

INSTALLATION INSTRUCTIONS FOR MERIT CONVERSION KITS

IMPORTANT !!! READ ME FIRST !!!

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 and 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.

NOTE: The software for some kits is available in two versions, one for games with monitors mounted horizontally, and the other for vertical mounting. Check that you received the proper EPROM set.

REQUIREMENTS FOR CONVERSION:

A surface inside at least 22"x16" to mount the controller.

A power supply able to deliver the following voltages:

- 110 Volts A.C., isolated for the monitor
- +5 Volts D.C. at 5 Amps, regulated
- +12 Volts D.C. at 1 Amp, regulated

A color monitor with TTL R.G.B. inputs and positive horizontal and vertical sync.

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

PREPARATORY STEPS

1. If you do not have a large enough mounting area, the components of the game controller may be removed and remounted individually.
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 mounted vertically make sure you have the correct software that works with monitors mounted vertically. If your monitor is black and white or vector (like Atari's Tempest), it cannot be used. Purchase a color raster R.G.B. monitor.
4. If your monitor is other than positive sync., see page #4.

DESCRIPTION

The Merit Conversion Kit can be configured as both one & two player games. For single player games only the standard kit is required. Conversion to a cocktail game is done by adding the

Cocktail Table Kit (KT9926) to the standard harness (available at additional cost).

NOTE: Some games are NOT available in two player cocktail format.

Supplementary parts that can be purchased from Merit Industries:

- Power supply assembly (SA4040) (includes power cord).
- Brushed aluminum front panel (specify game).

PARTS LIST: Controller assembly (P.C. board and other parts)
 Front panel harness
 Lighted push buttons and/or controllers
 Front panel overlay
 Front panel drilling template
 Header (MARQUEE) plexiglass
 Monitor glass painting mask
 Game Instruction Manual
 Video signals connector (7 pin plastic), wood screws and video sync. converter board (CRT-204)

 READING THE OLD GAME FOR CONVERSION

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 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 on page #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. Fill any large holes. It may be desirable to cut a new panel from plywood or purchase an all purpose panel from Merit.
- 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.

Supplied in the kit is a monitor painting mask. Use a pair of scissors and cut on the line corresponding to your monitor size. Determine where the monitor opening should be located (lay the new glass over the old). 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.

From the back, spray paint the entire glass. We suggest a flat black ENAMEL paint (laquer 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. When dry, remove only the monitor area mask. Reinstall the glass in the cabinet.

INSTALLATION STEPS

- 1 - Install the controller assembly using the four screws supplied.
- 2 - Determine the area where the push buttons should be mounted. 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 Pg.6.
- 3 - Peel off the backing from the 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 - Remove the material from where the switches will be mounted.

FRONT PANEL ASSEMBLY

- 1 - Assemble the switch panel using the buttons provided with the kit. Follow game instruction manual for order and position of buttons or controllers. See Page 5 for drilling information.
- 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.

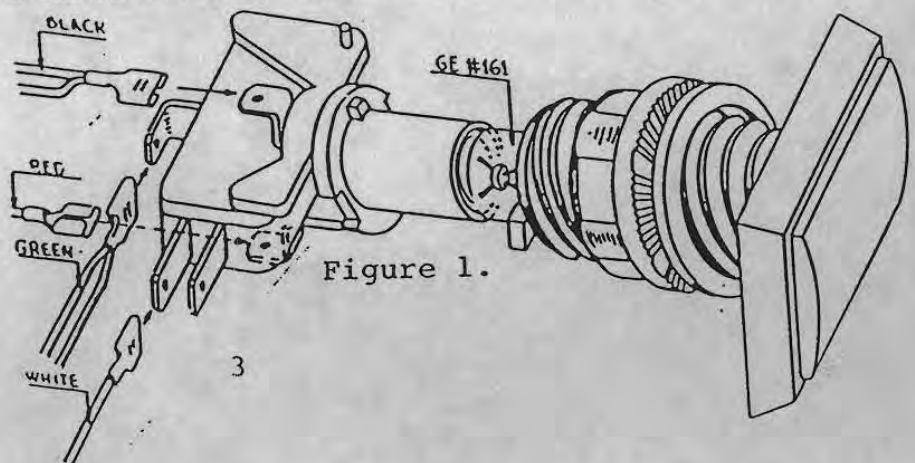


Figure 1.

