



MASSO: Changing from High-Speed to the Low-Speed/High-Torque Pulley Grooves

- 1. 99% of the time, you will use your headstock spindle in the High-Speed range and pulley groove.
- 2. Changing from High-Speed to Low-Speed/High-torque will be done mostly on the lathe or chucker lathe when you are cutting harder materials or need to use lower spindle speeds to avoid chatter or other problems.
- 3. The High-Speed pulley groove is the groove closest to the end of the spindle. The Low-Speed/High-Torque pulley groove is the groove closest to the headstock body shown below (See Figure 1).



FIGURE 1—The red arrow indicates the location of the low-speed/high-torque pulley groove.

- 4. To change the drive belt from the High-Speed to the Low-Speed, follow these steps.
 - A. Turn the controller off so there is no power to the optical encoder.
 - B. Disconnect the green optical encoder connector. We are disconnecting this so it will not get disconnected accidentally during the belt change process.

CAUTION: You must connect or disconnect the green optical encoder connector with the power off, or you will damage the optical encoder! (see Figures 2 and 3).



FIGURE 2—There is a tag on the encoder wires to remind you to turn the power off first before connecting or disconnecting the optical encoder.



FIGURE 3—Disconnecting the optical encoder wires.

C. Unscrew the speed control clamping screw (see Figure 4).



FIGURE 4

D. Raise the speed control housing up to gain access to the motor bracket adjustment screws (see Figure 5).





E. Loosen the two motor bracket adjustment screws (see Figure 6).



FIGURE 6—The red arrows show the locations of the two bracket adjustment screws.

- F. pull the motor towards the headstock pulley to gain some slack in the drive belt.
- G. Turn the headstock pulley and walk the drive belt off of both High-Speed pulley grooves on the headstock pulley and the motor pulley. Then, continue to turn the pulley to walk the belt onto the Low-Speed pulley grooves (see Figure 7).



FIGURE 7

H. Place a larger hex wrench between the motor bracket and the head of the first motor bracket adjustment screw. Then, using the hex wrench like a pry bar, force the motor away from the headstock to tighten the drive belt (see Figure 8).



FIGURE 8—The red circle indicates where to place a large hex wrench for leverage.

- I. While forcing the motor away from the headstock, tighten the two motor bracket adjustment screws.
- J. Place the lock-nut tab back in the belt cover slots (see Figure 9).



FIGURE 9—Location of the lock-nut tab.

- K. Lower the speed control housing. Align the locking screw with the tab, and tighten the locking screw.
- 5. With the power OFF, reconnect the green optical encoder connection. Be sure that all five pins are in the five female outlet holes (see Figure 10).



FIGURE 10—Reconnecting the optical encoder wires.

- 6. Now, change the Main Spindle Settings.
 - A. Click on F1 Setup.
 - B. Enter the password.
 - C. Double click on "Main Spindle" and the "Main Spindle Settings" box will open.
 - D. When the box opens, the "Maximum RPM (at 10 volts)" will be set at 2800 (see Figure 11).

