

INSTALLATION INSTRUCTIONS
FOR
MERIT CONVERSION KITS



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INTRODUCTION

Conversions should be done by qualified personnel only. Proper and trouble-free operation of this kit depends on good mechanical and electrical connections. Be sure to solder or crimp all wires firmly to prevent interference from other parts. Merit Industries does not assume any responsibility for any damage caused by the improper installation of this kit. Merit Industries, Inc. will not assume any liability for any use other than the intended use of this product.

1.1 REQUIREMENTS FOR CONVERSION

- A surface inside the game at least 22" x 16" to mount the circuit board wood and harness assembly.
- A power supply able to deliver the following voltages:
 - 110 Volts A.C., isolated for the monitor
 - +5 Volts D.C. at 7 Amps, regulated
 - +12 Volts D.C. at 1 Amp, regulated
- A horizontally-mounted color monitor with TTL R.G.B. inputs and positive horizontal and vertical sync.

If your game has these requirements, then skip Preparatory Steps.

1.2 PREPARATORY STEPS

1. If you do not have a large enough mounting area, the components of the circuit board wood and harness assembly may be removed and remounted individually inside the cabinet.
2. If the existing supply does not deliver the proper voltages, power supplies are available from Merit or other parts distributors.
3. If your monitor is other than positive sync., see page #4.

1.3 PREPARING THE OLD GAME FOR CONVERSION

WARNING

EXTREME CAUTION SHOULD BE EXERCISED WHILE HANDLING THE MONITOR. INJURIES CAN BE CAUSED BY HIGH VOLTAGE SHOCK OR TUBE IMPLOSION.

1. Unplug unit from the wall receptacle. Remove old boards, switches, marquee glass and harness from the cabinet. If the power supply does not deliver the voltages listed in Section 1.1, remove it.
2. Peel off the existing front panel overlay, if possible, and clean the surface of old glue or dirt. Wipe the surface with alcohol solvent. The surface must be clean, smooth and free from grease for the new overlay to adhere properly.

3. If your current monitor glass does not have a suitable design on it, you may wish to replace it using the parts supplied in the kit and a new sheet of plexiglass purchased from a hardware store.
 - 3a. Supplied in the kit is a monitor painting mask. Use a pair of scissors and cut on the line corresponding to your monitor size.
 - 3b. Determine where the monitor opening should be located (lay the new glass over the old).
 - 3c. Start at one edge and apply the mask. Be sure the edge of the mask has been firmly applied or paint may creep under it and you will not get a clean, sharp line.

Note: This is a removable adhesive, but if left on too long it may become difficult to remove.

- 3d. From the back, spray paint the entire glass. We suggest a flat black ENAMEL paint (lacquer paint may distort the surface of the glass or attack the adhesive). It is best to apply two light coats rather than one heavy coat.
- 3e. When dry, remove only the monitor area mask.
- 3f. Reinstall the glass in the cabinet.

1.4 INSTALLATION STEPS

1. Install the circuit board wood assembly inside of the game using the four screws supplied.
2. Determine the area where the push buttons should be mounted on the control panel. Use the template's vertical center line to center the template over the area. Make sure that the top and bottom edges of the template are parallel to the top and bottom edges of the front panel. Leave at least 1 - 3/4" from the centers of top holes to the top edge of front panel for harness clearance. Mark the centers with a center punch and drill the front panel with drill bits of sizes specified on the template. Some holes may require the use of a hole saw, circle cutter or chassis punch. See page 5 for proper button layout.
3. Peel off the backing from the control panel overlay. Carefully position the overlay on the front panel, and press the film down to eliminate air bubbles. This is a pressure sensitive adhesive; DO NOT press firmly until you are sure of the location.
4. Cut and remove the excess material from where the buttons will be mounted.

NOTE: CUT AND INSTALL CLEAR PLEXIGLAS IF THERE ARE PREVIOUSLY UNUSED HOLES THAT NEED TO BE COVERED.

1.5 FRONT PANEL ASSEMBLY

Depending upon the kit you ordered, you will have either a 7-button or a 9-button control panel harness assembly. Refer to Figure 3, which shows the button layout for either type of assembly. Refer to page 5 for specific button layouts.