- 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 detail "B" on drawing #1 (last page). The six wires are configured as follows:

White - +5V	-----+	
Blue - +12V		--- Power Supply Connections
Green - Gnd	-----+	
Black - 115V Line	-----+	
White - 115V 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 - VLamp 2

- 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 switchwires using "C" and "NO".

NOTE: If the game has more than two coin mechanisms, either jumper wires to the extra switches or block them so coins can't be inserted.

- 6 - Locate the twisted black and white wires (speaker) and solder the white wire to the "+" terminal and the black wire to "-".
- 7 - 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	- BROWN for + Vertical sync.
- WHITE for + Horiz. sync.	- GREEN w/YELLOW for ground

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

- 8 - 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.

- 9 - Plug the video signals connector to the monitor.

YOUR NEW MERIT GAME IS READY TO PLAY

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.

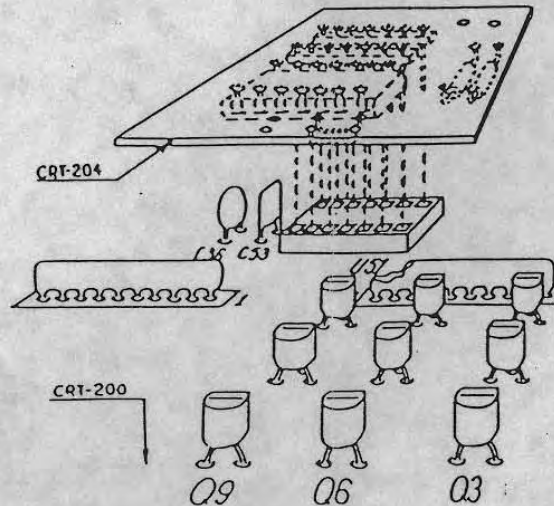


Figure 2.

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.

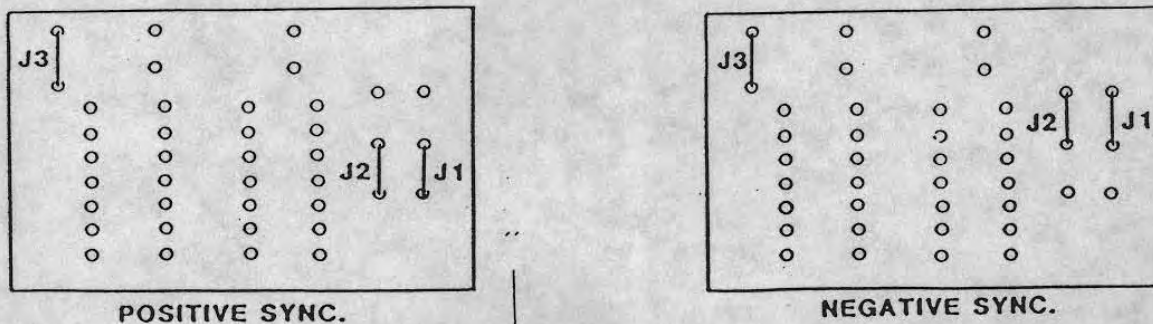
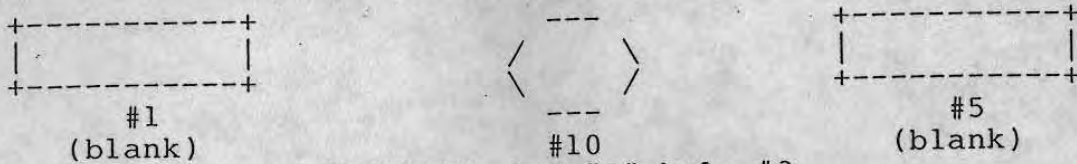
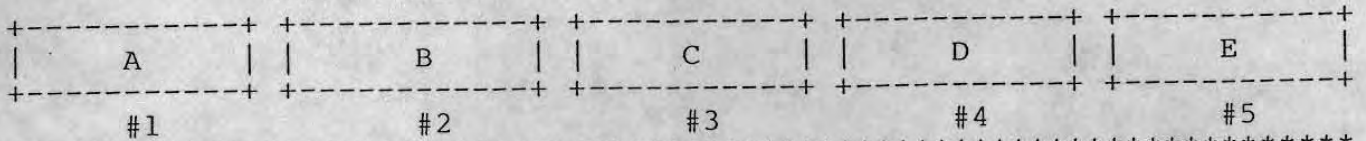


