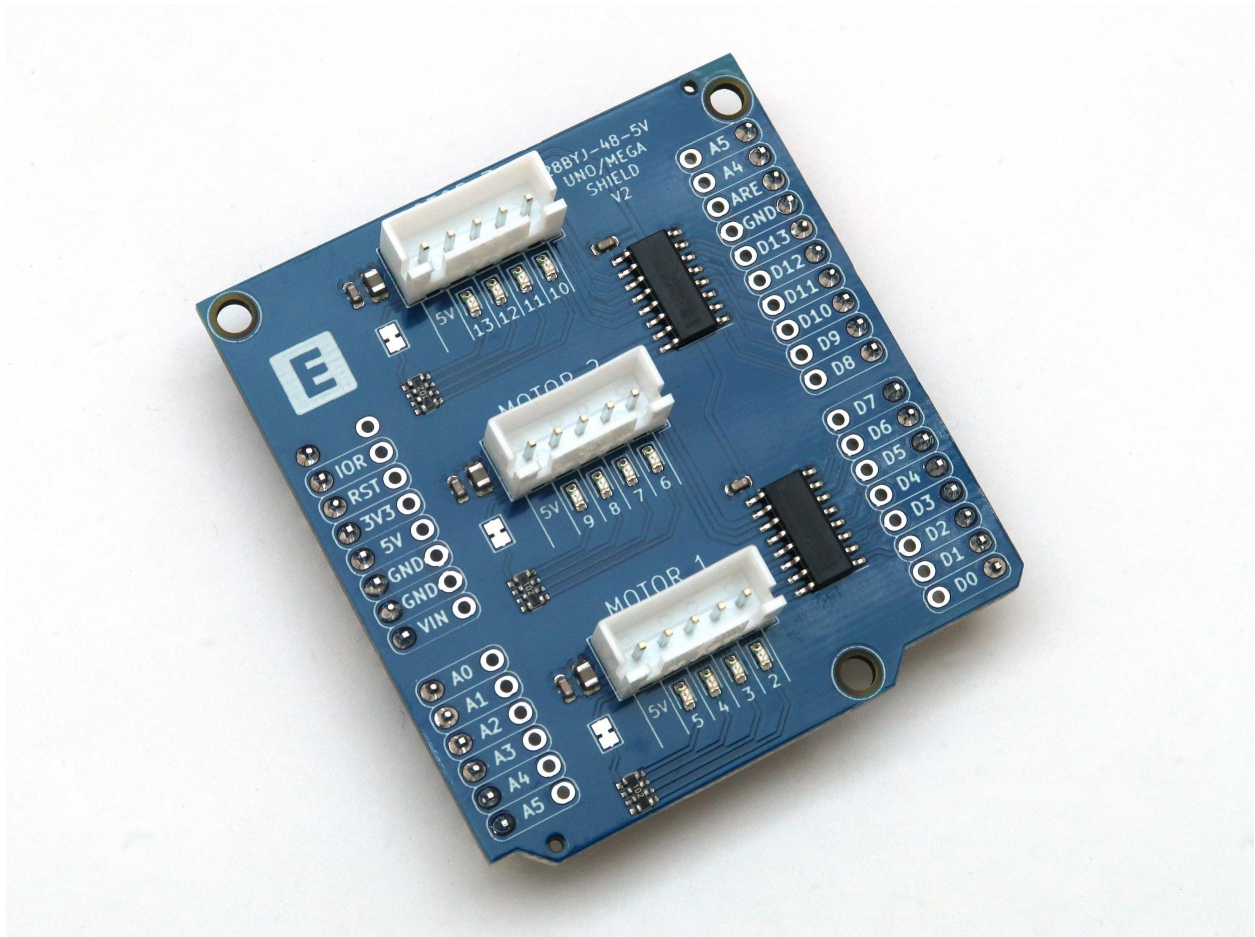# 28BYJ-48-5V Arduino Uno/Mega Stepper Motor Shield Datasheet

Board Version 2

Author: Ethan Opheim
Document Updated: September 6, 2022
Electreim Electronics LLC

