ground with a diode in reverse parallel
- Two pins on same side at bottom: one will be on, while the other is off
- Single pin on bottom on opposite side of two, is the high voltage you want to turn on and off



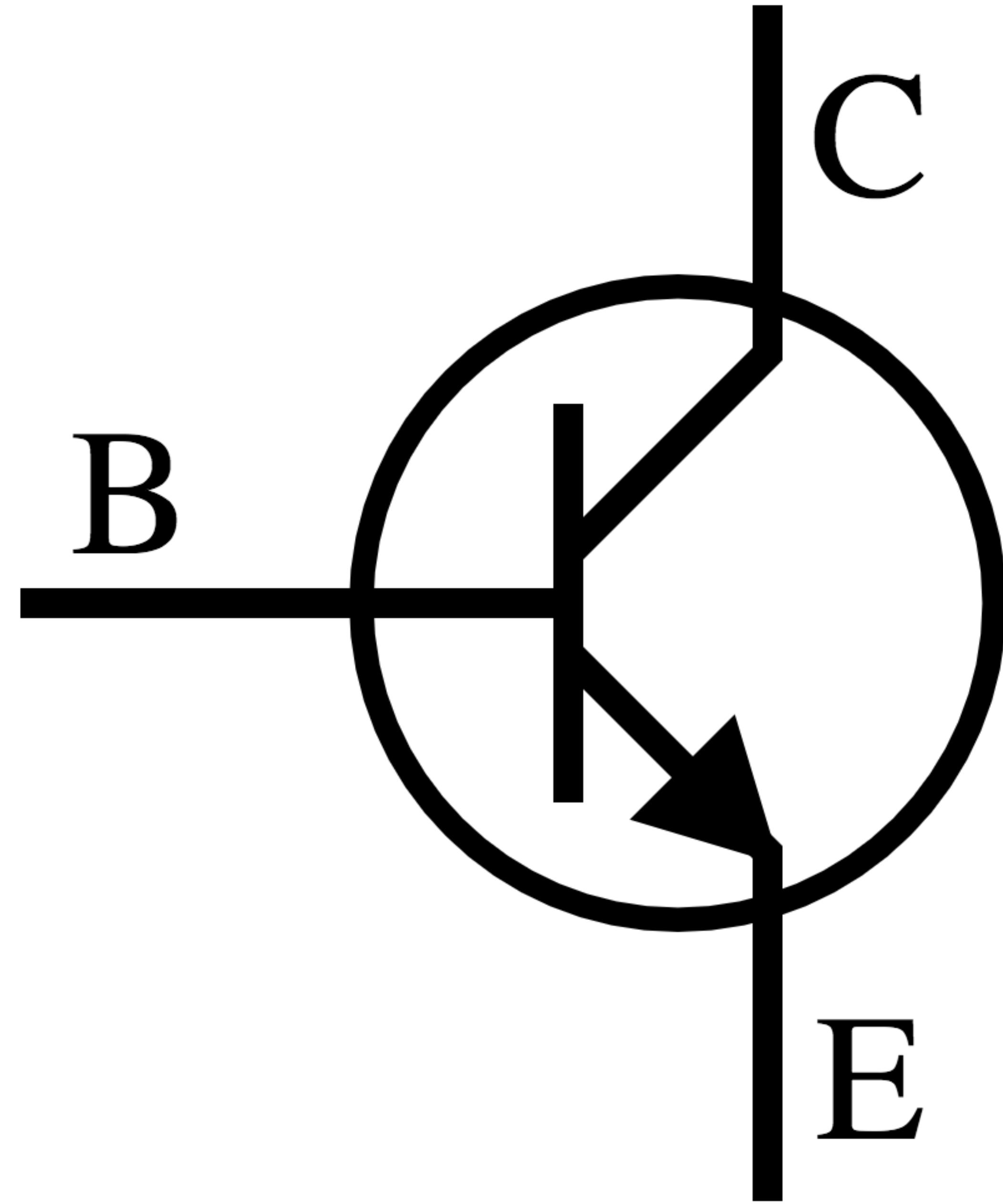


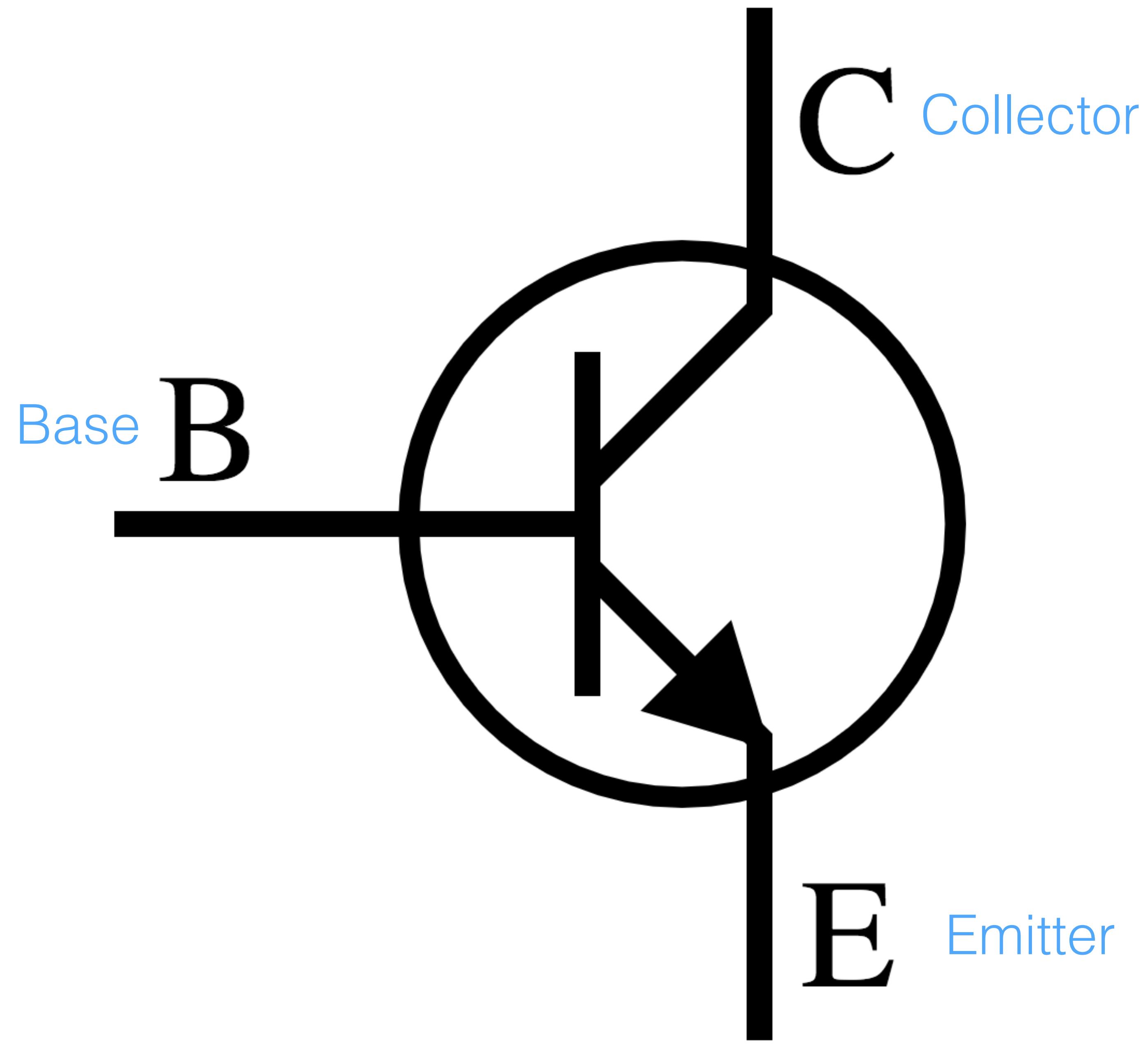


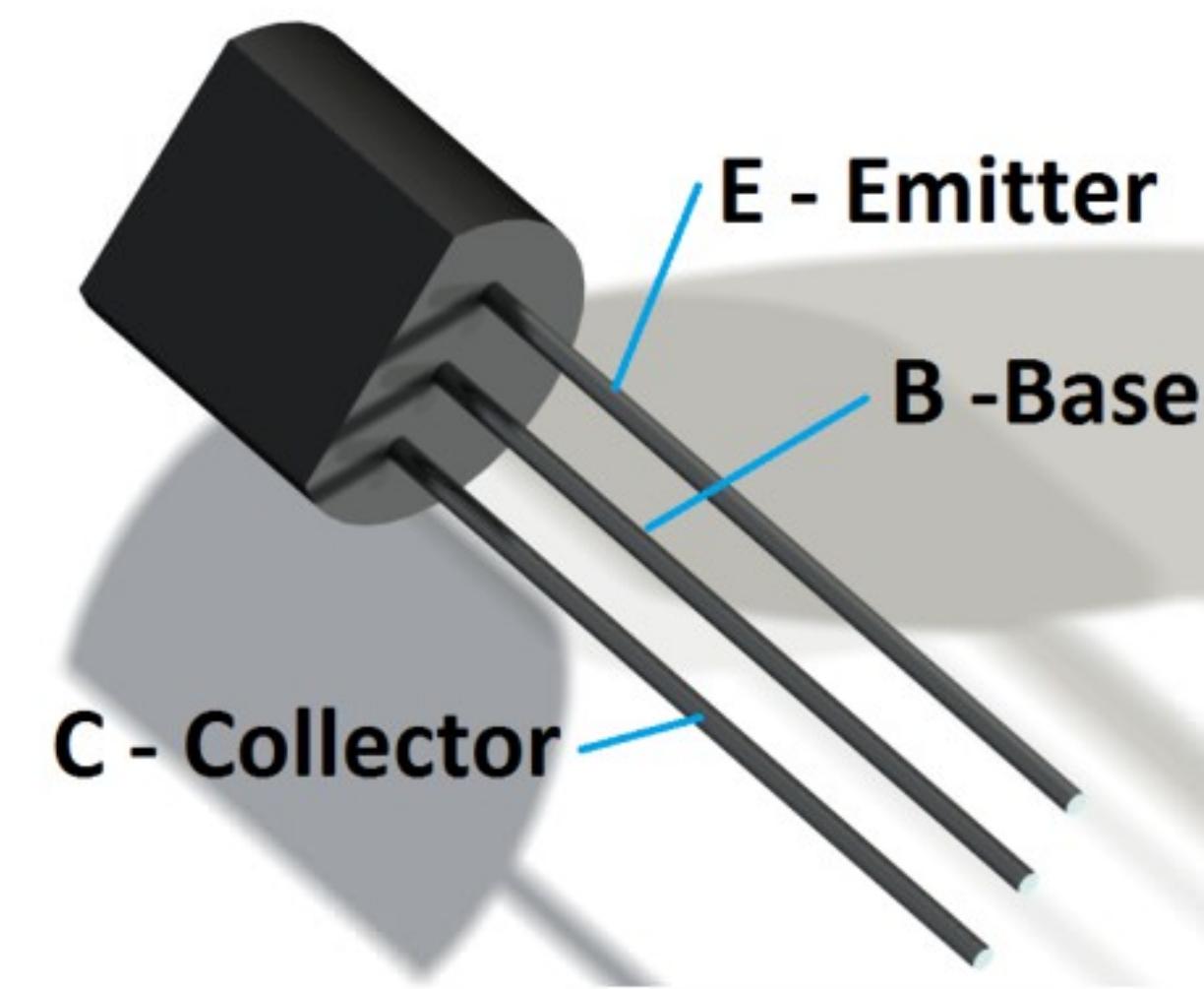
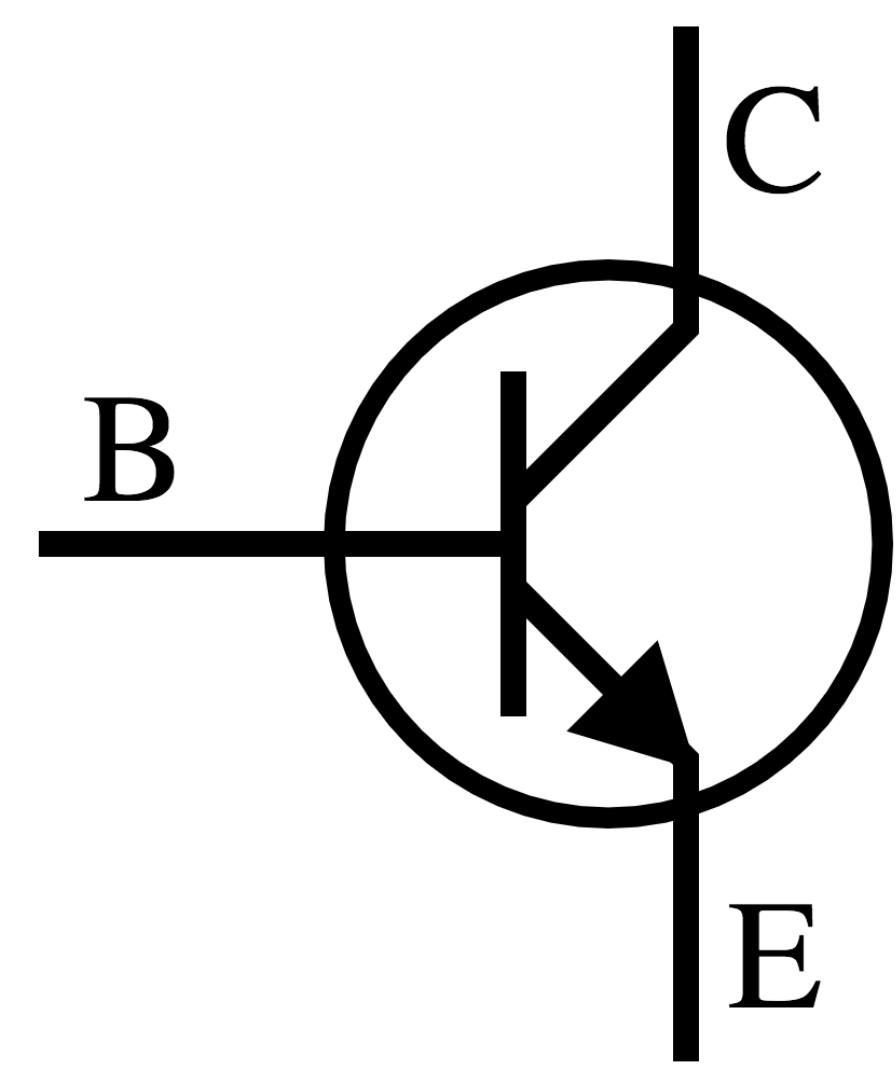