Figure 3.

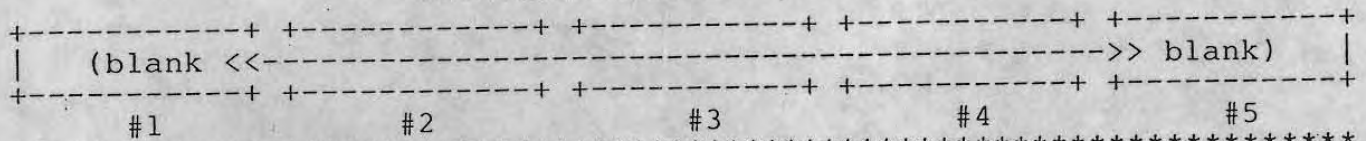
 BUTTON LAYOUT FOR MATCH 'EM UP KITS



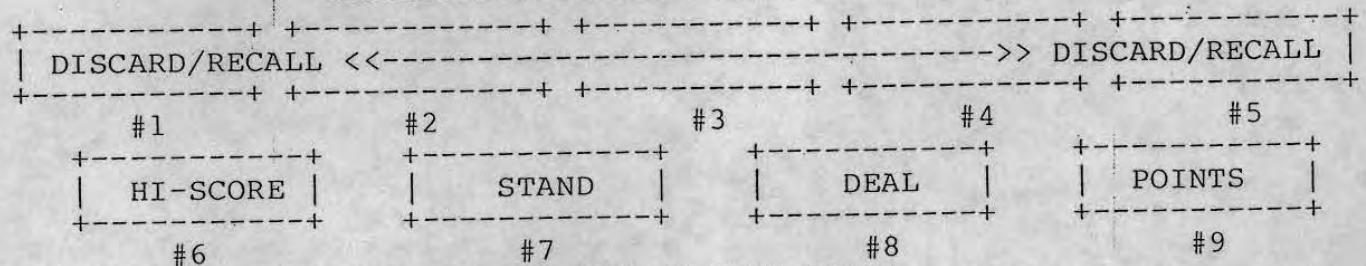
 BUTTON LAYOUT FOR TRIVIA WHIZ AND TIC TAC TRIVIA



 BUTTON LAYOUT FOR PHRAZE CRAZE