Table of Contents

General Description

The Arduino Uno stepper motor shield uses two ULN2003A driver ICs to power up to three 28BYJ-48-5V stepper motors. Power for the stepper motors is provided through the Arduino 5V pin, which provides enough power to run all three motors at the same time. Additional power can be provided by connecting 5V directly to the stepper motor board or to the Arduino 5V. The stepper motor board includes pin sockets which can be used to connect jumper wires or solder wires directly to the board. The stepper motor board works with most Arduino stepper motor libraries because the ULN2003A connects directly to the Arduino Nano digital pins. There are four sets of red leds at each stepper motor connector for visualization of the motor coil power.
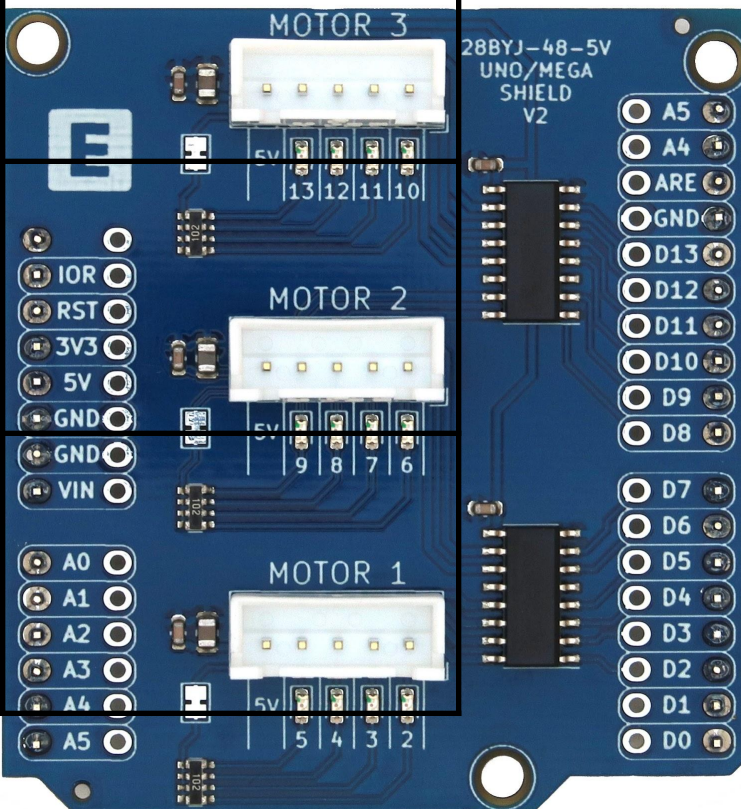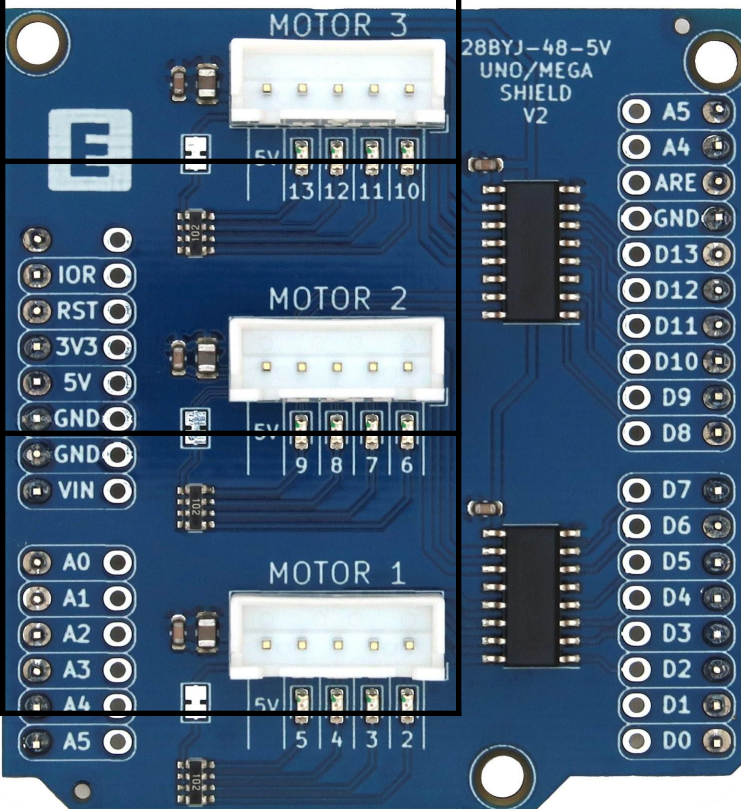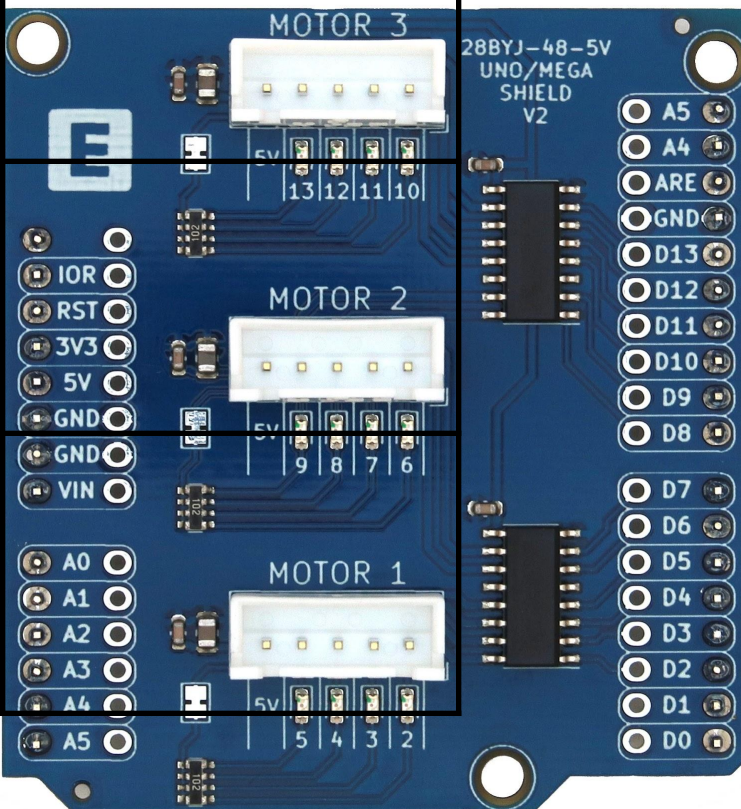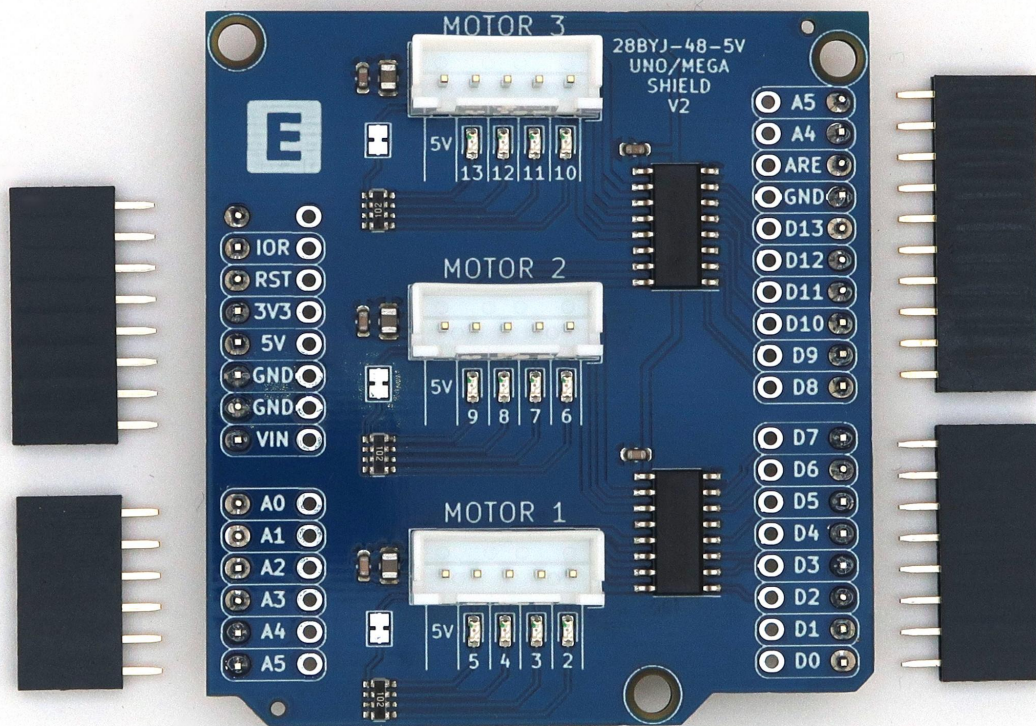
Connection Guide

