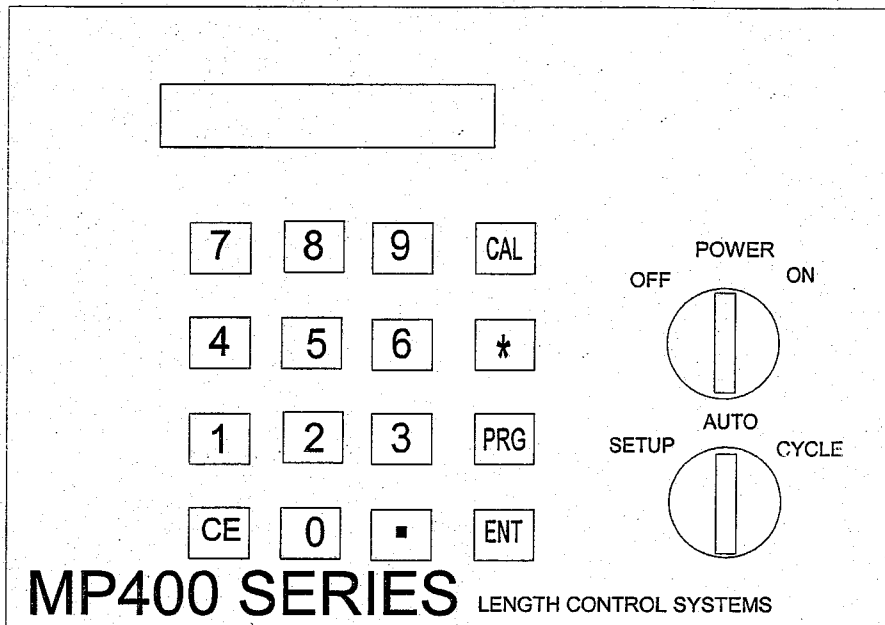


AMS Controls Model MP401



Front Panel Selector Switches

POWER OFF / ON

This switch will turn the controller on and off.

SETUP / AUTO / CYCLE

Select the SETUP position to make adjustments to the press. The press will activate and stay at the bottom of the stroke until the selector switch is returned to the AUTO position.

Select the AUTO position to produce programmed parts.

Select the CYCLE position to manually activate the press. The signal to activate the press will remain on for the programmed

press dwell time. (Refer to the calibration section for further details).

Keypad

Press the CAL (Calibration) key to configure the MP401 Length Controller to your machine. The calibration procedure will ensure accurate length parts. Refer to the Calibration section for further details

Press the (*) "asterisk" key to display the value in the footage totalizer. Press the CE key to clear or to reset the totalizer to zero.

Press the PRG key to program a job in response to the flashing prompts for the Quantity and Length. (Refer to the Programming Instructions section for further details).

Press the ENT key to enter or store the values programmed for the Quantity, and Length.

Press the CE (Clear Entry) key to clear or erase an entry.

Calibration Parameters

Procedure

When the MP401 is installed, the following calibration parameters must be programmed to configure the controller for your machine.

Press the CAL key to display the Calibration Parameters. Press the ENT key to store the programmed value, or to step through these parameters. Press the PRG or (*) key to exit the calibration.

Units

Enter the desired unit of length. Press the "5" key to toggle between INCHES and mm (Millimeters). Press the ENT key when the desired unit is displayed.

Counts / Rev

Enter the number of counts or pulses generated by one revolution of the encoder shaft. Enter 256 when using the AMS Model 256 encoder. The selectable range is between 100 to 1000 cts.

Dist. / Rev

Enter the distance traveled with one revolution (or the circumference) of the encoder measuring wheel. The range is 1 to 20 in.

Trim

Enter the calculated TRIM percentage to produce accurate lengths. The TRIM parameter compensates for the difference between the programmed length and the actual measured length. The acceptable range is between 90% and 110%.