- Voltage: below optimal you get less power, above rating will burn out
- Torque: measure of strength of motor
- Speed is given as RPM, Rotations Per Minute

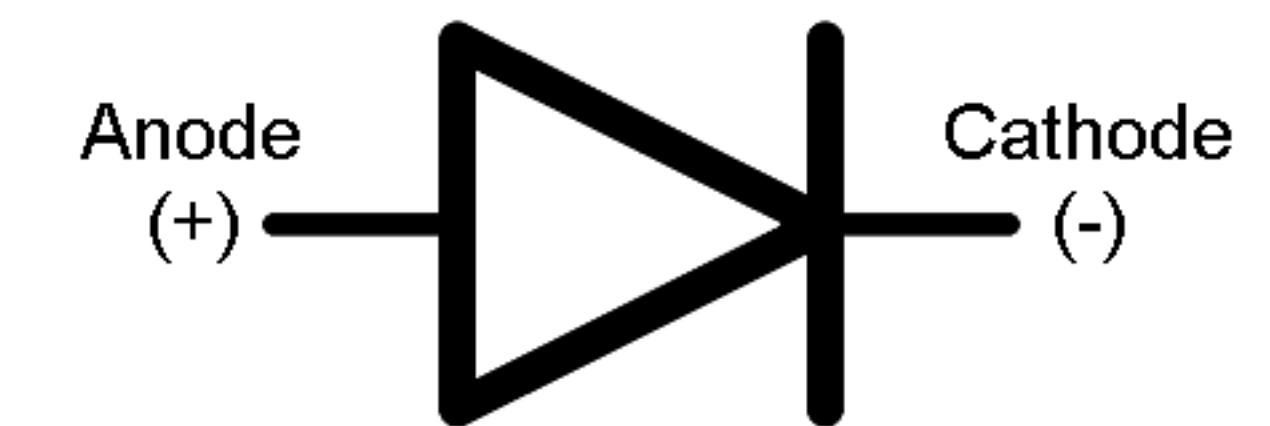
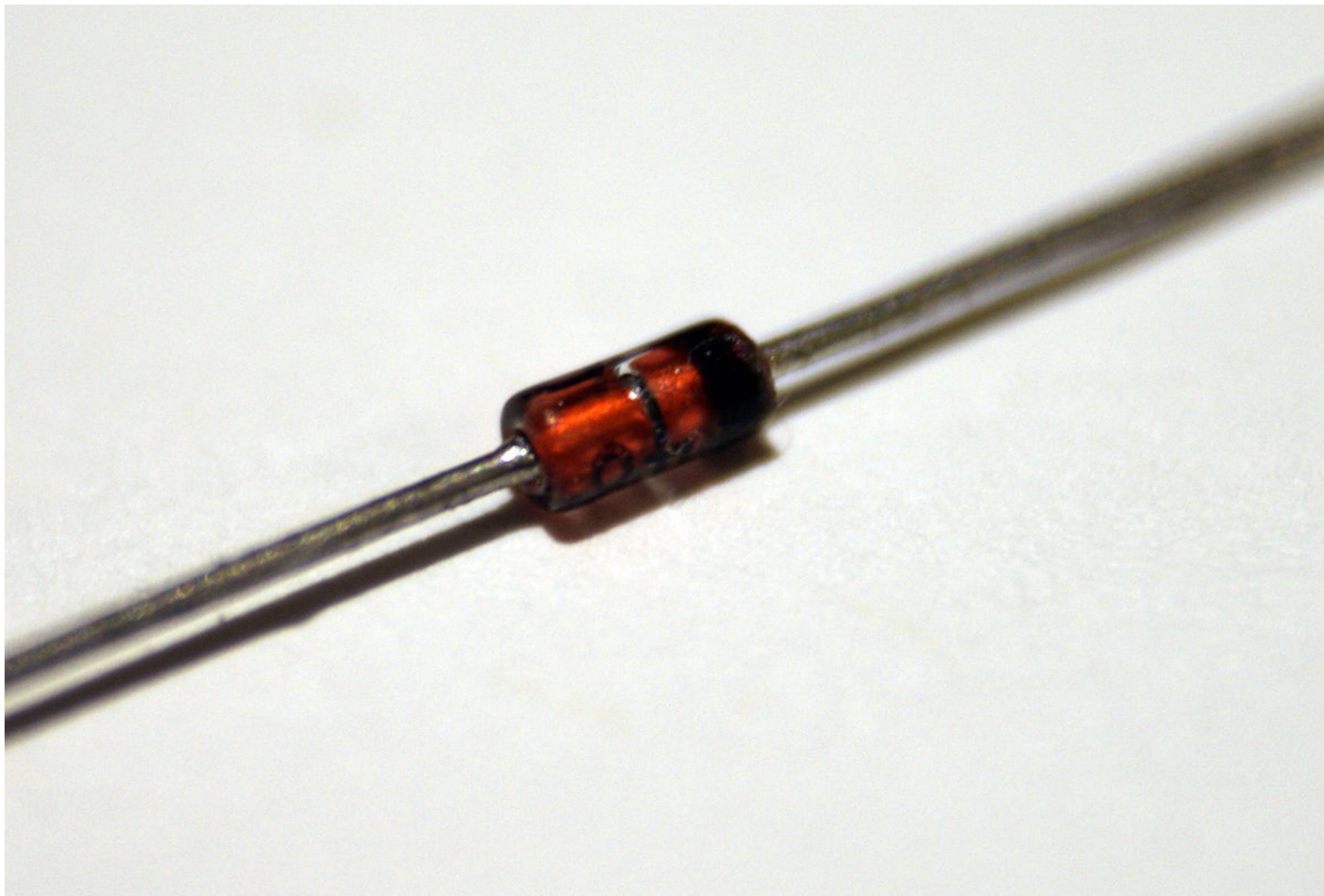