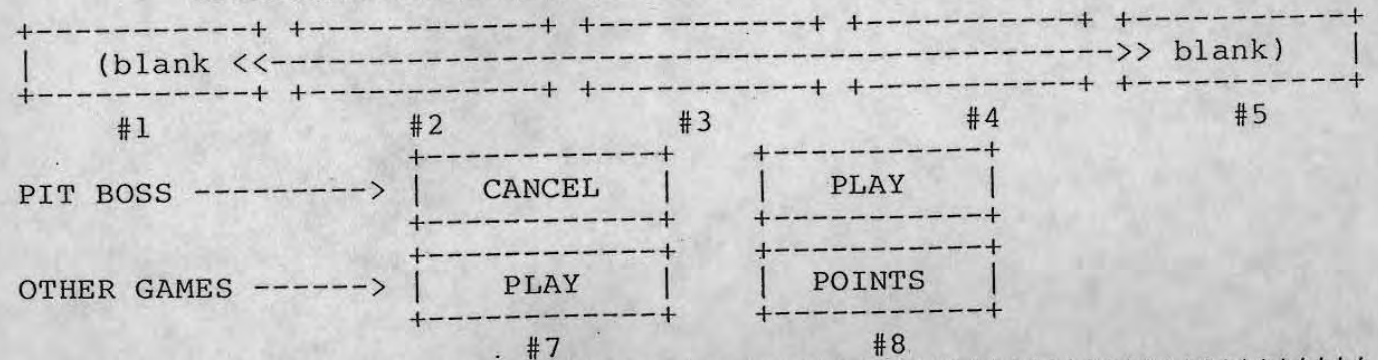


 BUTTON LAYOUT FOR RIVIERA OR BIG APPLE

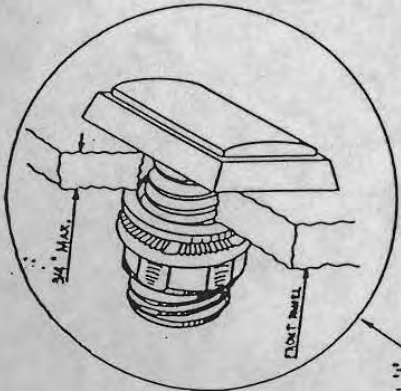
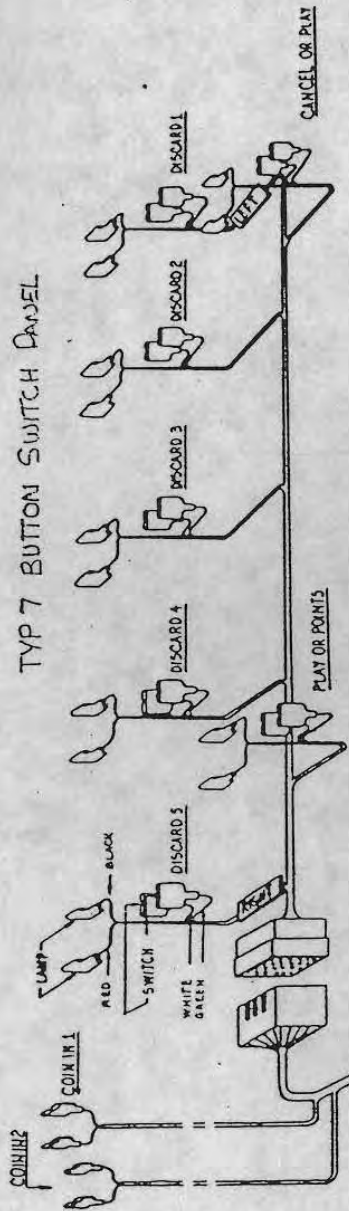


NOTE: DISCARD/RECALL BUTTONS MAY BE LEFT BLANK.

