

Steps to programming a controller for a Milling Machine:

Program the correct hydraulic type for your machine and make sure that depressing the up arrow on the controller will move the machine up and depressing the down arrow will move the machine down.

Note. If your machine will not move or the raise and lower are backward then take the following steps:

- a. The default value of the controller for the valve current may need to be increased for the machine to move.
- b. Make sure that there is not a cylinder shut off that is closed.
- c. Double-check the Hydraulic setting of the controller to match the machine.

Note. If your machines raise and lower are backward then take the following step:

- a. By swapping the connectors at the valve you will change the raise and lower.

With the above steps complete and you can raise and lower the machine you can now start to program the valve speeds of the machine.

Steps to setting Valve Speeds:

1. Enter the Technicians menu of the controller and go to the Min Up value. Refer to page two for this procedure.

The standard parameter menu can be called up from the working menu only.

Therefore:

First switch over to the operator menu by pressing the A/M key and the ENTER key at the same time.



Hold on the ENTER key for 3 seconds until „PA“ is indicated.



Hold on for 3 seconds



Within the next 3 seconds the key sequence:

- 1) - ENTER key
 - 2) - DOWN key
 - 3) - UP key
- has to be pressed.



Note.

After step 3 is complete you will see HYD in the Display. By depressing the blue button you will go to the Min Up symbol.

( _C) Min UP Current

( _C) Min DOWN Current

( _C) Max UP Current

( _C) Max DOWN Current

2. With the Min Up value in the display, lower this down to its lowest number. Then depress the blue button once and it will go to the Min Down value and lower this number as well. After this is complete depress the A/M button until you are at the working display.
3. Lower the machine so that the Drum is about 3" off the ground, even across and your end gate is flat on the ground.
4. Connect a grade sensor and for this exercise we will pick the wire rope.
5. Zero your sensor by depressing the Blue button on the controller and the display should read 0.0
6. Put the controller in automatic by depressing the A/M button. At this time you should have 0.0 in the display and the Automatic light should be illuminated.
7. Depress the up arrow two times until the display reads 0.2. At this time you should have a flashing up arrow with the machine **Not Moving Up**.
8. While the controller is in automatic, enter the Technicians menu and go to the Min up value and raise the number slowly until the machine goes to grade.
 - a. At this time you should still have Min Up in the display and you can now depress the Blue button and go to the Min Down value.
9. By using the manual switch for the front leg, just bump the switch to make the machine go up and the Controller will flash a down arrow.
10. Increase the Min Down value slowly until the machine moves to grade and stops.
11. Jog the manual switch up and it should come to grade. Jog the manual switch down and the machine should come to grade. If it still flashes a little then just increase the value one or two until it goes to grade and repeat this step.

Adjusting the Max Up and Max Down.

For a good starting point for Max Current Speed add 10-15 to the Min current for example, if you have a Min Up value of 20 then you would set your Max UP to 30 - 35.

After confirming steps 3,4,5 and 6 proceed to the next step.

12. With the Manual switch drop the machine down about 1.5" to 2" and watch the speed of the machine.

- a. If it is too slow then leave the controller in automatic and go to the Technicians Menu, refer to the Max Up value and add another 5 to 10. Stay in the Max Up and repeat step 12.

Note.

If it is too fast then drop your numbers another 5 to 10.

- b. Once you are getting close to the speed that you want drop down to steps of 5 until you like what you see and there is **No Over Shooting**.
- c. Your Machine should start moving as soon as the manual switch is released. The machine should Accelerate up, then start Decelerating to grade and stop at the **On Grade Symbol**.
- d. Once the up side is good, go to the Max Down by depressing the Blue button and proceed to 13.

13. With the Manual switch raise the machine Up about 1.5" to 2" and watch the speed of the machine.

- a. If it is too slow then leave the controller in automatic and go to the Technicians Menu, refer to the Max Down value and add another 5 to 10. Stay in the Max Down and repeat step 13.
- b. Once you are getting close to the speed that you want, drop down to steps of 5 until you like what you see and there is **No Over Shooting**.

- c. Your Machine should start moving as soon as the manual switch is released. The machine should Accelerate Down, then start Decelerating to grade and stop at the **On Grade Symbol**.
- d. Once the Down side is good, depress the A/M button until you return to the working display.

14. With the above steps complete you are ready to get the machine in the cut. A great help in knowing that you have tuned this machine correctly is watching the lights on the controller while the machine is cutting.

- a. You should see the **On Grade Symbol** most of the time **with a flashing up or down arrow**.
- e. If you see a lot of flashing in one direction or both then leave it in Automatic, go to the Technicians menu and adjust your Min up or Min down 1 - 2 and see if this helps.
- f. After your changes depress the A/M button and return to the working display keeping in mind that the Automatic light should still be illuminated.