1. Assemble the switch panel using the buttons provided with the kit. Follow game instruction manual for order and position of buttons or controllers.
2. Locate the small wiring harness. One end has a 24-pin connector, the other ends have a push-on type connector.

Note: The switch harness has tags attached to it. They mark the left and right hand side of the cabinet as seen from the front. Connect the front panel harness to the push button assemblies as shown in Fig. 1.

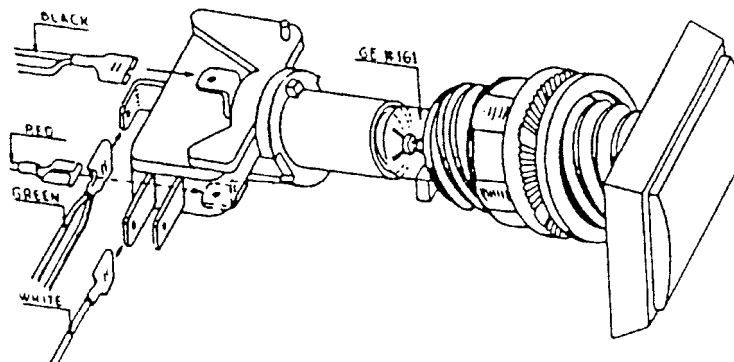


Figure #1.

3. Four connectors (a white wire, a black wire, a pair of green wires and a red wire) go to each push button assembly. The green wire goes to "common" (C) blade of the micro switch, the white wire goes to "normally open" (NO) blade, the black wire goes to one side of the light bulb blades and the red wire to the other side. Wire each switch in a similar manner.
4. If retaining the existing power supply, wire the power supply as shown in Figure 3. The six wires are configured as follows:

White - +5V DC ----+
 Blue - +12V DC ---Power Supply Connections
 Green - Logic Gnd ----+

Black - 115VAC Line ----+
 White - 115VAC Neutral ---AC Connections
 Green - Gnd ----+ (VLamp transformer)

The six pin harness power connector is configured as follows:

pin #1 - +5 Volts	pin #2 - ground
pin #3 - ground	pin #4 - +12 Volts
pin #5 - VLamp 1	pin #6 - VLamp2

5. Locate wires to be connected to the coin mechanisms. The wires are marked as "CM-1" and "CM-2" (coin mechanism 1 and 2). Connect the coin switch wires using "C" and "NO".

Note: If the game has more than two coin mechanisms, jumper the wires in parallel to the extra switches.

6. If coin meters are being used, there are (2) connectors (red and black wiring) provided in the main harness. The coin meter(s) should be +12VDC and wired to connector(s) without any reference to polarity. A safety diode is already incorporated on the CRT-250 p.c. board. One connector is for coin mech #1 and the other for coin mech #2.

NOTE: ALL MERIT PRODUCTS HAVE ELECTRONIC BOOKKEEPING. SEE MANUAL FOR YOUR PARTICULAR GAME'S BOOKKEEPING SECTIONS.

7. Locate the twisted black and white speaker wires and solder the white wire to the "+" terminal and the black wire to "-".
8. Locate the wires to be connected to the monitor. The wires for the video signals are color coded as follows:
 - RED for red video signal
 - GREEN for green video signal
 - BLUE for blue video signal
 - GREEN w/YELLOW for ground
 - BROWN for + Vertical sync.
 - WHITE for + Horiz. sync.

They are also imprinted RED, GRN, BLUE, GND, VERT, HORIZ.

9. Identify the pinout of the video signals connector on your monitor. Insert the pins of the video signal wires in the connector. The video connector supplied with the kit is the most common type. If your monitor does not use the type supplied, purchase a new one or reuse the old one.
10. Plug the video signals connector to the monitor.

1.6 VIDEO SYNC CONVERTER

The CRT-250 p.c. board included with your kit is capable of providing either negative or positive, vertical or horizontal sync. To convert your board, simply move jumpers J4 and J5 on the CRT-250 p.c. board to the proper positions.