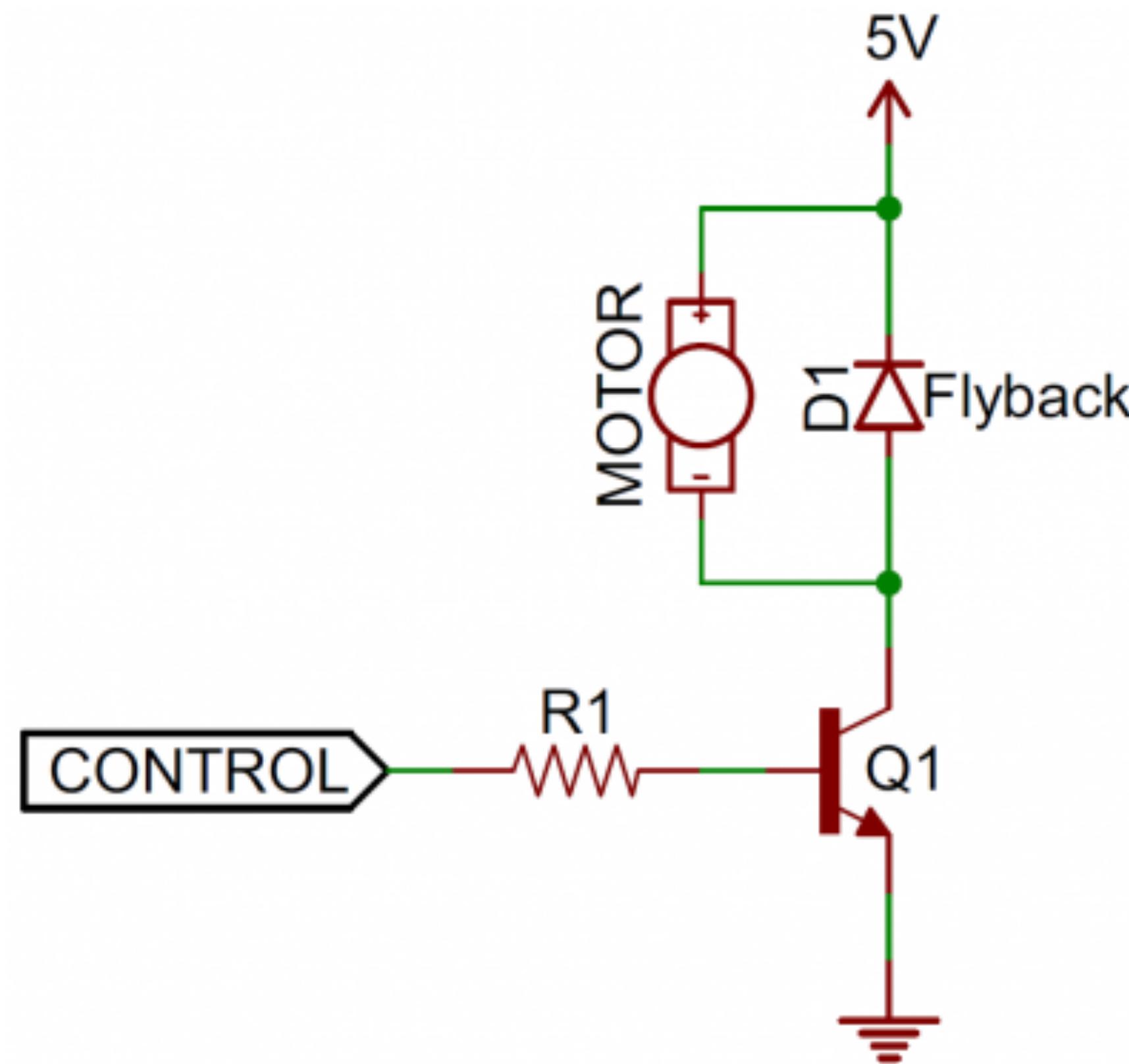


P2N2222A
BC337

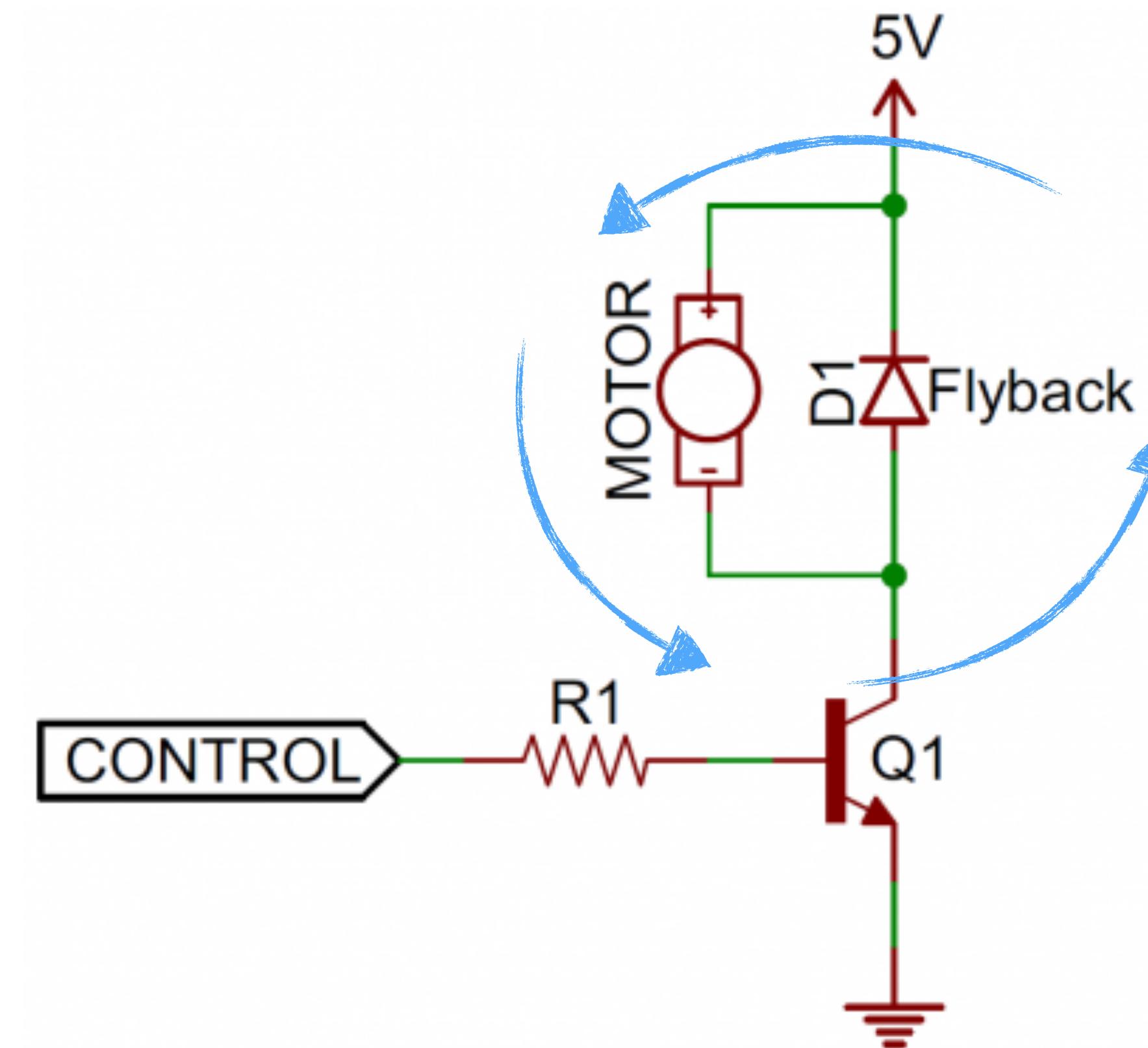
Diode

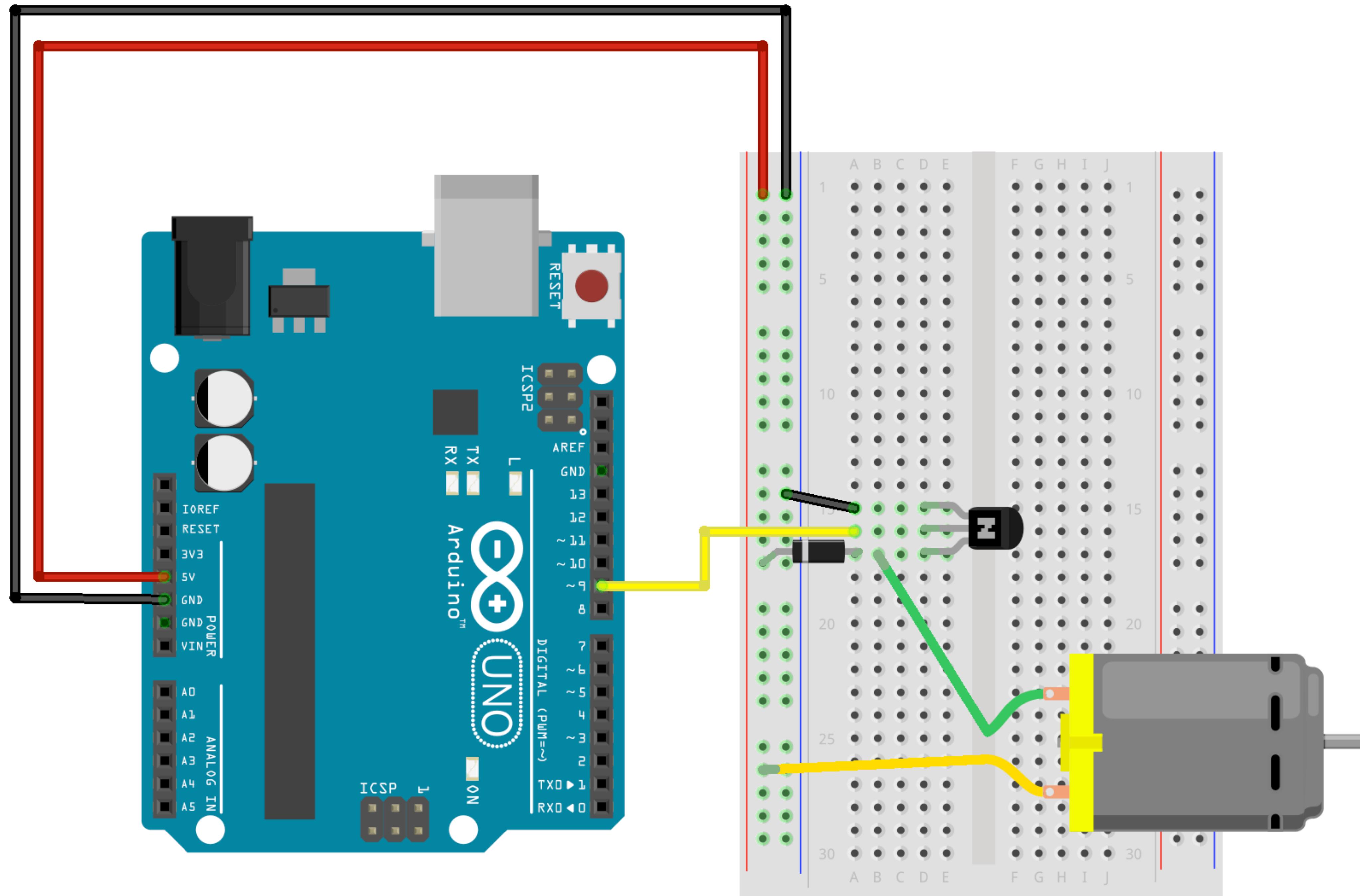


Flyback diode prevents a voltage spike from damaging our circuit when an inductor is turned off.

