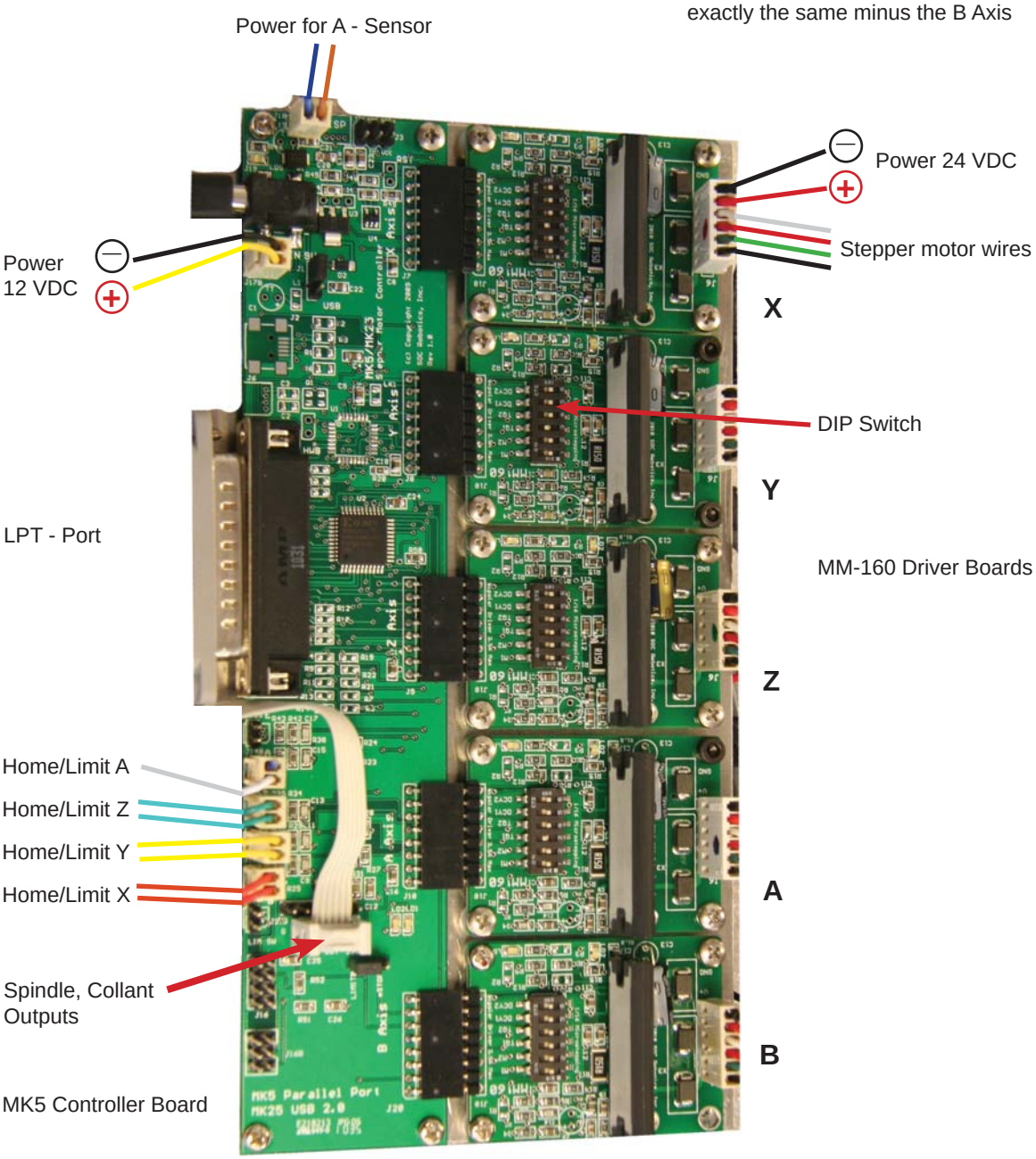
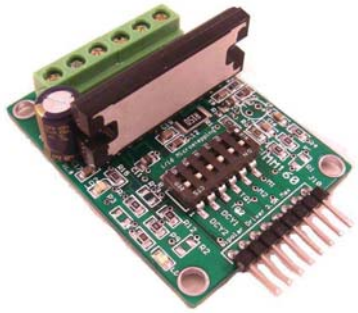
5-AXIS CONTROLLER BOARD

The image is a 5-axis controller board - 4 axis controller board is exactly the same minus the B Axis



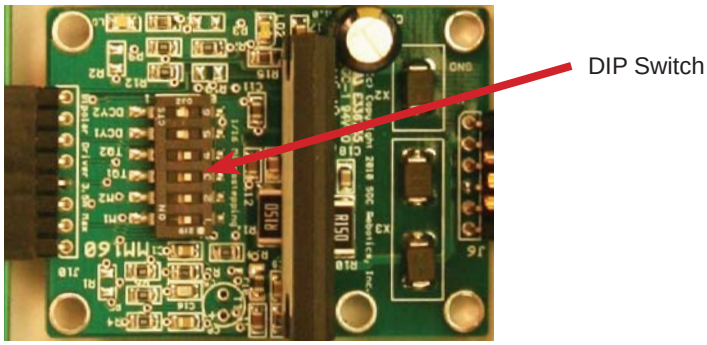
MM160 STEPPER MOTOR DRIVER



The MM160 is a compact single axis bipolar 3.5A/phase stepper motor microstepping driver with step and direction inputs, DIP switch settable Step mode, Torque level and Decay mode. The stepper motor driver IC is a TB6560 manufactured by Toshiba. The TB6560 converts step and direction signals to Pulse Width Modulated high voltage drive signals that send the appropriate current to the four coils of a bipolar stepper motor.

