

Quick Start Guide Redline VFD and Spindle.



Spindle Break-In Procedure

Before First Use

Upon receiving your spindle, it is essential to complete the break-in procedure before engaging in any cutting operations. This step is crucial to ensure optimal performance and longevity. If the spindle is to be used in extreme climate conditions (it is recommended to use the spindle in a climate-controlled environment for the best performance), you may need to perform the break-in process again. Extreme temperature fluctuations can affect bearing lubrication, resulting in reduced performance or unusual sounds from the spindle.

Break-In Steps

After installing the spindle on your CNC router, remove the collet, collet nut, and any installed bits. Position the CNC gantry so that the spindle is in a safe location, avoiding potential hazards while running the break-in cycle.

The break-in procedure can be performed manually or using G-code commands.

Break-In Procedure:

1. Operate at 500 RPM for 20-30 minutes.
2. Increase the speed to 3,000 RPM for 20–30 minutes.
3. Increase the speed to 6,000 RPM for 20–30 minutes.
2. Increase the speed to 9,000 RPM for 20–30 minutes.
3. Increase the speed to 12,000 RPM for 20–30 minutes.
4. Increase the speed to 18,000 RPM for 20–30 minutes.
5. Finally, increase the speed to 24,000 RPM for 20–30 minutes.

For ease of use, the following G-code procedure is provided for input via MDI or as part of a G-code file:

MASSO

(File available here: <https://www.redlinecnc.com/files>)

M3; spindle rotate CW

S500; speed 500 RPM

G4 P1200000; pause 20 minutes (20 x 60,000 milliseconds)

S3000; speed 3k RPM

G4 P1200000; pause 20 minutes (20 x 60,000 milliseconds)

S6000; speed 6k RPM

G4 P1200000; pause 20 minutes (20 x 60,000 milliseconds)

S9000; speed 9k RPM

G4 P1200000; pause 20 minutes

S12000; speed 12k RPM

G4 P1200000; pause 20 minutes

S18000; speed 18k RPM

G4 P1200000; pause 20 minutes

S24000; speed 24k RPM

G4 P1200000; pause 20 minutes

M5; spindle stop

Each line will look as follows:

M3 S500 G4 P1200000

S3000 G4 P1200000

S6000 G4 P1200000

S12000 G4 P1200000

S18000 G4 P1200000

S24000 G4 P1200000 M5

VFD Programming Codes for MASSO

Your VFD has already been programmed, change the programming only if you have experience with programming VFDs.

Press the  **Program** button to enter the Function code Menu.
The flashing number or letter indicates the file currently selected.

Press the  **Increase** or  **Decrease** buttons to scroll through numbers 0-9.

Press the  **Monitor Data Scroll** button to toggle through the different code locations.

Press  the **Enter** button when the correct function is displayed

The number currently showing/flashing is the current setting saved into the VFD.

To change the number press the  **Increase** or  **Decrease** buttons to scroll to the desired number.

If multiple numbers are required, use the  **Monitor Data Scroll** button to toggle through the different code locations.

Press the  **Enter** button when the correct function is displayed.

At any time press the  **Program** button to return to the previous menu.

Verification Codes.

Memory Location	Description
F01.00=1	Keypad potentiometer setting
F01.04=00	X, X+Y
F01.05=400	Maximum Frequency of the Drive. 400Hz
F01.07=400	Max. Output Frequency
F01.09=400	Upper limit frequency
F02.00=2	Keypad run command channel
F02.01=032	Keypad potentiometer setting, Analog AI1 setting, No function
F02.02=0	Motor Direction Same = 1 Reversed
F03.00=6	Acceleration time
F03.01=6	Deceleration time
F05.04=400	Rated frequency of motor 1
F05.05=24000	Rated speed of motor1
F10.00=4	Run command sources shifted
F10.01=60	Display parameter setting 1 on run status
F10.04=7	Display parameter setting on stop status
F11.00=1	DI1 Forward
F11.01=2	DI2 Reverse
F11.13=0	WIRE CONTROL 1
F00.10=1	FACTORY Reset

Programming Table

Memory Location	Description
F01.05=400	Maximum Frequency of the Drive. 400Hz
F02.00=2	Keypad run command channel
F02.01=032	Keypad potentiometer setting, Analog AI1 setting, No function
F03.00=6	Acceleration time
F03.01=6	Deceleration time
F10.00=4	Run command sources shifted "S" key
F10.01=60	Display parameter setting 1 on run status