

MC-60
MC-60M
MC-64
MC-67

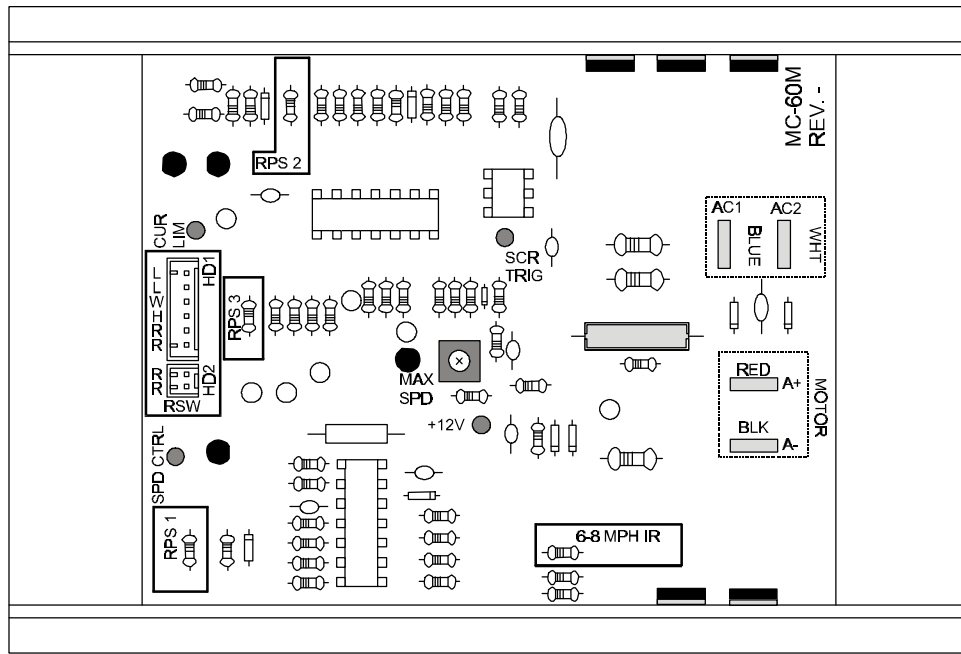
These SCR motor controllers are physically identical. The only difference is in the components used to allow a higher Current Limit on the MC-64 and a lower Current Limit on the MC-67. The MC-60M controller is a variation of the MC-60 controller that allows a single wire harness to carry signals between the console and controller. The treadmill's reed switch plugs into the controller, then the tach signal from the reed switch and the speed control signal are sent to the console.

These controllers can be configured to operate at different speeds and with various consoles by clipping one or more resistors on the controller. Configuring the controller is done at the factory and should not be attempted in the field.

Clipping a resistor changes the part number of the controller. Always be sure to order the controller configured correctly for the Model number treadmill you are working on by referencing the model number's part list.

A new feature of these controllers is four troubleshooting LEDs that can be used to troubleshoot the controller when repairing a treadmill. They indicated when the controller is receiving the expected control signals and outputting the required voltages. Each LED is displayed below:

- D6- Labeled SCR. Indicates that the SCR is triggering on the controller. If this light is out, no voltage will be sent to the motor. Note that this LED will vary in brightness, depending on the speed setting. If this LED does not light when the safety key is inserted and D7 is lit (indicating a speed setting other than zero MPH), the controller will need to be replaced.
- D7- Labeled SPD CTRL. This LED indicates that the controller is receiving a speed signal from the console. Note that on consoles without a power board that use a speed pot, the LED will light solidly, but vary in intensity at different speed settings. On consoles that use a power board, the LED will flicker with the PWM control signal. The brightness of the LED will vary with the speed setting. *NOTE: On consoles with speed potentiometers that require a power board, this light may be seen to flicker even when speed is set to zero MPH. This is due to a small signal being sent from the console. MC-60 controllers with this console and power board configuration will have RPS 1 clipped to operate normally and keep the treadmill from running at all times.* If this LED is not lit when the speed is set above zero MPH, but D11 is, it indicates a problem with the console, power board, or wire harness.
- D11- Labeled +12V. This LED indicates that the controller is outputting 12 VDC at the H spade connector. It should be lit at all times the controller is receiving voltage. If this LED does not light when the controller is receiving AC voltage, the controller will need to be replaced.
- D16- Labeled CUR LIM. This LED lights ONLY when the amperage draw of the treadmill is nearing the current limit setting. If this LED lights frequently, it indicates a worn walking belt or board, or that the walking belt or drive belt is too tight.



Controller Voltages

Seven spade connectors are used to connect the controller to the rest of the treadmill. They are described below:

- AC1- BLUE wire. 120 VAC High from the power cord or power board.
- AC2- WHITE wire. 120 VAC Neutral from the power cord or power supply
- A+ RED wire. 0-120 VDC to the motor. Voltage level depends on the current speed setting.
- A- BLACK wire. Ground wire for the motor and motor choke.
- H- RED wire. High supply voltage for the speed control signal of 12 VDC.
- W- WHITE wire. Wiper on potentiometer. 0-12 VDC depending on the current speed setting.
- L- BLACK wire. Low potentiometer. Ground wire for speed control voltage.

Configuration

The controller is configured at the factory to operate at different speeds and with different consoles. Four resistors are used to configure the controller. They are labeled RPS1, RPS2, RPS3, and 6-8 MPH. The function of each resistor is described below:

RPS1- Clipping this resistor causes the controller to operate in the same manner as the older 101757 and 108580 controllers.

This allows the controller to operate with older opto-isolators on some power boards.

RPS2- Clipping this resistor lowers the Current Limit (CL) setting of the controller by approximately 2 amps.

RPS3- Clipped only for use with older treadmill consoles programmed specifically to work with the MC-30. Clipping this resistor allows the speed to be increased without first having to press another button on the console. **This resistor must not be clipped under any other circumstances.**

6-8 MPH- Clipping this resistor changes the IR Compensation from a 15 KV motor constant to a 17.6 KV motor constant. This allows the use of motors of different specifications.