



# Wiring Instructions Portal milling machines Hobby Line

Support for setup and operation also in the user forum:

[www.hobbyline.info](http://www.hobbyline.info)

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HL1.AS.STANDARD

Version 2.0.0

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## Requirements

These instructions show the wiring of portal milling machines of the Sorotec Hobby-Line with the motor set (HL1.AS.STANDARD) available as an accessory. The completed mechanical construction of the kit machine and a basic understanding of electrical relationships are required.



### Caution

The electrical system of the Hobby Line milling machines described here works in the low voltage range below 60 volts, which is safe for humans. Nevertheless, pay careful attention to possible sources of error (insulation, kink protection, ...) to ensure proper functioning. Short circuits in particular can damage parts of the system or cause fires.

## Grounding

Ground all motors. To do this, attach the grounding cable to the flange of the respective motor with a ring cable lug each, as shown in Figure 1. Run all grounding cables to the central ground point of the controller (Fig. 2).

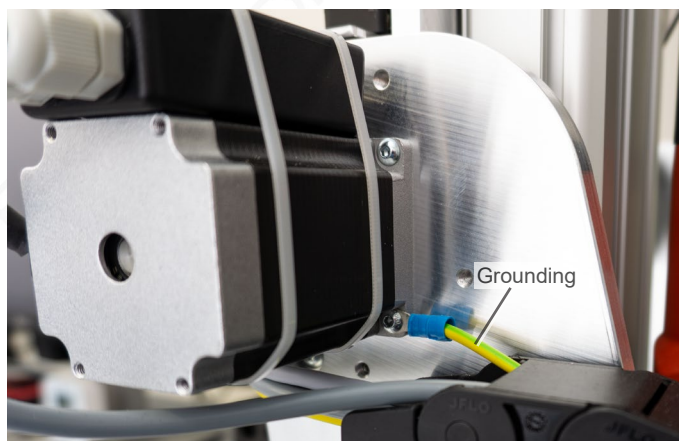


Fig. 1: Grounding on the motor flange



Fig. 2: Central ground point on the housing of the controller

## Motor connection

There are basically three options for connecting stepper motors (see Figure 3). We recommend the **Bipolar Parallel** variant for control with the MINI control kit. When using the terminal box described on page 4, this type of connection is build automatically.

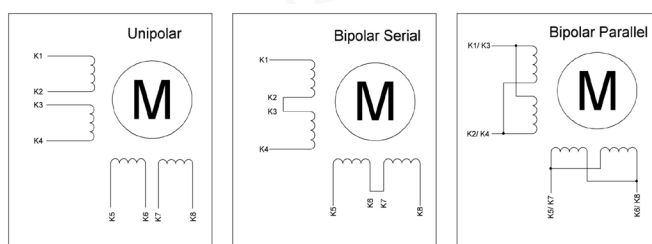


Fig. 3: Connection variants for stepper motors

### Connect the motor wires

- Combine the eight suitably cut strands of the motor with shrink tubing to form a cable and guide the end through the right screw connection into the terminal box.
- Strip the ends of the stranded wire and attach wire end ferrules.
- Connect the individual wires as shown in Figure 4 and Figure 5.
- Mount the strain relief.

### Connect the control cable

- Feed the end through the right screw connection into the terminal box.
- Isolate the shielding and the wire ends and attach wire end ferrules.
- Connect the individual wires as shown in Figure 4 and Figure 6.
- Place the shield under the cable at the height of the strain relief.
- Mount the strain relief.

### Mount the terminal box

- Close the cover of the terminal box.
- Mount the terminal box with cable ties as shown in Figure 7.

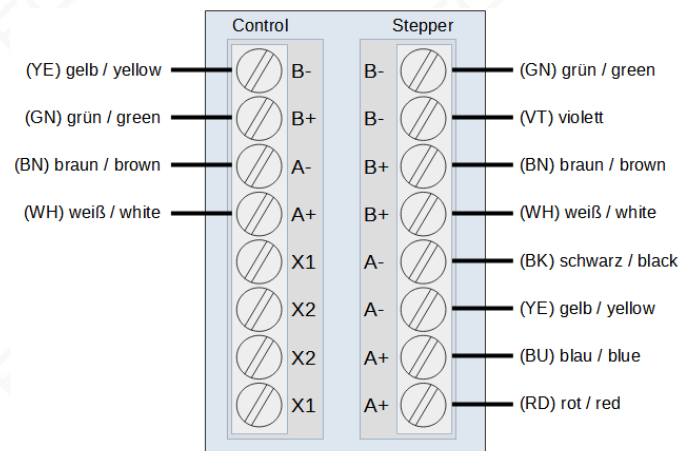


Fig. 4: Assignment of the connections in the terminal box



Fig. 5: Connected motor strands in the terminal box

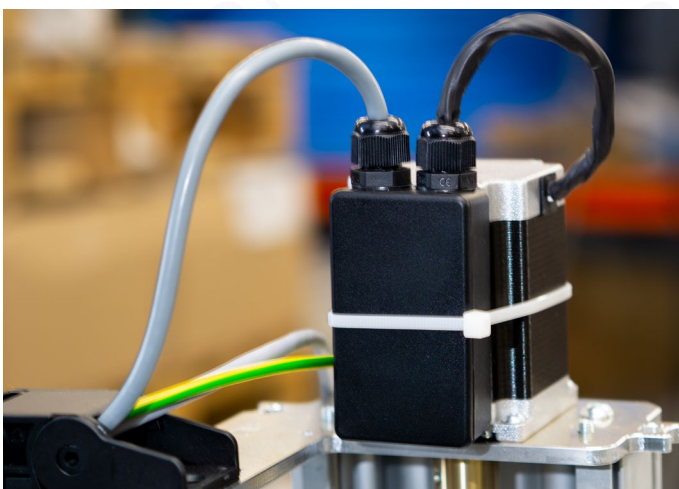


Fig. 7: Terminal box mounted with cable ties



Fig. 6: Connected strands of the control cable

## Reference switch and Emergency stop switch



Caution

Provide the control lines for the reference switches and the emergency stop button with cable lugs and connect the switches as shown in Fig. 6 and Fig. 7. Route the cables through the drag chains where appropriate.

The mains connection cables of milling spindles are not suitable for drag chains. There is a risk of charred areas in the insulation. Short circuits and electric shocks can result. Never lay the power cord of your milling spindle in the drag chain!



Fig. 6: Connection of the reference switches



Fig. 7: Control line to the emergency stop switch

## Bundling and fixing

Finally, fix the cables with blocks and cable ties. Combine parallel lines in bundles (see Fig. 2). Wind the cable harness leading to the control with winding hose.