



Insert jumpers to ground to indicate installed functionality
 Pin 13 motorized cap
 Pin 12 LED channel 4
 Pin 11 LED channel 3
 Pin 10 LED channel 2
 Pin 9 LED channel 1

12V fixed output boost converter

470uF
16V

12V input

visible

UV

IR850

IR940

12V out

9V in +

IRF3205 8mOhm, 55A

4x 1k
resistor

470 uF
16V

A4988

ENABLE
MS1
MS2
MS3
RESET
SLEEP
STEP
DIR

VMOT
GND
2B
2A
1A
1B
VDD
GND

Open limit
Closed limit

5V 25 ohm NEMA 8 geared stepper 90:1
<https://www.omc-stepperonline.com/nema-8-stepper-motor-bipolar-l-38mm-w-gear-ratio-90-1-planetary-gearbox.html?search=nema%208%20>

CapCalibrator 4 color with motor
 rev 4 200802
 Alan Sliski

Setting MS 1,2 high runs 1/8 microstep mode
 instructions here
<https://www.makerguides.com/a4988-stepper-motor-driver-arduino-tutorial/>
 set trimpot for smooth operation

16 bit pwm can be done on 11 pins on the Mega (2, 26, 3, 5, 6, 7, 8, 11, 12, 44, 45, and 46)
https://puzzlebox.io/orbit/development/browser/orbit/arduino/libraries/PWM/examples/PWM_lib_resolution_example/PWM_lib_resolution_example.ino
 Interrupt on open/close limits pins 20,21
 attachInterrupt(digitalPinToInterrupt(pin), ISR, mode)
 see
<https://www.arduino.cc/reference/en/language/functions/external-i>