TRIM procedure: 1) Run several lengths, as long as possible. 2) Carefully measure each part. 3) Calculate the average length. 4) Use the average length to calculate the TRIM percentage with the following formula:

$$\text{TRIM Percentage} = \frac{\text{Programmed Length}}{\text{Average Length}}$$

IMPORTANT!! If the displayed TRIM percentage is not 100.00 % when the above TRIM procedure is run, you must multiply the old TRIM percentage by the newly calculated TRIM percentage, and enter this value for TRIM.

Crop

On some machines, it may be necessary to do an "on-the-fly" trim cut when a new coil is loaded, to produce a good first part. The MP401 will automatically crop-cut the length programmed for the CROP parameter, when the display reads "READY (AUTO CROP)" after a job has been programmed.

When the RUN button is pressed, this automatic crop-cut will occur whenever power is first applied to the MP401 and the press has been manually cycled (by turning the front panel selector switch to the CYCLE position), or when the programmed length is shorter than the length of material past the shear. The MP401 will not cut a CROP length between jobs unless one of the two previous conditions has occurred.

Enter a CROP length (if desired), for your machine. If the first piece of a job produced, after a new coil has been loaded, is

longer than the others, increase the CROP length. If the first piece of a job produced, after a new coil has been loaded, is the same length as the others, decrease the CROP length to minimize scrap. You may enter a length from 0 to 999.999 inches.

Dwell

Enter the length of time (DWELL time) that the shear output signal should remain on, to activate your cutoff press. The DWELL time should be as short as possible, to maximize productivity and extend the life of the press. If, however, the shear does not cut through the material, increase the DWELL time. Any DWELL time from 0 to 99 seconds will be accepted.

Kerf

Enter the width of the kerf (or slug) removed by the cutoff die. If no slug is removed (as in the case of shears that have a cutting action similar to a pair of scissors), enter a KERF value of zero. A KERF from 0 to 999.999 inches is accepted.

Direction

Enter the proper direction to produce positive counting on the MP401 display when the encoder wheel is turned in the direction of the metal flow. Press the "5" key to toggle the display between CW (Clock Wise) and CCW (Counter Clock Wise). Press the ENT key when the desired direction is displayed.

Erase Code

Enter 1984 (press 1, 9, 8, 4, and the ENT key) to erase the memory in the MP401 controller, including the job programmed and the Calibration Parameters.

Sometimes severe thunderstorms or power surges will cause the MP401 memory to be lost or altered, resulting in erratic controller operation. If this is suspected, erase the memory, and then reprogram the Calibration Parameters.

IMPORTANT!! Keep a record of your Calibration Parameters so they can be easily reprogrammed if you should have to erase the memory.

Job Programming

Procedure

Press the PRG key to program a job, in response to the flashing prompts for the quantity and the length. The following example explains how to program a job of 25 pieces, 36.50 inches long.

Press the PRG key. "QUANTITY" will flash.

Press the 2 key.

Press the 5 key.

Press the ENT (Enter) key.

After the quantity is programmed, "LENGTH" will flash.

Press the 3 key.

Press the 6 key.

Press the (•) key.

Press the 5 key.