The MM160 has two I/O ports: a motor control port and motor drive port. The motor control port accepts step and direction inputs which are routed to the TB6560 driver chip. The motor drive port is connected to the stepper motor coils and motor power. Note that motor power should not be turned on unless logic power (VCC, GND) is also turned on. A Green Power LED and Red Thermal Overload LED indicate Power status and thermal shutdown state.

Figure 4: MM160 Stepper Motor Driver

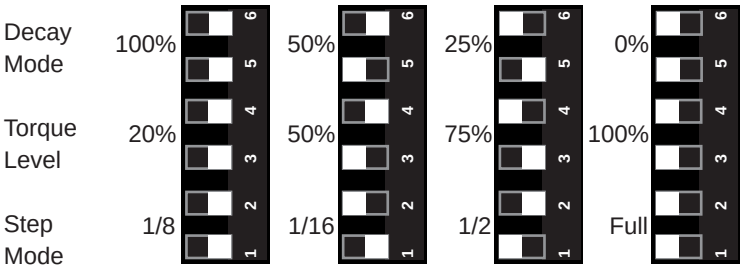


DIP switch changes should be made with power off so the correct selection is active at power up

DIP Switch Setting

A DIP switch is used to set:
- Decay mode, 5-6 (0%, 25%, 50% and 100%)
- Torque level, 3-4 (100%, 75%, 50%, 20%)
- Step mode, 1-2 (full, half, eight and sixteenth),

Figure 4: DIP Switch Setting The diagram shows the various settings, default setting is:
100% Decay Mode
20% Torque Level
1/8 Step Mode

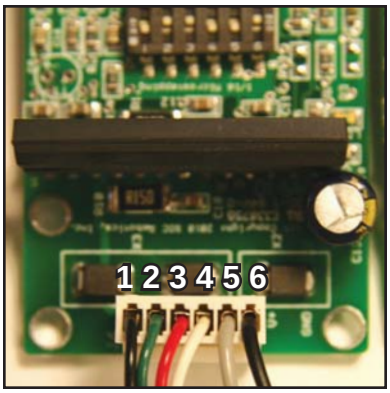


STEPPER MOTOR CONNECTION

The MM160 driver has 6 - pins connector. Pins 1 - 4 use to connect with stepper motor. Pins 5,6 use to connect with 24VCD power supply.

NSCNC use two type of stepper motors Standart Motors and LIN Motors. Standart motors use on all 4-Axis machine. LIN motors use on Z,A,B - axis of 5-Axis machines. Both type of motors can have 4 or 6 wires If you use 6-wires motor do not use White and Yellow wires.

Standart and LIN motors have different Wire Color Code Very important don't mix up color code.

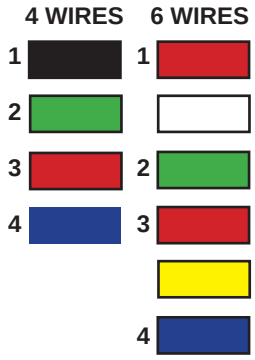


1 - 4
To Stepper Motor

5 - 6
To Power Supply 24V

Figure 4: Wiring Color Code

Standart Motor



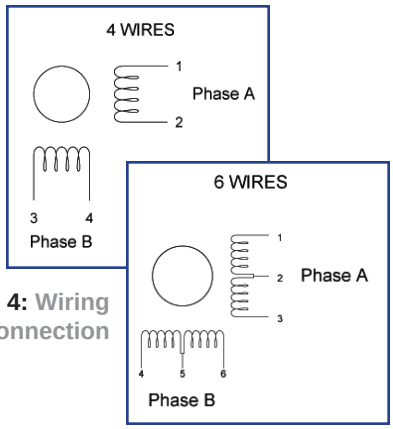
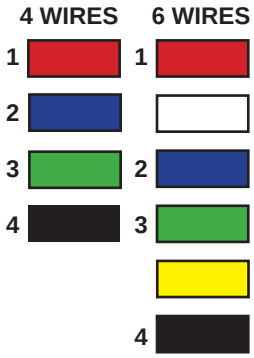


Figure 4: Wiring Connection

LIN Motor



Please note: Different versions of the NSCNC machine exist thus the layout and configuration provided may differ from your Mill. Contact NSCNC Support to receive additional information about your Mill. The information provided in this chapter is strictly for certified users of NSCNC Products.