 BUTTON LAYOUT FOR PIT BOSS AND OTHER 7 BUTTON GAMES

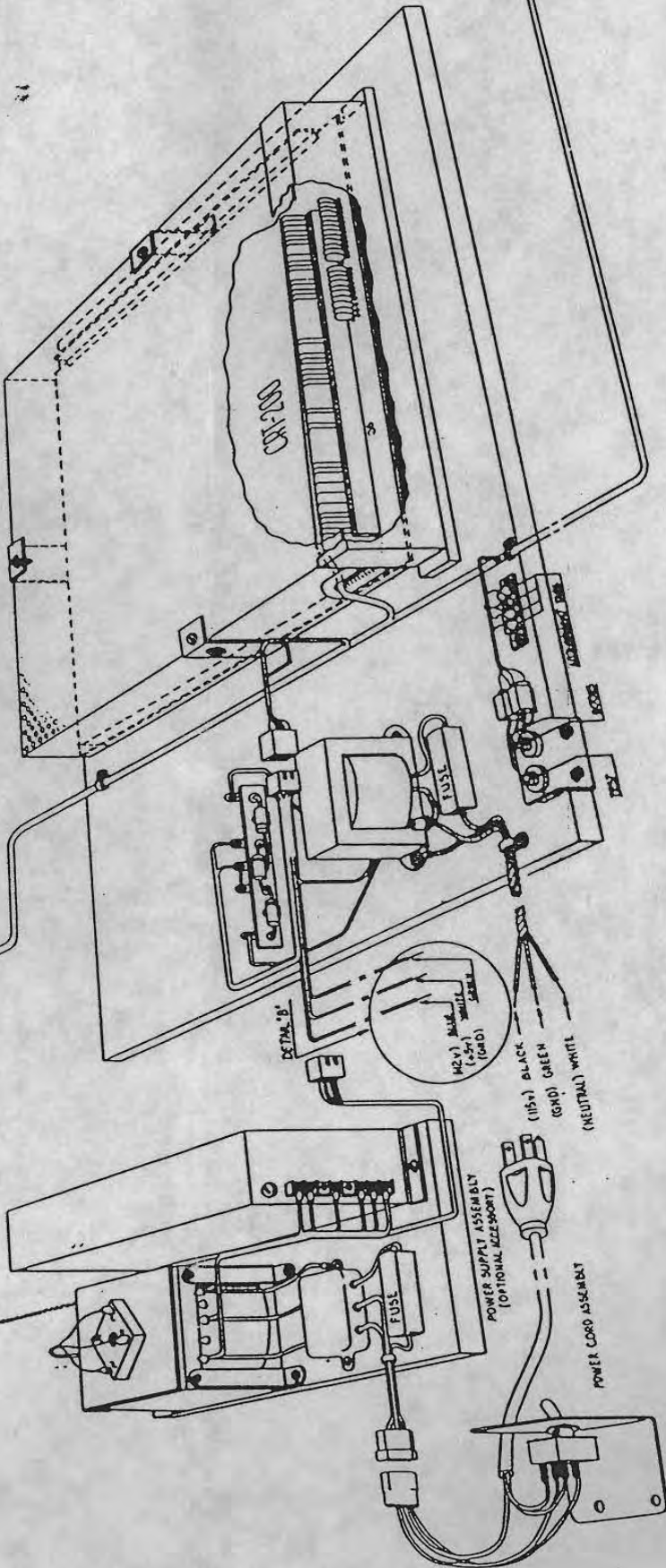


TYP 7 BUTTON SWITCH PANEL



DETAIL 'X'

MONITOR A.C.
(ISOLATED)



SPEAKER
(EXISTING IN THE CABINET)

8Ω

VIDEO SIGNALS

COIN IN

DETAIL 'B'

POWER SUPPLY ASSEMBLY
(OPTIONAL ACCESSORY)