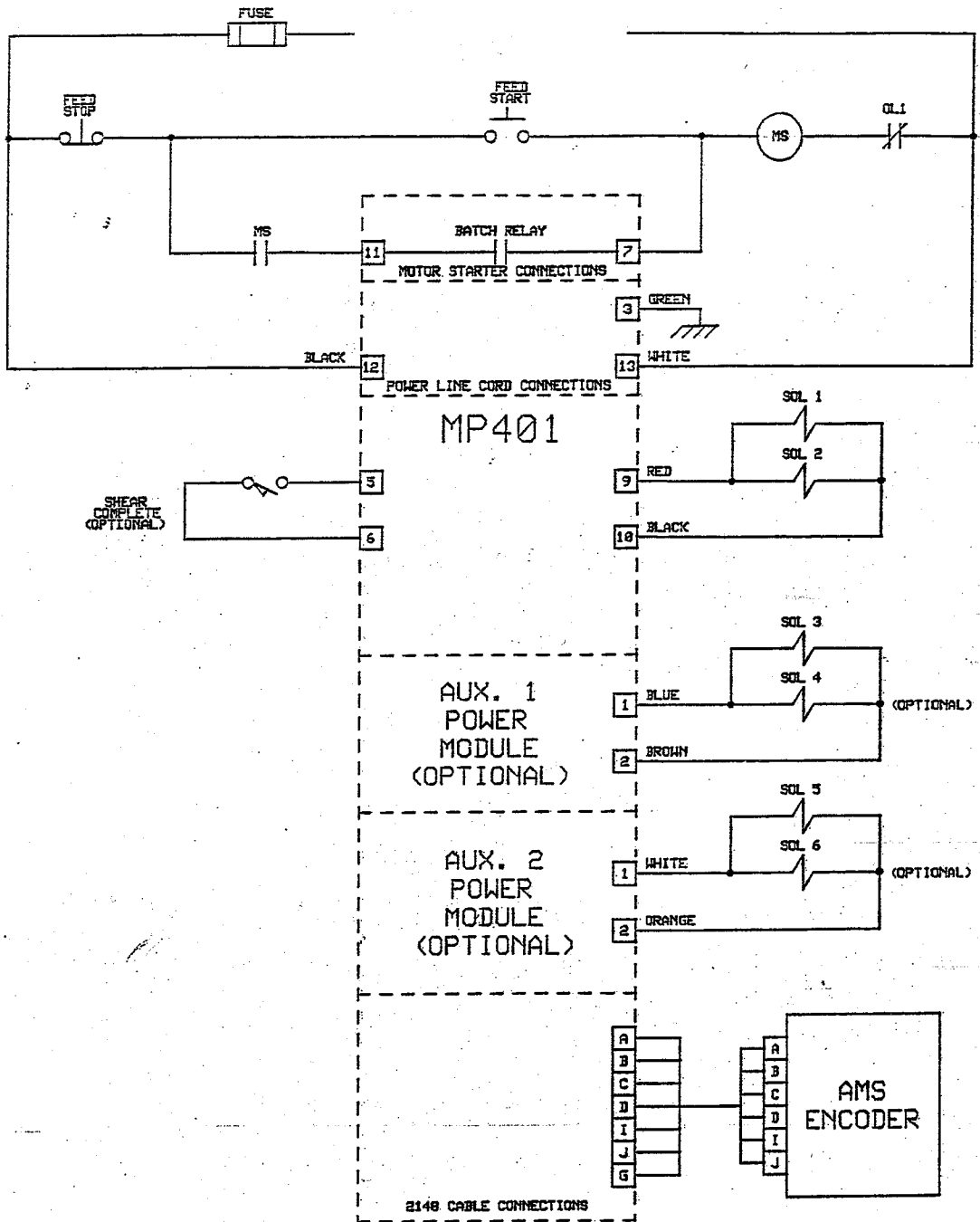
Press the ENT key.

Notice that it is not necessary to enter any trailing zeros to the right of the decimal point. If a programming error is made before the ENT is pressed, press the CE (Clear Entry) key to start over. If a programming error is detected after the ENT key has been pressed, simply press the PRG key to reprogram the job.

After the length has been programmed, the display will show the programmed quantity and length on the top line, and "READY TO RUN" on the bottom line. [Refer to CROP section of the Calibration Parameters, on page 3, if the display reads "READY (AUTO CROP)" after a job has been programmed]. When the user installed RUN button is pressed, the MP401 will produce parts according to the programmed quantity and length.

While the machine is producing the programmed job, the MP401 will display the programmed quantity and length, on the top line. The bottom line will display the quantity remaining and the length of the material that is past the shear.

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