SHERLINE PRODUCTS

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Configuring Centroid Acorn for Sherline Lathes and Mills

P/N 9400

Acorn Configuration Settings for the Lathe
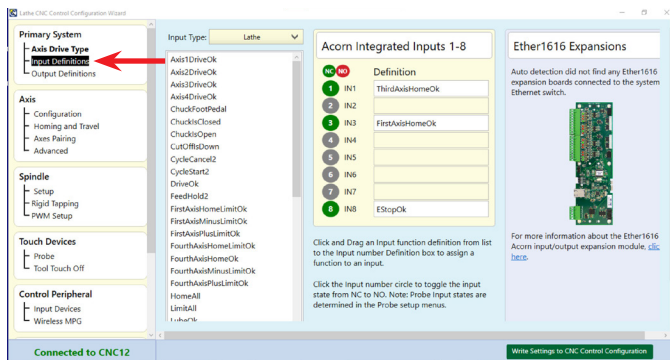
Input Settings for Homing Switches

FIGURE 1—Lathe CNC Control Configuration Wizard dialog box. Select Input Definitions under Primary System.

1. **Axis Configurations:** See Figures 2 and 3 for leadscrew and ball screw axis configurations, respectively.
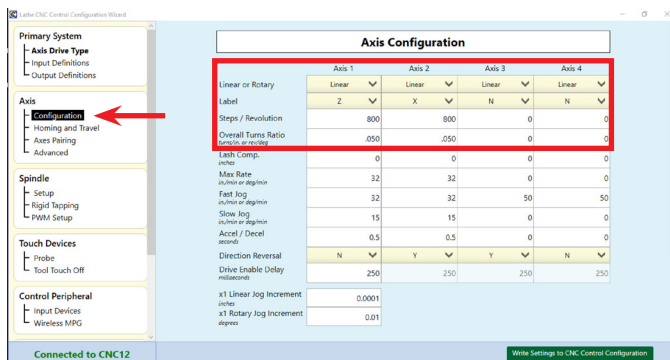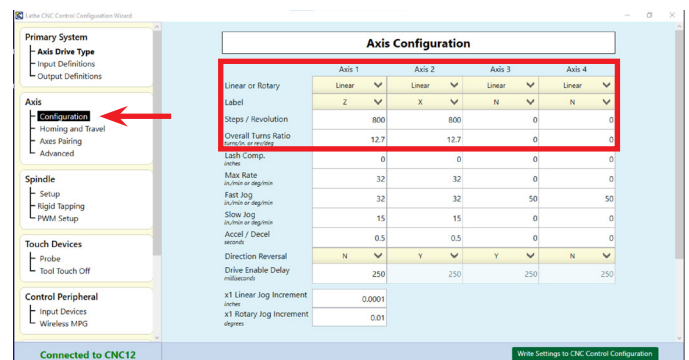

FIGURE 2—Axis configuration for leadscrew lathes.

FIGURE 3—Axis configuration for ball screw lathes.

2. **Homing Program**

FIGURE 4

3. **Homing Configuration**

FIGURE 5

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4. Software Travel Limits

FIGURE 6—Use the axis travel length for your machine.

5. Advanced Axis Configuration: These settings are needed when remapping the DB25 connector for use with a DB25 cable (see Figure 7).

FIGURE 7—The red numerals show the steps for mapping the DB25 connector: 1–Step and direction output set to DB25 Port. 2–Enable DB25 custom pin mapping.

You must remap the Acorn H6 port pin out to the Sherline driver box (P/N 8760) for use with a standard DB25 cable (See Figure 8).

FIGURE 8—DB25 connector remapping configuration for Sherline lathes using the 8760 driver box. This is where you reassign the pin mapping for the Acorn controller H6 pins to the 8760 controller pins (pins 4, 5, 8, and 9 are not used for this application).
Axis 1 (Z) pin 2=Dir 1, pin 3=Step 1
Axis 2 (X) pin 4=Dir 2, pin 5=Step 2

NOTE: *If a driver like the geckodrive 201X is used, it could be defined as any axis. In the case of the Sherline lathe, you would need 2 for the Z-axis and 1 for the X-axis*

6. Next, set the Advanced Axis Configuration to allow Axis Signal Inversion (see Figure 9).

FIGURE 9—Lathe stepper motor parameters: Z-axis is Axis 1, X-axis is Axis 2 for the lathe.

7. Spindle Setup: The Spindle Encoder has to be ON (Yes) to work with a mechanical encoder. Under Lathe Setup, select G98 for the Feed per Minute or Feed per Revolution default mode (see Figure 10).