1.7 MARQUEE INSTALLATION

If your conversion kit has a thin plastic game marquee included, you will have to use the original game marquee as a template. Center your new game marquee graphics and cut to proper size. You will have to cut a clear Plexiglas to place in front of this marquee.

1.8 POWER-UP TEST

1. Listen for sound upon powering up game.
2. Check the +5V power and adjust if necessary.
3. Check to see if monitor is in sync. Center the picture and adjust brightness if necessary.
4. Test coin switches and control panel buttons.
5. Adjust volume. *YOUR NEW MERIT GAME IS READY TO PLAY!*

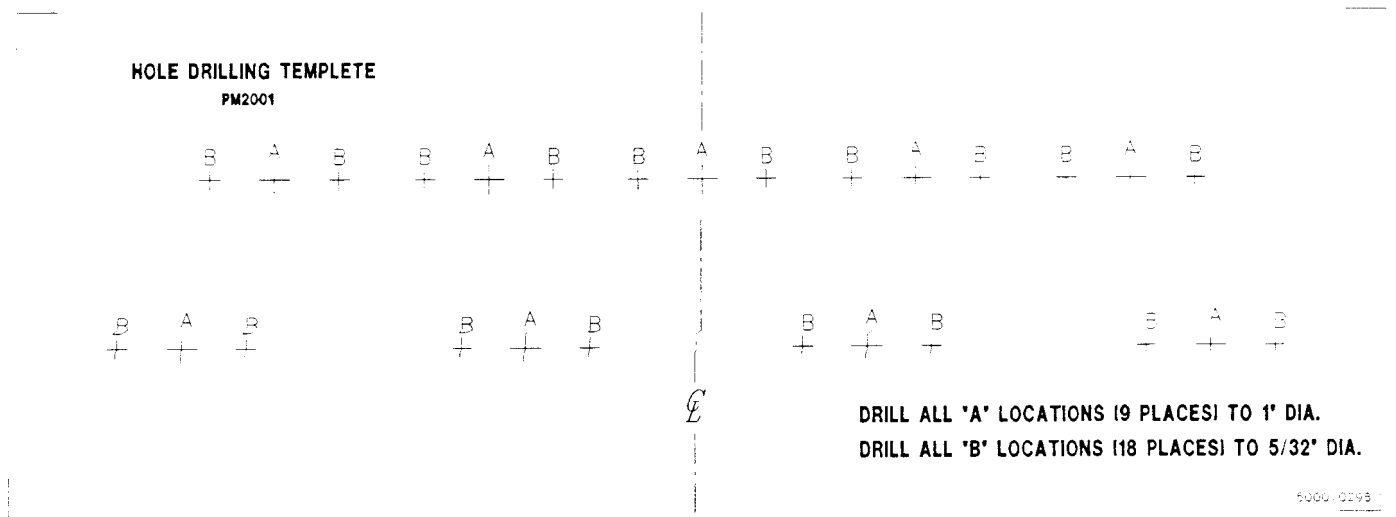
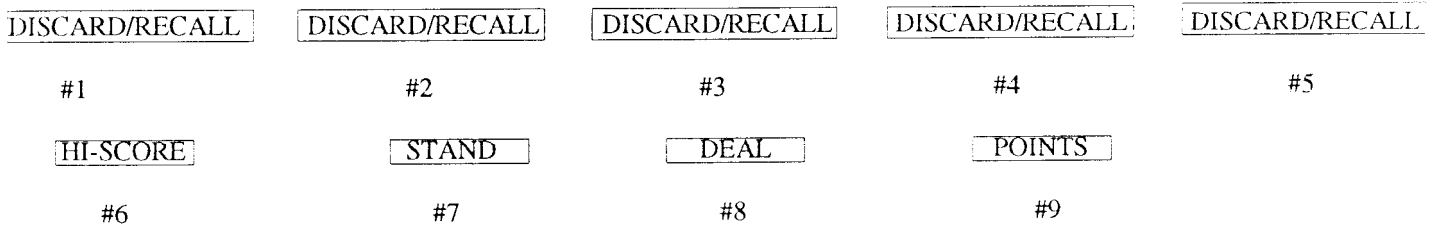


