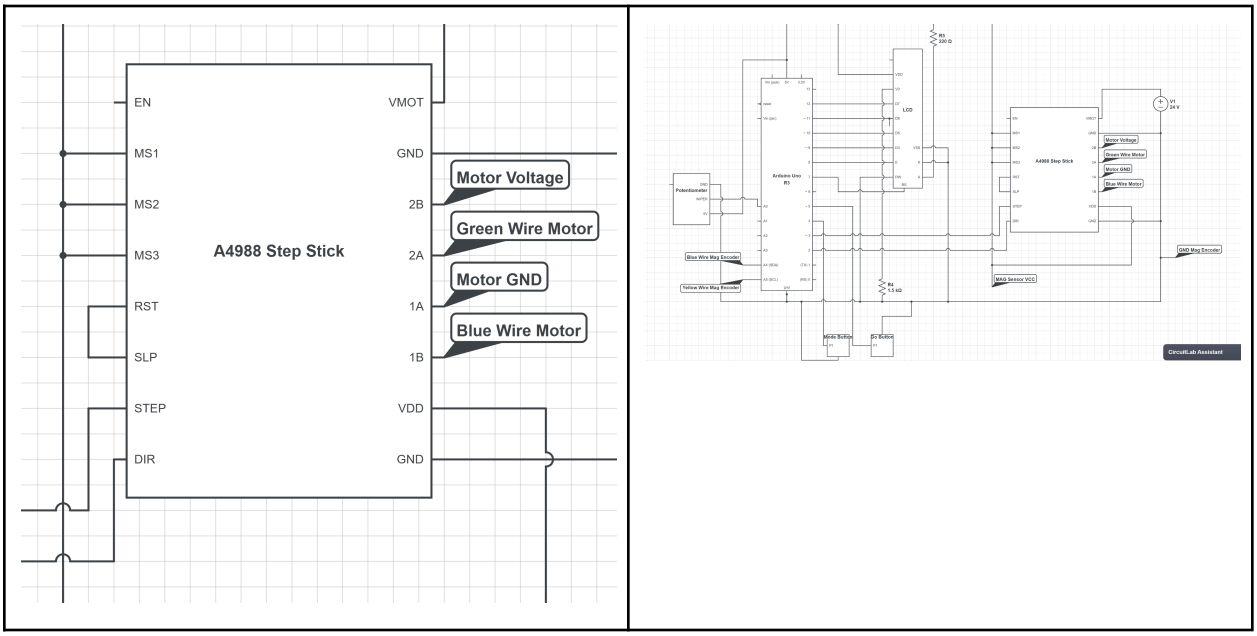
Instructions for Setting up Printer

To set up the printer using the board, 8 connections must be made to ensure that the motor and magnetic encoder are properly connected. Use this wiring diagram to help:



Once you have connected the wires, connect the 24V power source to the two hanging white and yellow cables. Connect the Arduino to power and take a look at the screen. Here is the layout:

1 **Power on**

```
build-step11
starting...
```

Firmware loads. Zero is wherever the toolhead sits now.

2 **Ready**

```
>Ang   0    6.1rpm
Now    0.0  READY
```

> marks what the knob controls: the angle.

3 **Turn the knob**

```
>Ang  90    6.1rpm
Now    0.0  READY
```

Picks a target angle in 5 degree steps.

4 **Tap Go**

```
Target  90.0 deg
Now    0.0  MOVING
```

Moves by the shortest way. Now holds the start angle.

5 **Correction**

```
Target  90.0 deg
Now    88.5  FIXING
```

The encoder checks the result and nudges it in.

6 **Arrived**

```
>Ang  90    6.1rpm
Now    89.9  READY
```

Lands within half a degree.

7 **Press Mode**

```
 Ang  90>  -6.1rpm
Now    89.9  READY
```

> moves to speed. Speed jumps to the knob's position.

8 **Turn the knob**

```
 Ang  90>   3.6rpm
Now    89.9  READY
```

Center is 0. Range is -12.1 to +12.1 rpm.

9 **Hold Go 1 second**

```
SPIN    3.6  rpm
Go=stop  knob=spd
```

Spins continuously at the set speed.

10 **Turn past center**

```
SPIN   -3.6  rpm
Go=stop  knob=spd
```

Live change: slows, stops, and reverses.

11 **Press Go**

```
SPIN   -3.6  rpm
Stopping...
```

Ramps down smoothly.

12 **Stopped**

```
 Ang  90>  -3.6rpm
Now  213.4  READY
```

Ready for the next move or spin.

Sending Speed and RPM to the assembly:

To switch between modes, click on the left button. This allows you to switch between adjusting the speed and the RPM. When you have the desired speed and RPM, you can click on the right button to send the command to the printer, and the printer will navigate to the position at the speed you've set.

Speed Control:

If you would just like to control the speed of the toolhead, you can long-press the right button. This brings up a new menu for speed control. Adjust the dial by turning it clockwise to increase positive rpm, and counterclockwise to increase negative speed.

Troubleshooting:

Sometimes the motor may be wired improperly and that causes the motor to buzz. In this scenario, swap the green and blue wires, and the motor will work as usual.