

SERVICE MANUAL

Model 1090, Model 1092,
Model 1093, Model 1095,
Model 1185, Model 2500,
Model 2510, Model 2520 &
Model 2703



An ISO-9001
Certified Company

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1.0 SCOPE

This manual covers Fuse Replacement and Power Line Voltage Settings for Patton Models 1090, 1092, 1093, 1095, 1185, 2500, 2510, 2520 and 2703.

WARNING! Only Service Personnel are to access the area inside the plastic shield marked with the electric shock symbol. (See 1.1 below.)



1.1 DEFINITION OF SERVICE PERSONNEL

Service Personnel are defined as persons who have the appropriate technical training and experience necessary to **(A)** perform tasks in the SERVICE ACCESS AREA of the equipment, and **(B)** be aware of hazards to which they are exposed in performing a task, and of measures to minimize the danger to themselves or other persons.

2.0 SERVICE PROCEDURES

This section describes the procedures for Power Line Voltage Settings and Fuse Replacement for **Patton Models 1090, 1092, 1093, 1095, 1185, 2500, 2510, 2520 and 2703**. **Note:** These procedures apply generally to all products listed above, which (products) will henceforth be referred to as “the unit”.

2.1 PROCEDURE FOR POWER LINE VOLTAGE SETTING

WARNING! When you change the voltage setting, you may have to remove the fuse and replace it with a fuse of a different value. (The proper fuse rating is marked on the board near the fuse holder.) Operating this equipment with the wrong fuse rating may result in a fire.

- A. Switch the unit OFF.
- B. Remove the power plug from the AC wall outlet.
- C. Remove the power plug out of the rear of the unit.
- D. Switch the unit ON and verify that none of the front panel status indicators are lit. Switch the unit OFF.
- E. Remove the metal screws located on the rear panel bottom left and bottom right. **DO NOT DISCARD THE SCREWS**. Gently slide the PC board and the rear panel out from the metal enclosure.
- F. Remove the nylon screws that hold the clear plastic shield in place. Lift off the plastic shield. **DO NOT DISCARD THE SCREWS OR THE PLASTIC SHIELD**.
- G. With a flat blade screw driver, gently select the voltage to the desired setting.
- H. Look at the fuse rating shown on the label near the fuse holder. The required rating is different for the new voltage setting you have just selected, change the fuse. (See Section 2.2, Step G.)
- I. Reinstall the plastic shield so that all of the holes line up with the stand-offs. Reinstall the nylon screws. **DO NOT OVERTIGHTEN THE NYLON SCREWS!**
- J. Line up the PC board with the 2 slots located on the rear panel bottom left and right. Gently slide the PC board/Rear panel

assembly back into the enclosure. Proper installation has been achieved when the all of the indicators and switches are aligned at the front panel and the rear panel bezel is fully mated into the enclosure. **DO NOT FORCE THE UNIT INTO THE ENCLOSURE. THIS USUALLY INDICATES THAT THE PC BOARD WAS NOT INSERTED INTO THE 2 SLOTS PROPERLY.**

- K. Reinstall the two metal screws that were removed as instructed in Step E, above.
- L. Inspect the label on the bottom of the unit. A new label must be added to indicate that the unit is now configured for the new operating voltage.
- M. **BEFORE CONNECTING THE POWER CORD, VERIFY THAT THE LINE VOLTAGE IS WITHIN THE VOLTAGE RANGE SPECIFIED FOR THE UNIT. THIS RATING IS STATED ON THE LABEL ON THE BOTTOM OF THE UNIT. AN IMPROPER LINE VOLTAGE CONNECTION MAY RESULT IN DAMAGE, IMPROPER FUNCTIONING, OR BOTH. INSTALL THE CIRCUIT POWER CORD ACCORDING TO THE OPERATORS' MANUAL INSTRUCTIONS.**

2.2 PROCEDURE FOR FUSE REPLACEMENT

Steps A to F and J to N in the instructions below apply to all models. Step G is different for the Model 2703 than for the other models.