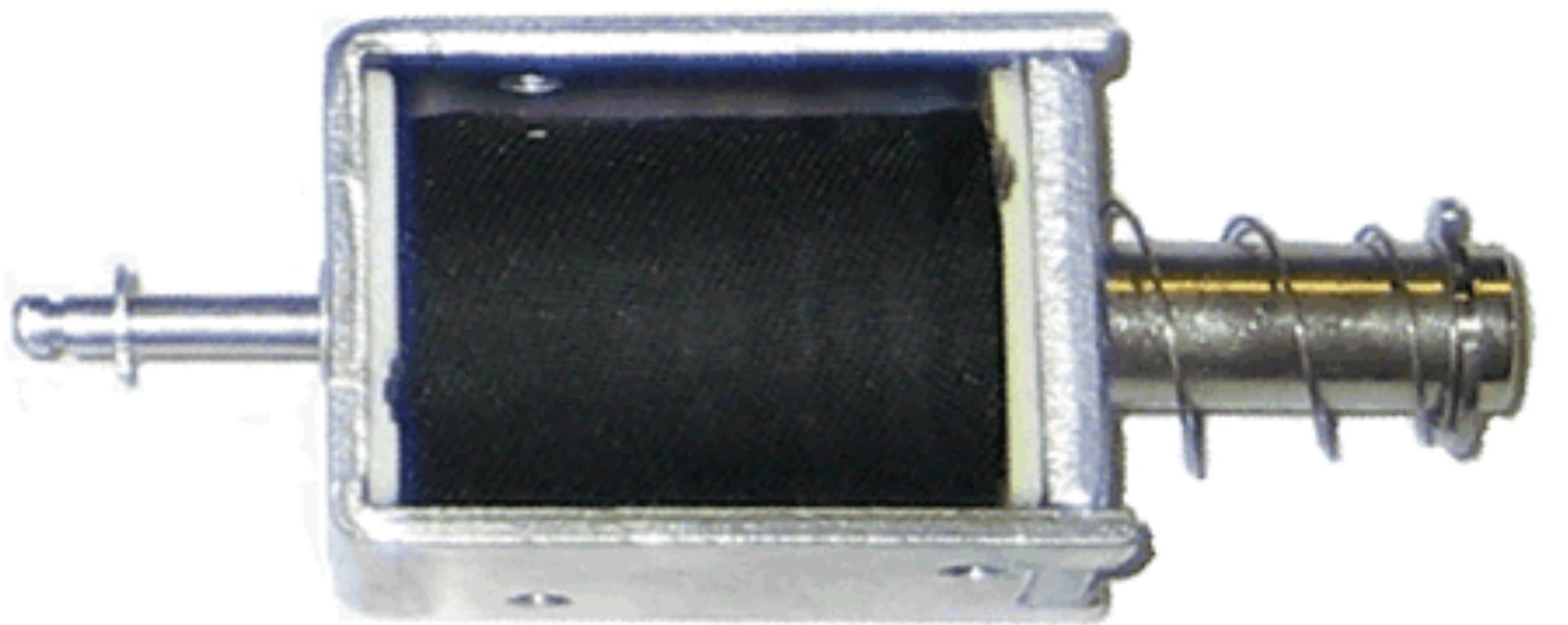


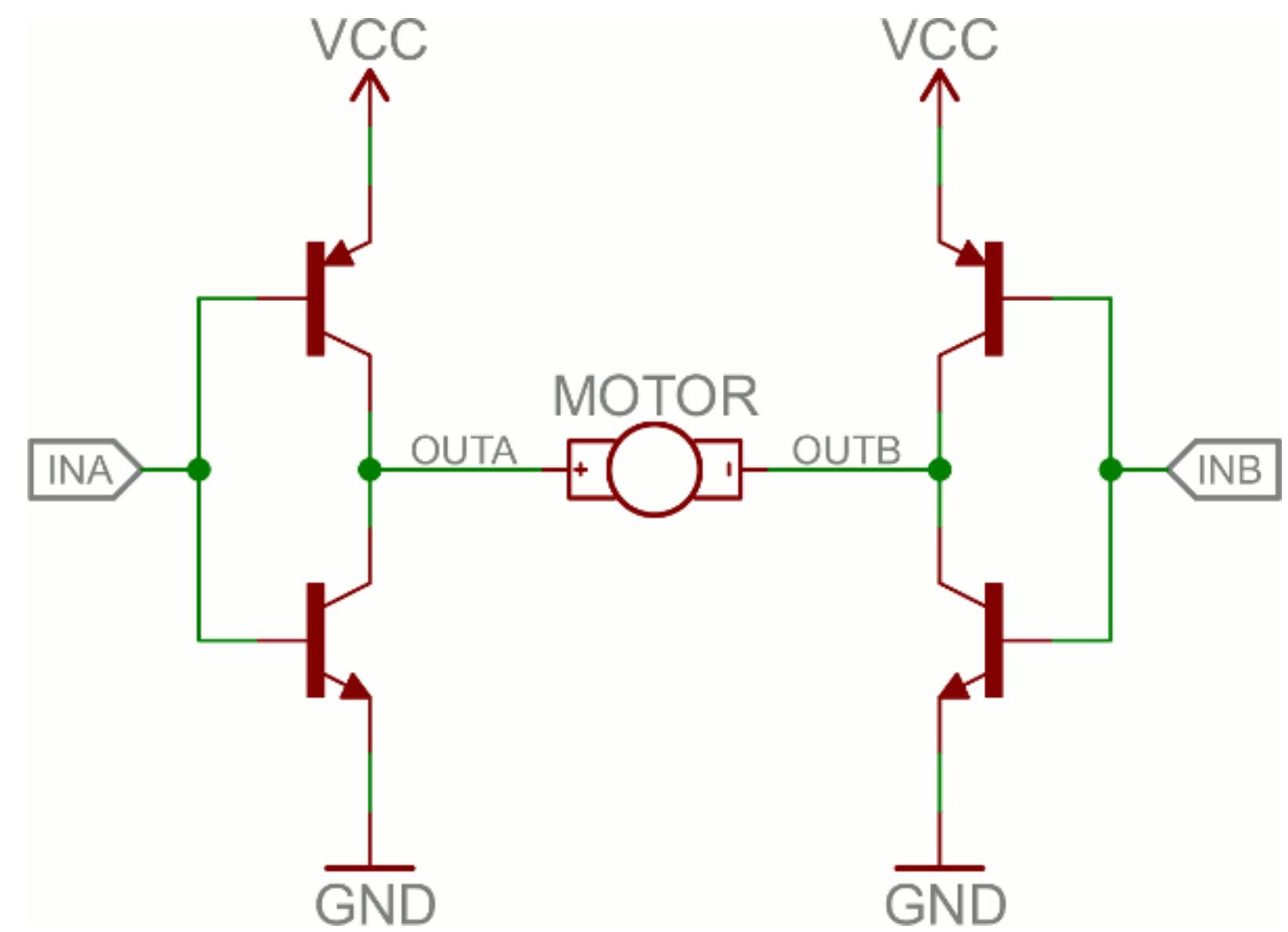
Flyback diode prevents a voltage spike from damaging our circuit when an inductor is turned off.