FIGURE 10— The red numerals show the steps for the Spindle Setup: 1–Set the Spindle Encoder to "Yes." 2–Set the Feed per Minute... to "G98."

Acorn Configuration Settings for the Mill
Input Settings for Homing Switches

FIGURE 11—Mill CNC Control Configuration Wizard dialog box. Select Input Definitions under Primary System.

1. **Axis Configuration:** See Figures 12 and 13 for leadscrew and ball screw axis configurations, respectively.
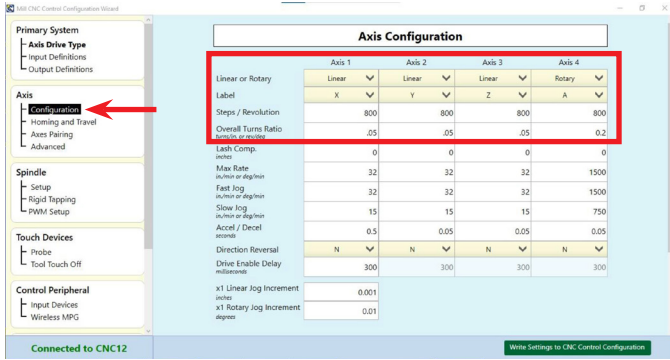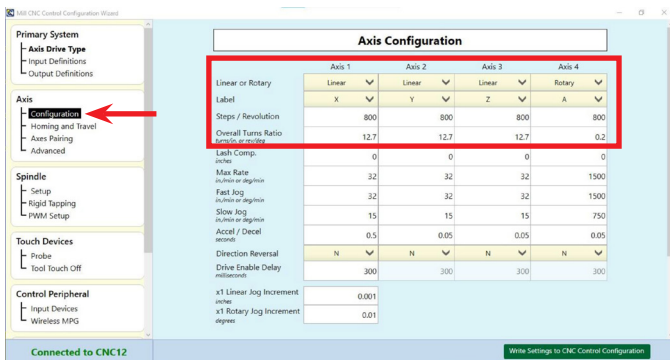

FIGURE 12—Axis configuration for leadscrew mills.

FIGURE 13—Axis configuration for ball screw mills.

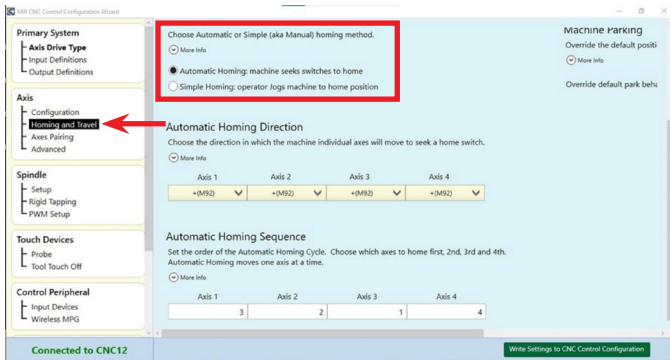2. **Homing Program:** The homing can be set to Automatic or Simple (AKA Manual) (see Figure 14).

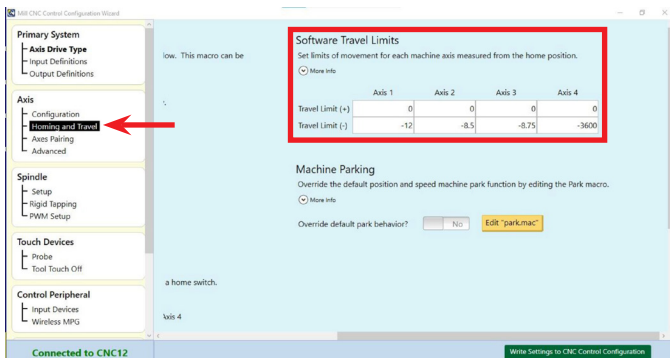FIGURE 14—Select the Automatic Homing button.

4. **Software Travel Limits**

FIGURE 15—Use the axis travel length for your machine.

5. **Advanced Axis Configuration:** These setting are needed when remapping the DB25 connector to 8760 driver box port (see Figure 16).
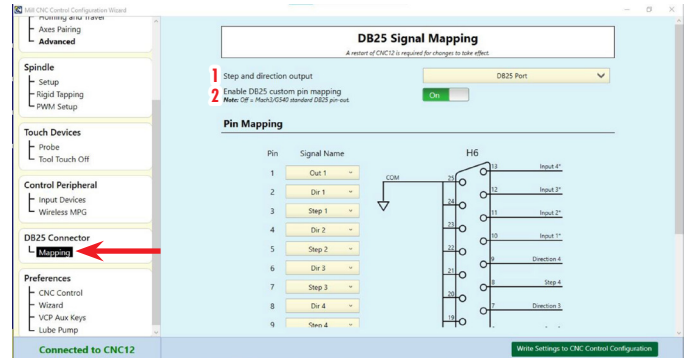

FIGURE 16—The red numerals show the steps for mapping the DB25 connector: 1–Step and direction output set to DB25 Port. 2–Enable DB25 custom pin mapping.