(Steps A TO F are for all units)

- A. Switch the unit OFF.
- B. Remove the power plug from the AC wall outlet.
- C. Remove the power plug out of the rear of the unit.
- D. Switch the unit ON and verify that none of the front panel status indicators are lit. Switch the unit OFF.
- E. Remove the metal screws located on the rear panel bottom left and bottom right. **DO NOT DISCARD THE SCREWS.** Gently slide the PC board and rear panel out from the metal enclosure.
- F. Remove the nylon screws that hold the clear plastic shield in place. Lift off the plastic shield. **DO NOT DISCARD THE SCREWS OR THE PLASTIC SHIELD.**

(Step G is for Models 1090, 1092, 1093, 1095, 1185, 2500, 2510 and 2520.)

- G.) With a flat blade screw driver, gently pry off the fuse cover. DO NOT DISCARD THIS COVER! Pull out the fuse. Replace the fuse and reinstall the fuse cover.

WARNING! Replace the fuse only with one that has the correct voltage and current rating for the voltage setting of the unit (the proper fuse ratings is marked on the board near the fuse holder). Replacing the fuse with one having an incorrect rating can result in a fire!

(Steps H and I are for Model 2703.)

- H.) With a flat blade screw driver, gently turn the movable section of the fuse cartridge holder counterclockwise. The spring action should push out the fuse.

WARNING! Replace the fuse only with one that has the correct voltage and current rating for the voltage setting of the unit (the proper fuse rating is marked on the board near the fuse holder). Replacing the fuse with one having an incorrect rating can result in a fire!

- I.) After inserting the correct fuse in the fuse cartridge holder, re-insert the movable section of the fuse cartridge holder with the new fuse into the fixed section of the fuse holder. Gently push and rotate clockwise while pushing until some resistance is felt and the cover is aligned with the fuse holder.

(Steps J to O apply to all units.)

- J.) BEFORE CONNECTING THE POWER CORD, VERIFY THAT THE LINE VOLTAGE IS WITHIN THE VOLTAGE RANGE SPECIFIED FOR THE UNIT. THIS RATING IS STATED ON THE LABEL ON THE BOTTOM OF THE UNIT. AN IMPROPER LINE VOLTAGE CONNECTION MAY RESULT IN DAMAGE, IMPROPER FUNCTIONING, OR BOTH. INSTALL THE CIRCUIT POWER CORD ACCORDING TO THE OPERATORS' MANUAL INSTRUCTIONS.
- K.) Reinstall the plastic shield so that all of the holes line up with the stand-offs. Reinstall the nylon screws. DO NOT OVERTIGHTEN THE NYLON SCREWS!

- L.) Line up the PC board with the two slots located on the rear panel bottom left and bottom right. Gently slide the PC board/rear panel assembly back into the enclosure. It is properly installed when the all of the indicators and switches are aligned at the front panel and the rear panel bezel is fully mated into the enclosure. DO NOT FORCE THE UNIT INTO THE ENCLOSURE. THIS USUALLY INDICATES THAT THE PC BOARD WAS NOT INSERTED INTO THE TWO SLOTS PROPERLY.
- M.) Reinstall the two metal screws that were removed as instructed in Step E, above.
- N.) Reinstall the power cord according to the Operator's Manual instructions.

3.0 REPLACEMENT FUSES

The following replacement fuses are available directly from Patton Electronics. You may also use the reference part numbers to order directly from the manufacturer.

Patton Part Number	Part Description
Patton Models 1090, 1092, 1093, 1185, 2500, 2510, 2520, 2703 and 2703-X21 (120/230V switch-selectable units)	
08242.....	Fuse 5x20mm, 100mA, 250V, Time-lag <i>Littelfuse P/N 218.100</i>
Patton Models 1090-DC, 1090-UI, 1092-DC, 1093-DC, 1095-DC, 1095-UI, 1185-DC, 2703-DC, 2703-UI, 2703-UI, 2703-X21-DC and 2703-X21-UI:	
0821R2.....	Fuse 5x20mm, 200mA, 250V, Time-lag <i>Littlefuse P/N 239.200</i>

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