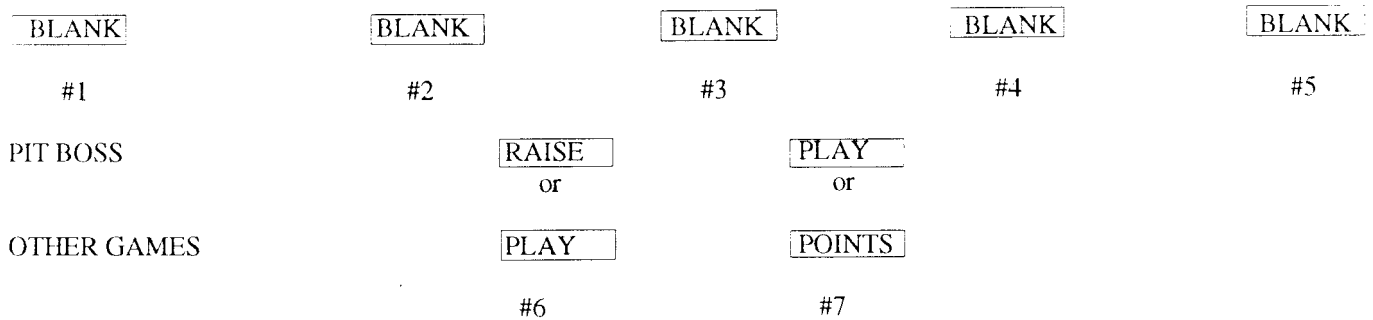
Figure #2.

BUTTON LAYOUT FOR AMERICANA



NOTE: DISCARD/RECALL BUTTONS MAY BE LEFT BLANK.