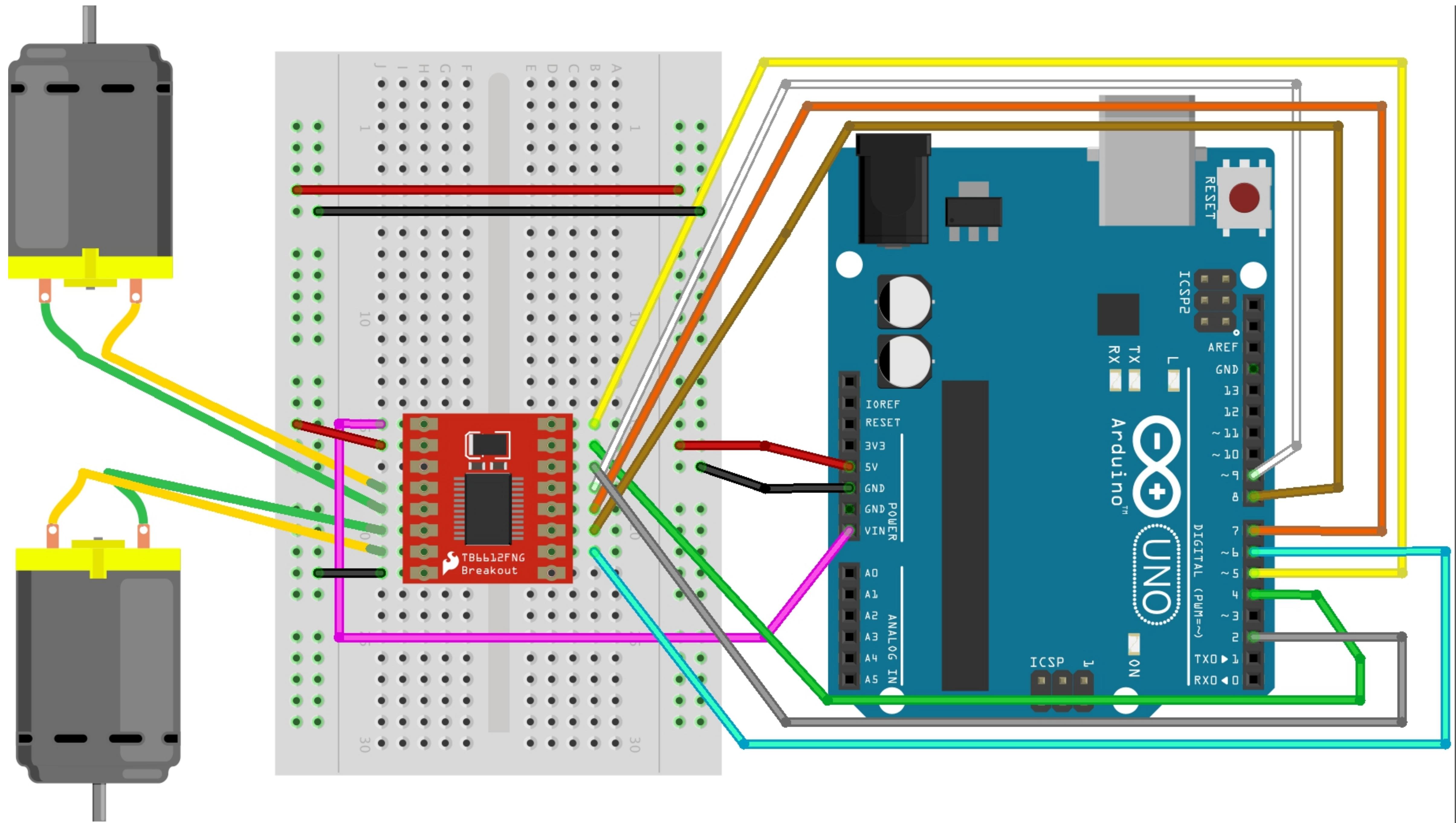


fritzing



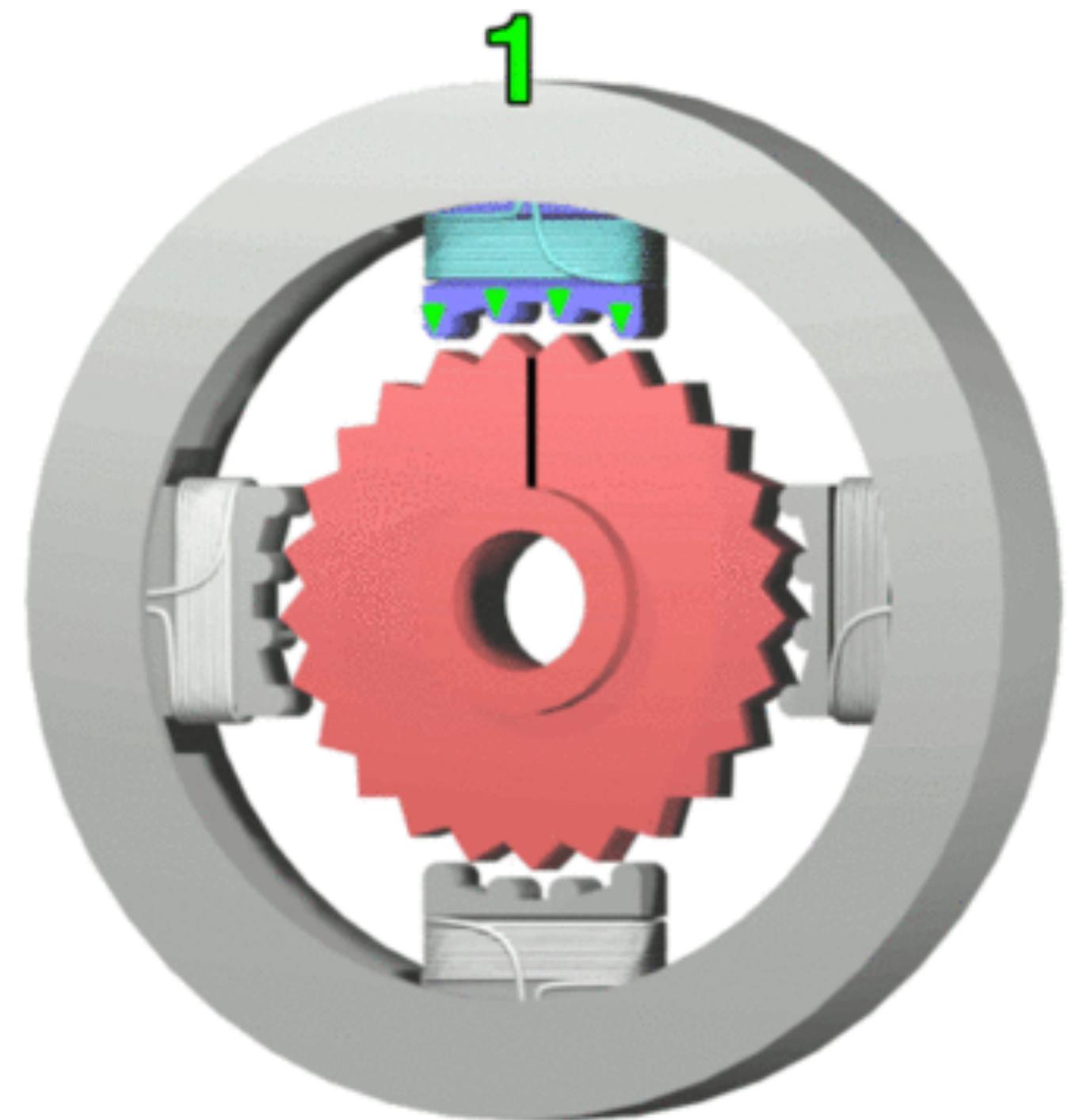


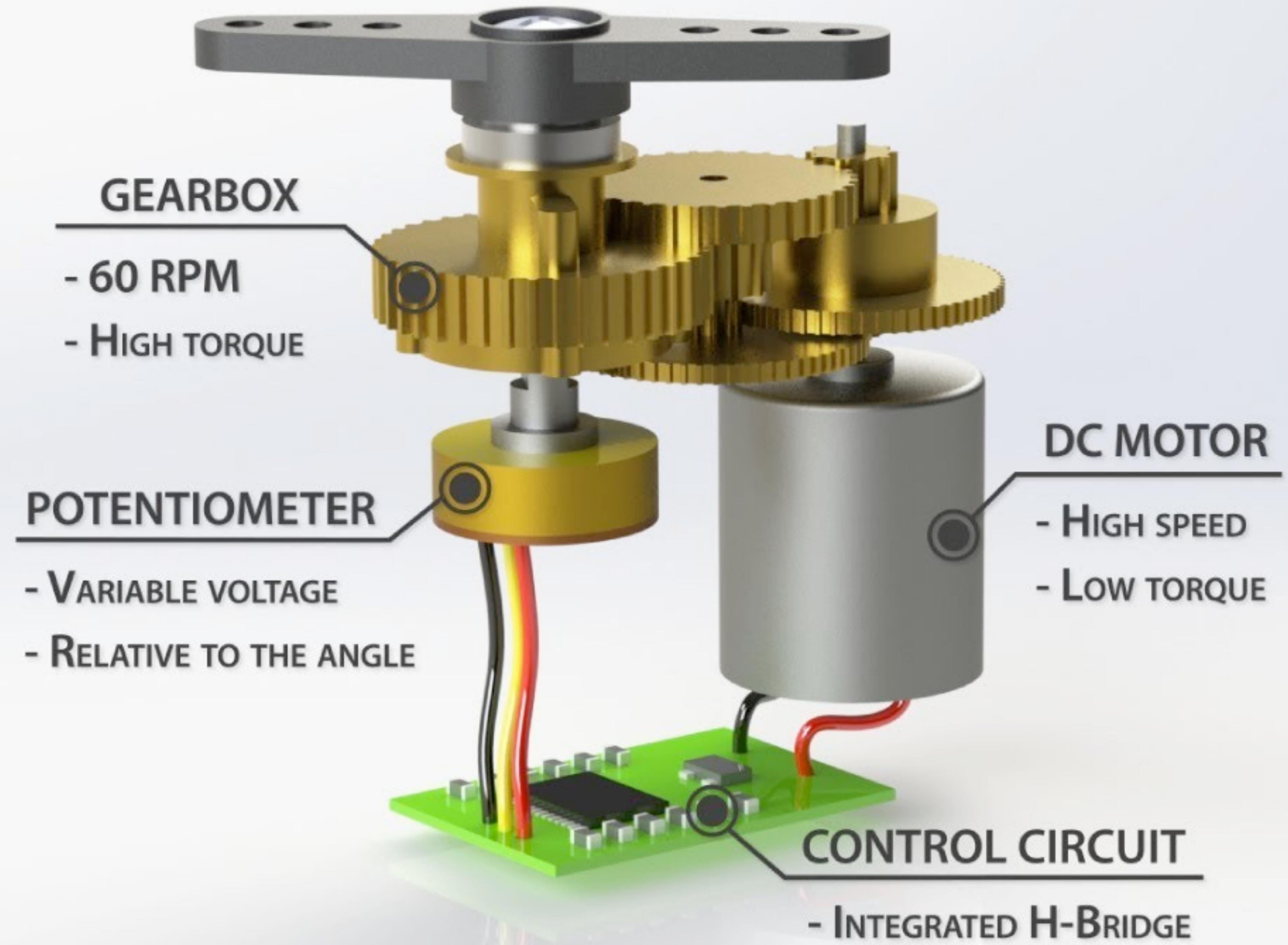