MASSO G3 Lathe v5.03		Work Offset: G54 MPG AXIS: OFF			Optio	Optional Stop: On Jobs: 24585 7:0				
	E.9	F3 JOG & PROBING		F4 TOOLS & OFFSETS		F5 CONVERSATIONAL		F6 LOAD FILE		
Machine Settings	Inputs	Function	Invert	Status	📤 Outpu	its f	Function	Invert	Status	
General Settings	EStop	EStop	No	High	Spind	e	CW	No	Low	
Homing	Sncoder	Signal - A	No	Low	Spind	e	CCW	No	Low	
Main Spindle <			No	Low	Outpul	:1		No	Low	
Lubrication	Encoder	Index	No	Low	Outpul	2		No	Low	
Tool Changer	MPG	Dial Signal - A	No	Low	Output	3		No	Low	
X - Axis	MPG	Dial Signal - B	No	Low	Outpul	:4		No	Low	
Z - Axis	MPG	Select X	No	Low	Outpul	: 5		No	Low	
QR Scanner	MPG	Select V	No	Low	Outpul	:6		No	Low	
User Account	MPG	Select 7	Nn	Low	Outrul			No	Low	
Save & Load Settings	MPG	Main Spindle Sett	ngs					No	Low	
	MPG	Encoder (Pulses	Encoder (Pulses per revolution): 5					No	Low	
	MPG	Spindle Control						No	Low	
	MPG				O PWM			No	Low	
	MPG				STEP/DIR			No	Low	
	Analog						and Puck Clamp M10/M11			
	Analog	Maximum RPM (at 10 voits,		2800	5		No	Low	
	Input 1		Spin UP delay (milliseconds): 0					No	Low	
MASSO Serial No: 63-10154	Input 2	Spin UP delay (r						No	Low	
Core: v2:03 Software: v5:03 www.masso.com.au support@masso.com.au	Input 3	Spin DOWN dela	Spin DOWN delay (milliseconds): 0					No	Low	
	Input 4	Spindle Auto			No	Low				
	Input 5	Save Cancel								
Sherline Products USA CNC Machine www.sherline.com support@sherline.com 1=000-541-0235	Input 6									
	Input 7		No	Low						
	Input 8		No	Low						
	Input 9		No	Low	-					

FIGURE 11

E. Enter (1450) and click on "Save" (see Figure 12).

PIASSO G3 Lattle VS.03		rk onsec us4	PIPU AN	IS: UPP	op	cional 5	top: on Jous: 2.	+303	7.01 MPI
F1 SETUP PRI	F2 OGRAM & MDI	F3 JOG & PROBING		F4 TOOLS & OFFSETS		5 CC	F5 INVERSATIONAL	F6 Load file	
Machine Settings	Inputs	Function	Invert	Status	📤 Ou	tputs	Function	Invert	Status
General Settings	EStop	EStop	No		Sp	indle	CW	No	Low
Homing	Encoder	Signal - A	No	Low	Sp	indle	CCW	No	Low
Main Spindle	Encoder	Signal - B	No	Low	Out	put 1		No	Low
Lubrication	Encoder	Index		Low	Oul	put 2			Low
Tool Changer	MPG	Dial Signal - A	No	Low	Oul	put 3		No	Low
X - Axis	MPG	Dial Signal - B	No	Low	Oul	put 4		No	Low
Z - Axis	MPG	Select X	No	Low	Ou	put S		No	Low
QR Scanner	MPG	Select Y	No	Low	Oul	put 6		No	Low
User Account	MPG	Select 7	Nn	Low	Out	mut 7			Low
Save & Load Settings	MPG	main spinule setu	ngs						Low
	MPG	Encoder (Pulses per revolution): 5						No	Low
	MPG	Spindle Control I		O VED			No	Low	
	MPG				O PWM				Low
	MPG	Ō				IR		Low	
MA550 Serial No: G3-10154 Core: v2.03	Analog	Mauriau an DDM/		1450		11 No	Low		
	Analog	maxiniani Kerei (1420		<u> </u>	No	Low	
	Input 1						No	Low	
	Input 2	Spin UP delay (miliseconds): 0						No	Low
	Input 3	Spin DOWN delay (milliseconds): 0					No	Low	
Sortware: V5.U3 www.masso.com.au	Input 4	Spindle Auto Stop/Resume on Feedhold						No	Low
support@masso.com.au 📒		 50	we	C	ancel				
Sherline Products USA CNC Machine www.sherline.com	Input 6								
	Input 7		No	Low					
	Input 8		No	Low					
1-800-541-0735	Input 9			Low	-				

FIGURE 12

7. You will now have an actual, usable RPM range of approximately 70 to 1,300, with substantially higher torque.

Thank you, Sherline Products Inc.