BUTTON LAYOUT FOR PIT BOSS AND OTHER 7 BUTTON GAMES



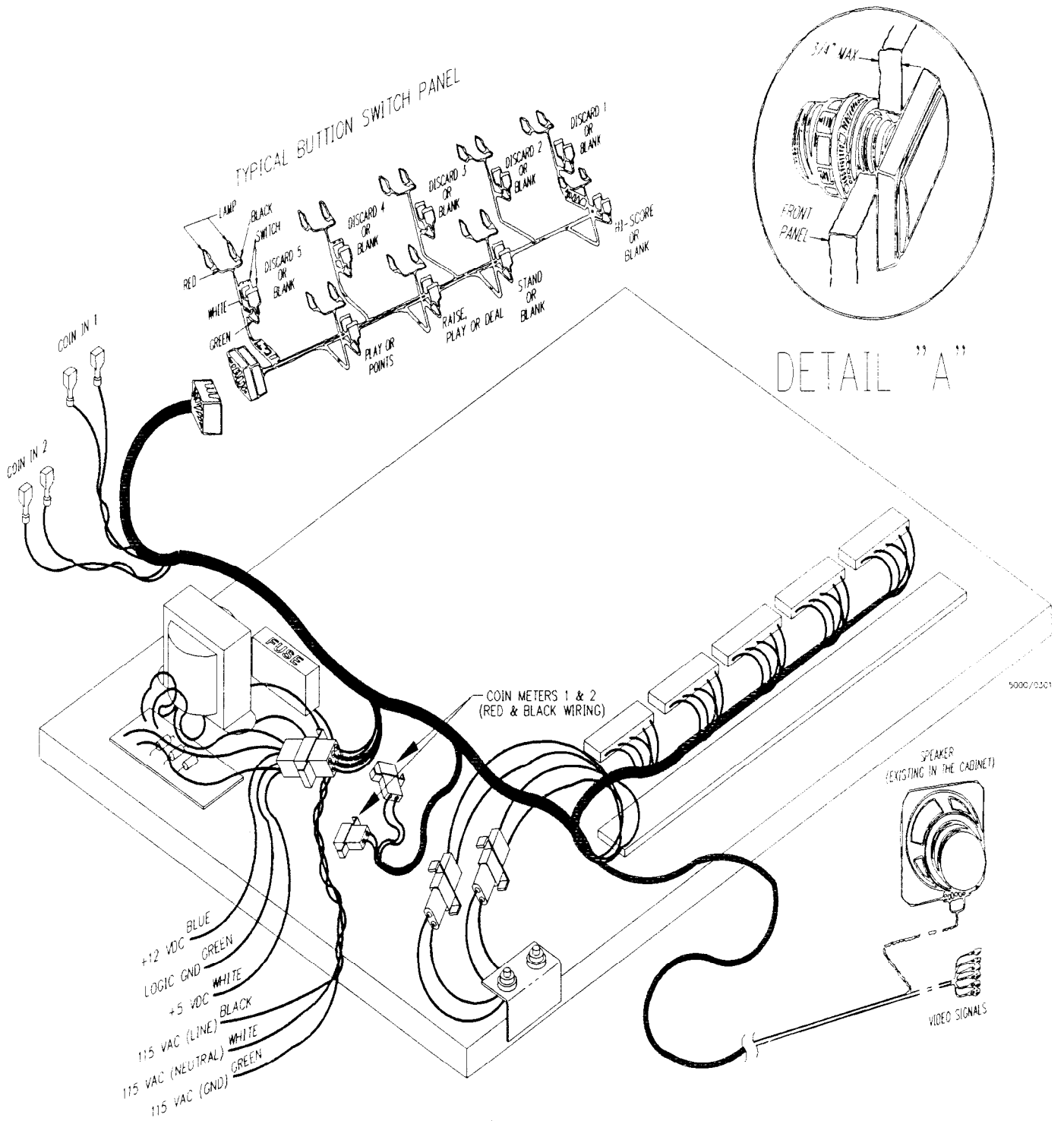


Figure #3.

1.8 PARTS LIST

QUANTITY	PART#	DESCRIPTION	INCLUDED IN KIT #:
1	CN6100	HDR RECEPT 7 PIN	F50004-4446, F50004-4464, F50004-4481
1	GL1134	STYRN,MARQ,PIT BOSS 2, KIT	F50004-4464
1	GL1133	VINYL,MARQ,PIT BOSS 30, KIT	F50004-4481
1	GL4022	LEXAN, OVRLY, GENERIC MERIT	F50004-4446, F50004-4464, F50004-4481
4	HW4450	PHIL. FLAT WOOD #8 X 1 1/2"	F50004-4446, F50004-4464, F50004-4481
1	PM2001	(9) HOLE DRILLING TEMPLATE	F50004-4446, F50004-4464, F50004-4481
1	PM3500	MONITOR PAINTING MASK	F50004-4446, F50004-4464, F50004-4481
1	PM8501	PURCHASE REGISTRATION CARD	F50004-4446, F50004-4464, F50004-4481
1	PM8924	MANUAL PIT BOSS SUPERSTAR 30	F50004-4481
1	PM8908	MANUAL AMERICANA CRT-250	F50004-4446
1	PM9502-OC	MANUAL CRT-250 FULL KIT	F50004-4446, F50004-4464, F50004-4481
1	SA1055	HARNESS CNTRL/PNL 9 HOLE U/R	F50004-4464
1	SA1114	HARNESS CNTRL/PNL 7 HOLE U/R	F50004-4481
1	SA1111-0E	HARN CONVERT/KIT CONTRL/PNL X9	F50004-4446
1	SA1950	ASSY CRT-250 BOARD TESTED	F50004-4446, F50004-4464

KT 9926 COCKTAIL TABLE HARNESS KIT

QUANTITY	PART #	DESCRIPTION	INCLUDED IN KIT #:
1	SA2270-02	PCA,CPU/MEM/KEY, AMUSE VIDEO	F50004-4481
1	SA7209	CNVRT KIT PWR/7 BTN HARN/PCA	F50004-4464, F50004-4481
1	SA7195	CNVRT KIT PWR/9 BTN HARN/PCA	F50004-4446
5	SW1200	SWITCH RED RECT NO LEGEND	F50004-4446, F50004-4464, F50004-4481
1	SW1810	LEGEND RED RECT STAND	F50004-4446
5	SW1812	LEGEND RED RECT DIS/RECALL	F50004-4446
1	SW1814	LEGEND RED RECT POINTS	F50004-4446
1	SW1817	LEGEND RED RECT DEAL	F50004-4446
1	SW1822	LEGEND RED RECT HI-SCORE	F50004-4446
1	SW1844	LEGEND RED RECT PLAY	F50004-4464, F50004-4481
1	SW1853	LEGEND RED RECT RAISE	F50004-4464, F50004-4481
2	SW1890	BUTTON LENS CAP RED RECT	F50004-4446, F50004-4464, F50004-4481
2	SW1950	BUTTON BASE/BULB/BEZEL/14V RECT	F50004-4446, F50004-4464, F50004-4481
1	3031	AMERICANA PGRM OPTIONS (250)	F50004-4446
1	9233- UPGRD	9233 SERIES PGRM UPGRD OPTIONS	F50004-4464, F50004-4481