Motor Shields



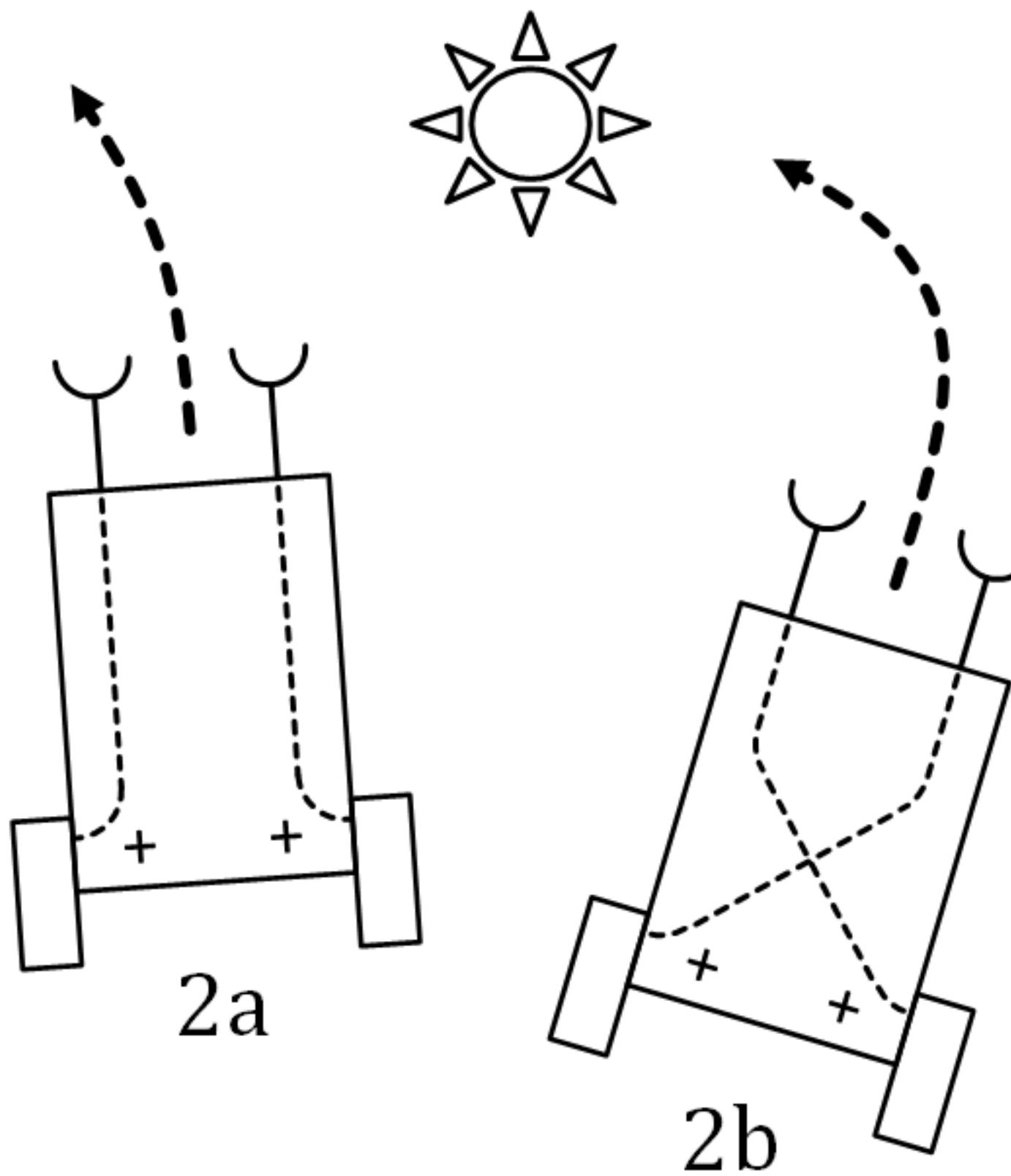
fritzing

Stepper Motors

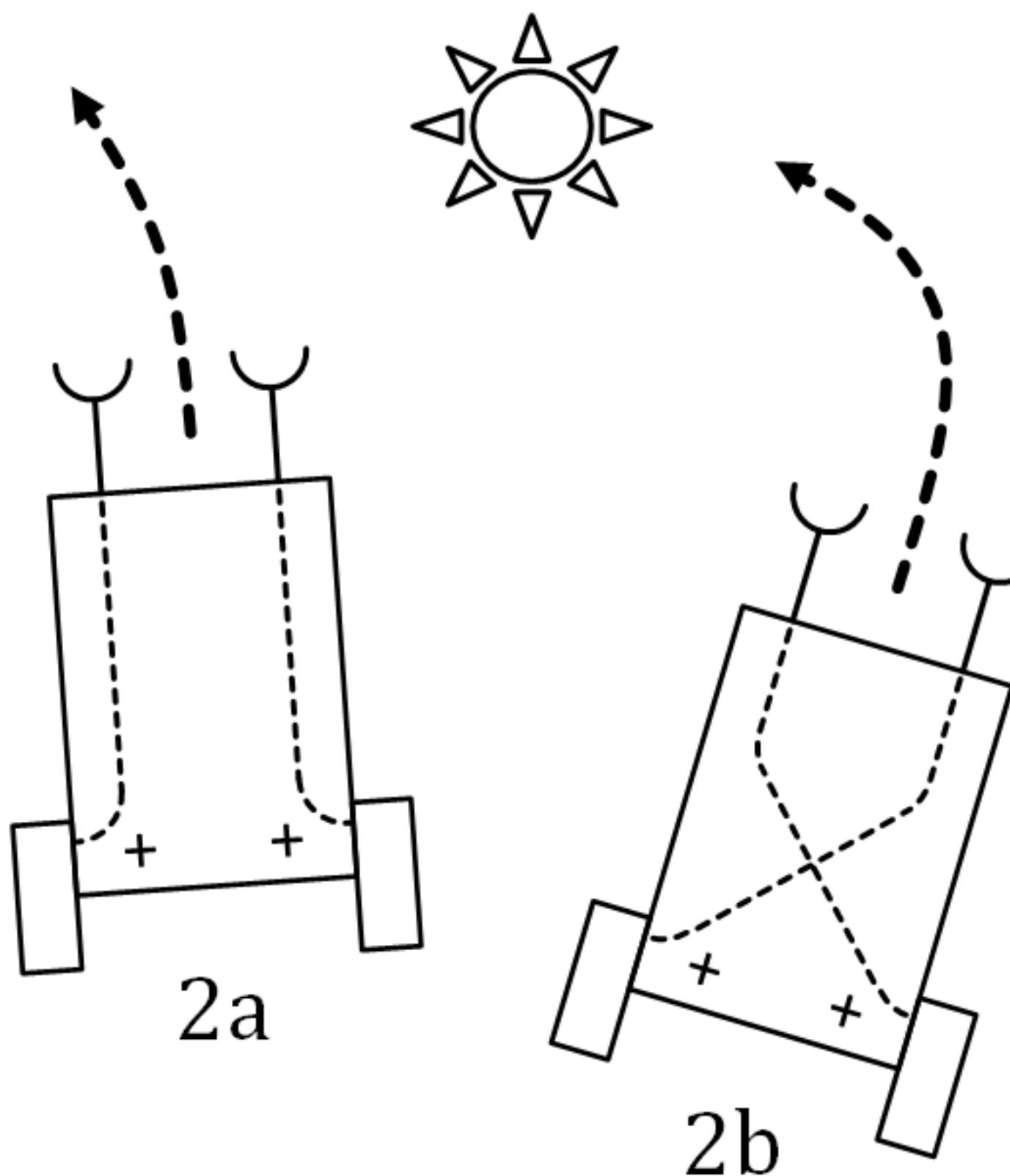




Braitenberg Vehicles



Goes fast when stimulus is strong - fear & aggression



- Goes slower when stimulus is strong - love