POWER CORD ASSEMBLY

FUSE

FUSE

FUSE

FUSE

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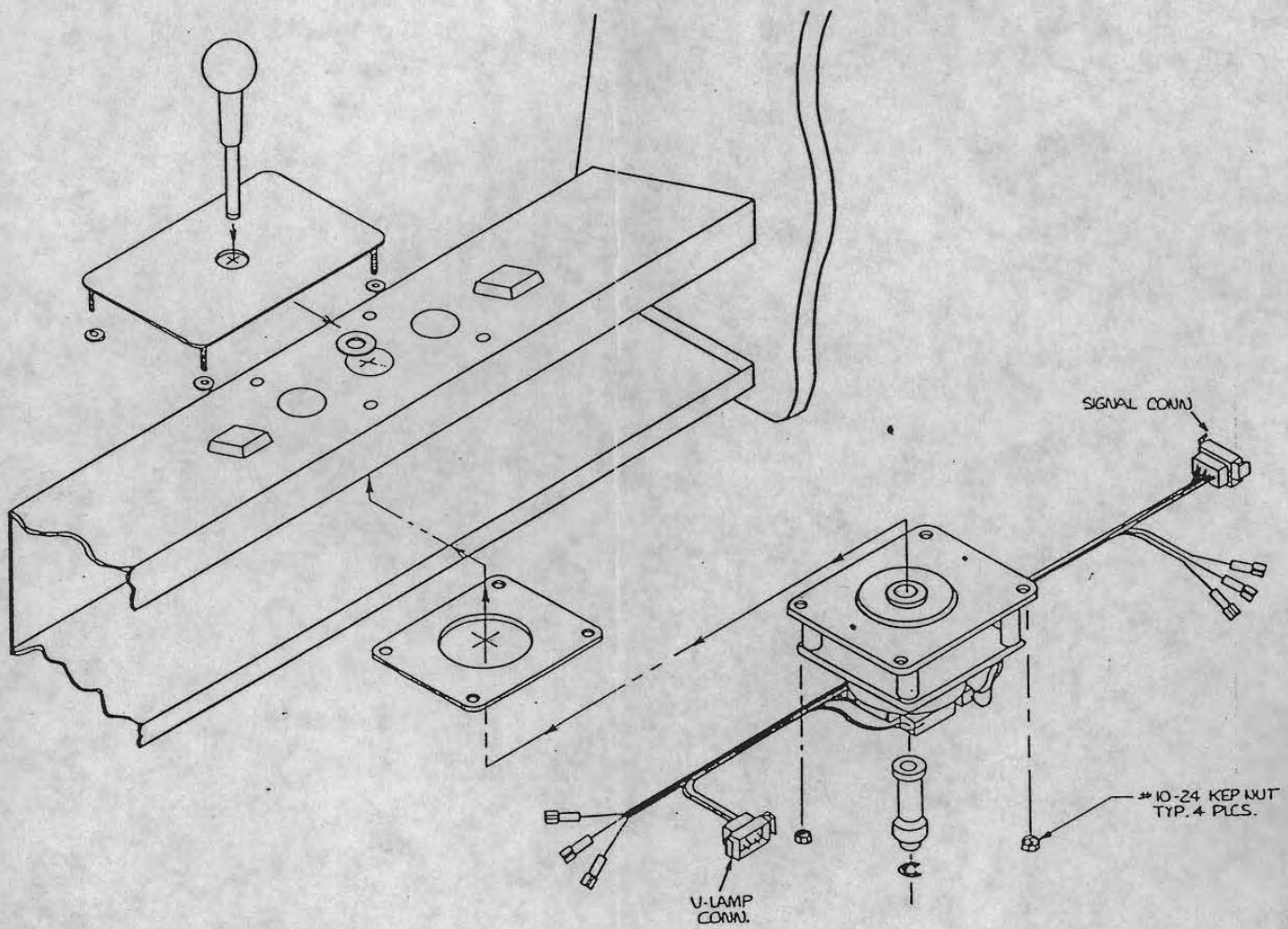


FIG. N° 3 MEUQKIT.doc 861126

M A T S C H E M U P _ BELEGUNGSPLAN

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- 1.) Diode in Position i 8 ablöten
- 2.) Baustein U 51 Nr. 7407 herausnehmen und mitgelieferten VIDEO SYNC CONVERTER mit beiliegendem Zwischenstück aufsetzen (lange Seite in Richtung Pinleiste)
- 3.) ADAPTERKABEL von links (Pin 1) nach rechts wie folgt anlöten :

Pin 1 blau	39 Lautsprecher
2 grün	40 Lautsprecher
3 rot	57 Münze
5 sync	60 Start 1 / löschen
7 GND	61 Start 2
8 "	62 unten
9 "	63 rauf
10 "	64 rechts
11 + 5 volt	65 links
12 " "	
13 + 12 volt	