VIDEO SYNC CONVERTER

If your monitor requires negative signals, remove the I.C. marked as "U51" and insert the video adaptor (SA2293) in its place as shown in Fig. 2 below.

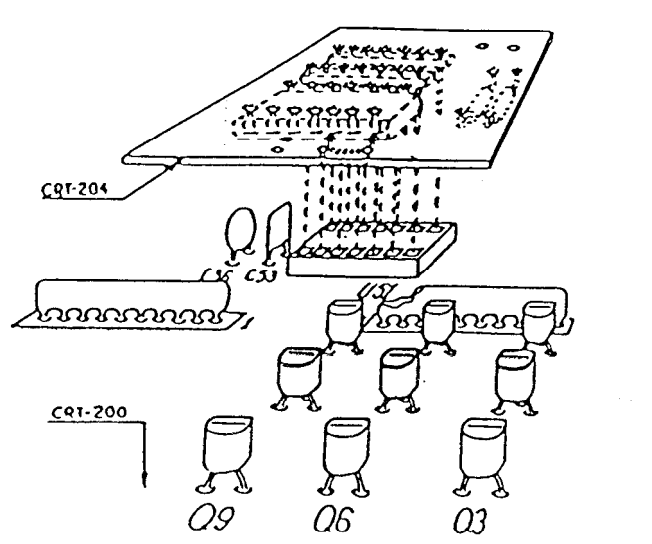


Figure 2.

The adaptor comes wired for negative composite sync. The signal will appear on both Brown and White wires when J3 is jumpered. If your monitor requires separate negative horizontal and vertical sync., cut jumper J3.

If your monitor requires positive composite sync., remove and resolder jumpers J1 and J2 as shown in Fig 3. below.

NOTE: J1, J2, J3, are to be installed on solder side of the P.C. board.

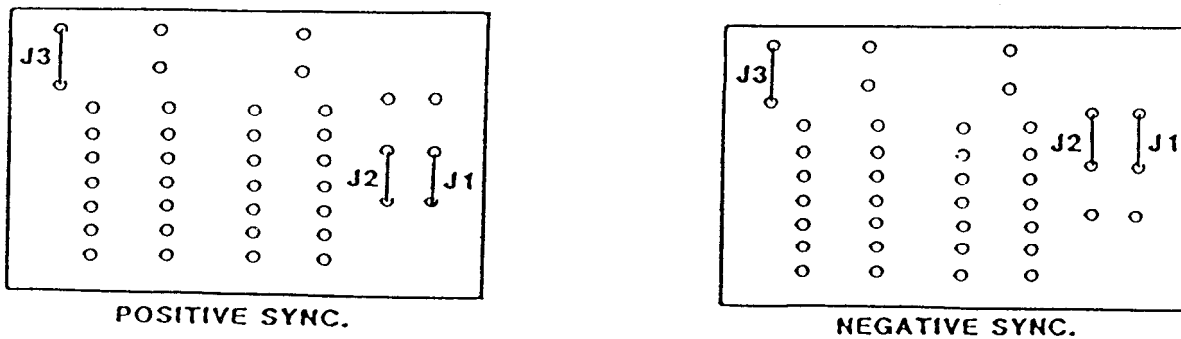


Figure 3.

PRESENTING THE MOST POWERFUL
TROUBLESHOOTING TOOL
AT YOUR DISPOSAL:



FOR TECHNICAL ASSISTANCE

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