Placing the stepper motor shield into the Arduino board

Plug the stepper motor shield board into the pin sockets on the Arduino Uno or Arduino Mega boards. Align the stepper motor shield board with the Arduino board using the outline and mounting holes as reference. The electreim logo and text should be on the side of the Arduino board with the USB connector.
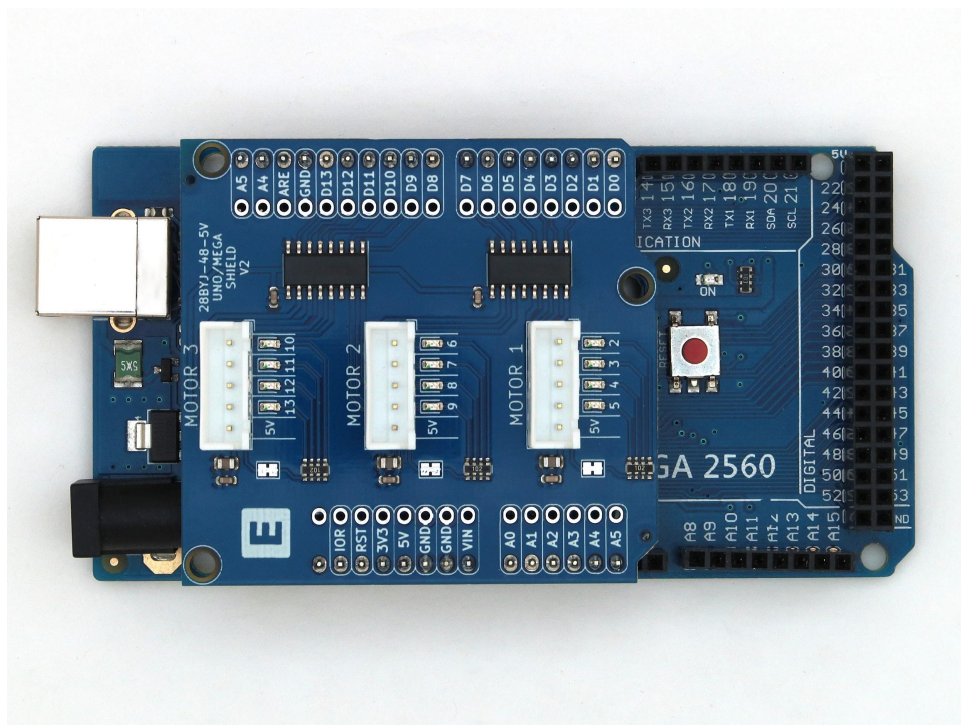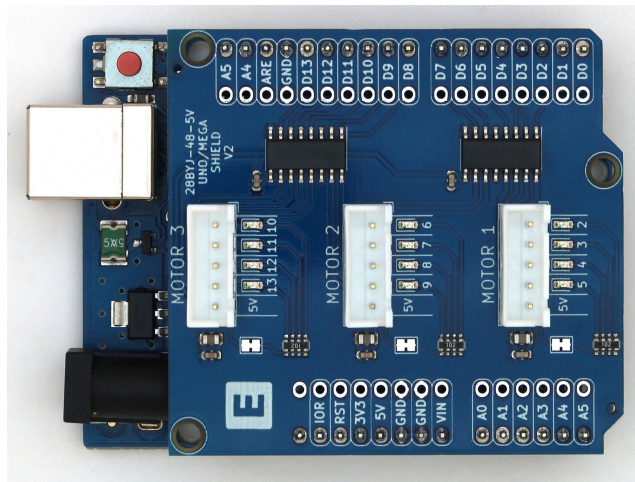
Connecting 28BYJ-48-5V Stepper Motors

Plug up to three 28BYJ-48-5V stepper motors into the white JST connectors on the stepper motor board.