You must remap the Acorn H6 port pin out to the Sherline driver box (P/N 8760) for use with a standard DB25 cable (See Figure 17).
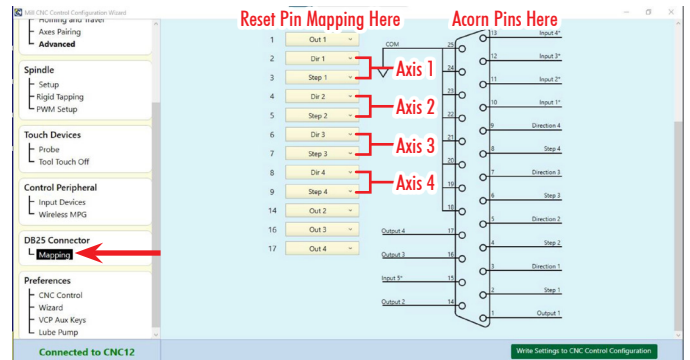

FIGURE 17—DB25 connector remapping configuration for Sherline mills using the 8760 driver box. This is where you reassign the pin mapping to allow the Acorn controller H6 pins to the 8760 controller pins.
Axis 1 (X) pin 2=Dir 1, pin 3=Step 1
Axis 2 (Y) pin 4=Dir 2, pin 5=Step 2
Axis 3 (Z) pin 6=Dir 3, pin 7=Step 3
Axis 4 (A) pin 8=Dir 4, pin 9=Step 4

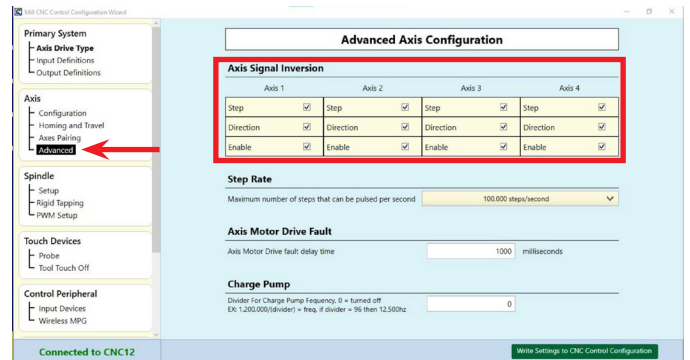6. Next, set the Advanced Axis Configuration to allow Axis Signal Inversion (see Figure 18).

FIGURE 18—Mill stepper motor parameters: X-axis is Axis 1, Y-axis is Axis 2, Z-axis is Axis 3, and A-axis is Axis 4.

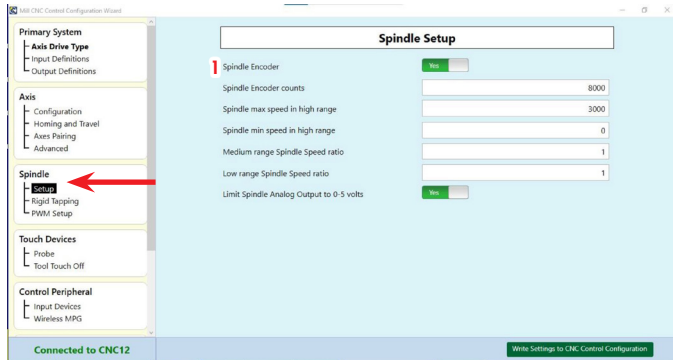**7. Spindle Setup:** The Spindle Encoder has to be ON (Yes) to work with a mechanical encoder (see Figure 19).

FIGURE 19—Set the Spindle Encoder to "Yes."

See Figure 20 for Acorn wiring configuration.

Required Parts for Spindle Speed Control

1. Spindle Control Isolator Board (P/N 94310)

   CLICK HERE for information regarding the Spindle Control Isolator Board.

   You will need to remove the Potentiometer (speed control knob) from the Sherline speed control. See the *Wiring the Isolator Board to the Speed Control PDF* for instructions on wiring the isolator board.

2. External Encoder for Acorn CNC Control (P/Ns 9402, 9404, and 9406)

   CLICK HERE for information regarding the External Encoder for the Acorn Controller.

   The External Encoder works with the Sherline/Acorn CNC Controller with a spindle control isolator board.

FIGURE 20