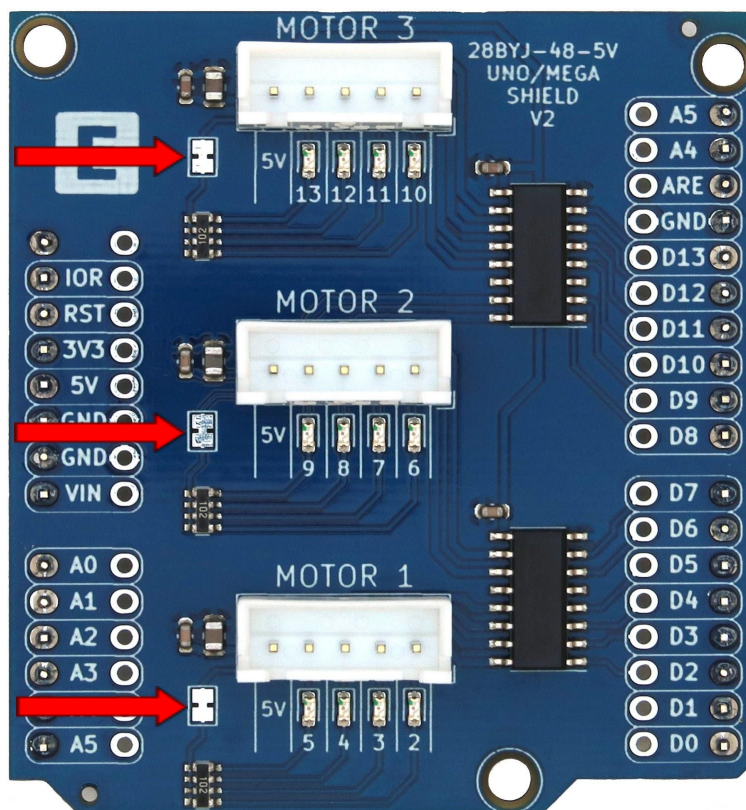| Motor Coil	Arduino Pin	JST
5V Coil 4 Coil 3 Coil 2 Coil 1	5V D13 D12 D11 D10	
5V Coil 4 Coil 3 Coil 2 Coil 1	5V D9 D8 D7 D6	
5V Coil 4 Coil 3 Coil 2 Coil 1	5V D5 D4 D3 D2	

Pin Header

The pin sockets are used to connect additional devices to the Arduino Uno. Use either jumpers wires or directly solder wires onto the solder pads next to the pins. The layout of the pin headers is identical to the Arduino layout and can be used just the same as the standard Arduino pins would be used.
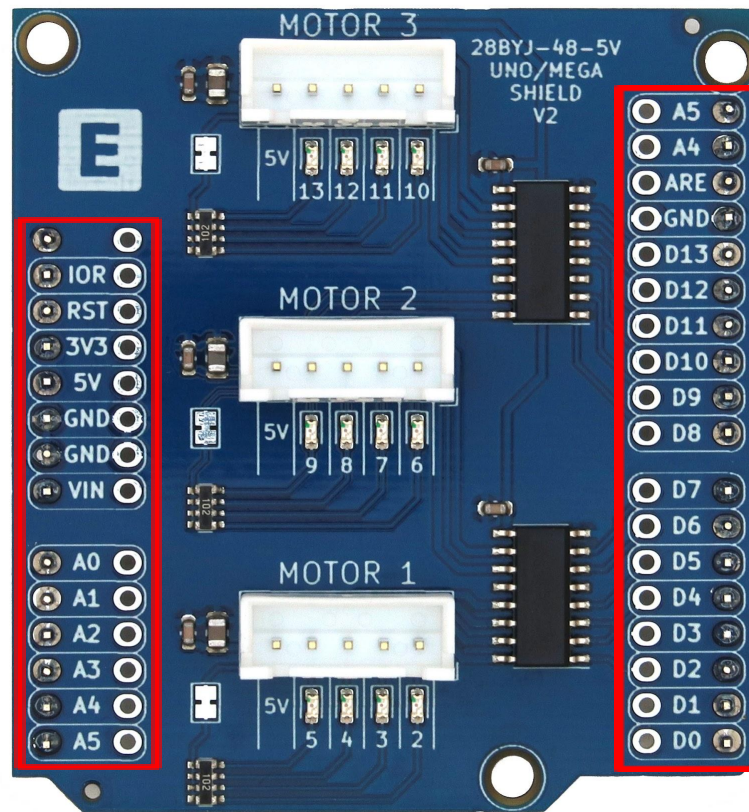
Disable LED

There are four red LEDs in front of each JST connector, which indicate the coil of the motor being powered. The LEDs are enabled by default on every stepper shield board. The LEDs can be disable for each motor connector by carefully cutting the connection between the jumper pads. To enable the LEDs, solder a small bridge on the jumper pads to electrically reconnect them.

Schematic